

# Diaphragm Valve MV 310

with pneumatic actuator



**DN 15 - DN 50**  
standard visual position indicator,  
lift limit and manual emergency control



**DN 65 - DN 100**  
optional with visual position indicator,  
lift limit and manual emergency control



## Application

- chemical plants
- water treatment

## Utilisation

- as shut-off valves as well as for controlling in process plants

## Type of fluids

- Neutral, aggressive liquids or gaseous media even with abrasive particles provided that the components getting in contact with the medium are resistant at operating temperature according to the ASV resistance guide.

## Examinations

- Requirements and examinations acc. to DIN 3441, 3442, 8063 and 16 963. DIN EN 12266, leak rate A examined.

## Certificate

- DIBt-approval up to DN 50

## Nominal pressure (H<sub>2</sub>O, 20 °C)

- PN 10 DN 15 - DN 50
- PN 6 DN 65 - DN 100

## Media temperature

- see pressure/temperature diagram

## Operating pressure

- see pressure/temperature diagram

## Size

- DN 15 - DN 100

## Housing

- PVC-U, PVC-C, PP, PVDF

## Diaphragm

- EPDM
- PTFE (vulcanised on EPDM diaphragm)
- FPM on request

## Sealings

- EPDM or FPM

## Bonnet

- DN 15 - DN 50 PP, glas fibre reinforced
- DN 65 - DN 100 aluminium, lacquered

## Control functions

- NC (normally closed)
- NO (normally open)
- DA (double acting)

## Connection

- spigot ends for solvent welding DIN/ISO (PVC-U, PVC-C)
- spigot ends for fusion welding DIN/ISO (PP, PVDF)
- union DIN 8063 (DN 15 - DN 50) with socket end for solvent welding DIN/ISO (PVC-U, PVC-C)
- union DIN 8063 (DN 15 - DN 50) with socket end for fusion welding DIN/ISO (PP, PVDF)
- GFR or PP/steel flange DIN 2501 PN 10/16 with DIN face-to-face dimension
- union ends acc. to BS, ANSI or JIS on request

## Mounting

- variable

## Option

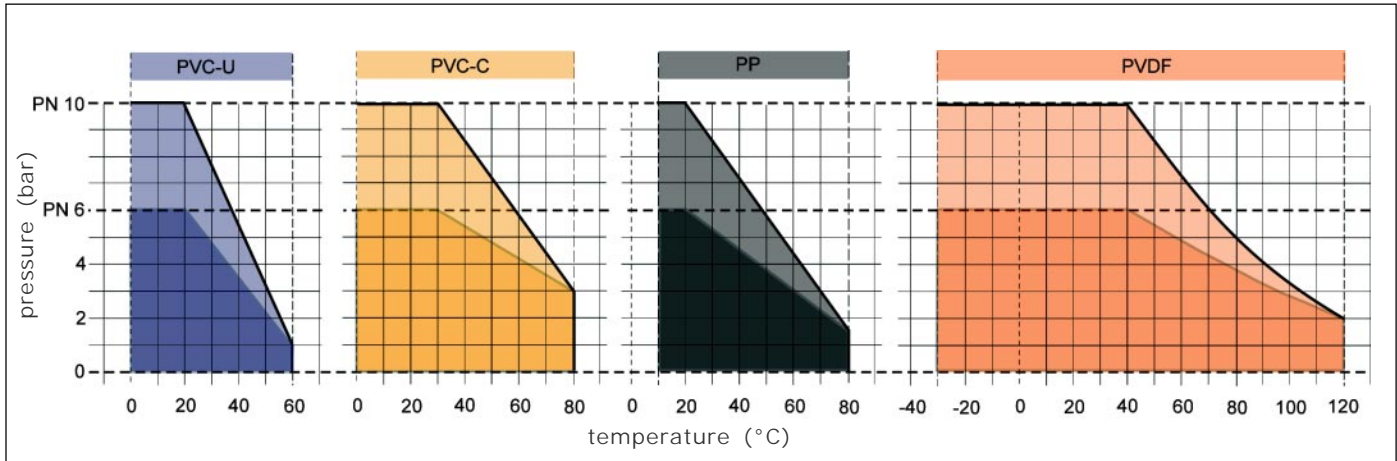
- position indicator, lift limit and manual emergency control from DN 65 (consider note on page 8)
- limit switch unit

## Colour

- housing
 

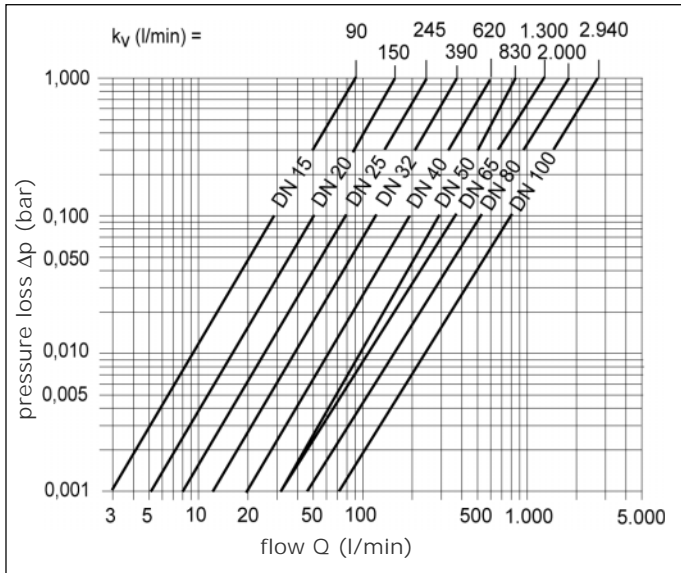
PVC-U:	grey, RAL 7011
PVC-C:	grey, RAL 7001
PP:	grey, RAL 7032
PVDF:	opaque, yellowish-white

## Pressure/temperature diagram



## Pressure loss curve

(standard values for H<sub>2</sub>O, 20°C)



### For calculation:

$$c_v = k_v \cdot 0,07$$

$$f_v = k_v \cdot 0,0585$$

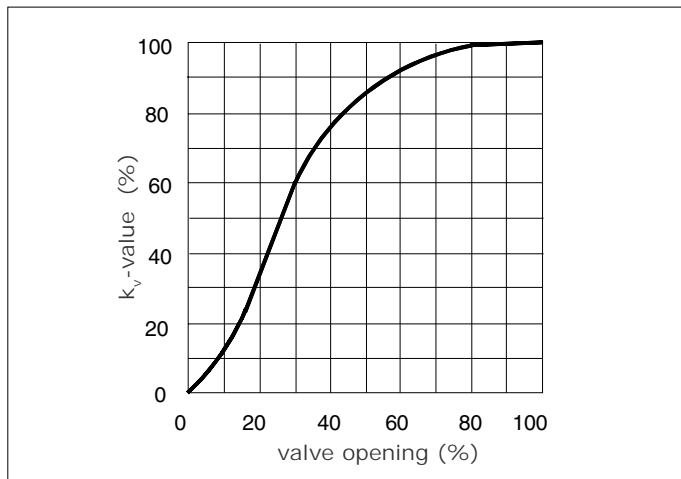
### Values:

$$k_v [l/min]$$

$$c_v [gal/min] \text{ US}$$

$$f_v [gal/min] \text{ GB}$$

## Flow characteristic



## Pressure/temperature diagram

The pressure/temperature limits are applicable for the stated nominal pressures and a computed operating life of 25 years.

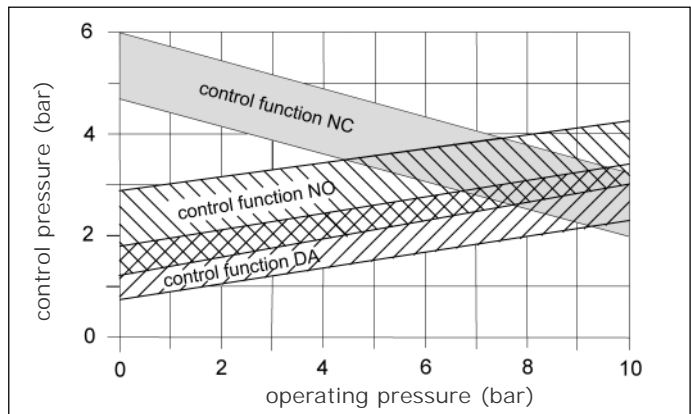
The values are a guide for harmless media (DIN 2403), to which the material of the valve is resistant.

For other media see the ASV resistance guide.

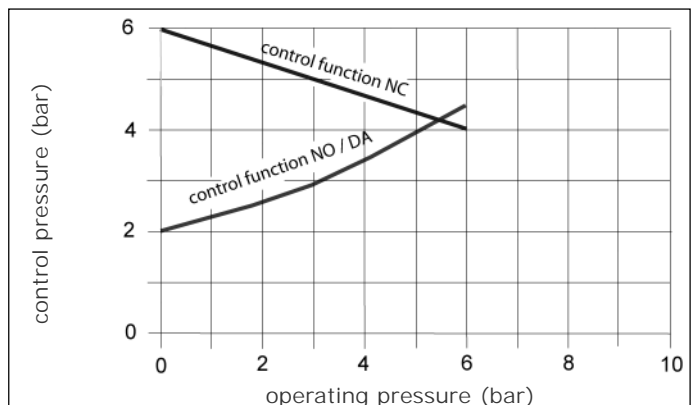
The durability of wear and tear parts depends on the operating conditions of the application.

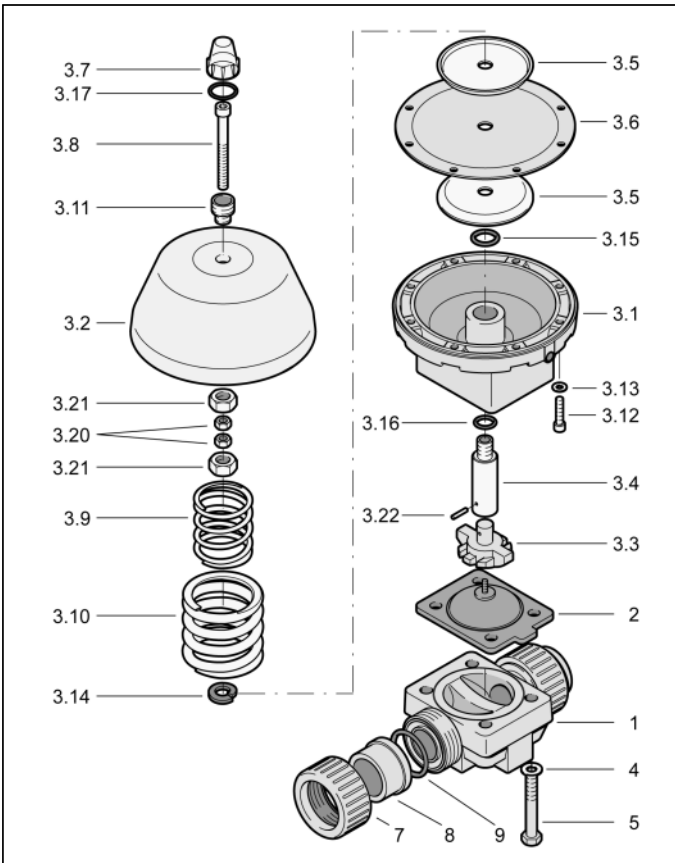
For temperatures below 0°C (PP < +10 °C) please specify the precise operating conditions of the application.

## Control curve DN 15 - DN 50

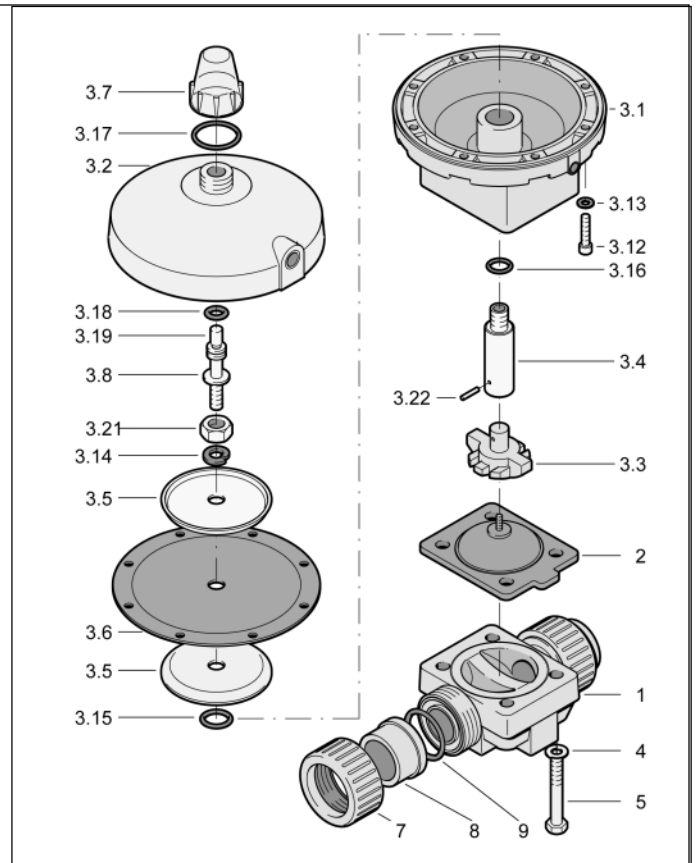


## Control curve DN 65 - DN 100

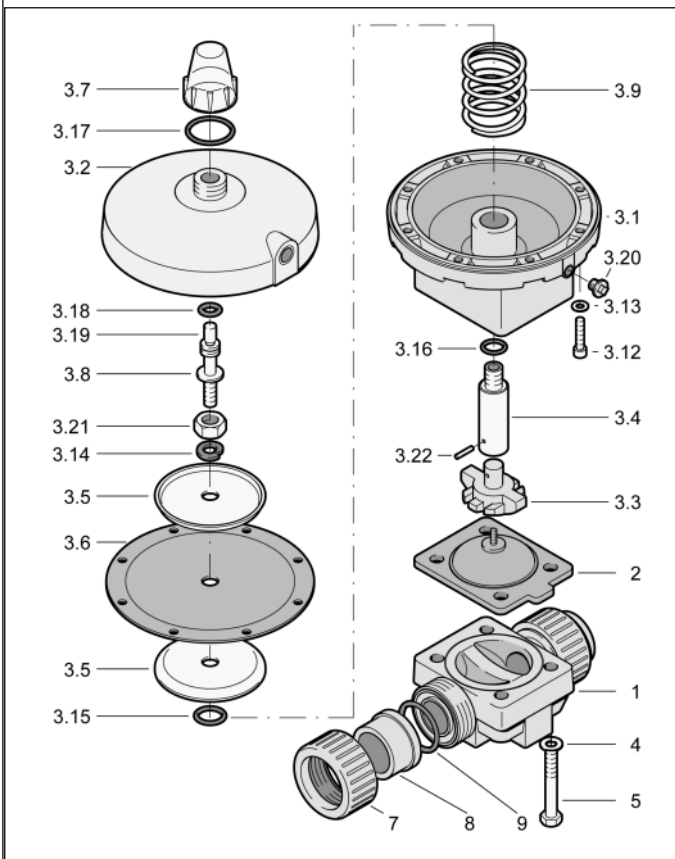




MV 310 NC DN 15 - DN 50



MV 310 DA DN 15 - DN 50

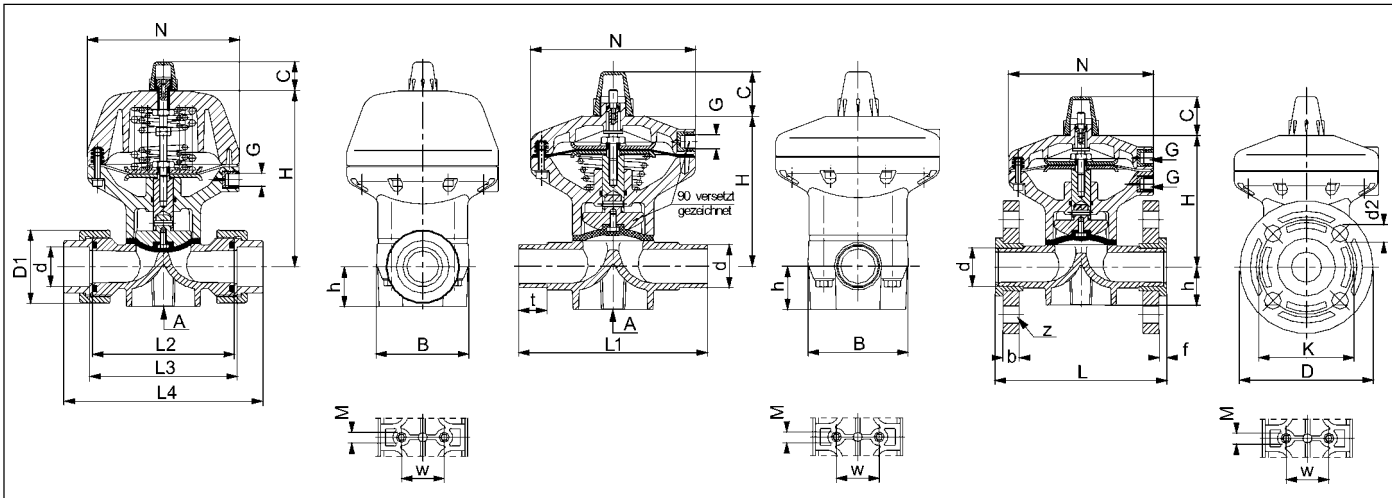


MV 310 NO DN 15 - DN 50

item	qty.	designation
1	1	body
2	1	diaphragm
3.1	1	housing actuator body
3.2	1	housing actuator bonnet
3.3	1	pressure piece
3.4	1	driving shaft
3.5	1	disc
3.6	1	diaphragm
3.7	1	cap
3.8	1	adjustment screw
3.9	1	pressure spring
3.10	1	pressure spring
3.11	1	banjo bolt
3.12	10	socket head cap screw
3.13	10	U-washer
3.14	1	circlip
3.15	1	O-ring
3.16	1	O-ring
3.17	1	O-ring
3.18	1	O-ring
3.19	1	indicator pin
3.20	2	hexagonal nut
3.21	2	hexagonal nut
3.22	1	clamping sleeve
4	4	U-washer
5	4	hexagonal screw
7	2	union nut
8	2	insert
9	2	O-ring

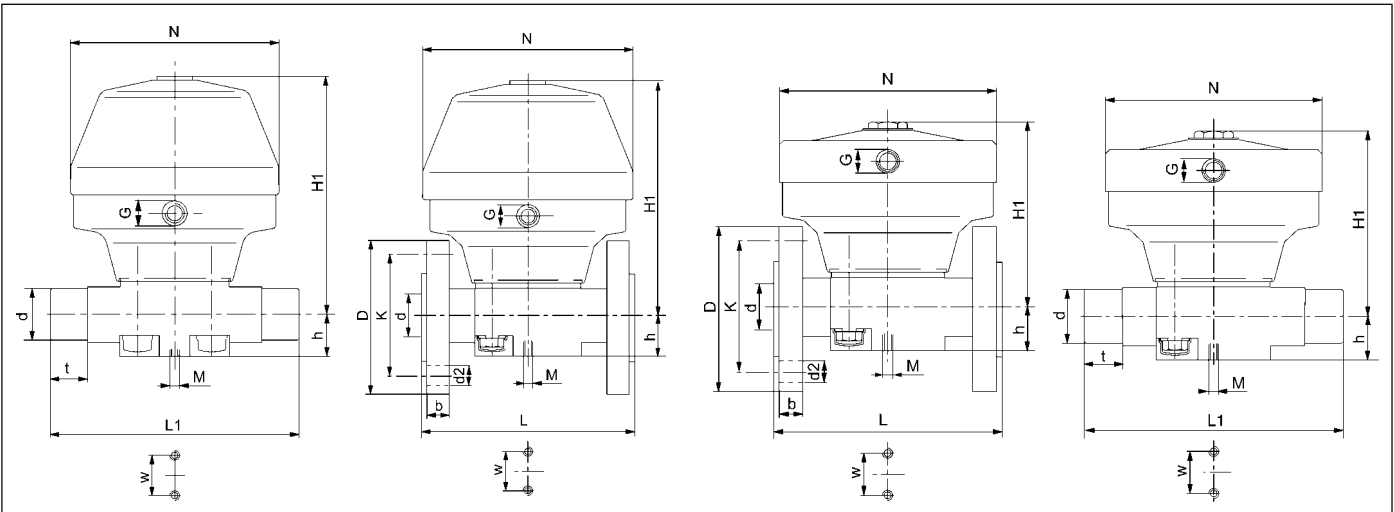
Exploded drawing DN 65 - DN 100 on request.

# Diaphragm Valve MV 310 »NC · NO · DA« DN 15 - DN 50



dimension	d (mm)	20	25	32	40	50	63
DN (mm)		15	20	25	32	40	50
DN (inch)		1/2	3/4	1	1 1/4	1 1/2	2
PN (bar)		10	10	10	10	10	10
	B	72,0	72,0	92,0	92,0	119,0	119,0
NC	C	29,0	29,0	29,0	29,0	41,0	41,0
NO / DA	C	41,0	41,0	41,0	41,0	41,0	41,0
GFR flange	b	12,0	14,0	15,0	17,0	17,0	18,0
PP/steel flange	b	13,0	14,5	15,5	17,5	17,5	19,0
	D	95,0	105,0	115,0	140,0	150,0	165,0
PVC-U / PVC-C	D1	41,0	50,0	58,0	72,0	79,0	98,0
PP	D1	46,0	56,0	66,0	79,0	87,0	107,0
PVDF	D1	47,0	57,0	64,0	78,0	89,0	109,0
	d2	14,0	14,0	14,0	18,0	18,0	18,0
	f	6,0	7,0	7,0	8,0	8,0	9,0
	G	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
NC	H	136,0	136,0	175,0	175,0	207,0	207,0
NO / DA	H	113,0	113,0	139,0	139,0	155,0	155,0
	h	26,0	26,0	26,0	40,0	40,0	40,0
	K	65,0	75,0	85,0	100,0	110,0	125,0
	L	130,0	150,0	160,0	180,0	200,0	230,0
	L1	124,0	144,0	154,0	174,0	194,0	224,0
	L2	90,0	108,0	116,0	134,0	154,0	184,0
	L3	96,0	114,0	122,0	140,0	160,0	190,0
PVC-U / PVC-C	L4	128,0	152,0	166,0	192,0	222,0	266,0
PP	L4	125,0	146,0	158,0	181,0	207,0	244,0
PVDF	L4	128,0	150,0	162,0	184,0	210,0	248,0
	M	M6	M6	M6	M8	M8	M8
	N	122,0	122,0	152,0	152,0	192,0	192,0
PVC-U / PVC-C	t	16,0	19,0	22,0	26,0	31,0	38,0
PP / PVDF	t	16,0	19,0	21,0	23,0	26,0	30,0
	w	26,0	26,0	26,0	45,0	45,0	45,0
	z	4,0	4,0	4,0	4,0	4,0	4,0
<b>weight<sup>1)</sup> (kg)</b>							
PVC spigot	PVC	1,45	1,48	2,86	2,92	6,15	6,25
PP spigot	PP	1,42	1,43	2,78	2,82	5,96	6,03
PVDF spigot	PVDF	1,48	1,51	2,92	3,02	6,30	6,45
1) weight for NC valves							

# Diaphragm Valve MV 310 »NC · NO · DA« DN 65 - DN 100



<b>dimension</b>	d (mm)	75	90	110
	DN (mm)	65	80	100
	DN (inch)	2 1/2	3	4
	PN (bar)	6	6	6
	B	-	-	-
NC	C	-	-	-
NO / DA	C	-	-	-
GFR flange	b	18,0	20,0	20,0
PP/steel flange	b	19,0	21,0	22,0
	D	185,0	200,0	220,0
PVC-U / PVC-C	D1	-	-	-
PP	D1	-	-	-
PVDF	D1	-	-	-
	d2	18,0	18,0	18,0
	f	-	-	-
	G	1/4"	1/4"	1/4"
NC	H1	325,0	325,0	355,0
NO / DA	H1	305,0	305,0	330,0
	h	55,0	55,0	64,0
	K	145,0	160,0	180,0
	L	290,0	310,0	350,0
	L1	284,0	300,0	340,0
	L2	-	-	-
	L3	-	-	-
PVC-U / PVC-C	L4	-	-	-
PP	L4	-	-	-
PVDF	L4	-	-	-
	M	M12	M12	M12
	N	258,0	258,0	258,0
PVC-U / PVC-C	t	44,0	52,0	61,0
PP / PVDF	t	33,5	38,0	41,5
	w	100,0	100,0	120,0
	z	4,0	8,0	8,0
<b>weight<sup>1)</sup> (kg)</b>				
PVC spigot	PVC	15,00	15,50	25,50
PP spigot	PP	14,50	15,00	25,00
PVDF spigot	PVDF	15,50	16,00	26,00

<sup>1)</sup> weights for NC valves



## Diaphragm Valve MV 310 »NC · NO · DA« DN 15 - DN 100

### Ident number

housing	PVC-U	d (mm)	20	25	32	40	50	63	75	90	110
connection	actuator	diaphragm									
PVC-U spigot	NC	EPDM	67324	67325	67326	67327	67328	67329	113623	43292	119768
PVC-U spigot	NC	PTFE	67340	67341	67342	67343	67344	67345	119769	110283	119770
PVC-U socket	NC	EPDM	122818	122819	122820	122821	122822	122823	-	-	-
PVC-U socket	NC	PTFE	122825	122826	122827	122828	122829	122830	-	-	-
GFR flange	NC	EPDM	122860	122861	122862	122863	122864	122865	122866	122867	122868
GFR flange	NC	PTFE	122870	122871	122872	122873	122874	122875	122876	122877	122878
PVC-U spigot	NO	EPDM	67552	67553	67554	67555	67556	67557	119781	119782	45662
PVC-U spigot	NO	PTFE	67564	67565	67566	67567	67568	67569	119783	111771	119784
PVC-U socket	NO	EPDM	122832	122833	122834	122835	122836	122837	-	-	-
PVC-U socket	NO	PTFE	122839	122840	122841	122842	122843	122844	-	-	-
GFR flange	NO	EPDM	122880	122881	122882	122883	122884	122885	122886	122887	122888
GFR flange	NO	PTFE	122890	122891	122892	122893	122894	122895	122896	122897	122898
PVC-U spigot	DA	EPDM	64405	64406	64407	64408	64409	64410	119794	110692	117697
PVC-U spigot	DA	PTFE	64417	64418	64419	64420	64421	64422	119795	110139	118698
PVC-U socket	DA	EPDM	122846	122847	122848	122849	122850	122851	-	-	-
PVC-U socket	DA	PTFE	122853	122854	122855	122856	122857	122858	-	-	-
GFR flange	DA	EPDM	122900	122901	122902	122903	122904	122905	122906	122907	122908
GFR flange	DA	PTFE	122910	122911	122912	122913	122914	122915	122916	122917	122918
housing	PVC-C	d (mm)	20	25	32	40	50	63	75	90	110
connection	actuator	diaphragm									
PVC-C spigot	NC	EPDM	131240	131241	131242	131243	131244	131245	-	-	-
PVC-C spigot	NC	PTFE	131250	131251	131252	131253	131254	131255	-	-	-
PVC-C socket	NC	EPDM	131300	131301	131302	131303	131304	131305	-	-	-
PVC-C socket	NC	PTFE	131307	131308	131309	131310	131311	131312	-	-	-
PP/steel flange	NC	EPDM	131342	131343	131344	131345	131346	131347	131348	131349	131350
PP/steel flange	NC	PTFE	131352	131353	131354	131355	131356	131357	131358	131359	131360
PVC-C spigot	NO	EPDM	131260	131261	131262	131263	131264	131265	-	-	-
PVC-C spigot	NO	PTFE	131270	131271	131272	131273	131274	131275	-	-	-
PVC-C socket	NO	EPDM	131314	131315	131316	131317	131318	131319	-	-	-
PVC-C socket	NO	PTFE	131321	131322	131323	131324	131325	131326	-	-	-
PP/steel flange	NO	EPDM	131362	131363	131364	131365	131366	131367	131368	131369	131370
PP/steel flange	NO	PTFE	131372	131373	131374	131375	131376	131377	131378	131379	131380
PVC-C spigot	DA	EPDM	131280	131281	131282	131283	131284	131285	-	-	-
PVC-C spigot	DA	PTFE	131290	131291	131292	131293	131294	131295	-	-	-
PVC-C socket	DA	EPDM	131328	131329	131330	131331	131332	131333	-	-	-
PVC-C socket	DA	PTFE	131335	131336	131337	131338	131339	131340	-	-	-
PP/steel flange	DA	EPDM	131382	131383	131384	131385	131386	131387	131388	131389	131390
PP/steel flange	DA	PTFE	131392	131393	131394	131395	131396	131397	131398	131399	131400



## Diaphragm Valve MV 310 »NC · NO · DA« DN 15 - DN 100

### Ident number

housing PP connection	actuator	d (mm) diaphragm	20	25	32	40	50	63	75	90	110
PP spigot	NC	EPDM	67346	67347	67348	67349	67350	67351	111961	119128	119727
PP spigot	NC	PTFE	67358	67359	67360	67361	67362	67363	119773	113858	119774
PP socket	NC	EPDM	122954	122955	122956	122957	122958	122959	-	-	-
PP socket	NC	PTFE	122961	122962	122963	122964	122965	122966	-	-	-
GFR flange	NC	EPDM	122989	122990	122991	122992	122993	122994	122995	122996	122997
GFR flange	NC	PTFE	122999	123000	123001	123002	123003	123004	123005	123006	123007
PP spigot	NO	EPDM	67570	67571	67572	67573	67574	67575	119127	111962	119785
PP spigot	NO	PTFE	67582	67583	67584	67585	67586	67587	112250	119786	119787
PP socket	NO	EPDM	123291	123292	123293	123294	123295	123296	-	-	-
PP socket	NO	PTFE	122968	122969	122970	122971	122972	122973	-	-	-
GFR flange	NO	EPDM	123009	123010	123011	123012	123013	123014	123015	123016	123017
GFR flange	NO	PTFE	123237	123238	123239	123240	123241	123242	123243	123244	123245
PP spigot	DA	EPDM	64423	64424	64425	64426	64427	64428	119796	119797	119798
PP spigot	DA	PTFE	64435	64436	64437	64438	64439	64440	119799	110156	119800
PP socket	DA	EPDM	122975	122976	122977	122978	122979	122980	-	-	-
PP socket	DA	PTFE	122982	122983	122984	122985	122986	122987	-	-	-
GFR flange	DA	EPDM	123019	123020	123021	123022	123023	123024	123025	123026	123027
GFR flange	DA	PTFE	123029	123030	123031	123032	123033	123034	123035	123036	123037
housing PVDF connection		d (mm) diaphragm	20	25	32	40	50	63	75	90	110
PVDF spigot	NC	PTFE	67364	67365	67366	67367	67368	67369	119778	119779	119780
PVDF socket	NC	PTFE	123090	123091	123092	123093	123094	123095	-	-	-
PP/steel flange	NC	PTFE	123135	123136	123137	123138	123139	123140	123141	123142	123143
PVDF spigot	NO	PTFE	67588	67589	67590	67591	67592	67593	119791	119792	119793
PVDF socket	NO	PTFE	123104	123105	123106	123107	123108	123109	-	-	-
PP/steel flange	NO	PTFE	123227	123228	123229	123230	123231	123232	123233	123234	123235
PVDF spigot	DA	PTFE	64441	64442	64443	64444	64445	64446	119804	119805	119806
PVDF socket	DA	PTFE	123118	123119	123120	123121	123122	123123	-	-	-
PP/steel flange	DA	PTFE	123165	123166	123167	123168	123169	123170	123171	123172	123173

### Actuator particulars

size d (mm)	control air connection G inch	control volume (litre)		
		NC	NO	DA
20	1/4	0,10	0,10	0,20
25	1/4	0,10	0,10	0,20
32	1/4	0,23	0,22	0,45
40	1/4	0,23	0,22	0,45
50	1/4	0,48	0,55	1,03
63	1/4	0,48	0,55	1,03
75	1/4	2,10	2,20	2,20
90	1/4	2,10	2,20	2,20
110	1/4	2,10	2,20	2,20

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## Attention Operating instructions

Safe operation of the valve can only be ensured if it is properly installed, operated, serviced or repaired by qualified personnel according to its intended use while observing the accident prevention regulations, safety regulations, relevant standards and technical regulations or data sheets such as e.g. DIN, DIN EN, DIN ISO and DVS\* for example.

\*DVS = German Welding Society

The intended use includes adhering to the specified limit values for pressure and temperature as well as checking the chemical resistance with regard to the operating conditions.

For this purpose, ensure that all components getting in contact with the media are **"resistant"** in accordance with the ASV resistance guide.

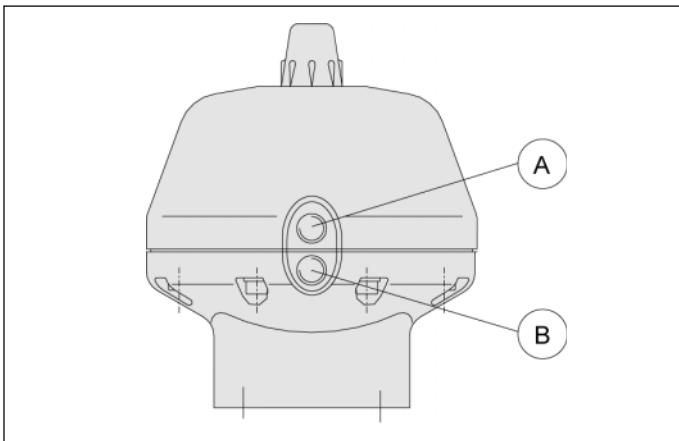
The owner/user must inform the authorized qualified personnel instructed to perform the assembly, inspection and/or maintenance work of any potential danger emanating from the machine line/medium, and ensure that suitable safety measures are observed. This also includes the consideration of local regulations and laws of the territories of use.

The connection of electric or pneumatic actuators and/or accessories to the power/compressed air supply requires special knowledge. Ensure that this work is performed only by authorized qualified personnel according to the operating instruction of the manufacturer.

If no operating and maintenance manual is available to the authorized qualified personnel, please request a manual prior to installation, maintenance or repair.

Non-observance of the specified instructions and safety regulations may cause damage to health and/or damage to assets.

## Compressed air connection



- **normally closed NC:**  
compressed air at connection »B«; valve opens
- **normally open NO:**  
compressed air at connection »B«; valve closes
- **double acting DA:**  
compressed air at connection »A«; valve closes  
compressed air at connection »B«; valve opens

## Pilot valves

- 3/2 way solenoid valves for NC/NO actuators
- 4/2 or 5/2 way solenoid valves for DA actuators

## Control

- Limit switch units with micro switches or proximity switches for signal output „OPEN/CLOSE“ see ASV accessories.

## Manual emergency control

- DN 15 up to DN 50 standard:  
In case of loss of compressed air the valve is opened by turning the adjustment screw (3.8) clockwise.
- DN 65 up to DN 100 special design:  
As to the **NC valve** the actuator bonnet has to be ordered as metal execution. Please ask for separate instruction.

## Lift limit

- DN 15 up to DN 50 standard:  
By turning the adjustment screw (3.8) anticlockwise the lift is limited.
- DN 65 up to DN 100 special design:  
As to the **NC valve** the actuator bonnet has to be ordered as metal execution. Please ask for separate instruction.

## Maintenance

In case of varying operating temperatures or with setting of diaphragm the torque of the casing bolts has to be controlled at intervals to be determined.

## Torques

at casing bolts

size	EPDM	EPDM/PTFE
d 20	6	8
d 25	6	8
d 32	10	12
d 40	10	12
d 50	18	20
d 63	18	20
d 75	40	50
d 90	40	50
d 110	30	40

## Repair

### Attention

The demontage of the actuator is forbidden without the necessary disassembly or assembly instruction.

Actuator is pretensioned.

Danger of injuries in case of improper opening.

Technical alterations excepted