

# Pressure Reducing Valve

Type DMV 755, DMV 765



## Advantages

- high reproducibility of setting pressure
- great operating security and long service life
- steady low vibration controlling
- safe mounting with stainless steel bolts
- hermetically sealed by diaphragm with crimped O-rings
- low maintenance
- pressure settings at any time, also during operation
- simple connection to the pipeline
- radial demountability even after mounting
- short compact dimensions in case of threaded necks
- direct mounting on any valve support by metal inserts in the body, the movability of the union nuts is not effected

## Application

- chemical plants
- water treatment
- electroplating

## Utilisation

- Directly controlled by the operating fluid the DMV 755/765 reduces the primary pressure to working pressure caused by system and keeps the operating pressure constant.

## Type of fluids

Technically clean, neutral and aggressive fluids provided that the valve materials are resistant at the operating temperature. Refer to the ASV resistance guide.

## Media temperature

- see pressure/temperature diagram

## Pressure rating

- PN 10 at +20°C

## Operating pressure

- PN 10

## Set range

- DMV 755 DN 10 - DN 50 1,0 - 9,0 bar
- DMV 765 DN 10 - DN 50 0,5 - 9,0 bar

## Working pressure (secondary pressure)

- set pressure minus flow depending pressure reduction:
  - DMV 755 1,0 - 9,0 bar
  - DMV 765 0,5 - 9,0 bar

## Constant working pressure

- Difference between maximal and minimal secondary pressure due to primary pressure fluctuations: approx. ± 0,2 bar

## Hysteresis

- difference between opening and closing pressure: approx. 0,1 - 0,4 bar

## Size

- DN 10 - DN 50

## DIBt approval

- PVC-U Z-40.23-193
- PP Z-40.23-194
- PVDF Z-40.23-195

## Valve body, piston and separation disc

- PVC-U (polyvinyl chloride)
- PP (polypropylene)
- PVDF (polyvinylidene fluoride)

## Valve bonnet

- PP-GFR

## Moulded diaphragm

- EPDM, PTFE-coated on fluid side

## Pressure Reducing Valve DMV 755, DMV 765

### Valve seat seal

- EPDM
- FPM

### O-ring sealings at union ends

- EPDM
- FPM

### Connection screws

- stainless steel 1.4301

### Connection

- body with threaded necks acc. to DIN 8063 completed with:
  - union nut made of PVC-U, PP or PVDF
  - insert with socket end made of PVC-U, PP or PVDF
  - O-ring in EPDM or FPM
- On request we deliver:
  - insert with spigot end for fusion welding made of PP or PE
  - dimensions acc. BS, ANSI and JIS on request
- body with spigot ends for solvent or fusion welding acc. to DIN ISO

We kindly ask for your inquiry.

### Mounting

- variable

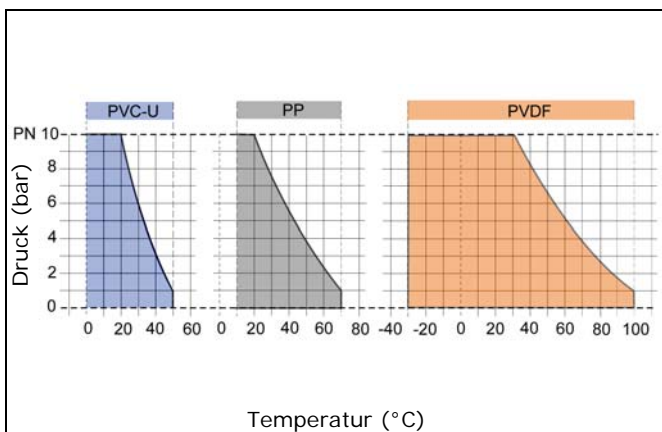
### Flow direction

- direction of flow always in direction of arrow

### Colour

- |          |        |                          |
|----------|--------|--------------------------|
| • body   | PVC-U  | grey, RAL 7011           |
|          | PP     | grey, RAL 7032           |
|          | PVDF   | opaque (yellowish white) |
| • bonnet | PP-GFK | orange, RAL 2004         |

### Pressure/temperature diagram



The pressure/temperature limits are applicable for a computed operating life factor of 25 years at PN 10.

The values are a guide for harmless fluids (DIN 2403)

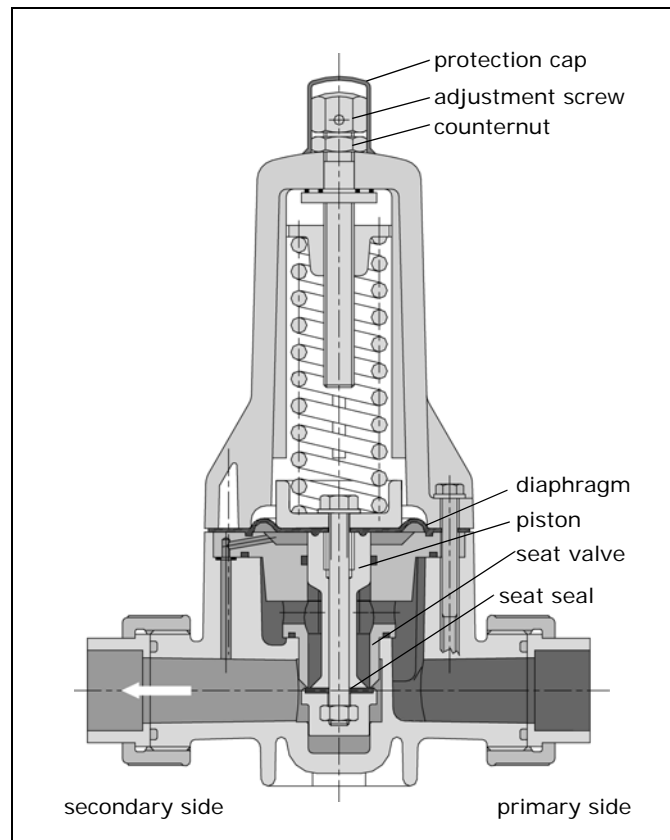
the material of the valve is resistant against.

For other media see the ASV resistance guide.

Durability of wear and tear parts is depending on the operating conditions of the application.

Values < 0 °C (PP < +10 °C) on request with exact data of operation.

### Sectional drawing pressure reducing valve type DMV 765



### Valve function and design

Under operation conditions the ASV valve DMV 755/765 is always open which means it is balanced between the inlet pressure (primary side) and the lower outlet/working pressure (secondary side). At any rise of working pressure at the valve outlet a pressure compensation via the control bore takes place at the area below the diaphragm. The higher working pressure activates the large diaphragm and lifts the piston against the spring force. The flow reduces and the working pressure drops down until balanced condition is reached again. When the working pressure drops the described procedure reverses. The spring force opens the valve against the lower pressure force below the diaphragm. The flow rises until the balanced condition is reached again.

#### NOTE

If the secondary pressure is additionally increased by the back pressure, the pressure reducing valve works as a non-return valve. This pressure can lead to the destruction of the valve piston. ✓

## Pressure Reducing Valve DMV 755, DMV 765

### Valve setting and adjustment

The presetting or readjustment is made by removing the protection cap at setting control screw with a counternut and by reading the set pressure from the ASV diaphragm pressure gauge guard type 902 in the pipe system. The counternut can be leaded.

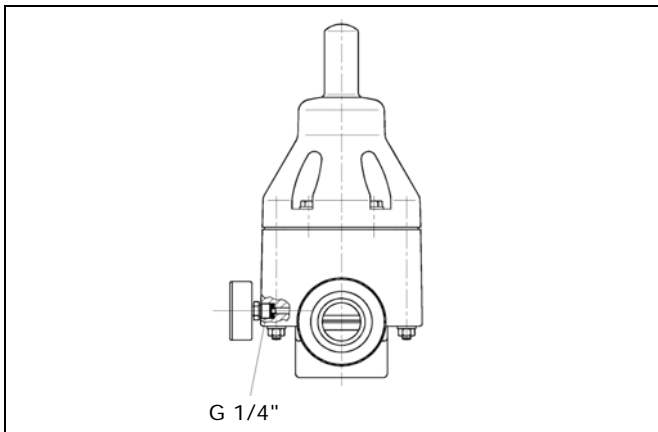
### Pressure reducing valve with pressure gauge

On request the valve can be equipped by the manufacturer with a gauge (adhere to the resistance guide).

### Flow diagram (see page 11)

There are two different applications the pressure reducing valves can be used for. The difference has to be seen in the way of valve setting at static or dynamic system pressure conditions.

### DMV 755 with factory-made pressure gauge



### Operating instructions

#### ATTENTION

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.

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.

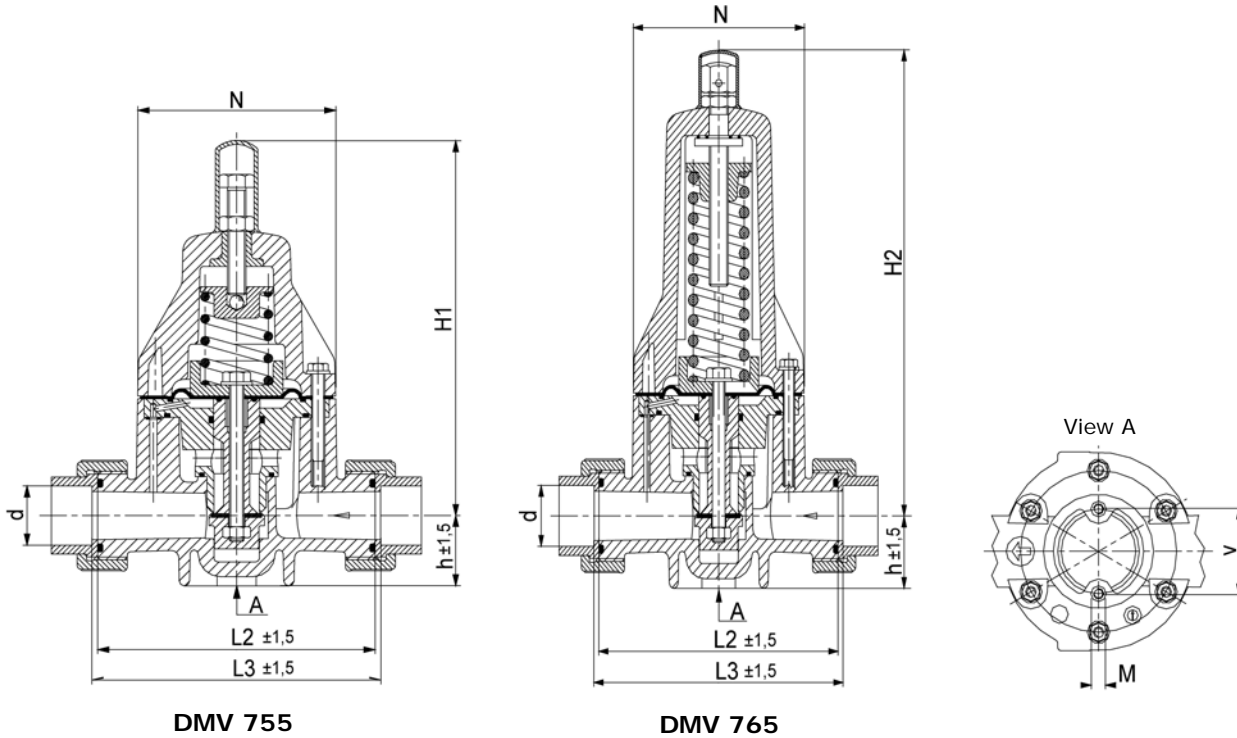
If the authorized qualified personnel does not have any operating and maintenance instruction this is to be requested prior installation, maintenance or repair.

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

\*DVS = German Welding Society

## Pressure Reducing Valve DMV 755, DMV 765

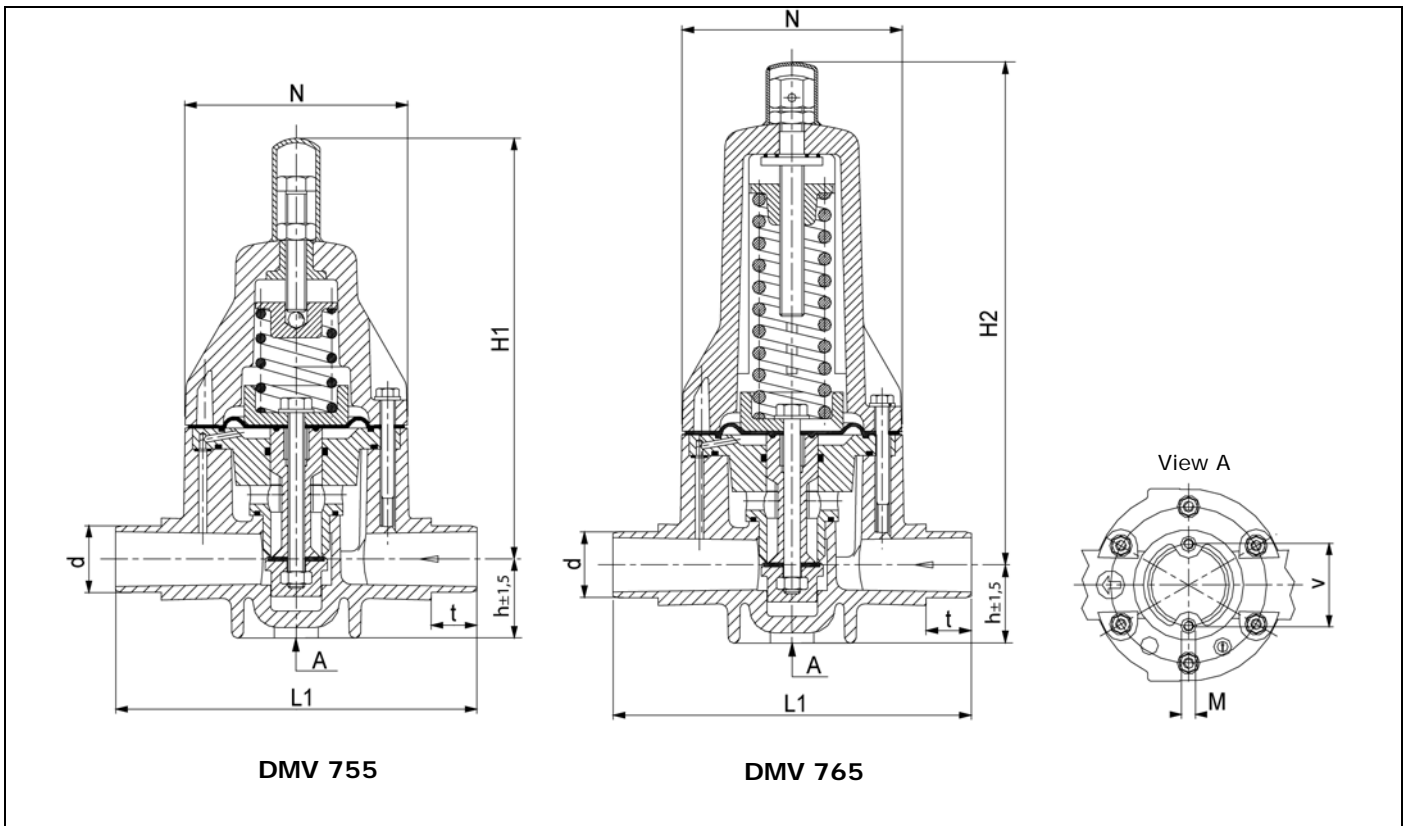
**Dimensions, DMV 755, DMV 765 with union socket ends for solvent or fusion welding**



dimension	d (mm)	16	20	25	32	40	50	63
DN (mm)		10	15	20	25	32	40	50
DN (inch)		3/8	1/2	3/4	1	1 1/4	1 1/2	2
PP/PVC-U	h	25,0	25,0	37,0	37,0	57,0	57,0	57,0
PVDF	h	24,0	24,0	36,0	36,0	54,0	54,0	54,0
	H1	174,0	174,0	202,0	202,0	262,0	262,0	262,0
	H2	207,0	207,0	243,0	243,0	348,0	348,0	348,0
PP/PVC-U	L2	120,0	120,0	150,0	150,0	205,0	205,0	205,0
PVDF	L2	118,0	118,0	147,0	147,0	200,0	200,0	200,0
	L3	126,0	126,0	156,0	156,0	211,0	211,0	211,0
	L3	124,0	124,0	153,0	153,0	207,0	207,0	207,0
	M	M6	M6	M6	M6	M8	M8	M8
	N	81,0	81,0	107,0	107,0	147,0	147,0	147,0
	v	40,0	40,0	46,0	46,0	65,0	65,0	65,0
<b>weight</b>	<b>kg (standard value)</b>							
<b>DFM 755</b>								
PP		0,7	0,7	1,6	1,6	4,1	4,2	4,3
PVC		0,8	0,9	1,9	1,9	5,0	5,1	5,2
PVDF		1,0	1,1	2,1	2,2	5,5	5,6	5,7
<b>DFM 765</b>								
PP		0,8	0,8	1,9	2,0	5,2	5,4	5,6
PVC		1,0	1,0	2,2	2,3	6,0	6,2	6,4
PVDF		1,2	1,2	2,5	2,5	6,5	6,7	6,9

## Pressure Reducing Valve DMV 755, DMV 765

Dimensions, DMV 755 und DMV 765 with spigot ends for solvent or fusion welding



dimension	d (mm)	16	20	25	32	40	50	63
DN (mm)	10	15	20	25	32	40	50	63
DN (inch)	3/8	1/2	3/4	1	1 1/4	1 1/2	2	
PP/PVC-U	h	25,0	25,0	37,0	37,0	57,0	57,0	57,0
PVDF	h	24,0	24,0	36,0	36,0	54,0	54,0	54,0
	H1	174,0	174,0	202,0	202,0	262,0	262,0	262,0
	H2	207,0	207,0	243,0	243,0	348,0	348,0	348,0
PP	L1	144±2,1	144±2,1	174±2,6	174±2,6	224±3,3	224±3,3	244±3,6
PVC-U	L1	144±1,0	144±1,0	174±1,0	174±1,0	224±1,1	224±1,1	244±1,2
PVDF	L1	144±2,1	144±2,1	174±2,6	174±2,6	224±3,3	224±3,3	244±3,6
	M	M6	M6	M6	M6	M8	M8	M8
	N	81,0	81,0	107,0	107,0	147,0	147,0	147,0
	v	40,0	40,0	46,0	46,0	65,0	65,0	65,0
<b>weight</b>	<b>kg (standard value)</b>							
<b>DFM 755</b>								
PP		0,7	0,7	1,6	1,6	4,1	4,2	4,3
PVC		0,8	0,9	1,9	1,9	5,0	5,1	5,2
PVDF		1,0	1,1	2,1	2,2	5,5	5,6	5,7
<b>DFM 765</b>								
PP		0,8	0,8	1,9	2,0	5,2	5,4	5,6
PVC		1,0	1,0	2,2	2,3	6,0	6,2	6,4
PVDF		1,2	1,2	2,5	2,5	6,5	6,7	6,9



## Pressure Reducing Valve DMV 755, DMV 765

### Ident number for DMV 755 with union socket ends for solvent or fusion welding

body PP	d (mm)	16	20	25	32	40	50	63
1,0 - 9,0 bar	sealing							
	FPM	119321	119322	119323	119324	119325	119326	119327
	EPDM	119314	119315	119316	119317	119318	119319	119320
body PVC	d (mm)	16	20	25	32	40	50	63
	1,0 - 9,0 bar	sealing						
	FPM	119307	119308	119309	119310	119311	119312	119313
	EPDM	119300	119301	119302	119303	119304	119305	119306
body PVDF	d (mm)	16	20	25	32	40	50	63
	1,0 - 9,0 bar	sealing						
	FPM	119335	119336	119337	119338	119339	119340	119341
	EPDM	119328	119329	119330	119331	119332	119333	119334

### Ident number for DMV 765 with union socket ends for solvent or fusion welding

body PP	d (mm)	16	20	25	32	40	50	63
0,5 - 9,0 bar	sealing							
	FPM	119363	119364	119365	119366	119367	119368	119369
	EPDM	119356	119357	119358	119359	119360	119361	119362
body PVC	d (mm)	16	20	25	32	40	50	63
	0,5 - 9,0 bar	sealing						
	FPM	119349	119350	119351	119352	119353	119354	119355
	EPDM	119342	119343	119344	119345	119346	119347	119348
body PVDF	d (mm)	16	20	25	32	40	50	63
	0,5 - 9,0 bar	sealing						
	FPM	119377	119378	119379	119380	119381	119382	119383
	EPDM	119370	119371	119372	119373	119374	119375	119376

### Ident number for DMV 755 with spigot ends for solvent or fusion welding

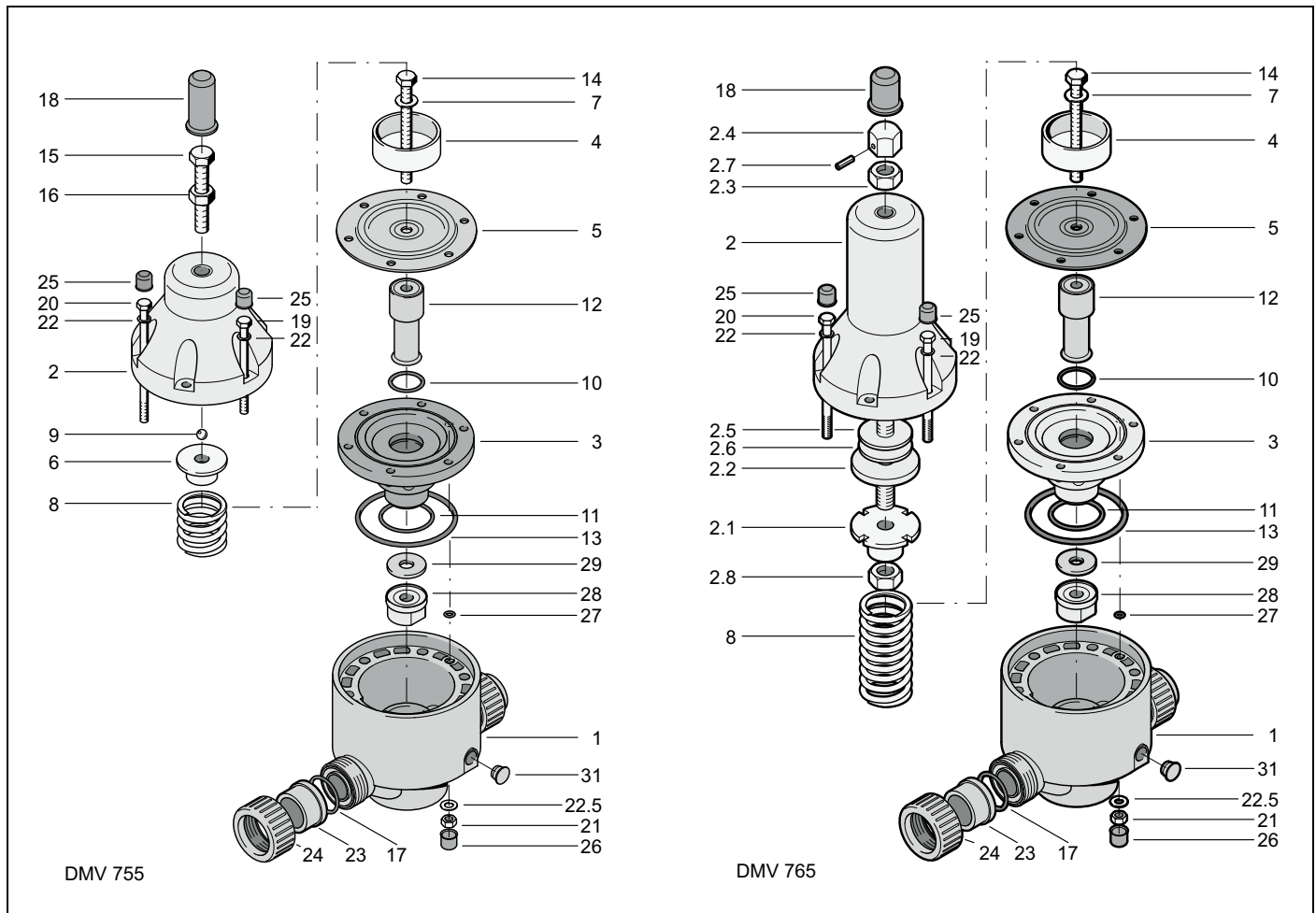
body PP	d (mm)	16	20	25	32	40	50	63
1,0 - 9,0 bar	sealing							
	FPM	122069	122070	122071	122072	122073	122074	122075
	EPDM	122062	122063	122064	122065	122066	122067	122068
body PVC	d (mm)	16	20	25	32	40	50	63
	1,0 - 9,0 bar	sealing						
	FPM	122055	122056	122057	122058	122059	122060	122061
	EPDM	122048	122049	122050	122051	122052	122053	122054
body PVDF	d (mm)	16	20	25	32	40	50	63
	1,0 - 9,0 bar	sealing						
	FPM	122083	122084	122085	122086	122087	122088	122089
	EPDM	122076	122077	122078	122079	122080	122081	122082

### Ident number for 765 with spigot ends for solvent or fusion welding

body PP	d (mm)	16	20	25	32	40	50	63
0,5 - 9,0 bar	sealing							
	FPM	122111	122112	122113	122114	122115	122116	122117
	EPDM	122104	122105	122106	122107	122108	122109	122110
body PVC	d (mm)	16	20	25	32	40	50	63
	0,5 - 9,0 bar	sealing						
	FPM	122097	122098	122099	122100	122101	122102	122103
	EPDM	122090	122091	122092	122093	122094	122095	122096
body PVDF	d (mm)	16	20	25	32	40	50	63
	0,5 - 9,0 bar	sealing						
	FPM	122125	122126	122127	122128	122129	122130	122131
	EPDM	122118	122119	122120	122121	122122	122123	122124

# Pressure Reducing Valve DMV 755, DMV 765

## Spare part and parts list



item	description	quantity
1	valve body	1
2	bonnet	1
2.1	spring nut	1
2.2	adjustment screw	1
2.3	section nut	1
2.4	cap nut	1
2.5	axial bearing disc	1
2.6	axial needle roller	1
2.7	clamping sleeve	1
2.8	hexagonal nut	1
3	separation disc*	1
4	spring plate	1
5	sealing diaphragm*	1
6	pressure plate	1
7	disc	1
8	pressure spring	1
9	steel ball	1
10	O-ring*	1
11	O-ring*	1
12	piston*	1
13	O-ring*	1

item	description	quantity
14	hexagonal screw	1
15	hexagonal screw	1
16	counternut	1
17	O-ring*	2
18	protection cap	1
19	hexagonal screw	2
20	hexagonal screw	4
21	hexagonal nut	4/6
22	disc	4/6
22.5	disc	4/6
23	insert	2
24	union nut	2
25	protection cap	4/6
26	protection cap	4/6
27	O-ring*	1
28	piston guide*	1
29	gasket*	1
31	protection plug	2

All parts marked with \* are included in the respective wear and tear part set. When ordering spare parts please state the complete valve ident number and serial number.  
Quantities depend on size.

# Pressure Reducing Valve DMV 755

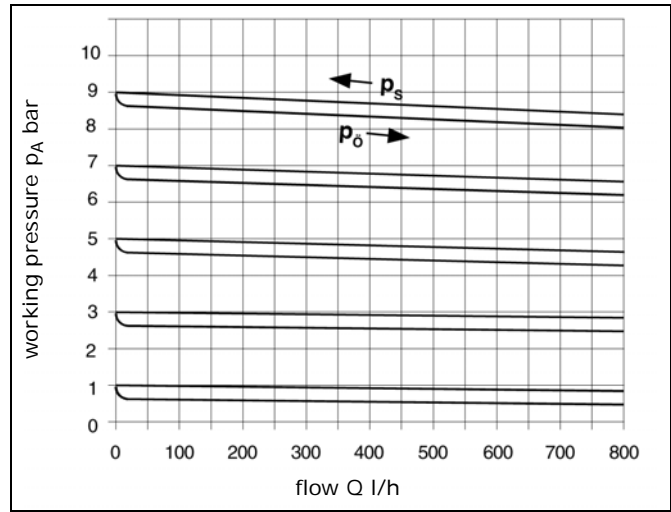
## Characteristic curves DMV 755

The valve curves show the primary pressure or working pressure  $p_A$  above the flow  $Q$  in l/h. Parameter is the set pressure  $p_E$  at  $Q = 0$  l/h.

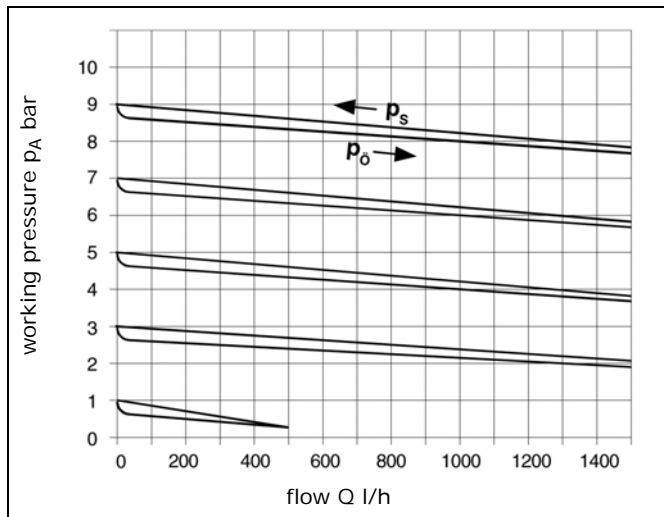
The curves are valid for water at +20°C.

The respective top and lower curve (at same  $p_E$ ) show the reseal  $p_S$  respectively opening pressure progression  $p_O$ .

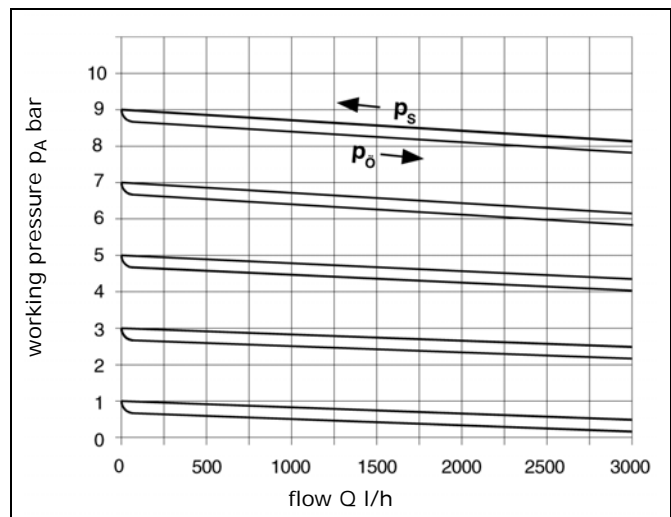
DN 10



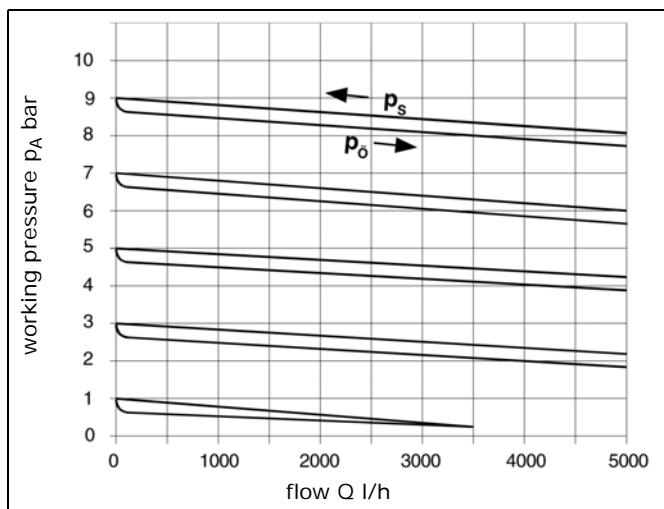
DN 15



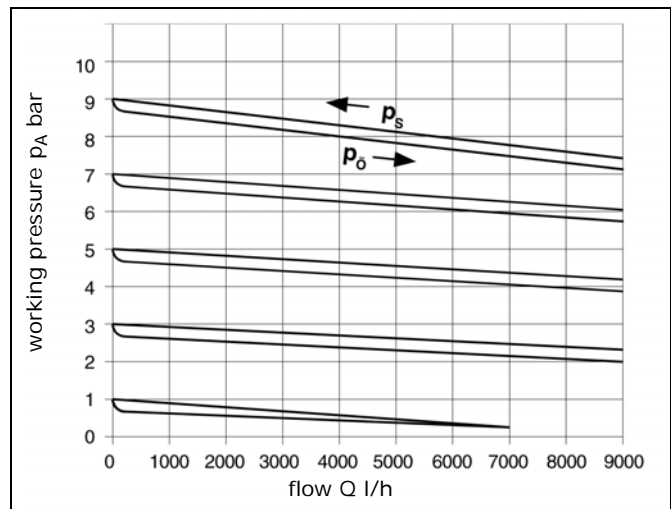
DN 20



DN 25



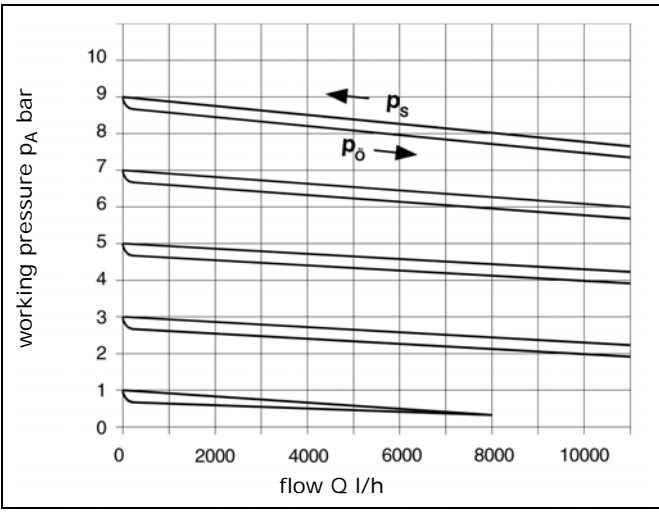
DN 32



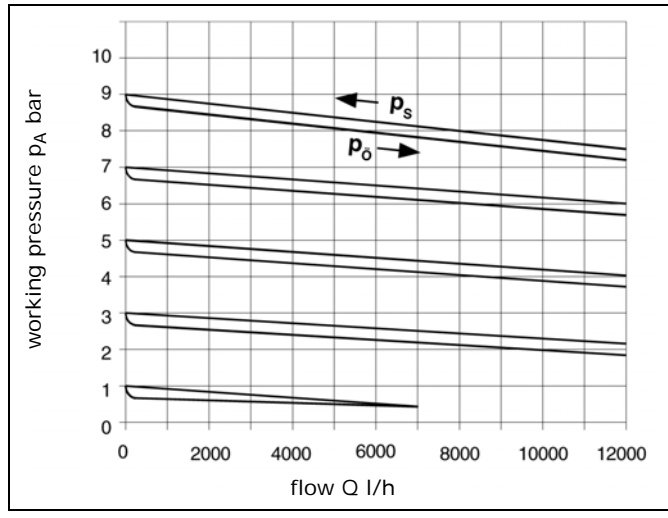


## Pressure Reducing Valve DMV 755, DMV 765

**DN 40**



**DN 50**



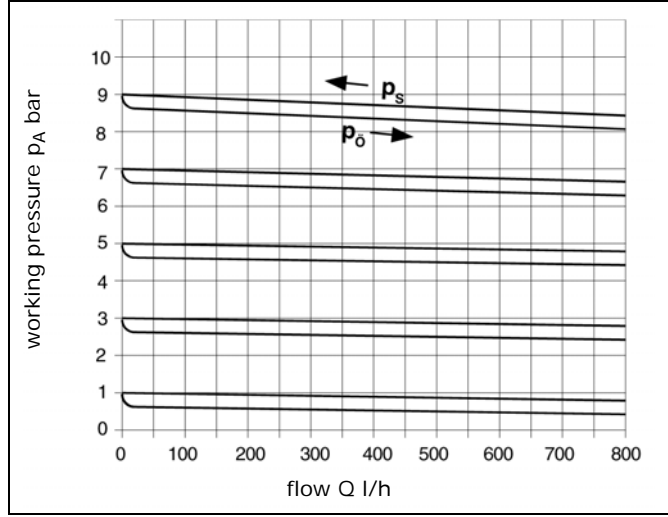
**Characteristic curves DMV 765**

The valve curves show the secondary or working pressure  $p_A$  above the flow  $Q$  in l/h. Parameter is the set pressure  $p_E$  at  $Q = 0$  l/h.

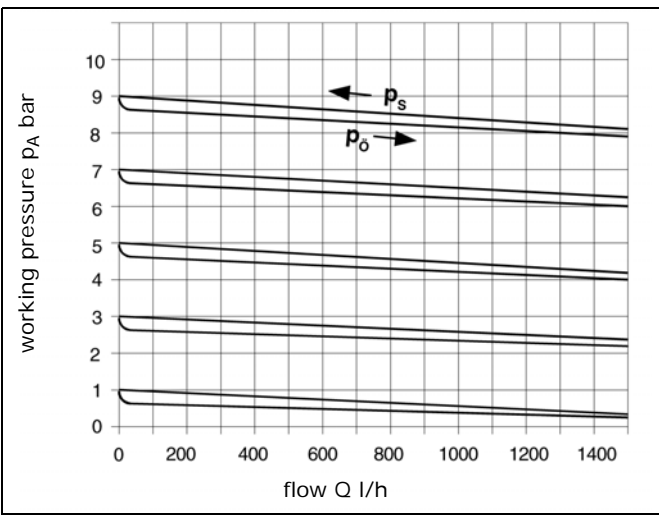
The curves are valid for water at  $+20^\circ\text{C}$ .

The respective top and lower curve (at same  $p_E$ ) show the reset  $p_s$  respectively opening pressure progression  $p_o$ .

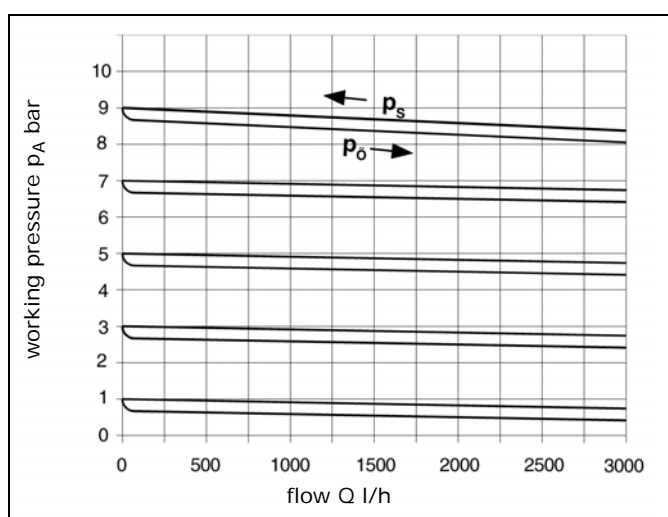
**DN 10**



**DN 15**

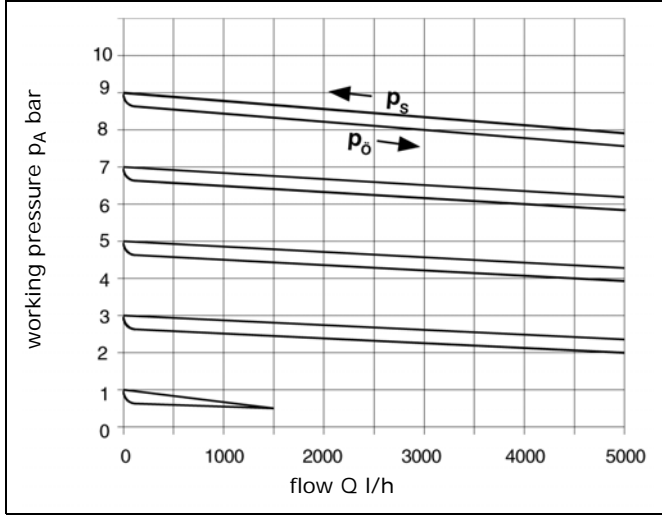


**DN 20**

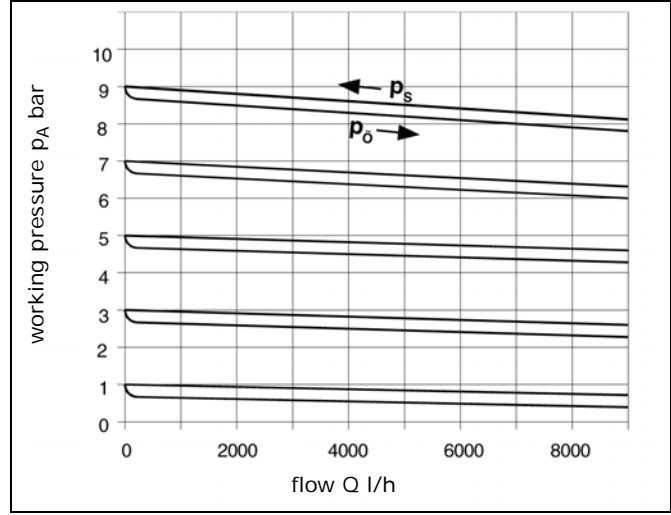


## Pressure Reducing Valve DMV 765

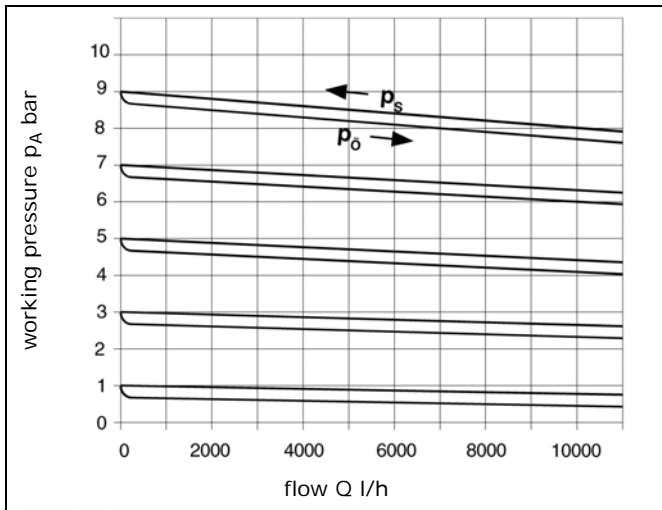
**DN 25**



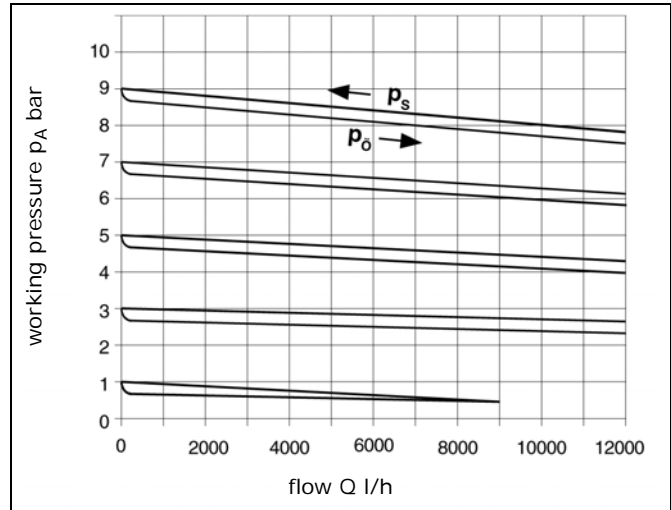
**DN 32**



**DN 40**



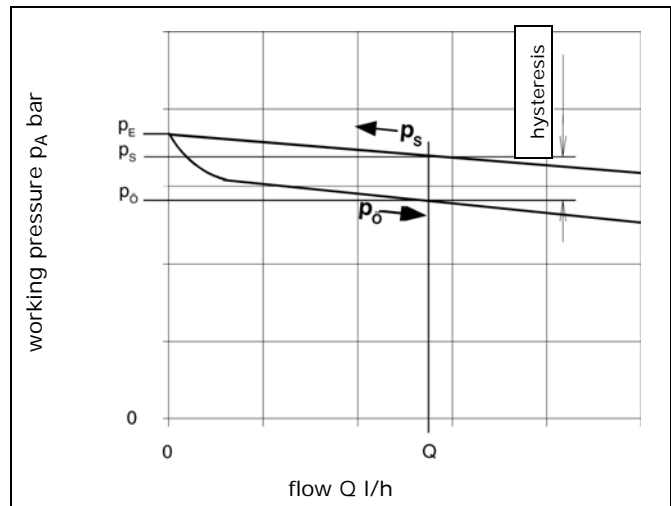
**DN 50**



### Operation conditions

- see diagram

- $p_E$  = set pressure
- $p_A$  = working pressure (secondary pressure)
- $p_S$  = closing pressure
- $p_O$  = opening pressure
- $p_S - p_O$  = hysteresis
- $p_E - p_A$  = flow depending pressure reduction

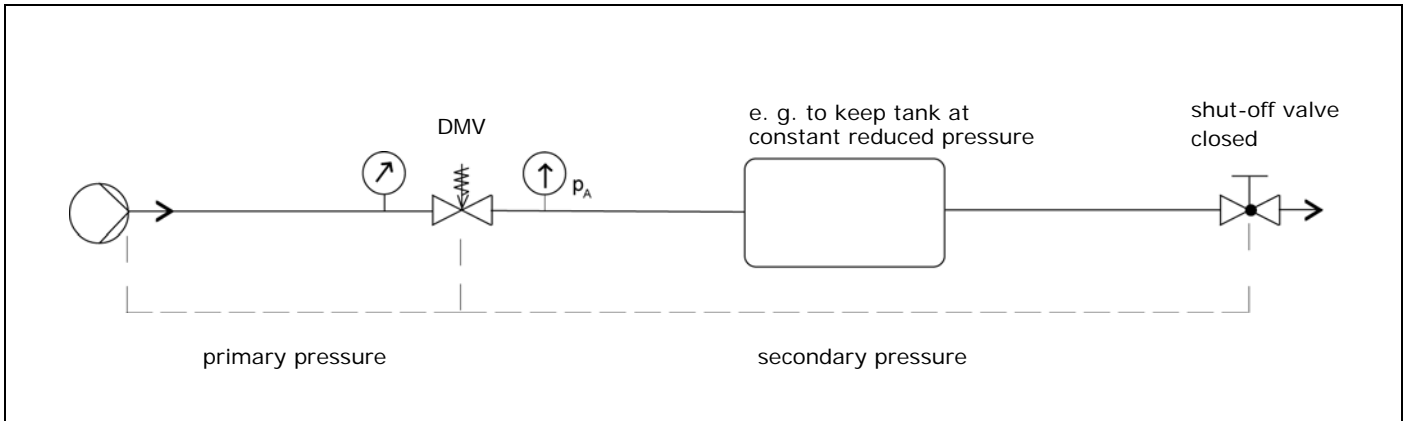


## Pressure Reducing Valve DMV 755, DMV 765

### Application of pressure reducing valve

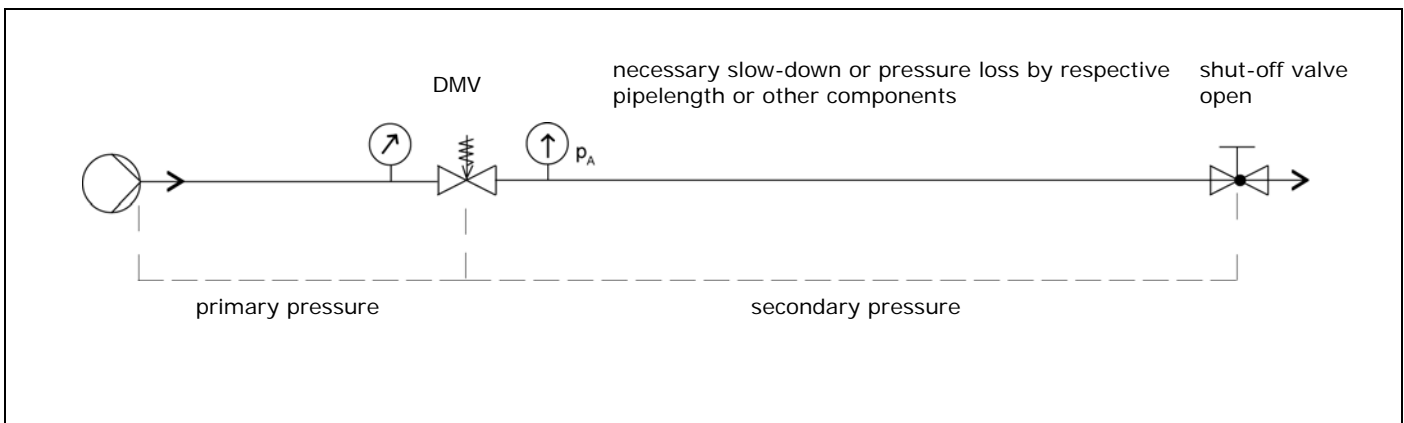
#### 1. Secondary pressure - system closed

If shut-off valve opens the working pressure  $p_A$  drops by the opening pressure  $p_0$ .



#### 2. Secondary pressure - system dynamically flowing

If shut-off valve closes the working pressure  $p_A$  rises by the closing pressure  $p_S$ .



### Malfunctions, possible causes and remedy

Malfunction	cause	remedy
Valve leaking at diaphragm	Diaphragm clamping pressure too low O-ring sealing damaged	Fasten screws (item 19 und item 20) Replace O-ring sealing (item 13)
Pressure rises above set pressure	Seat seal leaking Diaphragm leaking O-ring sealings leaking	Replace seat seal (item 29) Replace diaphragm (item 5) Replace O-ring sealings (item 10, 11 and item 13, 27)
	Control bore in body and/or separation disc dirty Piston is jammed or dirty	Dismount valve and clean bore Valve to be disassembled as described. Clean valve
Valve closed (does not open)	Valve mounted in wrong direction	Turn valve in direction of arrow
Valve is leaking at adjustment screw	Diaphragm damaged	Replace diaphragm (item 5)

## Pressure Reducing Valve DMV 755, DMV 765

### Installation

- Depending on the type of connection the pipe ends have to be properly prepared acc. to all technical standards.
- Valve to be radially installed acc. to all technical standards between the pipe ends.  
In case of flange connections the torques of the screws to fasten the flanges have to be observed.
- After proper installation the pipe system with all components has to be tested for leakages.

### Disassembly

#### NOTE

Adhere to the operating instructions. ✓

- If required protection clothes must be worn.
- The pipe section is to be shut-off and to be emptied. Ensure a safe pressure release.
- Any fluid rest is to be disposed properly.

### Valve bonnet

- Position the valve upright.
- Remove cap (item 18).
- Loosen counter nut (item 16) and adjustment screw (item 15), for type DMV 765 counter nut (item) and adjustment screw (item 2.2), so far that the spring (item 8) is totally released.
- Loosen and remove housing screws (item 19, 20) from valve body (item 1) and bonnet (item 2).
- Bonnet (item 2) to be pulled off upwards. Remove spring (item 8), pressure plate (item 6) and steel ball (item 9), for type DMV 765 only the spring (item 8).

### Valve body and diaphragm

- Perform the disassembly as already described above.
- Spring plate (item 4) with piston (item 12), diaphragm (item 5), separation disc (item 3), gasket (item 29) and piston guide (item 28) to be pulled out of the valve body (item 1). Remove the O-ring sealings (item 13, 27 and 11) with a blunt tool.
- Loosen screw (item 14) and remove piston guide (item 28). Release screw (item 14) out of piston (item 12). Remove gasket (item 29). Piston (item 12) to be lifted **upwards** out of separation disc (item 3). Remove O-ring sealing (item 10) out of separation disc (item 3) with a blunt tool. Remove diaphragm (item 5).

### Assembly

In the reverse order as described above.

#### NOTE

During assembly check the correct position of the separation disc bore and the control bore. ✓

- diaphragm, gasket, O-ring sealings to be checked for damages, dimension deviations, shore hardness etc. Replace if necessary.
- screw torques (lubricated screws):  
M6 and M8: approx. 6Nm

#### NOTE

Consider tightening torque or mounting of pressure gauge: max. 3Nm ✓

#### NOTE

Do not allow elastomer components, especially the EPDM sealing elements, to come into contact with synthetic or mineral oils, grease or cleaning agents. Danger of swelling. Only appropriate grease should be used such as e.g. silicone grease. ✓

### Pressure gauge execution

If the valve is equipped with a pressure gauge, the pressure gauge may be tightened with max. 3Nm only.

### We recommend

- installing of filter or strainer (see print No. 330 034) directly before the valve for avoiding impurities e.g. at valve seat.

Subject to technical modifications