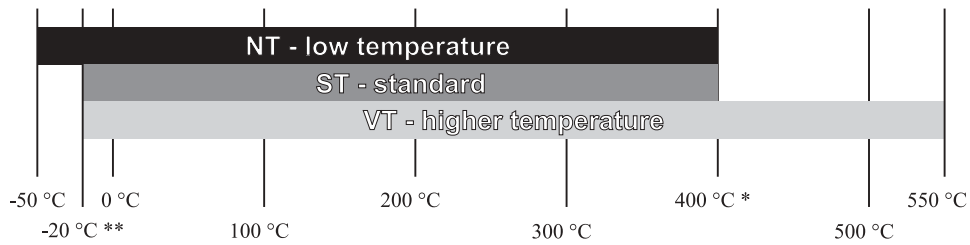


CONTROL VALVES												
Registration number	Name	Nominal inside diameter										
		15	20	25	32	40	50	65	80	100	125	150
V41 111 540	Control valve	X	X	X	X	X	X	X	X	X	X	X
V41 111 616	Control valve	X		X		X	X	X	X	X	X	X
V41 113 540	Control valve with electric actuator	X		X		X	X	X	X	X	X	X
V41 113 616	Control valve with electric actuator	X		X		X	X	X	X			
V42 113 540	Control valve with electric actuator			X	X	X	X	X	X			
V42 113 616	Control valve with electric actuator			X	X	X	X	X	X			
V43 113 540	Control valve with electric actuator	X	X	X	X	X	X	X	X			
V43 113 616	Control valve with electric actuator	X	X	X	X	X	X	X	X			
V44 413 540	Control valve with electric actuator	X	X	X	X	X	X	X	X			
V44 413 616	Control valve with electric actuator	X	X	X	X	X	X	X	X			
V45 113 540	Control valve with electric actuator	X	X	X	X	X	X	X	X			
V45 113 616	Control valve with electric actuator	X	X	X	X	X	X	X	X			
V46 113 540	Control valve with electric actuator			X	X	X	X	X	X			
V46 113 616	Control valve with electric actuator			X	X	X	X	X	X			

PRESSURE REGULATORS												
Registration number	Name	Nominal inside diameter										
		15	20	25	32	40	50	65	80	100	125	150
R12 117 616	Pressure regulator for water			X		X	X	X	X	X		
R22 117 616	Pressure regulator for steam			X		X	X	X	X	X		
R23 117 525	Pressure regulator for steam			X			X		X			

SURVEY OF TEMPERATURE IDENTIFICATION

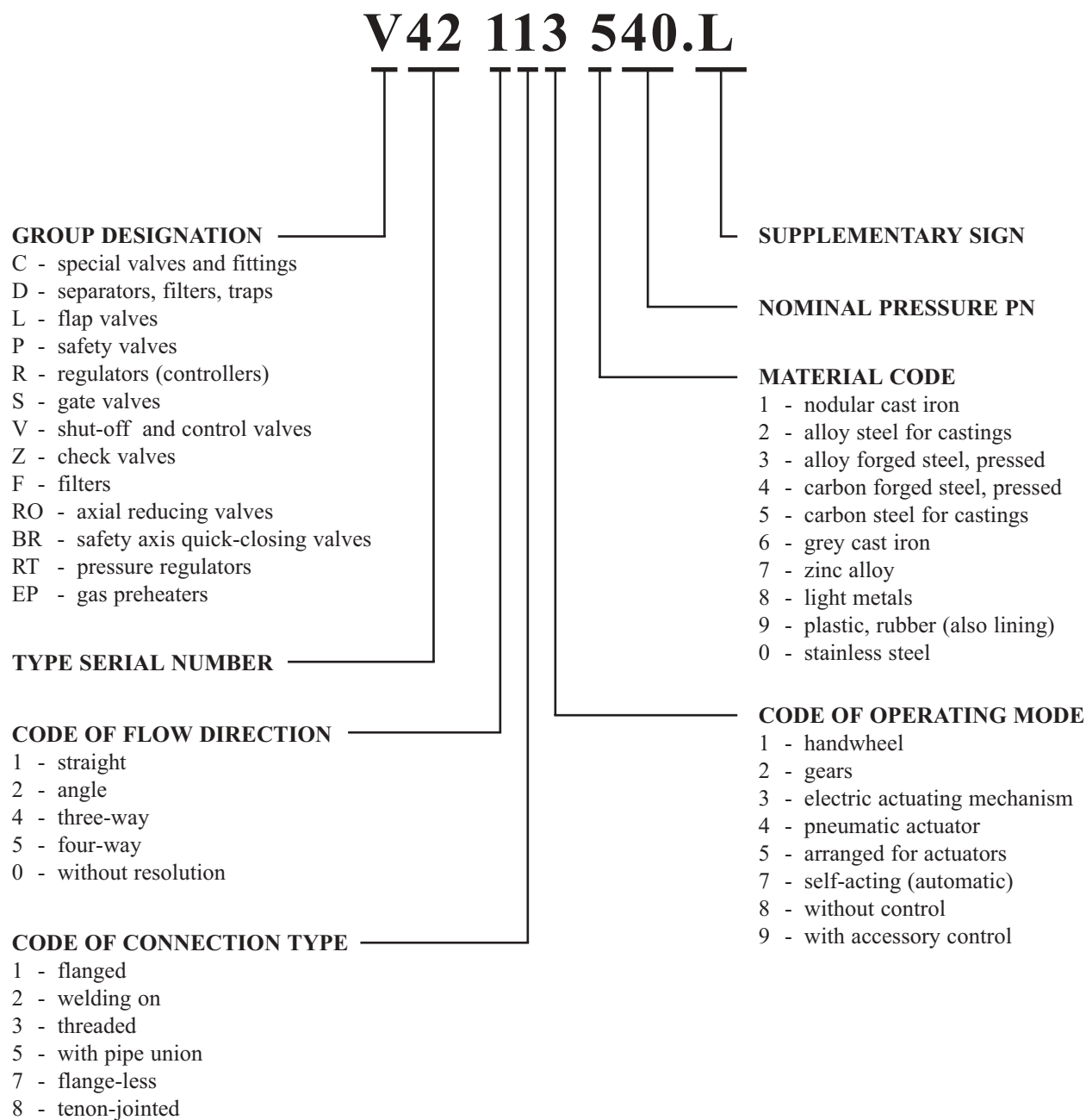


* Higher temperature can slightly differ, which depends on used sealing materials

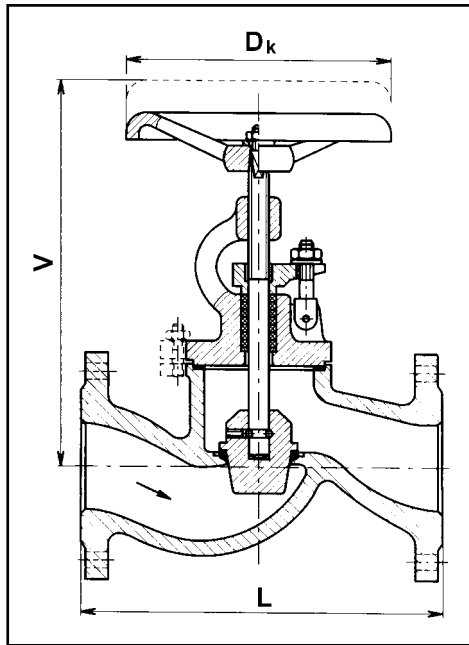
** DIN related execution can be used from -10 °C



THE STRUCTURE OF FILING NUMBER



CONTROL VALVE, CONTROL VALVE WITH ELECTRIC ACTUATOR



V41 111 540

USE

The valve can be used as a hand-operated or a servo actuated control element. This valve due to its function cannot guarantee tightness compared with a traditional closing valve, and therefore another closing valve has to be installed in the piping when tightness is required. The valve can be used according to valid standards and regulations relevant to given parameters. Suitable working fluids are water, steam, air, and non-aggressive fluids and gases.

Application areas:

- Water, steam, and gas distribution systems
- Selected segments of chemical industry

TYPES / DN / PN / TEMPERATURE / EXECUTIONS

V41 111 540	DN 15÷150	PN 40	-50 °C to 400 °C
V41 111 616	DN 15, 25, 40÷150	PN 16	0 °C to 300 °C
V41 113 540	DN 15, 25, 40÷150	PN 40	-50 °C to 400 °C
V41 113 540.02	DN 15, 25, 40÷150	PN 40	-10 °C to 400 °C
V41 113 616	DN 15, 25, 40÷80	PN 16	0 °C to 300 °C

It is produced in ST and NT executions.

ALLOWABLE PRESSURES AND TEMPERATURES

Relating to V41 111 540, V41 113 540 valves:

	DN	Temperature [°C]									
		-50	-20	-10	120	200	250	300	350	400	
		Max. operating overpressure [bar]									
ČSN	15÷150	32	40	40	40	40	34,4	30,9	27,2	23,5	
DIN	15÷150	-	-	40	40	35	32	28	24	21	

Relating to V41 111 616, V41 113 616 valves:

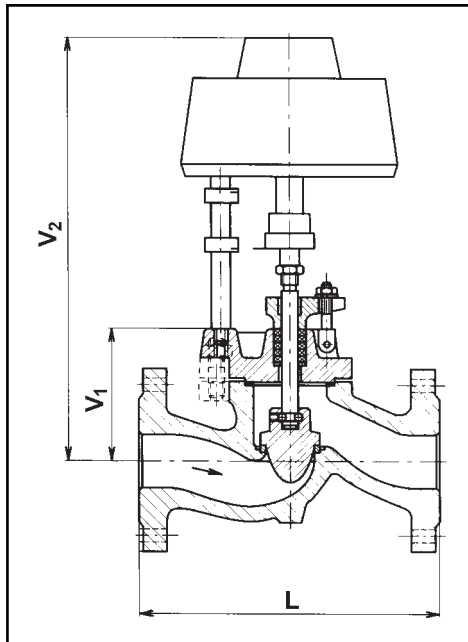
DN	Temperature [°C]						
	120	150	180	200	230	250	300
	Max. operating overpressure [bar]						
15÷150	16	14,4	13,4	12,8	11,8	11,2	9,6

DIMENSION TABLE

	PN	40										16									
		15	20	25	32	40	50	65	80	100	125	150	15	25	40	50	65	80	100	125	150
D _k [mm]		125	125	125	160	200	200	250	250	315	315	315	125	125	160	160	200	200	250	250	315
L [mm]		130	150	160	180	200	230	290	310	350	400	480	130	160	200	230	290	310	350	400	480
V [mm]		170	180	175	230	255	285	330	360	420	460	485	215	215	280	290	345	355	440	485	530
V ₁ [mm]		77	-	90	-	123	124	147	157	192	249	277	88	88	110	110	135	140	-	-	-
V41 111 540, 616	m [kg]	4,3	4,6	5,7	6,7	13	16,5	26	38	50	82	109	5,5	7,4	10,9	13,6	22,1	27	44	62	87
V41 113 540, 616	m [kg]	4,5	-	6	-	11,4	13,9	23,9	30	46,3	72,8	106	3,6	4,8	8,6	11,2	17,2	22,8	-	-	-
Lift z [mm]		12	12	16	18	22	28	34	38	46	52	62	12	14	20	25	30	32	42	50	60
Linear k _v [m ³ /h]		1,55	2,7	3,9	6,5	10,2	30	48	66	102	174	276	4,08	6,3	10,8	24	57	87	123	186	273
Equipercental k _v [m ³ /h]		1,15	2,0	2,5	5,1	10,3	20	33,5	51	81,6	115,6	174	1,85	3,6	10,5	13,2	24,9	39	55,8	114	155

Note: The total height "V₂" and mass depend on the type of actuator used. The masses are given without actuators.

CONTROL VALVE, CONTROL VALVE WITH ELECTRIC ACTUATOR



V41 113 540

FUNCTION

V41 111 540, V41 111 616

This is a hand-operated valve that controls the flow rate of working fluid through the valve seat by means of a control valve cone, which is designed to provide linear flow characteristics. The volume quantity of working fluid is given by k_v value (volume flow rate of water with 1000 kg/m³ density in m³/h at a valve pressure gradient of 1 bar). Allowable valve permeability in the seat is 0.05 % k_v . The valve is equipped with a rotary arising spindle.

V41 113 540, V41 113 616

This electric actuator controlled valve controls the flow rate of working fluid in the valve seat by means of a valve control cone. The cone is designed to provide linear or equipercental (only for V41 113 540 valves) flow characteristics. The volume quantity of working fluid is given by k_v value (volume flow rate of water with 1000 kg/m³ density in m³/h at a valve pressure gradient of 1 bar). Allowable valve permeability in the valve seat is 0.05 % k_v . The valve spindle is shifting, not rotating. The downstream and upstream pressure gradient is limited with respect to forces acting to the cone due to working fluid overpressure, and with respect to axial forces of valve actuators.

ALTERNATIVES

V41 113 540 Actuator ZPA, Ekorex, Ragana and others

V41 113 540.02 Actuator ZPA, Ekorex, Ragana and others DIN related execution

V41 113 616 Actuator ZPA, Ekorex, Ragana and others DIN related execution

OTHER

The following max. pressure gradient must be observed to ensure a proper function of the valves:

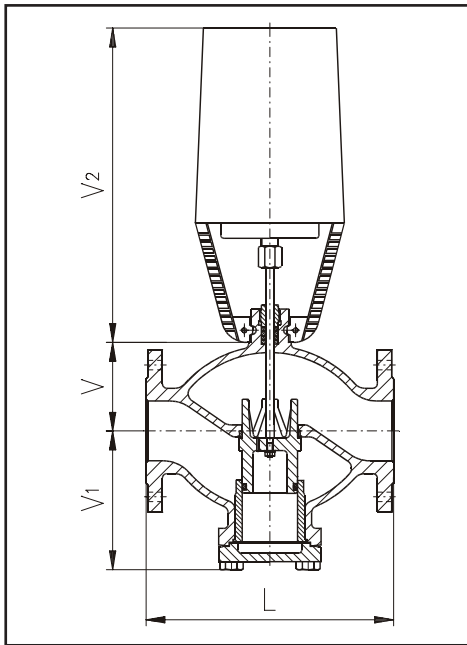
DN		15÷100	125	150
PN40	Δp max [bar]	40	29	21

MATERIAL AND CONNECTION

	V41 111 540 V41 113 540	V41 111 616 V41 113 616	V41 113 540.02
Body, yoke, cover	42 2643.1 42 2643.9 (-50 °C)	GG25	1.0619 N
Body seat	STAINLESS STEEL WELD DEPOSIT	ROLLED STAINLESS STEEL SEAT	STAINLESS STEEL WELD DEPOSIT
Valve cone	STAINLESS STEEL		
Cone seat	BASIC MATERIAL OF THE VALVE CONE		
Valve spindle	STAINLESS STEEL		
Sealing	ASBESTOS FREE		
Connection	ČSN	DIN	
Assembly lengths	Complying with EN 558-1		

Note: The dimensions of connecting flanges - see pages 114, 115.

CONTROL VALVE WITH ELECTRIC ACTUATOR



USE

These fittings are single seat valves with a pressure relieved valve cone, and they are intended for the control of flow rate of working fluid. Valve cones with different cut-outs ensure the control for given flow rate characteristics and given k_v value. A pressure relieved valve cone allows control at low-pressure gradients even with low forces exerted by valve actuators. Emergency function at power cut outs is ensured only by some of the actuators (in this case a cones with Teflon seats are used). Due to basic valve function there cannot be guaranteed the same tightness as with typical closing valves. Therefore when tightness is required, a closing valve has to be installed in the piping. The tightness can be enhanced by the use of valve cones with soft Teflon seats. The valve can be used in compliance with valid standards and regulations relevant to given parameters. Suitable working fluids can be water, steam, air, non-aggressive fluids and gasses. Application areas:

- Water, steam and gas distribution systems
- Ventilation and air conditioning technology
- Selected segments of chemical industry

TYPES / DN / PN / TEMPERATURES / EXECUTIONS

V42 113 540	DN25÷80 - EPDM	PN40	-10 °C to 140 °C
V42 113 616	DN25÷80 - EPDM	PN16	0 °C to 140 °C
V42 113 540	DN25÷80 - TEFLON	PN40	-10 °C to 260 °C
V42 113 616	DN25÷80 - TEFLON	PN16	0 °C to 260 °C

They are produced in ST execution, DN 15, 20 - see type V45

OTHER

The valves are installed with actuators of the following producers: **Siemens (L)**, **ZPA Nová Paka (L)**, **Belimo (L)**, **Sauter (S)**, **Honeywell (H)**, **Johnson Controls (J)**. The identification is based on a letter given in the filing number of the valve after the full stop (see the brackets attached to individual manufacturers), e.g. **V42 113 540.L**. Recommended ambient temperatures, humidity, safety and other parameters can be obtained from the valve manufacturer.

CAUTION: The valve can be installed in the piping in any position except for the position with actuator pointing down, i.e. under the valve axis.

When inquiring or ordering the valve, it is necessary to specify the temperature and pressure of working fluid which is important for the selection of the sealing elements.

MATERIAL AND CONNECTION

	V42 113 540	V42 113 616
Body, cover	1.0619 N	GG25
Body seat	STAINLESS STEEL WELD DEPOSIT	ROLLED STAINLESS STEEL SEAT
Valve cone	STAINLESS STEEL	
Cone seat	BASIC MATERIAL OF THE VALVE CONE / TEFLON	
Bush	STAINLESS STEEL	
Valve spindle	STAINLESS STEEL	
Sealing	ASBESTOS FREE	
Connection	DIN	
Assembly lengths	Complying with EN 558-1	

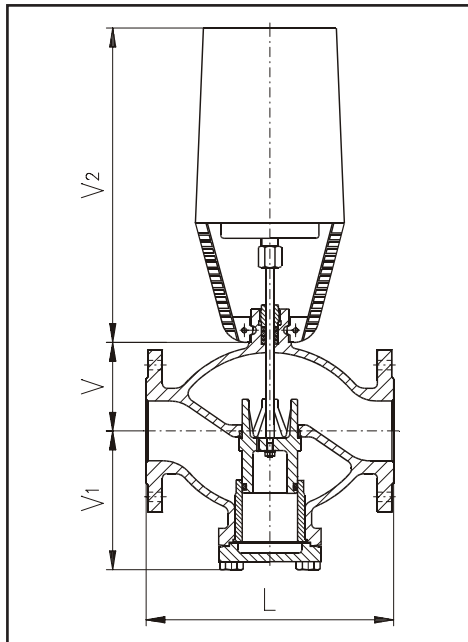
Note: The dimensions of connecting flanges - see pages 114, 115.

TABULKA ROZMĚRŮ

	PN	40						16						
		DN	25	32	40	50	65	80	25	32	40	50	65	80
		L [mm]	160	180	200	230	290	310	160	180	200	230	290	310
Siemens, ZPA Nová Paka, Belimo		V [mm]	66	66	66	83	103	115	66	66	66	83	103	115
Sauter		V [mm]	78	78	78	95	118	128	78	78	78	95	118	128
Honeywell		V [mm]	75	75	75	92	112	-	75	75	75	92	112	-
Johnson Controls RA 3000, FA 3300		V [mm]	71	71	71	88	108	120	71	71	71	88	108	120
Johnson Controls FA 1000, VA 7150, VA 7200		V [mm]	99,5	99,5	99,5	116,5	-	-	99,5	99,5	99,5	116,5	-	-
		V ₁ [mm]	108	108	114	126	168	178	104	104	109	121	163	173
		m [kg]	7,8	9,0	11,4	14,7	21,4	27,7	6,6	8,0	9,5	13,4	18,7	23,1

Note: The total height "V₂" and mass depend on the type of actuator used. The masses are given without actuators. The lifts depend of the actuator being used, and they equal to: 13 mm, 14 mm, 19 mm, 20 mm, 40 mm.

CONTROL VALVE WITH ELECTRIC ACTUATOR



FUNCTION

V42 113 540, V42 113 616

This electric actuator controlled valve controls the flow rate of working fluid in the valve seat by means of a valve control cone. The cone is designed to provide linear or equipercentual characteristics. The linear cone is equipped with cut outs, and the equipercentual one is perforated. The volume quantity of working fluid is given by k_v value (volume flow rate of water with 1000 kg/m³ density in m³/h at a valve pressure gradient of 1 bar). Allowable valve permeability in the valve seat is 0.05 % k_v , and in case of valves with emergency function, the permeability is 0.01 % k_v . The valve spindle is shifting, not rotating. The downstream and upstream pressure gradient is limited with respect to forces acting to the cone due to working fluid overpressure, and with respect to axial forces of valve actuators. The tables of the limits of pressure gradients can be obtained from the manufacturer.

ALLOWABLE PRESSURES AND TEMPERATURES

For V42 113 540 valves:

DN	Temperature [°C]			
	-10	120	200	260
	Max. operating overpressure [bar]			
25÷80	40	40	35	31

For V42 113 616 valves:

DN	Temperature [°C]					
	120	150	180	200	230	260
	Max. operating overpressure [bar]					
25÷80	16	14,4	13,4	12,8	11,8	11

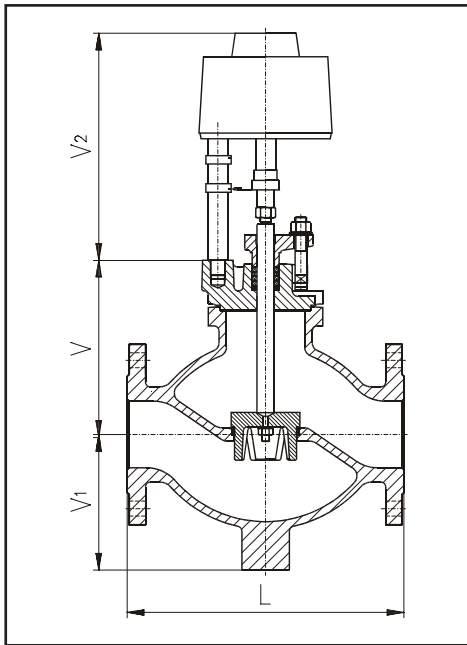
TABLE OF K_v VALUES FOR 20 mm LIFT

DN	Characteristic								
	Lift z [mm]	Linear k_v [m ³ /h]				Lift z [mm]	Equipercentual k_v [m ³ /h]		
		Valve cone of series (valve filing number)					Valve cone of series (valve filing number)		
		1	2	3	4		5	6	7
25	20	3,60	5,35	6,80	8,63	20	7,70 ----		
32		3,70	5,50	7,10	9,10		----		
40		10,57	15,66	21,52	---		11,60	15,80	---
50		12,30	17,10	22,50	28,30		19,20	23,40	---
65		22,36	39,19	56,40	65,50		23,40	30,60	---
80	---	---	---	---	---	40	48,20	61,20	---

TABLE OF K_v VALUES FOR 13, 14 AND 19 mm LIFT

DN	Characteristic														
	Lift z [mm]	Linear k_v [m ³ /h]				Lift z [mm]	Linear k_v [m ³ /h]				Lift z [mm]	Equipercentual k_v [m ³ /h]			
		Valve cone of series (valve filing number)					Valve cone of series (valve filing number)					Valve cone of series (valve filing number)			
		1	2	3	4		1	2	3	4		1	2	3	4
25	13	2,34	3,48	4,42	5,61	14	2,52	3,75	4,76	6,04	19	3,42	5,08	6,46	8,20
32		2,41	3,58	4,62	5,92		2,59	3,85	4,97	6,37		3,52	5,23	6,75	8,65
40		6,87	10,18	13,99	---		7,40	10,96	15,06	---		10,04	14,88	20,44	---
50		8,00	11,12	14,63	18,40		8,61	11,97	15,75	19,81		11,69	16,25	21,38	26,89
65		14,53	25,47	36,66	42,58		15,65	27,43	39,48	45,85		21,24	37,23	53,58	62,23
80	40	24,78	51,95	76,93	95,20	---	---	---	---	---	---	---	---	---	---

CONTROL VALVE WITH ELECTRIC ACTUATOR



USE

These valves are single seat fittings with a pressure relieved valve cone, and they are intended for the control of flow rate of working fluid. Valve cones with different cut-outs ensure the control for given flow rate characteristics and given k_v value. Due to basic valve function there cannot be guaranteed the same tightness as with typical closing valve. Therefore when tightness is required, a closing valve has to be installed in the piping. The tightness can be enhanced by the use of valve cones with soft Teflon seats. The valve can be used in compliance with valid standards and regulations relevant to given parameters. Suitable working fluids can be water, steam, air, non-aggressive fluids and gasses.

Application areas:

- Water, steam and gas distribution systems
- Ventilation and air conditioning technology
- Selected segments of chemical industry

TYPY / DN / PN / TEPLoty / PROVEDENÍ

V43 113 540	DN15÷80 - TEFLON	PN40	-10 °C to 260 °C
V43 113 616	DN15÷80 - TEFLON	PN16	0 °C to 260 °C
V43 113 540	DN15÷80 - METAL	PN40	-10 °C to 400 °C
V43 113 616	DN15÷80 - METAL	PN16	0 °C to 300 °C

They are produced in ST execution.

OTHER

The valves are combined with actuators of the following manufacturers: SPA Praha, ZPA Nová Paka, Ekorex. Recommended ambient temperatures, humidity, safety and other parameters can be obtained from the valve manufacturer.

CAUTION: The valve can be installed in then piping in any position except for the position with actuator pointing down, i.e. under the valve axis.

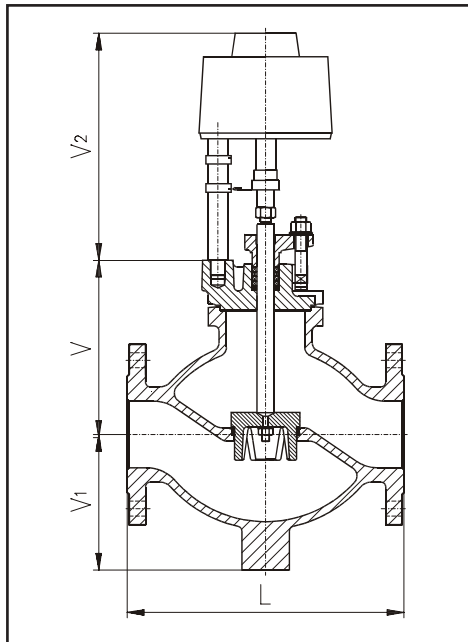
When inquiring or ordering the valve, it is necessary to specify the temperature and pressure of working fluid which is important for the selection of the sealing elements.

TABULKA ROZMĚRŮ

PN	40								16							
	15	20	25	32	40	50	65	80	15	20	25	32	40	50	65	80
L [mm]	130	150	160	180	200	230	290	310	130	150	160	180	200	230	290	310
V [mm]	100	100	121	121	135	147	189	199	94	94	121	121	135	147	189	199
V ₁ [mm]	88	88	105	105	105	122	142	154	88	88	105	105	105	122	142	154
Column spacing Ø100 m [kg]	5,3	6,9	9,0	10,2	12,3	15,8	-	-	5,8	6,3	7,8	9,5	10,5	14,2	19,1	24,5
Column spacing Ø150 m [kg]	-	-	-	-	-	16,3	22,2	28,9	-	-	-	-	-	-	-	-

Note: The total height "V₂" and mass depend on the type of actuator used. The masses are given without actuators. The lifts depend of the actuator being used, and they equal to: 20 mm, 40 mm.

CONTROL VALVE WITH ELECTRIC ACTUATOR



FUNCTION

V43 113 540, V43 113 616

This electric actuator controlled valve controls the flow rate of working fluid in the valve seat by means of a valve control cone. The cone is designed to provide linear or equipercentual flow rate characteristics. The linear cone is equipped with cut outs, and the equipercentual one is perforated. The volume quantity of working fluid is given by k_v value (volume flow rate of water with 1000 kg/m³ density in m³/h at a valve pressure gradient of 1 bar). Allowable valve permeability in the valve seat is 0.05 % k_v , in case of valves with emergency function, the permeability is 0.01 % k_v . The valve spindle is shifting, not rotating. The downstream and upstream pressure gradient is limited with respect to forces acting to the cone due to working fluid overpressure, and with respect to axial forces of valve actuators. The tables of the limits of pressure gradients can be obtained from the manufacturer.

ALLOWABLE PRESSURES AND TEMPERATURES

For V42 113 540 valves:

DN	Temperature [°C]						
	-10	120	200	250	300	350	400
	Max. operating overpressure [bar]						
15÷80	40	40	35	32	28	24	21

For V42 113 616 valves:

DN	Temperature [°C]							
	-10	120	150	180	200	230	250	300
	Max. operating overpressure [bar]							
15÷80	16	16	14,4	13,4	12,8	11,8	11,2	9,6

MATERIAL AND CONNECTION

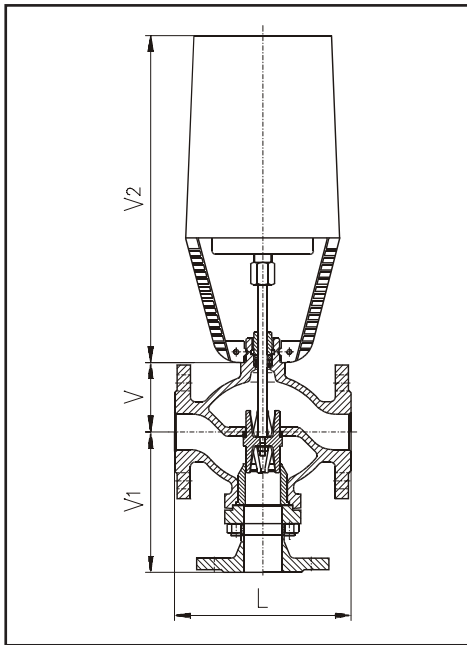
	V43 113 540	V43 113 616
Body, cover	1.0619 N	GG25
Body seat	STAINLESS STEEL WELD DEPOSIT	ROLLED STAINLESS STEEL SEAT
Valve cone	STAINLESS STEEL	
Cone seat	BASIC MATERIAL OF THE VALVE CONE / TEFLON	
Valve spindle	STAINLESS STEEL	
Sealing	ASBESTOS FREE	
Connection	DIN	
Assembly lengths	Complying with EN 558-1	

Note: The dimensions of connecting flanges - see pages 114, 115.

TABLE OF K_v VALUES

DN	Characteristic								
	Lift z [mm]	Linear k_v [m ³ /h]				Lift z [mm]	Equipercentual k_v [m ³ /h]		
		Valve cone of series (orientating number)					Valve cone of series (orientating number)		
		1	2	3	4		5	6	7
15	20	1,19	1,79	2,67	3,09	20	----	----	----
20		1,45	2,10	2,90	3,58		----	----	----
25		3,60	5,35	6,80	8,63		7,70	----	
32		3,70	5,50	7,10	9,10		----	----	
40		10,57	15,66	21,52	----		11,60	15,80	----
50		12,30	17,10	22,50	28,30		19,20	23,40	----
65	22,36	39,19	56,40	65,50	23,40	30,60	----		
80	40	24,78	51,95	76,93	95,20	40	48,20	61,20	

CONTROL VALVE WITH ELECTRIC ACTUATOR



USE

These valves are three-way mixing or distributing fittings with, and they are intended for the control of the flow rate of working fluid. The control is ensured by valve cones with different cut-outs for given flow rate characteristics and given k_v value. Emergency function at power failures is ensured only by some of the actuators (in this case cones with Teflon seats are used). Due to basic valve function there cannot be guaranteed the same tightness as with typical closing valves. Therefore when tightness is required, a closing valve has to be installed in the piping. The tightness can be enhanced by the use of valve cones with soft Teflon seats. The valve can be used in compliance with valid standards and regulations relevant to given parameters. Suitable working fluids can be water, steam, air, non-aggressive fluids and gasses.

Application areas:

- Water, steam and gas distribution systems
- Ventilation and air conditioning technology
- Selected segments of chemical industry

TYPES / DN / PN / TEMPERATURES / EXECUTIONS

V44 413 540	DN15÷80 - EPDM	PN40	-10 °C to 140 °C
V44 413 616	DN15÷80 - EPDM	PN16	0 °C to 140 °C
V44 413 540	DN15÷80 - TEFLON	PN40	-10 °C to 260 °C
V44 413 616	DN15÷80 - TEFLON	PN16	0 °C to 260 °C

They are produced in ST execution.

OTHER

The valves are installed with actuators of the following producers: **Siemens (L)**, **ZPA Nová Paka (L)**, **Belimo (L)**, **Sauter (S)**, **Honeywell (H)**, **Johnson Controls (J)**. The identification is based on a letter given in the filing number of the valve after the full stop (see the brackets attached to individual manufacturers), e.g. **V44 113 540.L**. Recommended ambient temperatures, humidity, safety and other parameters can be obtained from the valve manufacturer.

CAUTION: The valve can be installed in then piping in any position except for the position with actuator pointing down, i.e. under the valve axis.

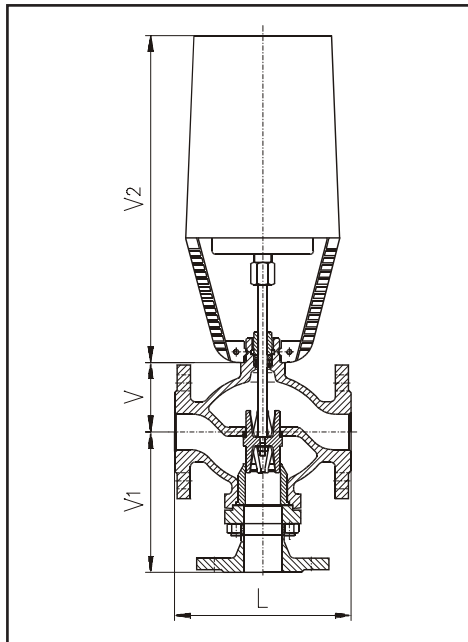
When inquiring or ordering the valve, it is necessary to specify the temperature and pressure of working fluid which is important for the selection of the sealing elements.

DIMENSION TABLE

PN DN	40								16							
	15	20	25	32	40	50	65	80	15	20	25	32	40	50	65	80
L [mm]	130	150	160	180	200	230	290	310	130	150	160	180	200	230	290	310
Siemens, ZPA Nová Paka, Belimo V [mm]	49	49	66	66	66	83	103	115	49	49	66	66	66	83	103	115
Sauter V [mm]	61	61	78	78	78	95	118	128	61	61	78	78	78	95	118	128
Honeywell V [mm]	58	58	75	75	75	92	112	-	58	58	75	75	75	92	112	-
Johnson Controls RA 3000, FA 3300 V [mm]	54	54	71	71	71	88	108	120	54	54	71	71	71	88	108	120
Johnson Controls FA 1000, VA 7150, VA 7200 V [mm]	82,5	82,5	99,5	99,5	99,5	116,5	-	-	82,5	82,5	99,5	99,5	99,5	116,5	-	-
V ₁ [mm]	122	122	157	157	163	180	231	241	117	122	147	152	158	170	216	231
m [kg]	5,9	6,7	9,0	10,2	12,6	16,1	22,8	29,8	5,2	5,9	7,5	9,2	11,2	15,9	21,2	27

Note: The total height "V₂" and mass depend on the type of actuator used. The masses are given without actuators. The lifts depend of the actuator being used, and they equal to: 20 mm, 40 mm.

CONTROL VALVE WITH ELECTRIC ACTUATOR



FUNCTION

V44 413 540, V44 413 616

This electric actuator controlled valve controls the flow rate of working fluid in the valve seat by means of a valve control cone with cut outs and linear characteristics. When used as a mixing valve the valve inlet is from under the valve cone, and controls the fluid flow rate from both inlets. When used as distribution valve, the inlet is from above valve cone, and divides and controls the fluid flow rate into two outlets. The volume quantity of working fluid is given by k_v value (volume flow rate of water with 1000 kg/m³ density in m³/h at a valve pressure gradient of 1 bar). Allowable valve permeability in the valve seat is 0.05 % k_v , in case of valves with emergency function, the permeability is 0.01 % k_v . The valve spindle is shifting, not rotating. The downstream and upstream pressure gradient is limited with respect to forces acting to the cone due to working fluid overpressure, and with respect to axial forces of valve actuators. The tables of the limits of pressure gradients can be obtained from the manufacturer.

ALLOWABLE PRESSURES AND TEMPERATURES

For V44 413 540 valves:

DN	Temperature [°C]				
	-10	120	200	250	260
15÷80	40	40	35	32	31

For V44 413 616 valves:

DN	Temperature [°C]						
	120	150	180	200	230	250	260
15÷80	16	14,4	13,4	12,8	11,8	11,2	11

MATERIAL AND CONNECTION

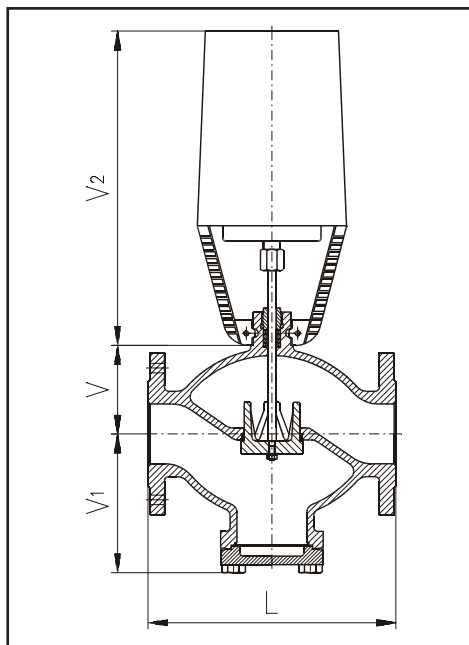
	V44 413 540	V44 413 616
Body, cover	1.0619 N	GG25
Body seat	STAINLESS STEEL WELD DEPOSIT	ROLLED STAINLESS STEEL SEAT
Valve cone	STAINLESS STEEL	
Cone seat	BASIC MATERIAL OF THE VALVE CONE / TEFLON	
Valve spindle	STAINLESS STEEL	
Bush	STAINLESS STEEL	
Sealing	ASBESTOS FREE	
Connection	DIN	
Assembly lengths	Complying with EN 558-1	

Note: The dimensions of connecting flanges - see pages 114, 115.

TABLE OF K_v VALUES

DN	Characteristic Linear									
	Lift z [mm]	k_v [m ³ /h]				Lift z [mm]	k_v [m ³ /h]			
		Valve cone of series (orientating number)					Valve cone of series (orientační číslo)			
		1	2	3	4		1	2	3	4
15	14	0,83	1,25	1,87	2,16	20	1,19	1,79	2,67	3,09
20		1,02	1,47	2,03	2,51		1,45	2,10	2,90	3,58
25		2,52	3,75	4,76	6,04		3,60	5,35	6,80	8,63
32		2,59	3,85	4,97	6,37		3,70	5,50	7,10	9,10
40		7,40	10,96	15,06	---		10,57	15,66	21,52	---
50		8,61	11,97	15,75	19,81		12,30	17,10	22,50	28,30
65	15,65	27,43	39,48	45,85	22,36	39,19	56,40	65,50		
80	40	24,78	51,95	76,93	95,20	---	---	---	---	

CONTROL VALVE WITH ELECTRIC ACTUATOR



USE

These valves are single seat fittings, and they are intended for the control of flow rate of working fluid. The control is ensured by valve cones with different cut-outs for given flow rate characteristics and given k_v value. Emergency function at power failures is ensured only by some of the actuators (in this case cones with Teflon seats are used). Due to basic valve function there cannot be guaranteed the same tightness as with typical closing valve. Therefore when tightness is required, a closing valve has to be installed in the piping. The tightness can be enhanced by the use of valve cones with soft Teflon seats. The valve can be used in compliance with valid standards and regulations relevant to given parameters. Suitable working fluids can be water, steam, air, non-aggressive fluids and gasses.

Application areas:

- Water, steam and gas distribution systems
- Ventilation and air conditioning technology
- Selected segments of chemical industry

TYPES / DN / PN / TEMPERATURES / EXECUTIONS

V45 113 540	DN15÷80 - EPDM	PN40	-10 °C to 140 °C
V45 113 616	DN15÷80 - EPDM	PN16	0 °C to 140 °C
V45 113 540	DN15÷80 - TEFLON	PN40	-10 °C to 260 °C
V45 113 616	DN15÷80 - TEFLON	PN16	0 °C to 260 °C

They are produced in ST execution.

OTHER

The valves are installed with actuators of the following producers: **Siemens (L)**, **ZPA Nová Paka (L)**, **Belimo (L)**, **Sauter (S)**, **Honeywell (H)**, **Johnson Controls (J)**. The identification is based on a letter given in the filing number of the valve after the full stop (see the brackets attached to individual manufacturers), e.g. **V45 113 540.L**. Recommended ambient temperatures, humidity, safety and other parameters can be obtained from the valve manufacturer.

CAUTION: The valve can be installed in then piping in any position except for the position with actuator pointing down, i.e. under the valve axis.

When inquiring or ordering the valve, it is necessary to specify the temperature and pressure of working fluid which is important for the selection of the sealing elements.

ALLOWABLE PRESSURES AND TEMPERATURES

For V45 113 540 valves:

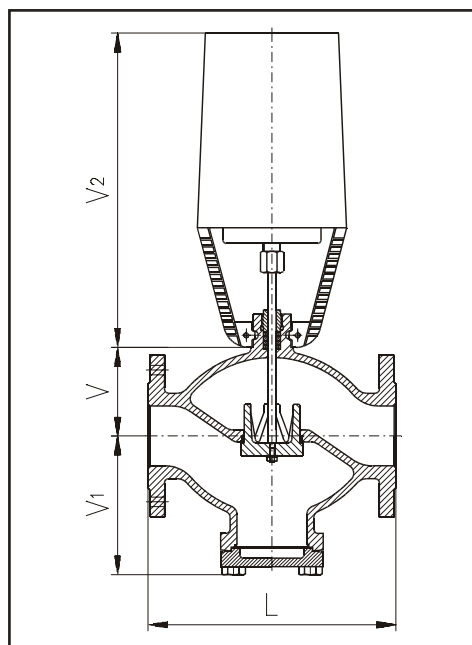
DN	Temperature [°C]				
	-10	120	200	250	260
15÷80	40	40	35	32	31

DIMENSION TABLE

	PN	40								16								
		DN	15	20	25	32	40	50	65	80	15	20	25	32	40	50	65	80
		L [mm]	130	150	160	180	200	230	290	310	130	150	160	180	200	230	290	310
Siemens, ZPA Nová Paka Belimo		V [mm]	49	49	66	66	66	83	103	115	49	49	66	66	66	83	103	115
Sauter		V [mm]	61	61	78	78	78	95	118	128	61	61	78	78	78	95	118	128
Honeywell		V [mm]	58	58	75	75	75	92	112	-	58	58	75	75	75	92	112	-
Johnson Controls RA 3000, FA 3300		V [mm]	54	54	71	71	71	88	108	120	54	54	71	71	71	88	108	120
Johnson Controls FA 1000, VA 7150, VA 7200		V [mm]	82,5	82,5	99,5	99,5	99,5	116,5	-	-	82,5	82,5	99,5	99,5	99,5	116,5	-	-
		V ₁ [mm]	81	81	108	108	114	126	168	178	78	78	104	104	109	121	163	173
		m [kg]	5,0	5,0	7,6	8,7	11,1	14,3	20,8	27	4,3	4,3	6,5	7,5	9,3	13,1	18,3	22,5

Note: The total height "V₂" and mass depend on the type of actuator used. The masses are given without actuators. The lifts depend of the actuator being used, and they equal to: 13 mm, 14 mm, 19 mm, 20 mm, 40 mm.

VENTIL REGULAČNÍ S ELEKTRICKÝM POHONEM CONTROL VALVE WITH ELECTRIC ACTUATOR



ALLOWABLE PRESSURES AND TEMPERATURES

For V45 113 616 valves:

DN	Temperature [°C]					
	120	150	180	200	230	260
	Max. operating overpressure [bar]					
15÷80	16	14,4	13,4	12,8	11,8	11

FUNCTION

V45 113 540, V45 113 616

This electric actuator controlled valve controls the flow rate of working fluid in the valve seat by means of a valve control cone. The cone is designed to provide linear or equipercentual characteristics. The linear cone is equipped with cut outs, and the equipercentual one is perforated. The volume quantity of working fluid is given by k_v value (volume flow rate of water with 1000 kg/m³ density in m³/h at a valve pressure gradient of 1 bar). Allowable valve permeability in the valve seat is 0.05 % k_v , in case of valves with emergency function, the permeability is 0.01 % k_v . The valve spindle is shifting, not rotating. The downstream and upstream pressure gradient is limited with respect to forces acting to the cone due to working fluid overpressure, and with respect to axial forces of valve actuators. The tables of the limits of pressure gradients can be obtained from the manufacturer.

MATERIAL AND CONNECTION

	V45 113 540	V45 113 616
Body, cover	1.0619 N	GG25
Body seat	STAINLESS STEEL WELD DEPOSIT	ROLLED STAINLESS STEEL SEAT
Valve cone	STAINLESS STEEL	
Cone seat	BASIC MATERIAL OF THE VALVE CONE / TEFLON	
Valve spindle	STAINLESS STEEL	
Sealing	ASBESTOS FREE	
Connection	DIN	
Assembly lengths	Complying with EN 558-1	

Note: The dimensions of connecting flanges - see pages 114, 115.

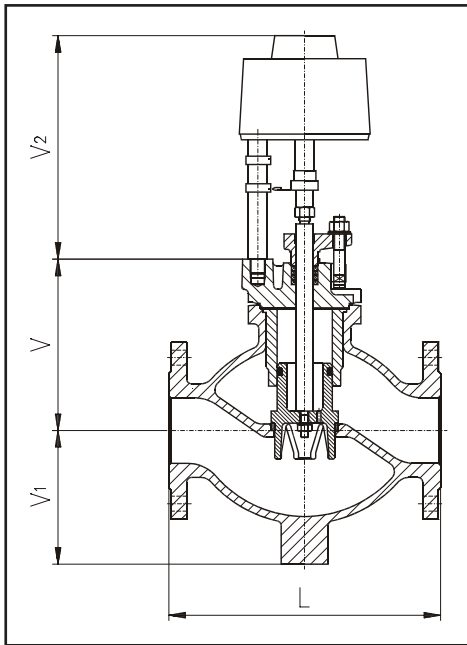
TABLE OF K_v VALUES FOR 20 mm LIFT

DN	Characteristic								
	Lift z [mm]	Linear k_v [m ³ /h]				Lift z [mm]	Equipercentual k_v [m ³ /h]		
		Valve cone of series (orientating number)					Valve cone of series (orientating number)		
		1	2	3	4		5	6	7
15	20	1,19	1,79	2,67	3,09	20	----	----	----
20		1,45	2,10	2,90	3,58		----	----	----
25		3,60	5,35	6,80	8,63		7,70	----	
32		3,70	5,50	7,10	9,10		----	----	
40		10,57	15,66	21,52	----		11,60	15,80	----
50		12,30	17,10	22,50	28,30		19,20	23,40	----
65		22,36	39,19	56,40	65,50		23,40	30,60	----
80	----	----	----	----	40	48,20	61,20	----	

TABLE OF K_v VALUES FOR 13, 14 AND 16 mm LIFT

DN	Characteristic														
	Lift z [mm]	Linear k_v [m ³ /h]				Lift z [mm]	Linear k_v [m ³ /h]				Lift z [mm]	k_v [m ³ /h]			
		Valve cone of series (orientating number)					Valve cone of series (orientating number)					Valve cone of series (orientating number)			
		1	2	3	4		1	2	3	4		1	2	3	4
15	13	0,77	1,16	1,74	2,01	14	0,83	1,25	1,87	2,16	19	1,13	1,70	2,54	2,94
20		0,94	1,37	1,89	2,33		1,02	1,47	2,03	2,51		1,38	2,00	2,76	3,40
25		2,34	3,48	4,42	5,61		2,52	3,75	4,76	6,04		3,42	5,08	6,46	8,20
32		2,41	3,58	4,62	5,92		2,59	3,85	4,97	6,37		3,52	5,23	6,75	8,65
40		6,87	10,18	13,99	----		7,40	10,96	15,06	----		10,04	14,88	20,44	----
50		8,00	11,12	14,63	18,40		8,61	11,97	15,75	19,81		11,69	16,25	21,38	26,89
65	14,53	25,47	36,66	42,58	15,65	27,43	39,48	45,85	21,24	37,23	53,58	62,23			
80	40	24,78	51,95	76,93	95,20	----	----	----	----	----	----	----	----	----	----

CONTROL VALVE WITH ELECTRIC ACTUATOR



USE

These valves are single seat fittings with a pressure relieved valve cone, and they are intended for the control of flow rate of working fluid. The control is ensured by valve cones with different cut-outs for given flow rate characteristics and given k_v value. A pressure relieved valve cone allows a control at low-pressure gradients even with the low forces exerted by valve actuators. Emergency function at power cut outs is ensured only by some of the actuators (in this case cones with Teflon seats are used). Due to basic valve function there cannot be guaranteed the same tightness as with typical closing valve. Therefore when tightness is required, a closing valve has to be installed in the piping. The tightness can be enhanced by the use of valve cones with soft Teflon seats. The valve can be used in compliance with valid standards and regulations relevant to given parameters. Suitable working fluids can be water, steam, air, non-aggressive fluids and gasses.

Application areas:

- Water, steam and gas distribution systems
- Ventilation and air conditioning technology
- Selected segments of chemical industry

TYPES / DN / PN / TEMPERATURES / EXECUTIONS

V46 113 540	DN25÷80 - EPDM	PN40	-10°C to 140 °C
V46 113 616	DN25÷80 - EPDM	PN16	0°C to 140 °C
V46 113 540	DN25÷80 - TEFLON	PN40	-10°C to 260 °C
V46 113 616	DN25÷80 - TEFLON	PN16	0°C to 260 °C

They are produced in ST execution.

ALLOWABLE PRESSURES AND TEMPERATURES

For V46 113 540 valves:

DN	Temperature [°C]			
	-10	120	200	260
25÷80	40	40	35	31

For V46 113 616 valves:

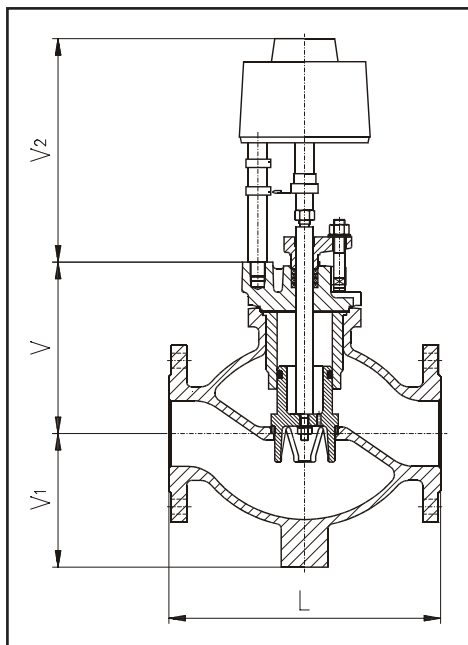
DN	Temperature [°C]					
	20	150	180	200	230	260
25÷80	16	14,4	13,4	12,8	11,8	11

DIMENSION TABLE

PN	40						16					
	25	32	40	50	65	80	25	32	40	50	65	80
DN	160	180	200	230	290	310	160	180	200	230	290	310
L [mm]	160	180	200	230	290	310	160	180	200	230	290	310
V [mm]	121	121	135	147	189	199	121	121	135	147	189	199
V ₁ [mm]	105	105	105	122	142	154	105	105	105	122	142	154
Column spacing Ø100	m [kg]	9,2	10,5	12,6	16,2	-	8,0	9,8	10,8	14,6	19,6	25,2
Column spacing Ø150	m [kg]	-	-	-	16,7	22,7	29,5	-	-	-	-	-

Note: The total height "V₂" and mass depend on the type of actuator used. The masses are given without actuators. The lifts depend of the actuator being used, and they equal to: 20 mm, 40 mm.

CONTROL VALVE WITH ELECTRIC ACTUATOR



FUNKCE

V46 113 540, V46 113 616

This electric actuator controlled valve controls the flow rate of working fluid in the valve seat by means of a valve control cone. The cone is designed to provide linear or equipercentual characteristics. The linear cone is equipped with cut outs, and the equipercentual one is perforated. The volume quantity of working fluid is given by k_v value (volume flow rate of water with 1000 kg/m³ density in m³/h at a valve pressure gradient of 1 bar). Allowable valve permeability in the valve seat is 0.05 % k_v , in case of valves with emergency function, the permeability is 0.01 % k_v . The valve spindle is shifting, not rotating. The inlet of media is always from under the valve cone. The downstream and upstream pressure gradient is limited with respect to forces acting to the cone due to working fluid overpressure, and with respect to axial forces of valve actuators. The tables of the limits of pressure gradients can be obtained from the manufacturer.

OTHER

The valves are combined with actuators of the following manufacturers: SPA Praha, ZPA Nová Paka, Ekorex. Recommended ambient temperatures, humidity, safety and other parameters can be obtained from the valve manufacturer.

CAUTION:

The valve can be installed in then piping in any position except for the position with actuator pointing down, i.e. under the valve axis.

When inquiring or ordering the valve, it is necessary to specify the temperature and pressure of working fluid which is important for the selection of the sealing elements.

MATERIAL AND CONNECTION

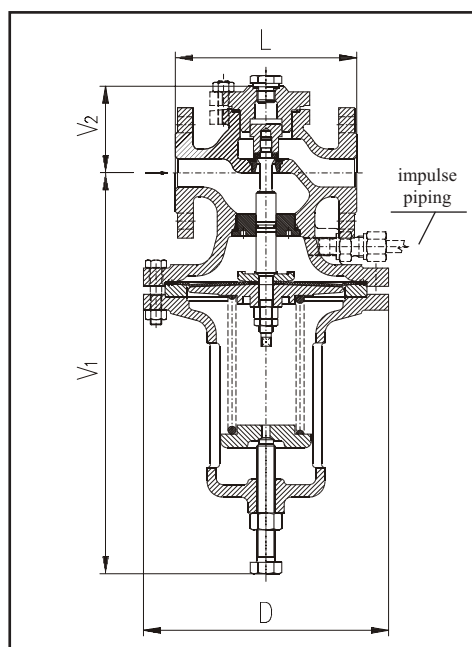
	V46 113 540	V46 113 616
Body, cover	1.0619 N	GG25
Body seat	STAINLESS STEEL WELD DEPOSIT	ROLLED STAINLESS STEEL SEAT
Valve cone	STAINLESS STEEL	
Cone seat	BASIC MATERIAL OF THE VALVE CONE / TEFLON	
Bush	STAINLESS STEEL	
Valve spindle	STAINLESS STEEL	
Sealing	ASBESTOS FREE	
Connection	DIN	
Assembly lengths	Complying with EN 558-1	

Note: The dimensions of connecting flanges - see pages 114, 115.

TABLE OF K_v VALUES

DN	Characteristic								
	Lift z [mm]	Linear k_v [m ³ /h]				Lift z [mm]	Equipercentual k_v [m ³ /h]		
		Valve cone of series (orientating number)					Valve cone of series (orientating number)		
		1	2	3	4		5	6	7
25	20	3,60	5,35	6,80	8,63	20		7,70	----
32		3,70	5,50	7,10	9,10				----
40		10,57	15,66	21,52	----		11,60	15,80	----
50		12,30	17,10	22,50	28,30		19,20	23,40	----
65		22,36	39,19	56,40	65,50		23,40	30,60	----
80	40	24,78	51,95	76,93	95,20	40	48,20	61,20	

WATER, AIR PRESSURE REDUCING VALVE



APPLICATION

The pressure regulator or controller (reducing valve) decreases the inlet pressure of a fed medium on a required outlet pressure and keeps it on a set point. It serves to the regulation of the pressure of water, air, non-aggressive gases and non-aggressive liquids. The regulators or controllers are reducing valves which are not suitable for a tight piping closing.

Application:

- Water system
- Air conditioning

TYPES / DN / PN / TEMPERATURES / EXECUTION

R12 117 616 DN 25, 40÷100 PN16 0 °C to 90 °C

It is produced in the ST execution.

FUNCTION

The valve with a straight control that decreases the inlet pressure on the required outlet pressure. The outlet pressure is set and kept by a spring. Every spring corresponds to a certain pressure span. At adjusting on another pressure span it is necessary to change the spring according to a producer regulation.

The reduced pressure acts on an upper diaphragm side and a spring force acts on a lower side. An equilibrium is failed by a reduced pressure drop, the cone coupled with the diaphragm is lifted and the pressure begins to rise till the set point. At a rise of the reduced pressure a procedure is reverse. The space over the diaphragm is interconnected with the outlet piping by an impulse pipe.

INSTALLATION

The controllers or reducing valves are mounted in places with a pressure rest flowing. They are installed on principle into the horizontal pipeline with the diaphragm down there (see fig.). For a correct installment of the regulator or the reducing valve into the pipeline and for a correct connection of an impulse piping it is necessary to follow a producer regulation for the installation, attendance and maintenance PN 8 670 107; the filter for trapping impurities must be mounted before the regulator.

ADMISSIBLE PRESSURES AND TEMPERATURES

DN	25	40	50	65	80	100
Inlet overpressure span [bar]	3 – 13					
Outlet overpressure span [bar]	1 – 10					
Working temperature [°C]	0 to 90					
Minimum pressure gradient [bar]	2					

MATERIAL AND CONNECTION

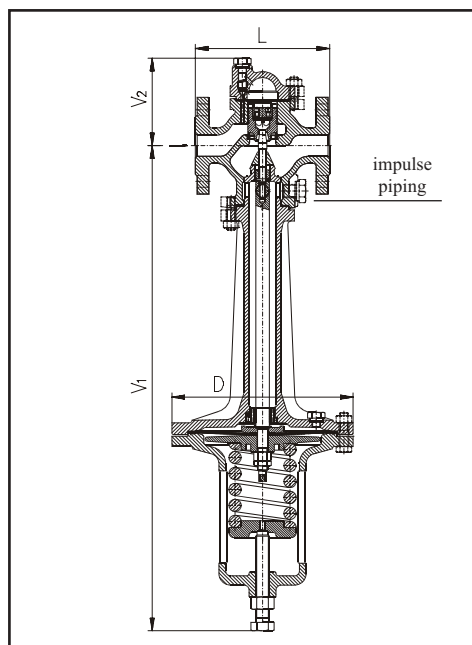
	R12 117 616
Body, cover, lid	GG25
Body seat	STAINLESS STEEL
Function parts	STAINLESS STEEL
Diaphragm	DIAPHRAGM CLOTH
Packing	ASBESTOS-FREE, RUBBER
Connection	DIN
Constructional lengths (dimensions)	According to EN 558-1

DIMENSION TABLE

PN	16					
	DN 25	40	50	65	80	100
D [mm]	216	216	216	216	260	260
L [mm]	160	200	230	290	310	350
V ₁ [mm]	340	370	380	390	435	435
V ₂ [mm]	75	100	100	100	140	140
m [kg]	14	20	22	25	40	46
Flow coefficient Kvs [m ³ /h]	2,54	6,5	10,18	17,67	25,45	41

Note: Connecting flange dimensions see pages 114, 115.

STEAM PRESSURE REDUCING VALVE



APPLICATION

The pressure regulator or controller (reducing valve) decreases the inlet pressure of a fed medium on a required outlet pressure and keeps it on a set point. It serves to the regulation of the pressure of steam. The regulators or controllers are reducing valves which are not suitable for a tight piping closing. Application:

- Steam distributions

TYPES / DN / PN / TEMPERATURES / EXECUTION

R22 117 616 DN 25, 40÷100 PN16 0 °C to 300 °C

It is produced in the ST execution.

FUNCTION

The valve with a straight control that decreases the inlet pressure on the required outlet pressure. The outlet pressure is set and kept by a spring. Every spring corresponds to a certain pressure span. At adjusting on another pressure span it is necessary to change the spring according to a producer regulation.

The reduced pressure acts on an upper diaphragm side and a spring force acts on a lower side. An equilibrium is failed by a reduced pressure drop, the cone coupled with the diaphragm is lifted and the pressure begins to rise till to the set point. At a rise of the reduced pressure a procedure is reverse. The space over the diaphragm is interconnected with the outlet piping by an impulse pipe.

INSTALLATION

The controllers or reducing valves are mounted in places with a pressure rest flowing. They are installed on principle into the horizontal pipeline with the diaphragm down there (see fig.). For a correct installment of the regulator or the reducing valve into the pipeline and for a correct connection of an impulse piping it is necessary to follow a producer regulation for the installation, attendance and maintenance PN 8 670 107; the filter for trapping impurities must be mounted before the regulator.

ADMISSIBLE PRESSURES AND TEMPERATURES

DN	Temperature [°C]						
	120	150	180	200	230	250	300
	The highest working overpressure [bar]						
25÷100	13	13	13	12,8	11,8	11,2	9,6

DN	25	40	50	65	80	100
Outlet overpressure span [bar]	0,1 - 8	0,1 - 6			0,1 - 4	

Minimum difference pressure: $p_{inlet} (abs) / p_{outlet} (abs) \geq 1,2$

MATERIAL AND CONNECTION

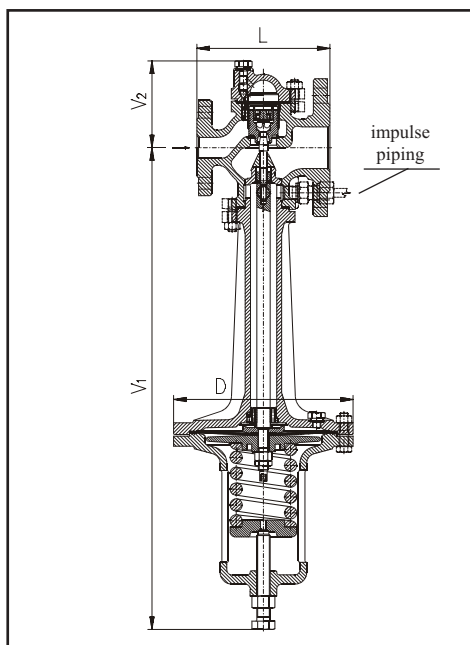
	R22 117 616
Body, cover, lid, adapter	GG25
Body seat	STAINLESS STEEL
Function parts	STAINLESS STEEL
Diaphragm	DIAPHRAGM CLOTH
Packing	ASBESTOS-FREE
Connection	DIN
Constructional lengths (dimensions)	According to EN 558-1

DIMENSION TABLE

PN	16					
	25	40	50	65	80	100
DN	25	40	50	65	80	100
D [mm]	215	260	260	260	335	335
L [mm]	160	200	230	290	310	350
V ₁ [mm]	615	735	735	735	915	915
V ₂ [mm]	100	125	125	125	160	160
m [kg]	23	40	41	43	79	87
Flow coefficient Kvs [m ³ /h]	15	21	26	31	55	80

Note: Connecting flange dimensions see pages 114, 115.

STEAM PRESSURE REDUCING VALVE



APPLICATION

The pressure regulator or controller (reducing valve) decreases the inlet pressure of a fed medium on a required outlet pressure and keeps it on a set point. It serves to the regulation of the pressure of steam. The regulators or controllers are reducing valves which are not suitable for a tight piping closing. Application:

- Steam distributions

TYPES / DN / PN / TEMPERATURES / EXECUTION

R23 117 525 DN 25/50, 50/100, 80/150 PN 25 0 °C to 400 °C

It is produced in the ST execution.

FUNCTION

The valve with a straight control that decreases the inlet pressure on the required outlet pressure. The outlet pressure is set and kept by a spring. Every spring corresponds to a certain pressure span. At adjusting on another pressure span it is necessary to change the spring according to a producer regulation.

The reduced pressure acts on the upper diaphragm side and the spring force acts on a lower side. The equilibrium is failed by a reduced pressure drop, the cone coupled with the diaphragm is lifted and the pressure begins to rise till to the set point. At a rise of the reduced pressure the procedure is reverse. The space over the diaphragm is interconnected with the outlet piping by the impulse pipe.

INSTALLATION

The controllers or reducing valves are mounted in places with a pressure rest flowing. They are installed on principle into the horizontal pipeline with the diaphragm down there (see fig.). For the correct installment of the regulator or the reducing valve into the pipeline and for the correct connection of an impulse piping it is necessary to follow the producer regulation for the installation, attendance and maintenance PN 8 670 107; the filter for trapping impurities must be mounted before the regulator.

ADMISSIBLE PRESSURES AND TEMPERATURES

DN	Temperature [°C]					
	120	200	250	300	350	400
	The highest working overpressure [bar]					
25÷80	25	22	20	17	16	13

DN (Inlet/Outlet)	25/50	50/100	80/150
Outlet overpressure span [bar]	0,1 – 8	0,1 - 6	0,1 - 4

Minimum difference pressure: $p_{inlet} (abs) / p_{outlet} (abs) \geq 1,2$

MATERIAL AND CONNECTION

	R23 117 525
Body, lid	1.0619+N
Cover, adapter	GG25
Body seat	STAINLESS STEEL
Function parts	STAINLESS STEEL
Diaphragm	DIAPHRAGM CLOTH
Packing	ASBESTOS-FREE
Connection	DIN
Constructional lengths (dimensions)	Dle EN 558-1

DIMENSION TABLE

PN	25		
	25/50	50/100	80/150
DN			
D [mm]	215	260	335
L [mm]	160	230	310
V ₁ [mm]	615	735	915
V ₂ [mm]	100	125	160
m [kg]	25	48	90
Flow coefficient Kvs [m ³ /h]	15	26	55

Note: Dimensions of connecting flanges see pages 114, 115.