



**02 - 09.2**

02.23.GB

# CONTROL AND SHUT-OFF VALVES IN SEISMIC VERSION

## **300 line**



# 300 line

**RV / UV 320 SP (Ex)**  
**RV / UV 330 SP (Ex)**

two-way, single-seated,  
control (shut-off) valve

**RV 322 SP (Ex)**  
**RV 332 SP (Ex)**

two-way, single-seated,  
control valve with pressure-balanced plug

Control valves **300 line** are designed for regulation and shut-off of process liquid flow, for which seismic resistance of the device is required. The valves meet the conditions of **seismic resistance** in the sense of maintaining mechanical integrity and functionality after a seismic event with a response spectrum of up to  $30 \text{ m.s}^{-2}$  in all directions, in the band 0 to 33 Hz. Thus, they meet the requirements of **seismic classification 1b of fittings for nuclear energy according to OTT 87/91** and in non-nuclear applications meet the conditions for use in earthquake-prone areas with a maximum intensity of up to 9 degrees of the international scale EMS-98, or MSK-64 (9 bal).

**Version Ex** meets demands of II 1/2G IIC TX Ga/Gb dle ČSN EN ISO 80079-36 (9/2016) a ČSN EN 1127-1 (4/2020). Flow characteristics, Kvs coefficients and leakage comply with international standards. The maximal permissible operating pressures in behaviour with types of material and temperature are specified in the table on page 22 of this catalogue.

## Control

hand wheel  
electromechanical actuators **Auma**

## Application

**RV / UV 3xx SP (Ex)** - heating, ventilation, power gen. and chemical process. industries  
**RV / UV 3xx SP (Ex)** - gas and chemical industries

## Process media

**RV / UV 3xx SP (Ex)** - liquids, gases and vapours without abrasive particles  
 e.g. water, steam, air and other media compatible with material of the valve inner parts  
**RV / UV 3xx SP (Ex)** - technical and fuel gases and inflammable liquids

To ensure a reliable regulation, the producers recommends to pipe a strainer in front of the valve into pipeline or ensure in any other way that process medium does not contain abrasive particles or impurities.

## Installation

The valve can be installed in any position except position when the actuator is under the valve body. The valve is to be piped the way so that the direction of medium flow will coincide with the arrows on the body.

It is necessary to protect the actuator from excessive heat from the pipeline at medium temperatures above  $150^\circ\text{C}$ , e.g. by appropriately insulating the pipeline and valve and tilting the actuator from the vertical axis.

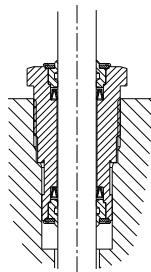
When the valve is used as diverting, process medium flows through common valve port AB and split streams leave through valve ports A and B).

Detailed informations are given in the instruction for installation and service.

## Packings

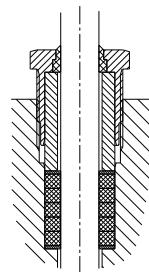
### DRSpack® (PTFE)

DRSpack® (Direct Radial Sealing Pack) is a packing with high tightness at both low and high operating pressure values. It is the most used type of packing suitable for temperatures ranging from 0 °C to 260 °C. The pH range is from 0 to 14. The packing enables using of actuators with low linear force. The design enables an easy change of the whole packing. The average service life of DRSpack® is more than 500 000 cycles.



### Graphite

This type of packing can be used for media with temperature up to 550°C and pH range: 0 to 14. Packing can be "sealed up" either by screwing the packing screw in or adding another sealing ring. In regard of intensive frictional forces, graphite packing is suitable for actuators with a sufficient linear force.



## Principles for plug type selection

V-ported plugs should not be used in supercritical differential pressures with inlet pressure  $p \geq 0,4$  MPa and for regulation of saturated steam. In these cases we recommend to use a perforated plug. The perforated plug should be also used always when cavitation may occur due to a high differential pressure value or valve ports erosion caused by high speed of process medium flow. If the parabolic plug is used (because of small Kvs) for supercritical differential pressures, it is necessary to close both plug and seat with a hard metal overlay, i.e. stellited trim.

## Rangeability

Rangeability is the ratio of the biggest value of flow coefficient to the smallest value. In fact it is the ratio (under the same conditions) of highest regulated flow rate value to its lowest value. The lowest or minimal regulated flow rate is always higher than 0.



# RV/UV 3x0 SP

Control and  
Shut-off valves  
in seismic version

**DN 15 to 400**  
**PN 16 to 63**

## Technical data

Series	RV / UV 320 SP (Ex)	RV / UV 330 SP (Ex)
<b>Type of valve</b>		
<b>Nominal size range</b>	DN 15 to 400	
<b>Nominal pressure</b>	PN 16 to 63	
<b>Body material</b>	Cast steel 1.0619 (GP240GH) 1.7357 (G17CrMo5-5)	Stainless steel 1.4581(GX5CrNiMoNb19-11-2)
<b>Seat material:</b> DN 15 - 50	1.4028 / 17 023.6	1.4571 / 17 348.4
<b>DIN W.Nr./+ČSN</b> DN 65 - 400	1.4027 / 42 2906.5	1.4571 / 17 348.4
<b>Plug material:</b> DN 15 - 65	1.4028 / 17 023.6	1.4581 / 42 2941.4
<b>DIN W.Nr./+ČSN</b> DN 80 - 150	1.4021 / 17 027.6	1.4581 / 42 2941.4
DN 200 - 400	1.4021 / 17 022.6	1.4581 / 42 2941.4
<b>Operating temperature range</b>	-10 to 550 °C	-10 to 550 °C
<b>Face to face dimensions</b>	Section 1 for flanged version PN 16 to 40 acc. to ČSN EN 558 (9/2022), Section 2 for flanged version PN 63 acc. to ČSN EN 558 (9/2022), Section 73 for weld ends version acc. to ČSN EN 12982 (1/2011)	
<b>Connection flanges</b>	Acc. to ČSN EN 1092-1 (12/2019)	
<b>Flange faces</b>	Type B1 (raised-faced) or Type B2 (plain face) or Type F (female), or Type D (groove) acc. to ČSN EN 1092-1 (12/2019)	
<b>Weld ends</b>	Weld ends acc. to ČSN EN 12627-2 (9/2018)	
<b>Type of plug</b>	V-ported, contoured, perforated	
<b>Flow characteristic</b>	Linear, equal-percentage, LDMspline®, parabolic, on - off	
<b>Kvs value</b>	0.01 to 1600 m <sup>3</sup> /h	
<b>Leakage rate</b>	Class III. acc. to ČSN-EN 1349 (7/2010) (<0.1% Kvs) for c. valves with metal-metal seat sealing Class IV. acc. to ČSN-EN 1349 (7/2010) (<0.01% Kvs) for shut off valve Class IV. acc. to ČSN EN 1349 (7/2010) (<0.01% Kvs) pro uzavírací ventil	
<b>Leakage rate for Ex version</b>	RV 3xx class IV. acc. to ČSN EN 1349 (7/2010) (< 0.01% Kvs); UV 3xx step C acc. to ISO 5208 (6/2015)	
<b>Rangeability r</b>	50 : 1	
<b>Packing</b>	DRSpack® (PTFE) t <sub>max</sub> = 260°C, Exp. graphite t <sub>max</sub> = 550°C, Bellows (DN15-150) t <sub>max</sub> = 550°C	
<b>Seismic resistance</b>	až 33 Hz, 30 m.s <sup>2</sup>	

## Kvs values and differential pressures $\Delta p_{max}$ [MPa] of valves DN 15 - 200 with countoured and V-ported plugs (flow direction below plug) with electro-mechanic actuators

$\Delta p_{max}$  value is the valve max. differential pressure when open - close function is always guaranteed. Differential pressure must not exceed 4,0 MPa for valves PN 40. In regard of service life of seat and plug, it is recommended so that differential pressure would not exceed 1,6 MPa. Otherwise it is suitable to use perforated plug ( $\Delta p$  4,0 MPa) or sealing surfaces of seat and plug with a hard metal overlay ( $\Delta p_{max}$  up to 2,5 MPa).

For further information on actuating, see actuators' catalogue sheets			Actuating (actuating)									Auma	Auma	Auma	Hand wheel
			Marking in valve specification No.									EA...	EA...	EA...	Rxx
			Linear force									5 kN	7.5 kN	10 kN	
DN	H	Ds	1	2	3	4	5	6	7	8	9	$\Delta p_{max}$ packing graphite PTFE	$\Delta p_{max}$ packing graphite PTFE	$\Delta p_{max}$ packing graphite PTFE	$\Delta p_{max}$ packing graphite PTFE
15		3	---	---	---	---	---	---	0.16 <sup>3)</sup>	0.1...0.01 <sup>3)</sup>	0.16...0.01 <sup>3)</sup>	6.3	6.3	6.3	6.3
		6	---	---	---	---	---	0.25 <sup>1)</sup>	---	---	---	6.3	6.3	6.3	6.3
		8	---	---	---	1.0 <sup>1)</sup>	0.63 <sup>1)</sup>	0.4 <sup>1)</sup>	---	---	---	6.3	6.3	6.3	6.3
		12	---	2.5 <sup>1)</sup>	1.6 <sup>1)</sup>	---	---	---	---	---	---	6.3	6.3	6.3	6.3
		15	4.0 <sup>1)</sup>	---	---	---	---	---	---	---	---	6.3	6.3	6.3	6.3
20		3	---	---	---	---	---	---	---	0.16...0.01 <sup>3)</sup>	0.16...0.01 <sup>3)</sup>	6.3	6.3	6.3	6.3
		6	---	---	---	---	---	0.25 <sup>1)</sup>	---	---	---	6.3	6.3	6.3	6.3
		8	---	---	---	1.0 <sup>1)</sup>	0.63 <sup>1)</sup>	0.4 <sup>1)</sup>	---	---	---	6.3	6.3	6.3	6.3
		12	---	2.5 <sup>1)</sup>	1.6 <sup>1)</sup>	---	---	---	---	---	---	6.3	6.3	6.3	6.3
		15	4.0 <sup>1)</sup>	---	---	---	---	---	---	---	---	6.3	6.3	6.3	6.3
		20	6.3 <sup>1)</sup>	---	---	---	---	---	---	---	---	6.3	6.3	6.3	6.3
25	16	3	---	---	---	---	---	---	---	0.16...0.01 <sup>3)</sup>	0.16...0.01 <sup>3)</sup>	6.3	6.3	6.3	6.3
		6	---	---	---	---	---	0.25 <sup>1)</sup>	---	---	---	6.3	6.3	6.3	6.3
		8	---	---	---	1.0 <sup>1)</sup>	0.63 <sup>1)</sup>	0.4 <sup>1)</sup>	---	---	---	6.3	6.3	6.3	6.3
		12	---	2.5 <sup>1)</sup>	1.6 <sup>1)</sup>	---	---	---	---	---	---	6.3	6.3	6.3	6.3
		15	4.0 <sup>1)</sup>	---	---	---	---	---	---	---	---	6.3	6.3	6.3	6.3
		20	6.3 <sup>1)</sup>	---	---	---	---	---	---	---	5.56	6.3	6.3	6.3	6.3
32		3	10.0	6.3 <sup>4)</sup>	4.0 <sup>4)</sup>	---	---	---	---	---	---	3.36	6.3	6.3	6.3
		6	---	---	---	---	---	---	---	0.25 <sup>1)</sup>	0.25 <sup>1)</sup>	6.3	6.3	6.3	6.3
		8	---	---	---	---	1.0 <sup>1)</sup>	0.63 <sup>1)</sup>	0.4 <sup>1)</sup>	---	---	6.3	6.3	6.3	6.3
		12	---	2.5 <sup>1)</sup>	1.6 <sup>1)</sup>	---	---	---	---	---	---	6.3	6.3	6.3	6.3
		15	4.0 <sup>1)</sup>	---	---	---	---	---	---	---	---	6.3	6.3	6.3	6.3
		20	6.3 <sup>2)</sup>	---	---	---	---	---	---	---	---	6.3	6.3	6.3	6.3
40		32	16	10	6.3 <sup>4)</sup>	---	---	---	---	---	4.31	4.31	4.72	6.3	6.3
		6	---	---	---	---	---	---	---	0.25 <sup>1)</sup>	0.25 <sup>1)</sup>	6.3	6.3	6.3	6.3
		8	---	---	---	---	1.0 <sup>1)</sup>	0.63 <sup>1)</sup>	0.4 <sup>1)</sup>	---	---	6.3	6.3	6.3	6.3
		12	---	2.5 <sup>1)</sup>	1.6 <sup>1)</sup>	---	---	---	---	---	---	6.3	6.3	6.3	6.3
		15	4.0 <sup>2)</sup>	---	---	---	---	---	---	---	---	6.3	6.3	6.3	6.3
		20	6.3 <sup>2)</sup>	---	---	---	---	---	---	---	5.56	6.3	6.3	6.3	6.3
		40	25	16	10	6.3 <sup>4)</sup>	4.0 <sup>4)</sup>	---	---	---	1.2	2.71	2.98	4.49	4.75

the table continues on the next page

<sup>1)</sup> shaped plug

<sup>2)</sup> shaped plug for linear, equal-percentage, parabolic and LDMspline® characteristic

<sup>3)</sup> valve with micro-throttling trim. Execution with Kvs = 0,16; 0,1; 0,063; 0,04; 0,025; 0,016; 0,01

<sup>4)</sup> v-ported plug with linear characteristic only

Max. differential pressures specified in table apply to PTFE and graphite packing.

$\Delta p_{max}$  for bellows must be consulted with the producer.

For further information on actuating, see actuators' catalogue sheets			Actuating (actuating)					Auma	Auma	Auma	Auma	Auma	Auma	Hand wheel							
			Marking in valve specification No.					EA...	EA...	EA...	EA...	EA...	EA...	Rxx							
*) max. DN 300			Linear force																		
			Kvs [m³/h]					Δp <sub>max</sub> packing	Δp <sub>max</sub> graphite PTFE												
DN	H	Ds	1	2	3	4	5														
50	20	50	40	25	16	10	6.3 <sup>4)</sup>	0.68	1.58	1.74	2.65	2.8	3.71	4.93	5.89	---	---	---	---	2.8	3.71
65		65	63	40	25	16	10	0.37	0.93	1.02	1.58	1.67	2.23	3.53	2.97	---	---	---	---	1.67	2.23
80		80	100	63	40	25	16	---	---	0.45	0.9	0.9	1.35	1.8	2.25	2.70	3.15	---	---	1.98	2.43
100		100	160	100	63	40	25	---	---	0.27	0.56	0.56	0.85	1.14	1.43	1.73	2.02	---	---	1.26	1.55
125		125	250	160	100	63	40	---	---	0.15	0.34	0.34	0.53	0.72	0.91	1.10	1.29	---	---	0.8	0.99
150		150	360	250	160	100	63	---	---	0.1	0.23	0.23	0.36	0.49	0.63	0.76	0.89	---	---	0.55	0.68
200	80	100	---	---	250	160	100	---	---	---	---	---	---	1.02	1.36	1.61	1.95	3.03	3.37	3.98	4.32
		150	---	400	---	---	---	---	---	---	---	---	---	0.43	0.59	0.7	0.85	1.34	1.49	1.77	1.92
		200	570	---	---	---	---	---	---	---	---	---	---	0.23	0.32	0.38	0.47	0.75	0.83	0.99	1.08
250	80	150	---	---	400	250	160	---	---	---	---	---	---	0.34	0.51	0.61	0.78	1.26	1.43	1.69	1.86
		200	---	630	---	---	---	---	---	---	---	---	---	0.17	0.27	0.33	0.43	0.69	0.79	0.94	1.04
		230	800	---	---	---	---	---	---	---	---	---	---	0.13	0.20	0.24	0.32	0.52	0.60	0.71	0.78
300	80	150	---	---	400	250	160	---	---	---	---	---	---	0.34	0.51	0.61	0.78	1.26	1.43	1.69	1.86
		200	---	---	630	---	---	---	---	---	---	---	---	0.17	0.27	0.33	0.43	0.69	0.79	0.94	1.04
		230	---	800	---	---	---	---	---	---	---	---	---	0.13	0.20	0.24	0.32	0.52	0.60	0.71	0.78
		250	1000	---	---	---	---	---	---	---	---	---	---	0.10	0.17	0.20	0.26	0.44	0.50	0.59	0.66
400	100	150	---	---	400	250	160	---	---	---	---	---	---	0.34	0.51	0.61	0.78	1.26	1.43	1.69	1.86
		200	---	---	630	---	---	---	---	---	---	---	---	0.17	0.27	0.33	0.43	0.69	0.79	0.94	1.04
		250	---	1000	---	---	---	---	---	---	---	---	---	0.10	0.17	0.20	0.26	0.44	0.50	0.59	0.66
		330	1600	---	---	---	---	---	---	---	---	---	---	0.05	0.09	0.11	0.14	0.24	0.28	0.33	0.37

<sup>1)</sup> shaped plug<sup>2)</sup> shaped plug for linear, equal-percentage, parabolic and LDM spline® characteristic<sup>3)</sup> valve with micro-throttling trim. Execution with Kvs = 0,16; 0,1; 0,063; 0,04; 0,025; 0,016; 0,01<sup>4)</sup> v-ported plug with linear characteristic only

Max. differential pressures specified in table apply to PTFE and graphite packing.

Δp<sub>max</sub> for bellows must be consulted with the producer.

## Kvs values and differential pressures $\Delta p_{max}$ [MPa] of valves DN 25 - 400 with perforated plugs (flow direction above plug) with electromechanic actuators

$\Delta p_{max}$  value is the valve max. differential pressure when open - close function is always guaranteed. Differential pressure must not exceed 4,0 MPa. In regard of service life of seat and plug, it is recommended so that differential pressure would not exceed 1.6 MPa. Otherwise it is suitable to use perforated plug ( $\Delta p$  4,0 MPa)

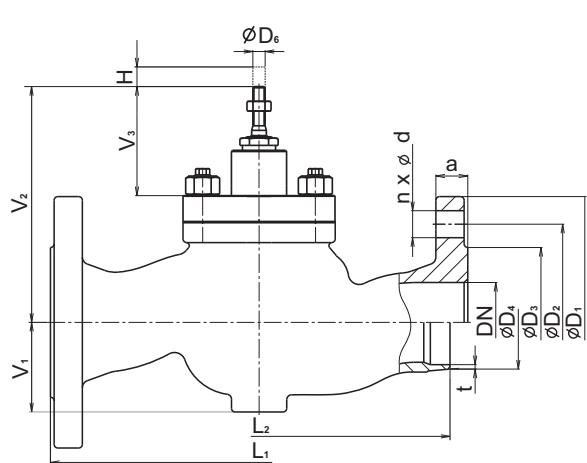
For further information on actuating, see actuators' catalogue sheets			Actuating (actuator)		Auma	Auma	Auma	Auma	Auma	Auma	Hand wheel		
			Marking in valve specification No.		EA...	EA...	EA...	EA...	EA...	EA...	Rxx		
			Linear force		5 kN	7.5 kN	10 kN	15 kN	20 kN	32 kN			
			Kvs [m³/h]		$\Delta p_{max}$ packing								
DN	H	Ds	1	2	3	4	5	graphite PTFE	graphite PTFE	graphite PTFE	graphite PTFE		
25	16	25	---	6.3	4.0	2.5 <sup>5)</sup>	1.6 <sup>5)</sup>	3.36 6.3	6.3 6.3	6.3 6.3	---	6.3 6.3	
32		32	---	10	6.3	4.0	2.5 <sup>5)</sup>	1.95 4.31	4.72 6.3	6.3 6.3	---	6.3 6.3	
40		40	---	16	10	---	---	1.2 2.71	2.98 4.49	4.75 6.26	---	4.75 6.26	
50	20	50	---	25	16	---	---	0.68 1.58	1.74 2.65	2.8 3.71	4.93 5.89	---	2.8 3.71
65		65	---	40	25	---	---	0.37 0.93	1.02 1.58	1.67 2.23	3.53 2.97	---	1.67 2.23
80	40	80	---	63	40	---	---	0.45 0.9	0.9 1.35	1.8 2.25	2.70 3.15	---	1.98 2.43
100		100	---	100	63	---	---	0.27 0.56	0.56 0.85	1.14 1.43	1.73 2.02	---	1.26 1.55
125		125	---	160	100	---	---	0.15 0.34	0.34 0.53	0.72 0.91	1.10 1.29	---	0.8 0.99
150		150	---	250	160	---	---	0.1 0.23	0.23 0.36	0.49 0.63	0.76 0.89	---	0.55 0.68
200	80	200	---	400	250	160	100	---	---	0.23 0.32	0.38 0.47	0.75 0.83	0.99 1.08
250		230	---	630	400	250	160	---	---	0.13 0.20	0.24 0.32	0.52 0.60	0.71 0.78
300		250	---	800	630	400	250	---	---	0.10 0.17	0.20 0.26	0.44 0.50	0.59 0.66
400	100	330	---	1000	630	400	250	---	---	0.05 0.09	0.11 0.14	0.24 0.28	0.33 0.37

<sup>5)</sup> linear characteristic only

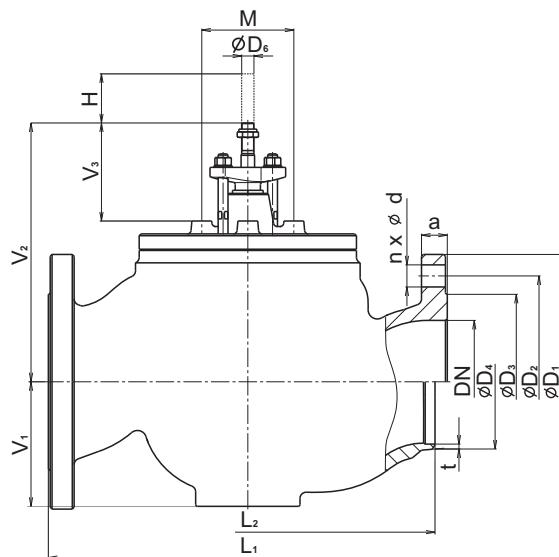
## Dimensions and weights of valves RV / UV 3x0 (Ex) with flanged and welded connection, DN 15 - 400

DN	PN 10-16							PN 25-40							PN 63						
	L <sub>1</sub>	ØD <sub>1</sub>	ØD <sub>2</sub>	ØD <sub>3</sub>	a	d	n	L <sub>1</sub>	ØD <sub>1</sub>	ØD <sub>2</sub>	ØD <sub>3</sub>	a	d	n	L <sub>1</sub>	ØD <sub>1</sub>	ØD <sub>2</sub>	ØD <sub>3</sub>	a	d	n
<b>15</b>	130	95	65	45	16	14	4	130	95	65	45	16	14	4	210	105	75	45	20	14	4
<b>20</b>	150	105	75	58	18	14		150	105	75	58	18	14		230	130	90	58	22	18	
<b>25</b>	160	115	85	68	18	14		160	115	85	68	18	14		230	140	100	68	24	18	
<b>32</b>	180	140	100	78	18	18		180	140	100	78	18	18		260	155	110	78	24	22	
<b>40</b>	200	150	110	88	18	18	8	200	150	110	88	18	18	8	260	170	125	88	26	22	8
<b>50</b>	230	165	125	102	20	18		230	165	125	102	20	18		300	180	135	102	26	22	
<b>65</b>	290	185	145	122	22	18		290	185	145	122	22	18		340	205	160	122	26	22	
<b>80</b>	310	200	160	138	24	18		310	200	160	138	24	18		380	215	170	138	28	22	
<b>100</b>	350	220	180	162	24	18	8	350	235	190	162	24	22	8	430	250	200	162	30	26	8
<b>125</b>	400	250	210	188	26	18		400	270	220	188	26	26		500	295	240	188	34	30	
<b>150</b>	480	285	240	212	28	22		480	300	250	218	28	26		550	345	280	218	36	33	
<b>200</b>	---	---	---	---	---	---		---	---	---	---	---	---		650	415	345	285	42	36	
<b>250</b>	---	---	---	---	---	---	---	---	---	---	---	---	---	775	470	400	345	46	36	12	
<b>300</b>	---	---	---	---	---	---		---	---	---	---	---		900	530	460	410	52	36		
<b>400</b>	---	---	---	---	---	---		---	---	---	---	---		1150	670	585	535	60	42		

DN	H	V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	M	ØD <sub>6</sub>	PN 10-63											
							L <sub>2</sub>	ØD <sub>4</sub>	m <sub>1</sub>	m <sub>2</sub>	m <sub>3</sub>							
<b>15</b>	16	47	152	89	M10x1	203	203	22	5.5	7	4.5	M10x1.5	337	91	36	36	24	
<b>20</b>		47	152				206	28	6.5	8.5	4.5			394	117	49	54	38
<b>25</b>		52	162				210	35	8	10.5	5			500	144	82	92	70
<b>32</b>		52	162				260	44	9.5	12.5	6.5			508	172	100	140	105
<b>40</b>		52	162				251	50	11	15	7.5			610	223	---	260	210
<b>50</b>		73	193				286	62	20	20	12			752	278	---	485	370
<b>65</b>	40	73	193	107	M16x1.5	311	77	25	25	25	15			819	329	---	665	520
<b>80</b>		105	245				337	91	36	36	24			1108	413	---	1305	1130
<b>100</b>		105	245				394	117	49	54	38							
<b>125</b>		133	264				500	144	82	92	70							
<b>150</b>		134	281				508	172	100	140	105							
<b>200</b>	80	203	422	160	M20x1.5	610	223	---	260	210	M20x1.5	819	329	---	665	520	16	
<b>250</b>		253	506				752	278	---	485	370							
<b>300</b>		296	555				819	329	---	665	520							
<b>400</b>	100	382	672				1108	413	---	1305	1130							



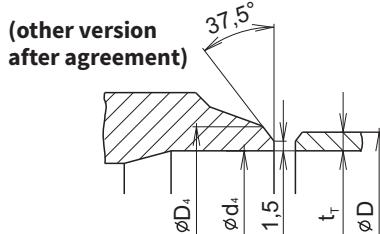
DN 15 - 150



DN 200 - 400

**Dimensions of weld ends for pipes  
ISO 4200 line 1**

DN	$\varnothing D_4$	$\varnothing D$	$t_r$			$\varnothing D_{4\max}$	$\varnothing d_{4\min}$	
<b>15</b>	22	21.3	2.0	2.6	3.2	3.6	25	14
<b>20</b>	28	26.9	2.0	2.6	3.2	3.6	32	18
<b>25</b>	35	33.7	2.3	2.6	3.2	3.6	39	23
<b>32</b>	44	42.4	2.6	2.9	3.6	4.0	48	28
<b>40</b>	50	48.3	2.6	2.9	3.6	4.0	54	37
<b>50</b>	62	60.3	2.9	3.2	4.0	4.5	66	48
<b>65</b>	77	76.1	2.9	3.2	3.6	5.0	82	62
<b>80</b>	91	88.9	3.2	3.6	4.0	5.6	96	74
<b>100</b>	117	114.3	3.6	4.0	5.0	6.3	122	98
<b>125</b>	144	139.7	4.5	5.0	6.3	7.1	154	118
<b>150</b>	172	168.3	4.5	5.0	7.1	8.0	177	144
<b>200</b>	223	219.1	6.3	8.0	8.8	10.0	235	193
<b>250</b>	278	273.0	7.1	8.0	10.0	14.2	278	229
<b>300</b>	329	323.9	8.0	10.0	12.5	17.5	329	281
<b>400</b>	413	406.4	11.0	12.5	14.2	20.0	426	345





# RV 3x2 SP

Pressure balanced  
control valves  
in seismic version

**DN 25 to 200**  
**PN 40 to 63**

## Technical data

Series	RV 322 SP (Ex)	RV 332 SP (Ex)
<b>Type of valve</b> Two-way, single-seated, control valve with pressure balanced plug		
<b>Nominal size range</b>	DN 25 to 400	
<b>Nominal pressure</b>	PN 63 (PN 16 to 63 weld ends version)	
<b>Body material</b>	Cast steel 1.0619 (GP240GH) 1.7357 (G17CrMo5-5)	Stainless steel 1.4581(GX5CrNiMoNb19-11-2)
<b>Seat material:</b> DN 15 - 50	1.4028 / 17 023.6	1.4571 / 17 348.4
<b>DIN W.Nr./+ČSN</b> DN 65 - 400	1.4027 / 42 2906.5	1.4571 / 17 348.4
<b>Plug material:</b> DN 15 - 65	1.4028 / 17 023.6	1.4581 / 42 2941.4
<b>DIN W.Nr./+ČSN</b> DN 80 - 150	1.4021 / 17 027.6	1.4581 / 42 2941.4
DN 200 - 400	1.4021 / 17 022.6	1.4581 / 42 2941.4
<b>Operating temperature range</b>	-10 to 550 °C	
<b>Face to face dimensions</b>	Section 1 for flanged version PN 16 to 40 acc. to ČSN EN 558 (9/2022), Section 2 for flanged version PN 63 acc. to ČSN EN 558 (9/2022), Section 73 for weld ends version acc. to ČSN EN 12982 (1/2011)	
<b>Connection flanges</b>	Acc. to ČSN EN 1092-1 (12/2019)	
<b>Flange faces</b>	Type B1 (raised-faced) or Type B2 (plain face) or Type F (female), or Type D (groove) acc. to ČSN EN 1092-1 (12/2019)	
<b>Weld ends</b>	Weld ends acc. to ČSN EN 12627-2 (9/2018)	
<b>Type of plug</b>	V-ported, perforated	
<b>Flow characteristic</b>	Linear, equal-percentage, LDMspline, parabolic	
<b>Kvs value</b>	1.6 - 1600 m <sup>3</sup> /h	
<b>Leakage rate</b>	Class III. acc. to ČSN EN 1349 (7/2010) (<0.1% Kvs) for control valves with metal-metal seat sealing Class IV. acc. to ČSN EN 1349 (7/2010) (<0.01% Kvs) for control valves with metal - PTFE seat sealing	
<b>Leakage rate for Ex version</b>	RV 3xx class IV. acc. to ČSN EN <1349 (7/2010) (0.01% Kvs)	
<b>Rangeability r</b>	50 : 1	
<b>Packing</b>	DRSpack® (PTFE) t <sub>max</sub> = 260°C, Expanded graphite t <sub>max</sub> = 550°C, Bellows (DN15-150) t <sub>max</sub> = 550°C	
<b>Seismic resistance</b>	až 33 Hz, 30 m.s <sup>2</sup>	

## Kvs values and differential pressures $\Delta p_{max}$ [MPa] of valves DN 25 - 400 with pressure-balanced plug and with electromechanic actuators

$\Delta p_{max}$  value is the valve max. differential pressure when open - close function is always guaranteed. Differential pressure must not exceed 4,0 MPa for valves PN 40. In regard of service life of seat and plug, it is recommended so that differential pressure would not exceed 1,6 MPa. Otherwise it is suitable to use perforated plug ( $\Delta p$  4,0 MPa) or sealing surfaces of seat and plug with a hard metal overlay ( $\Delta p_{max}$  up to 2,5 MPa).

For further information on actuating, see actuators catalogue sheets *) max. DN 300			Actuating (actuator)					Auma	Auma	Auma	Hand wheel	
			Marking in valve specification No.					EA...	EA...	EA...	Rxx	
			Linear force					15 kN	15 kN	16 kN		
Kvs [ $m^3/h$ ]					$\Delta p_{max}$	$\Delta p_{max}$	$\Delta p_{max}$	$\Delta p_{max}$	$\Delta p_{max}$	$\Delta p_{max}$		
DN	H	Ds	1	2	3	4	5	graphite PTFE	graphite PTFE	graphite PTFE	graphite PTFE	
25		25	10	6.3 <sup>5)</sup>	4.0 <sup>5)</sup>	2.5 <sup>5)</sup>	1.6 <sup>5)</sup>	6.3	6.3	---	6.3 6.3	
32	16	32	16	10	6.3 <sup>5)</sup>	4.0 <sup>5)</sup>	2.5 <sup>5)</sup>	6.3	6.3	---	6.3 6.3	
40		40	25	16	10	6.3 <sup>5)</sup>	4.0 <sup>5)</sup>	6.3	6.3	---	6.3 6.3	
50	20	50	40	25	16	10	6.3 <sup>5)</sup>	6.3	6.3	---	6.3 6.3	
65		65	63	40	25	16	10	6.3	6.3	---	6.3 6.3	
80		80	100	63	40	25	16	6.3	6.3	---	6.3 6.3	
100	40	100	160	100	63	40	25	6.3	6.3	---	6.3 6.3	
125		125	250	160	100	63	40	6.3	6.3	---	6.3 6.3	
150		150	360	250	160	100	63	6.3	6.3	---	6.3 6.3	
200		200	570	400	250	160	100	---	6.3	6.3	---	6.3 6.3
250	80	230	800	630	400	250	160	---	6.3	6.3	6.3 6.3	
300		250	1000	800	630	400	250	---	6.3	6.3	6.3 6.3	
400	100	330	1600	1000	630	400	250	---	6.3	6.3	6.3 6.3	

<sup>5)</sup> linear characteristic only

Max. differential pressures specified in table apply to PTFE and graphite packing.

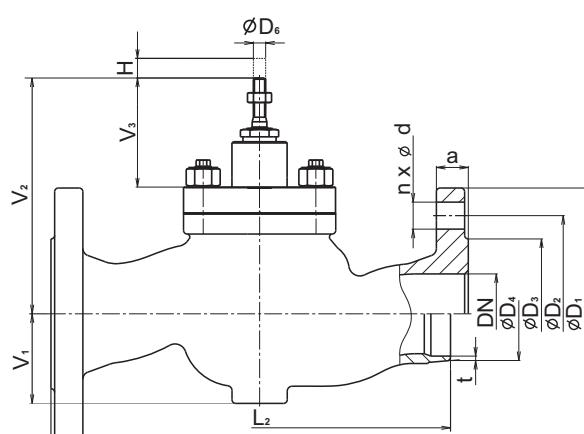
Perforated plug available only with Kvs values in shadowed frames with the following restrictions:

- perforated plug with Kvs value acc. to column No. 2 available with linear or parabolic characteristic only

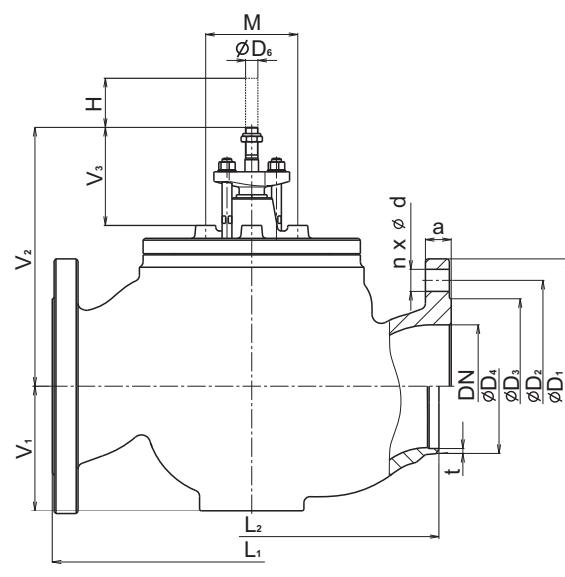
## Dimensions and weights of valves RV 3x2 SP (Ex) with flanged and welded connection, DN 25 - 400

DN	PN 10-16							PN 25-40							PN 63						
	L <sub>1</sub>	ØD <sub>1</sub>	ØD <sub>2</sub>	ØD <sub>3</sub>	a	d	n	L <sub>1</sub>	ØD <sub>1</sub>	ØD <sub>2</sub>	ØD <sub>3</sub>	a	d	n	L <sub>1</sub>	ØD <sub>1</sub>	ØD <sub>2</sub>	ØD <sub>3</sub>	a	d	n
25	160	115	85	68	18	14	4	160	115	85	68	18	14	4	230	140	100	68	24	18	4
32	180	140	100	78	18	18		180	140	100	78	18	18		260	155	110	78	24	22	
40	200	150	110	88	18	18		200	150	110	88	18	18		260	170	125	88	26	22	
50	230	165	125	102	20	18		230	165	125	102	20	18		300	180	135	102	26	22	
65	290	185	145	122	22	18	4 <sup>1)</sup>	290	185	145	122	22	18	8	340	205	160	122	26	22	8
80	310	200	160	138	24	18		310	200	160	138	24	18		380	215	170	138	28	22	
100	350	220	180	162	24	18		350	235	190	162	24	22		430	250	200	162	30	26	
125	400	250	210	188	26	18		400	270	220	188	26	26		500	295	240	188	34	30	
150	480	285	240	212	28	22		480	300	250	218	28	26		550	345	280	218	36	33	
200	---	---	---	---	---	---		---	---	---	---	---	---		650	415	345	285	42	36	
250	---	---	---	---	---	---		---	---	---	---	---	---		775	470	400	345	46	36	
300	---	---	---	---	---	---		---	---	---	---	---	---		900	530	460	410	52	36	
400	---	---	---	---	---	---		---	---	---	---	---	---		1150	670	585	535	60	42	

DN	H	PN 10-63									
		V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	M	ØD <sub>6</sub>	L <sub>2</sub>	ØD <sub>4</sub>	m <sub>1</sub>	m <sub>2</sub>	m <sub>3</sub>
25	16	52	162	89	M10x1	210	35	8.5	11	5.5	12
32		52	162				260	44	10	13	
40		52	162				251	50	11.5	15.5	
50		73	193				286	62	21	21	
65	20	73	193	107	M16x1.5	311	77	26	26	16	16
80		105	245				337	91	38	38	
100		105	245				394	117	51	56	
125		133	264				500	144	84	94	
150	40	134	281	160	M20x1.5	508	172	103	143	108	16
200		203	422				610	223	---	272	
250		253	506				752	278	---	500	
300		296	555				819	329	---	691	
400	100	382	672	150		1108	413	---	1348	1173	16



DN 15 - 150



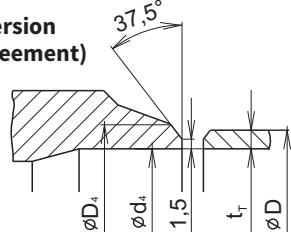
DN 200 - 400

- <sup>1)</sup> - with regard to previously valid standards used possibility of choosing the number of connecting screws, offered by the ČSN EN 1092-1 standard
- m<sub>1</sub>** - weight of flanged connection PN 16 - 40
- m<sub>2</sub>** - weight of flanged connection PN 63
- m<sub>3</sub>** - weight of weld ends connection
- t - wall thickness of weld ends:  $t = [D_4 - (D - 2 * t_t)] / 2$

### Dimensions of weld ends for pipes acc. to ISO 4200 line 1

DN	$\emptyset D_4$	$\emptyset D$	$t_r$			$\emptyset D_{4\ max}$	$\emptyset d_{4\ min}$	
<b>25</b>	35	33.7	2.3	2.6	3.2	3.6	39	23
<b>32</b>	44	42.4	2.6	2.9	3.6	4.0	48	28
<b>40</b>	50	48.3	2.6	2.9	3.6	4.0	54	37
<b>50</b>	62	60.3	2.9	3.2	4.0	4.5	66	48
<b>65</b>	77	76.1	2.9	3.2	3.6	5.0	82	62
<b>80</b>	91	88.9	3.2	3.6	4.0	5.6	96	74
<b>100</b>	117	114.3	3.6	4.0	5.0	6.3	122	98
<b>125</b>	144	139.7	4.5	5.0	6.3	7.1	154	118
<b>150</b>	172	168.3	4.5	5.0	7.1	8.0	177	144
<b>200</b>	223	219.1	6.3	8.0	8.8	10.0	235	193
<b>250</b>	278	273.0	7.1	8.0	10.0	14.2	278	229
<b>300</b>	329	323.9	8.0	10.0	12.5	17.5	329	281
<b>400</b>	413	406.4	11.0	12.5	14.2	20.0	426	345

(other version  
after agreement)



**Valve complete specification No. for ordering RV/UV 3x0 (Ex), RV 3x2 (Ex)**

		XX	XXX	XXX	XXXX	X	XX	/	XXX	-	XXX	XXXX
<b>1. Valve</b>	Control valve	RV										
	Shut-off valve	UV										
<b>2. Series</b>	Valves made of steel		3 2									
	Valves made of stainless steel		3 3									
	Straight-throgh		0									
	Straight-throgh with pressure balanced plug		2									
<b>3. Actuating</b>	Electric actuator			EXX								
	Hand wheel			RXX								
<b>4. Connecting</b>	Raised flange (type B1)				1							
	Femeale flange (type F)				2							
	Flange with groove (type D)				3							
	Plain flange (type B2)				4							
	Weld ends				5							
<b>5. Body material</b>	Cast steel 1.0619 (-10 to 450 °C)				1							
	CrMo steel 1.7357 (-10 to 550 °C)				7							
	Stainless steel 1.4581 (-10 to 500 °C)				8							
	Other material on request											
<b>6. Seat sealing</b>	Metal - metal				1							
	<sup>2)</sup> DN 25 - 400 ; t <sub>max</sub> = 260°C				2							
	<sup>3)</sup> DN 80 - 400				3							
	<sup>4)</sup> DN 40 - 400				5							
	Balanced by graphite, metal-metal <sup>3)</sup>				7							
	Balanced by graphit, hard metal overlay <sup>4)</sup>				8							
<b>7. Packing</b>	DRSpack® (PTFE)				3							
	<sup>1)</sup> DN 15 to 150 only				5							
<b>8. Flow characteristic</b>	Linear				L							
	Equal-percentage				R							
	LDMspline®				S							
	On-off				U							
	Parabolic				P							
	Linear - perforated plug				D							
	Equal-percentage - perforated plug				Q							
	Parabolic - perforated plug				Z							
<b>9. Kvs</b>	Column No. acc. to Kvs value table				X							
<b>10. Nominal pressure</b>	PN 16				16							
	PN 25				25							
	PN 40				40							
	PN 63				63							
<b>11. Max. operating temperature °C</b>	DRSpack® (PTFE)				260							
	Expanded graphite				300							
	Expanded graphite				315							
	Expanded graphite				400							
	Expanded graphite				500							
	Expanded graphite				550							
<b>12. Nominal size</b>	DN				XXX							
<b>13. Execution</b>	Normal				SP							
	Non - explosive				SPEx							
	Oxygen				SPOx							

Ordering example of flanged execution:

**RV 320 ENC 1135 L1 63/400-065SP**

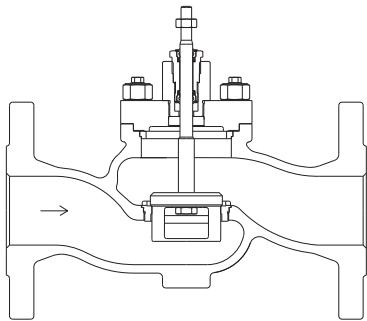
Ordering example of weld ends execution:

**RV 320 ENC 5135 L1 63/400-065SP, weld ends size Ø 77 x 5,5 acc. to ČSN EN 12627-2-DN65 for tube size Ø 76,1 x 5**

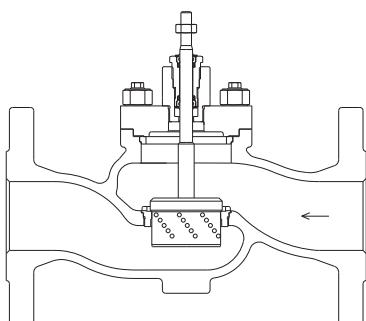
For marking of actuators in specification code, refer to table on page No. 22 of this catalogue

## Ventily RV / UV 3x0 (Ex)

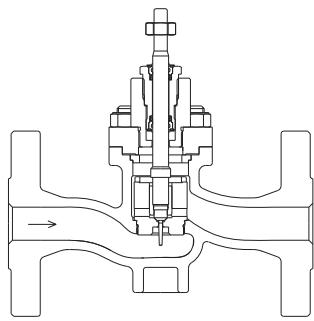
Section of valve with V-ported plug



Section of valve with perforated plug

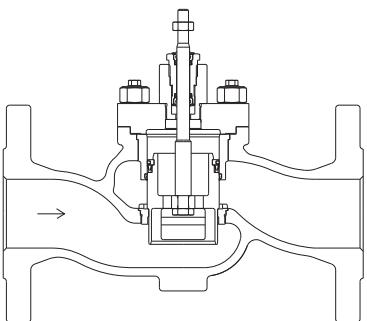


Section of valve with micro-throttling system

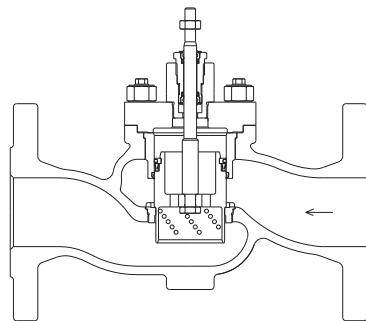


## Valves RV 3x2 (Ex)

Section of pressure-balanced valve with V-ported plug



Section of pressure-balanced valve with perforated plug





Electric actuators

# Auma

**SA 07.2, SA Ex 07.2,  
SAR 07.2, SAR Ex 07.2,  
SA 07.6, SA Ex 07.6,  
SAR 07.6, SAR Ex 07.6**

marking in type number:

**EAA, EAB, EAC, EAD  
EAE, EAF, EAG, EAH**

## Technical data

Type	SA 07.2	SA Ex 07.2	SAR 07.2	SAR Ex 07.2	SA 07.6	SA Ex 07.6	SAR 07.6	SAR Ex 07.6				
Marking in valve spec. No.	EAA	EAB	EAC	EAD	EAE	EAF	EAG	EAH				
<b>Voltage</b>	3-phase ~ 380 or 400 V AC (1-phase ~ 230 V AC cannot be used - high weight)											
<b>Frequency</b>	50 Hz											
<b>Power consumption</b>	see specification table											
<b>Control</b>	3 - point or with signal 4 - 20 mA											
<b>Nominal force</b>	10 Nm~5 kN; 15 Nm~7,5 kN; 20 Nm~10 kN				30 Nm~15 kN; 40 Nm~20 kN							
<b>Travel</b>	acc. to used valve 16, 20, 40 mm				acc. to used valve 40, 80 mm							
<b>Enclosure</b>	IP 68											
<b>Process medium max. temp.</b>	acc. to used valve											
<b>Ambient temperature range</b>	-40 to 80°C	-20 to 60°C	-40 to 60°C	-20 to 60°C	-40 to 80°C	-20 to 60°C	-40 to 60°C	-20 to 60°C				
<b>Ambient humidity range</b>	100 %											
<b>Weight</b> - one phase	25 - 62 kg				25 - 62 kg							
- three phase	20 - 33 kg				21 - 33 kg							
<b>Vibration resistance</b> dle EN 60068-2-6	AUMA NORM: 2g, 10-200Hz AUMA MATIC: 1g, 10-200Hz AUMATIC: 1g, 10-200Hz											

→ **Note:** Specifications and technical data are for information only.

Detailed technical informations can be found in producer's data sheet or on the website [www.auma.com](http://www.auma.com)

## Specification of Auma actuators

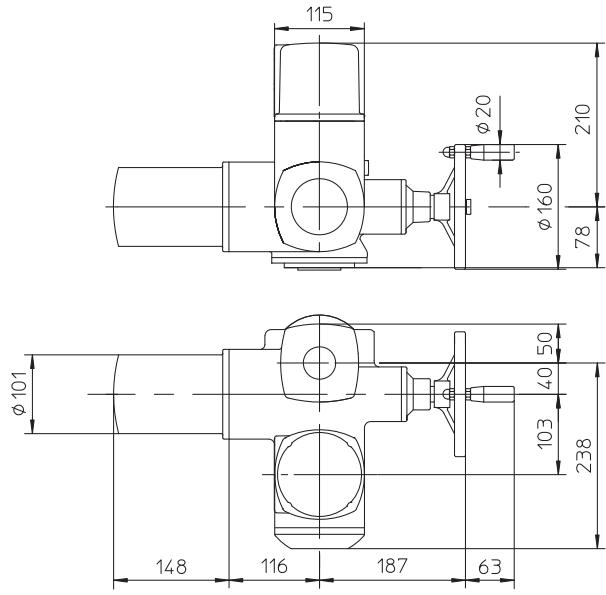
Type				<b>SA</b>	<b>X</b>	<b>XX</b>	<b>07.X</b>
Duty	control ON - OFF			<b>SA</b>			
Version	standard non-explosive					<b>R</b>	
Actuator size							<b>07.2</b> <b>07.6</b>
<b>Output shaft type A</b> (thread TR 16x4 LH, connection flange F07) ... for RV 3xx DN 15 to 150							
Output speed [°/min]	Tripping torque	SA 07.2	SAR 07.2	SA 07.2 S2-15min	SA Ex 07.2 S2-15min	SAR 07.2 S4-25%	SAR Ex 07.2 S4-25%
		SA Ex 07.2	SAREx 07.2	0,02	0,02	0,02	0,02
		4	10-30 Nm	0,02	0,02	0,02	0,02
		5,6	15-30 Nm	0,04	0,04	0,04	0,04
		8		0,04	0,04	0,04	0,04
		11		0,06	0,06	0,06	0,06
		16		0,06	0,06	0,06	0,06
		22		0,10	0,10	0,10	0,10
		32		0,10	0,10	0,10	0,10
45		0,10	0,10	0,10	0,10		
<b>Output shaft type A</b> (thread TR 20x4 LH, flange F10) ... for RV 3xx DN 80 to 400							
Output speed [°/min]	Tripping torque	SA 07.6	SAR 07.6	SA 07.6 S2-15min	SA Ex 07.6 S2-15min	SAR 07.6 S4-25%	SAR Ex 07.6 S4-25%
		SA Ex 07.6	SAREx 07.6	0,03	0,03	0,03	0,03
		4	20-60 Nm	0,03	0,03	0,03	0,03
		5,6	30-60 Nm	0,06	0,06	0,06	0,06
		8		0,06	0,06	0,06	0,06
		11		0,12	0,12	0,12	0,12
		16		0,12	0,12	0,12	0,12
		22		0,20	0,20	0,20	0,20
		32		0,20	0,20	0,20	0,20
45		0,20	0,20	0,20	0,20		

## Accessories

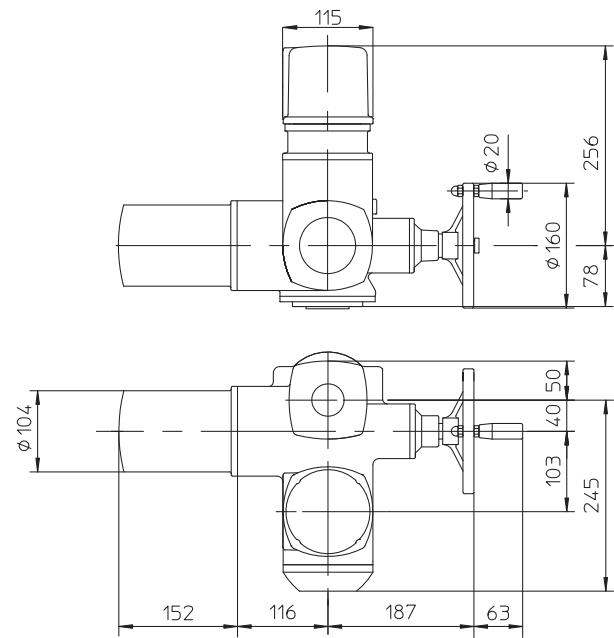
- 2 TANDEM switches
  - Gearing for signalisation of position
  - Mechanical position indicator
  - Potentiometer 1x200 Ω
  - Electronic position transmitter RWG (potentiometer included), 4 - 20 mA, 2-wire
  - Electronic position transmitter RWG (potentiometer included), 4 - 20 mA, 3/4-wire
  - Inductive position transmitter IWG, 4 - 20 mA
  - MATIC - or continuous control (specification of accessories acc. to catalogue of producer: IP 67; -25 to +70°C; ...), weight + 7 kg
  - AUMATIC - or continuous control (specification of accessories acc. to catalogue of producer: IP 68; -25 to +70°C; ...), weight + 7kg
- Other accessories acc. to catalogue of producer of actuators.

## Dimensions of actuators Auma series 07.2 and 07.6

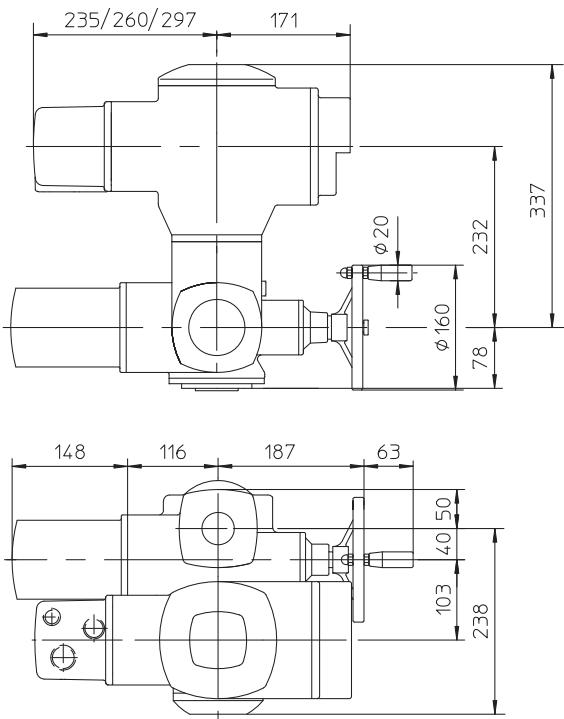
**Normal version**



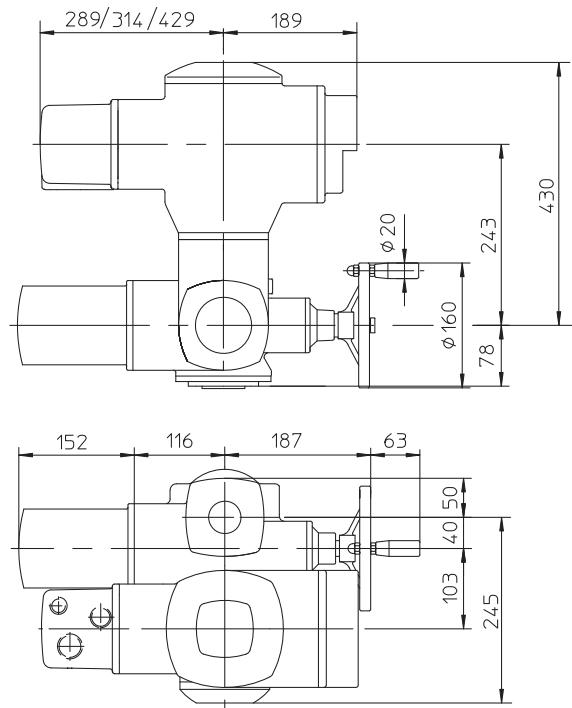
**Version Ex norm**

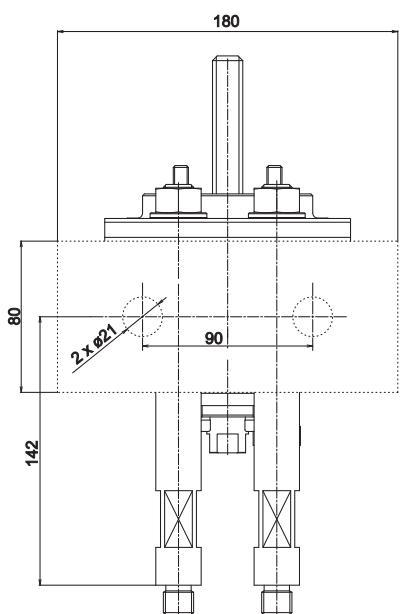
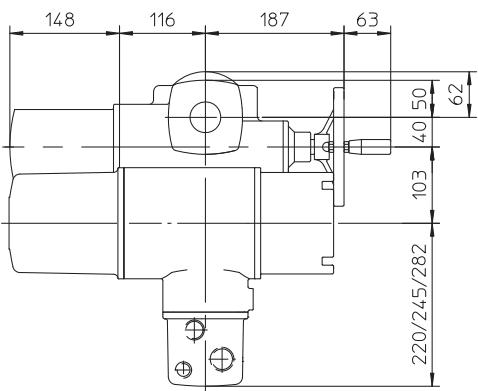
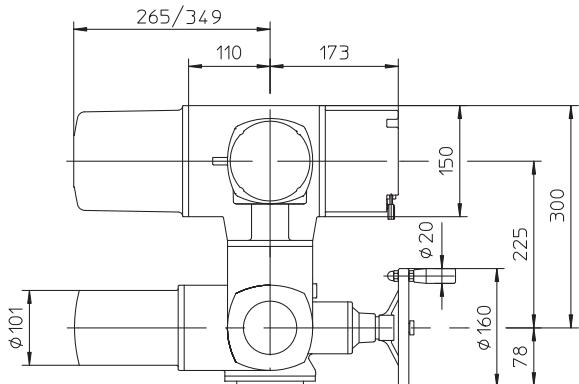
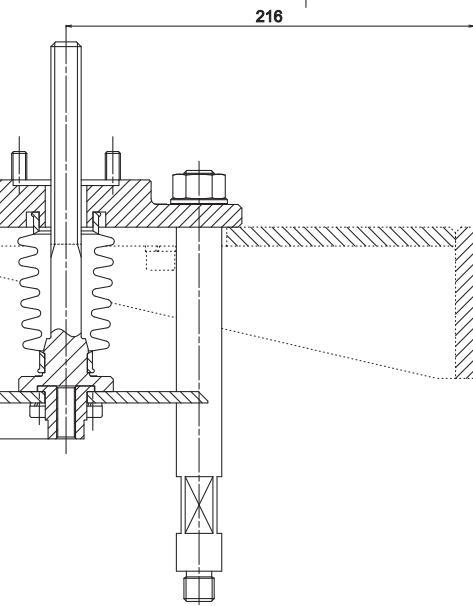
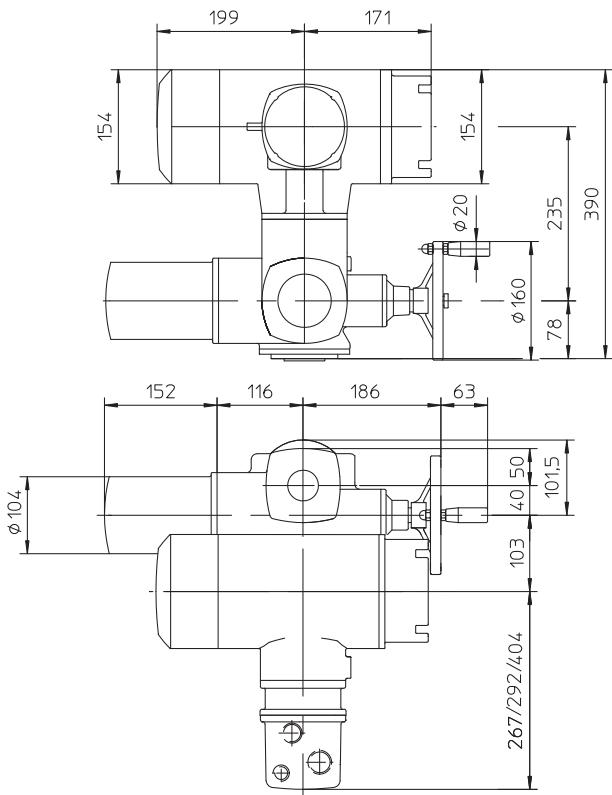
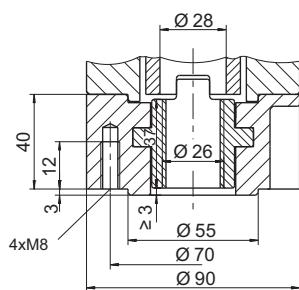


**Version MATIC**



**Version Ex MATIC**



**Version with AUMATIC****Version Ex AUMATIC****Output drive shaft A, F07**

..... console required for DN15-32, all versions AUMA SAR 07.2 max. 33kg  
 (Norm, Matic, Aumatic, Ex), with exception DN 20-25 AUMA SAR 07.2 Norm max. 24,3kg,  
 DN 32 AUMA SAR 07.2 Norm, Matic, Aumatic max. 31kg (mimo Ex).

<b>For valves</b>	<b>Number of columns</b>	<b>A</b>	<b>B</b>	<b>Weight</b>
RV 3xx DN 15 to 65	4	70	207	~ 6 kg + ~ (6 kg console)
RV 3xx DN 80 to 150	4	80	245	~ 8 kg
RV 3xx DN 200 to 400	4	140	420	~ 15 kg



Electric actuators

# Auma

**SA 10.2, SA Ex 10.2  
SAR 10.2, SAR Ex 10.2**

marking in type number:  
**EAI, EAJ, EAK, EAL**

## Technical data

Type	SA 10.2	SA Ex 10.2	SAR 10.2	SAR Ex 10.2
Marking in valve spec. No.	EAI	EAL	EAJ	EAK
Voltage	3-phase ~ 380 or 400 V AC (1-phase ~ 230 V AC not applicable - high weight)			
Frequency	50 Hz			
Power consumption	see specification table			
Control	3 - point or with signal 4 - 20 mA			
Nominal force	80 Nm ~ 21,6 kN; 100 Nm ~ 27 kN; 120 Nm ~ 32 kN			
Travel	80, 100 mm			
Enclosure	IP 68			
Process medium max. temp.	acc. to used valve			
Ambient temperature range	-40 to 80 °C	-20 to 60 °C	-40 to 60 °C	-20 to 60 °C
Ambient humidity range	100 %			
Weight	22 to 47 kg			
Vibration resistance acc. to EN 60068-2-6	AUMA NORM: 2g, 10-200Hz; AUMA MATIC: 1g, 10-200Hz; AUMATIC: 1g, 10-200Hz			

→ **Note:** Specifications and technical data are for information only.

Detailed technical informations can be found in producer's data sheet or on the website [www.auma.com](http://www.auma.com)

## Specification of Auma actuators

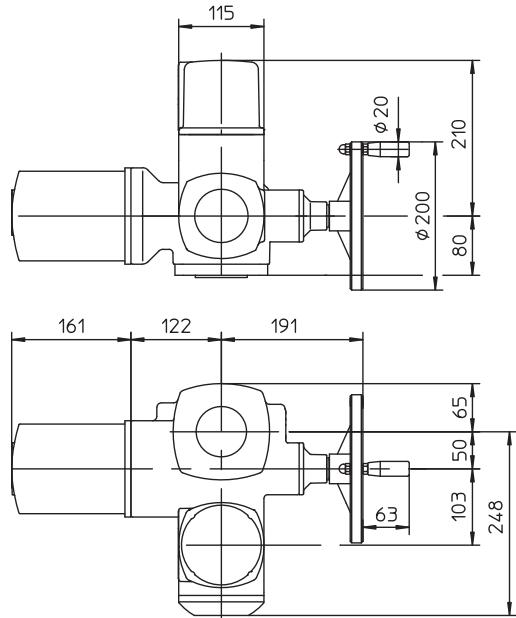
Type	SA	X	XX	10.2		
Duty	SA					
Version	R					
Actuator size						
Output drive shaft type A (thread TR 36x6 LH, flange F10) ... for RV 3xx DN 200 - 400						
Output speed [ot/min]	SA 10.2 SAEx 10.2	SAR 10.2 SAR Ex 10.2	SA 10.2 S2-15min	SA Ex 10.2 S2-15min	SAR 10.2 S4-25%	SAR Ex 10.2 S4-25%
4			0,06	0,09	0,09	0,09
5,6			0,06	0,09	0,09	0,09
8			0,12	0,18	0,18	0,18
11			0,12	0,18	0,18	0,18
16			0,25	0,37	0,37	0,37
22			0,25	0,37	0,37	0,37
32			0,40	0,75	0,75	0,75
45			0,40	0,75	0,75	0,75
	Tripping torque	Motor power [kW]				
	40-120 Nm	60-120 Nm				

## Accessories

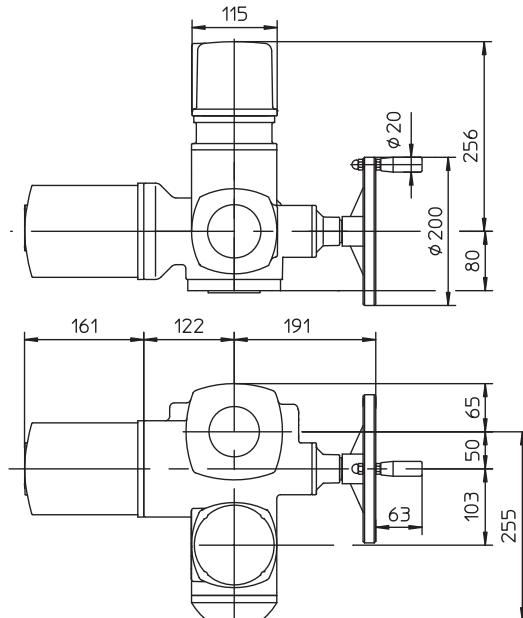
- 2 TANDEM switches
- Electronic position transmitter RWG (potentiometer included), 4 - 20 mA, 2-wire
- Gearing for signalisation of position
- Electronic position transmitter RWG (potentiometer included), 4 - 20 mA, 3/4-wire
- Mechanical position indicator
- Inductive position transmitter IWG, 4 - 20 mA
- Potentiometer 1x200 Ω
- MATIC - or continuous control (specification of accessories acc. to catalogue of producer: IP 67; -25 to +70°C; ...), weight + 7 kg
- AUMATIC - or continuous control (specification of accessories acc. to catalogue of producer: IP 68; -25 to +70°C; ...), weight + 7kg
- Other accessories acc. to catalogue of producer of actuators.

## Dimensions of actuators Auma series 10

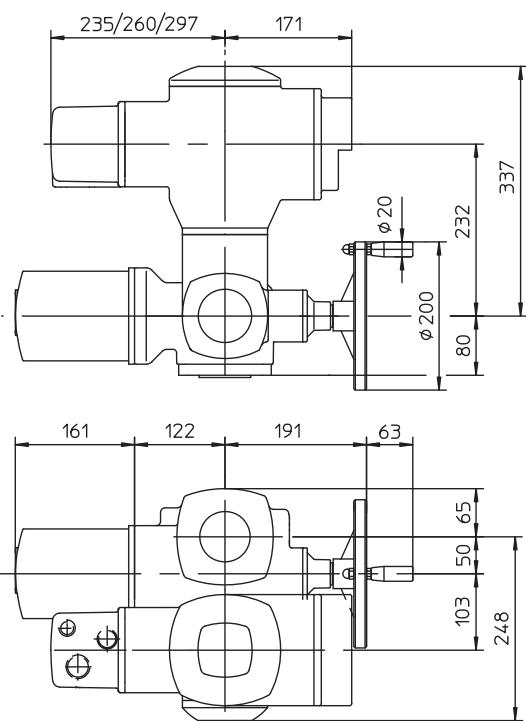
**Normal version**



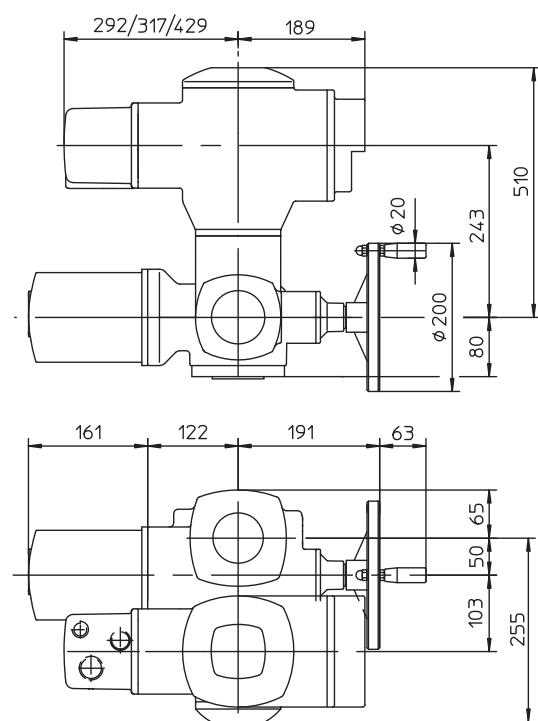
**Ex norm version**



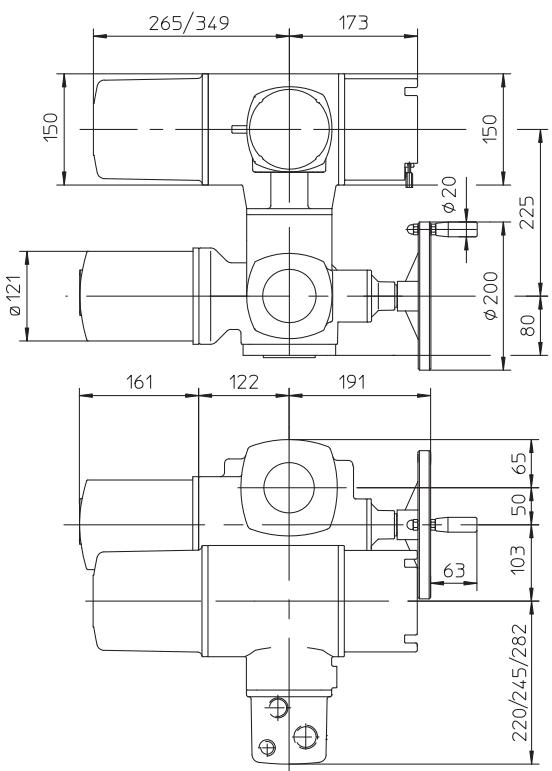
**Version with MATIC**



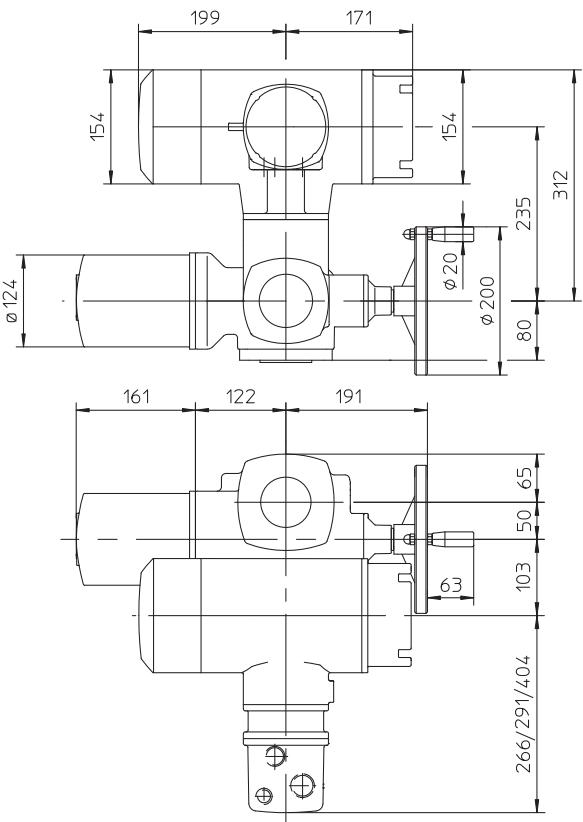
**Version with Ex MATIC**



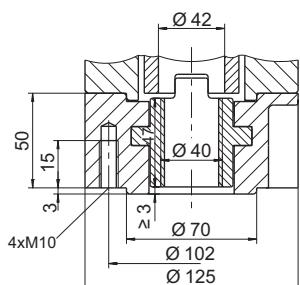
**Version AUMATIC**



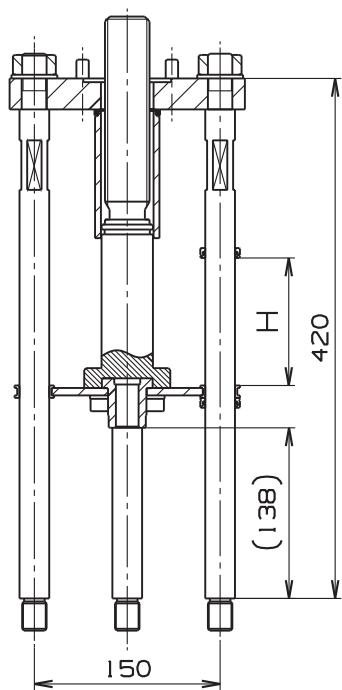
**Version Ex AUMATIC**



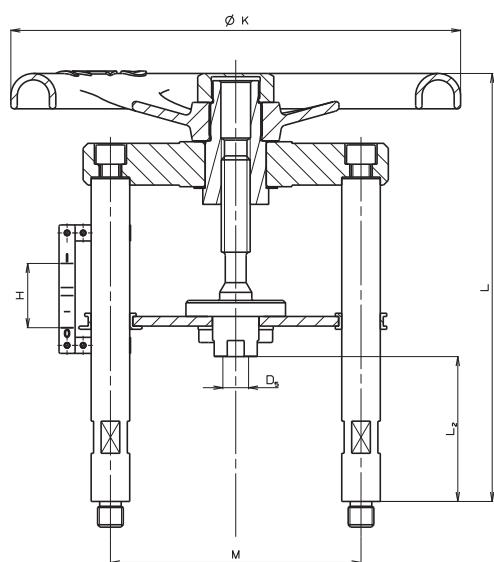
**Output drive shaft A, F10**



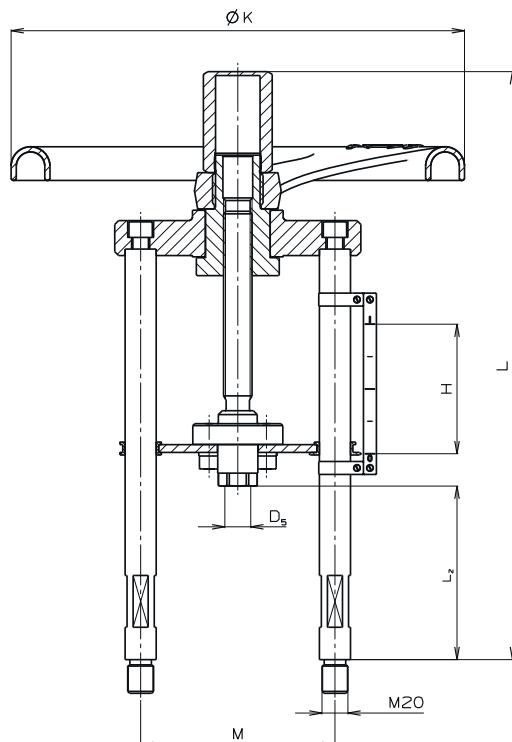
**Control DN 200-400  
Connection A, F10, Tr36x6-LH**



## Hand wheels for RV / UV 3x0 SP and 3x2 SP



Hand wheel DN 15 - 150



Hand wheel DN 200 - 400

Dimensions of manual control										
DN	Marking	H [mm]	L [mm]	L <sub>2</sub> [mm]	ØK [mm]	M [mm]	D <sub>s</sub> [mm]	m [kg]	Ordering no. (BOM number)	
15										
20										
25	R16	16	209	70	160	140	M10x1	7	<b>S900 0256</b>	
32										
40										
50	R20	25	235		195			12	<b>S900 0257</b>	
65										
80	R28		267	90	280	156	M16x1,5	14,5	<b>S900 0258</b>	
100			40							
125			323							
150									<b>S900 0259</b>	
200	R35	80	454	134	350	150	M20x1,5	15	<b>S900 0141</b>	
250										
300										
400		100							<b>S900 0235</b>	

**Maximal permissible operating pressures ČSN EN 12516-1 + A1 (03/2019) [bar]**

<b>Material</b>	<b>PN</b>	<b>Temperature [ °C ]</b>													
		<b>RT<sup>1)</sup></b>	<b>100</b>	<b>150</b>	<b>200</b>	<b>250</b>	<b>300</b>	<b>350</b>	<b>375</b>	<b>400</b>	<b>425</b>	<b>450</b>	<b>475</b>	<b>500</b>	<b>550</b>
<b>Cast steel</b> 1.0619 (GP240GH)	<b>40</b>	40,0	37,4	35,5	33,6	30,7	27,8	25,9	25,0	24,0	20,8	14,7	---	---	---
	<b>63</b>	63,0	59,0	55,9	52,9	48,4	43,8	40,8	39,3	37,8	32,7	23,2	---	---	---
<b>Alloy steel</b> 1.7357 (G17CrMo5-5)	<b>40</b>	40,0	40,0	40,0	40,0	40,0	40,0	37,3	35,9	34,1	32,7	31,5	29,5	25,0	11,7
	<b>63</b>	63,0	63,0	63,0	63,0	63,0	63,0	58,7	56,5	53,8	51,4	49,7	46,5	39,3	18,5
<b>Stainless steel</b> 1.4581 (GX5CrNiMoNb19-11-2)	<b>40</b>	40,0	40,0	38,6	35,8	34,2	32,5	30,8	30,0	29,1	28,6	28,0	27,4	26,3	---
	<b>63</b>	63,0	63,0	60,9	56,4	53,8	51,2	48,5	47,2	45,9	45,0	44,1	43,2	41,5	---

<sup>1)</sup> -10°C to 50°C

**Marking of actuators in type no.**

Electric actuator Auma SA 07.2	<b>EAA</b>	DN 15 - 65
Electric actuator Auma SA Ex 07.2	<b>EAB</b>	DN 15 - 65
Electric actuator Auma SAR 07.2	<b>EAC</b>	DN 15 - 65
Electric actuator Auma SAR Ex 07.2	<b>EAD</b>	DN 15 - 65
Electric actuator Auma SA 07.6	<b>EAE</b>	DN 80 - 150
Electric actuator Auma SA Ex 07.6	<b>EAF</b>	DN 80 - 150
Electric actuator Auma SAR 07.6	<b>EAG</b>	DN 80 - 150
Electric actuator Auma SAR Ex 07.6	<b>EAH</b>	DN 80 - 150
Electric actuator Auma SA 10.2	<b>EAI</b>	DN 200-400
Electric actuator Auma SAR 10.2	<b>EAJ</b>	DN 200-400
Electric actuator Auma SAR Ex 10.2	<b>EAK</b>	DN 200-400
Electric actuator Auma SA Ex 10.2	<b>EAL</b>	DN 200-400
Hand wheel for DN 15 - 40	<b>R16</b>	
Hand wheel for DN 50 - 65	<b>R20</b>	
Hand wheel for DN 80 - 100	<b>R28</b>	
hand wheel for DN 125 - 400	<b>R35</b>	



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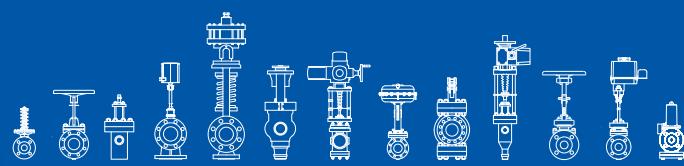
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