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**LDM shut-off valves
with hand wheel**





UV 226 (Ex) UV 236 (Ex)

Shut-off valves DN 15 to 400, PN 16, 25 and 40 with hand wheel

Description

Shut-off valves series UV 2x6 are hand-wheel valves that excel with unique features suitable for a long-time no maintenance service. If bellows is used, it ensures a hermetic tightness to environment and in addition it is added with a safety packing made of graphite. Valves with graphite packing are equipped with back seat. The most advantageous feature is low linear forces when opening or closing the valve which does not change during the life-time. Thanks to a yoke design, the valve can be easily insulated and its hand wheel can be operated even at high temperatures of process medium. The hand wheel is non-rising which enables the valves application in unaccessible places. The visible indicator ensures an easy identification of the valve position. The valves UV 2x6 acc. to ČSN EN 13709 (10/2003). The valves UV 2x6 Ex meet the requirements II 1/2G IIB acc. to ČSN-EN 13 463-1.

Application

The valves are especially designed for applications in warm-water and steam circuits in power plants, heating plants, heatexchange stations, heat transferring stations and common heating applications. Thanks to a great scale of available valve sizes, the valve is suitable for a tight closing (shutting down) of main branches, by-passes, extracting and sampling pipelines. The used materials enable the valves to be installed also in air-conditioning, refrigerating and other special applications.

Process media

The valves UV 2x6 are suitable for shutting off water, water vapour and other liquids and gases which are compatible with used materials of the valve body and internal materials. The valves UV 2x6 (Ex) can be also used for industrial and heating gases and flammable liquids.

To ensure a long-life of a valve seat, the producer 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 valves can be installed in any position, except execution V and B. The valves of execution V and B must be installed only in horizontal position to the vertical axis of the spindle. It is recommended to ensure enough space for hand wheel operating. The flow direction is indicated by the arrows on the valve body. The alternate flow direction through the valve is permissible, except execution V and B.

Detailed informations are given in the instruction for installation and service which is standard part of delivery.

Technical data

Series	UV 226 (Ex)	UV 236 (Ex)
Execution	Shut-off valve, straight-through	
Nominal size range	DN 15 to 400	
Nominal pressure	PN 16, 25 and 40	
Body material	Cast steel 1.0619 (GP240GH)	Stainless steel 1.4581 (GX5CrNiMoNb19-11-12)
Plug material (DIN W.Nr. / ČSN)	1.4021 / 17 022.6	1.4571 / 17 348.4
Operating temperature range ¹⁾	-10 to +400°C	
Connection	Type B1 (raised-faced flange) acc. to ČSN-EN 1092-1 (4/2002) Face to face dimensions comply with ČSN EN 558-1 (3/1997), section 1	
Type of plug	Disc; pressure-balanced plug with pilot system; control	
Flow characteristic	On-Off, linear	
Leakage rate ²⁾	Acc. to ČSN EN 12266-1 (11/2003) - leakage rate class A	
Packing	Bellows with safety graphite packing or graphite packing	

1) The valves can be also used for temperatures from -60°C in the choice of suitable material with the agreement with the manufacturer.

2) The valves are tested with water commonly. In case of demand for air test it must be specified in the valve specification number.

Dimensions and weights for the type UV 2x6 (Ex)

DN	PN 16						PN 25						PN 40											
	D ₁	D ₂	D ₃	d	n	a	D ₁	D ₂	D ₃	d	n	a	D ₁	D ₂	D ₃	d	n	a						
	mm	mm	mm	mm		mm	mm	mm	mm	mm		mm	mm	mm	mm	mm		mm						
15	95	65	45	14	4	16	Same as PN 40						95	65	45	14	4	16						
20	105	75	58			18							18											
25	115	85	68			18							18											
32	140	100	78			18							18											
40	150	110	88	18	4 ¹⁾	20							165	125	102	18	18	165	125	102	18	8	20	
50	165	125	102			22							185	145	122	22	185	145	122					
65	185	145	122	8	8	24							200	160	138	24	200	160	138	26	8	24		
80	200	160	138			24							235	190	162	22	235	190	162			22		
100	220	180	158			26							270	220	188	26	270	220	188			26		
125	250	210	188	22	12	28							300	250	218	28	300	250	218	33	16	28		
150	285	240	212			24							360	310	278	26	360	310	278			26		
200	340	295	268	26	16	26							425	370	335	30	12	30	375	320	285	30	12	34
250	405	355	320			28							485	430	395	30	16	32	450	385	345	33	16	38
300	460	410	378	30	16	28							485	430	395	30	16	34	515	450	410	33	16	42
400	580	525	490			30							16	32	620	550	505	36	16	40	660	585	535	39

DN	PN 16, PN 25, PN 40							
	H	L	V ^{R, S, B)}	V ^{V)}	K	f	m	
	mm	mm	mm	mm	mm	mm	kg	
15	6	130	189	120	2	2	4.3	
20	6	150	189	120			5.1	
25	6	160	189	120			5.8	
32	10	180	220	160			9.5	
40	10	200	220	160	3	3	9.8	
50	16.5	230	295	195			17.5	
65	16.5	290	295	195			20.5	
80	25	310	368	280			34	
100	25	350	368	300	2	2	44	
125	40	400	523	350			77	
150	40	480	523	553			350	113
200	50	600	505	721			350	240
250	75	730	663	945	350	410		
300	75	850	713	994	350	610		
400	100	1100	855	1166	350	1240		

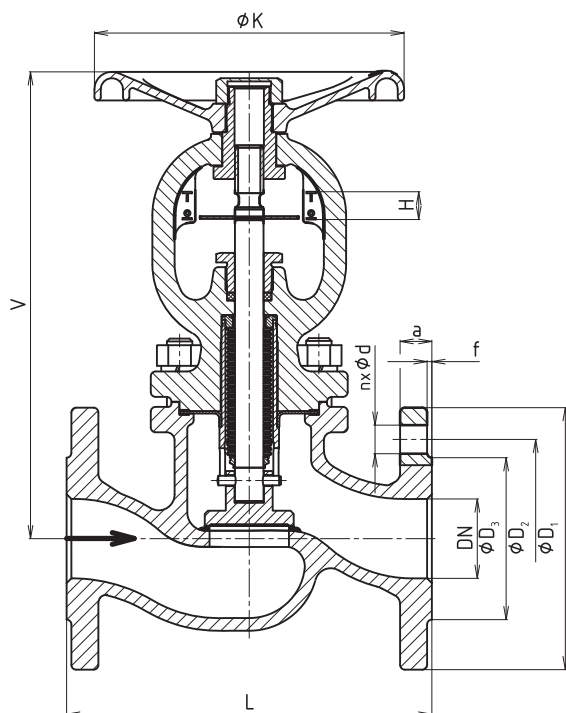
¹⁾ regarding the previous standards in force, we can optionally make an execution with No. of connection bolts corresponding to ČSN-EN 1092-1

Values of Kvs, differential pressure and pressure loss coefficient ζ (zeta)

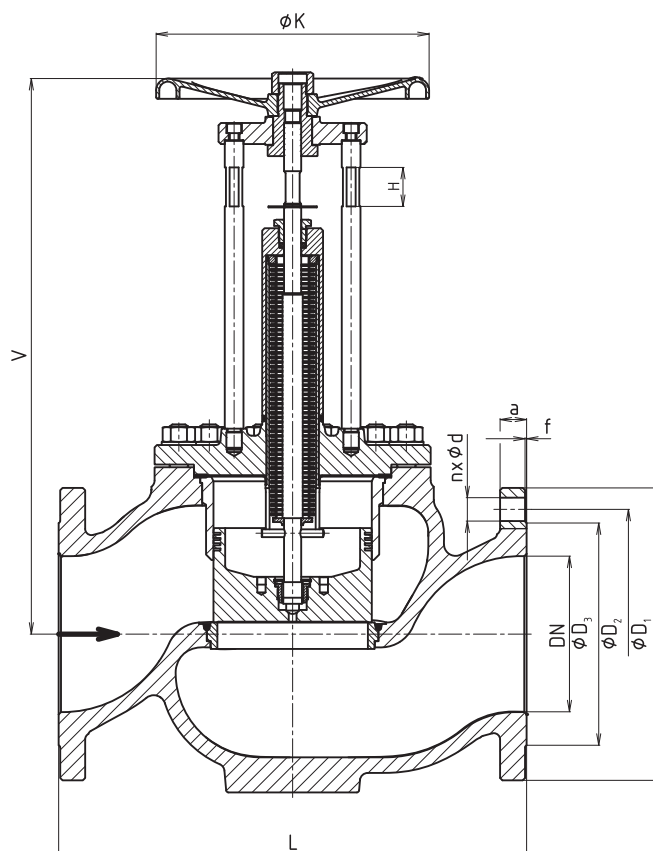
DN	Shut - off		Control		Δp _{max} [MPa]
	Kvs [m ³ /h]	ζ	Kvs [m ³ /h]	ζ	
15	4.3	4.4	4.0	5.1	4.00
20	7.0	5.2	6.6	5.9	4.00
25	11.0	5.2	10.0	6.2	4.00
32	17.5	5.5	16.0	6.5	4.00
40	27.0	5.6	24.0	7.1	4.00
50	47.0	4.5	39.0	6.6	4.00
65	68.0	6.2	56.0	9.1	4.00
80	116.0	4.9	80.0	10.2	4.00
100	162.0	6.1	140.0	8.2	4.00
125	250.0	6.2	184.0	11.5	4.00
150 UV 2x6 R,S	364.0	6.1	320.0	7.9	2.00
150 UV 2x6 B,V	364.0	6.1	350.0	6.6	4.00
200	570.0	7.9	540.0	8.8	4.00
250	800.0	9.8	800.0	9.8	4.00
300	1100.0	10.7	1000.0	13.0	4.00
400	1700.0	14.2	1800.0	12.6	4.00

Δp_{max} value is the valve max. differential pressure when open - close function is always guaranteed. In regard of service life of seat and plug, it is recommended so that permanent differential pressure at open valve would not exceed 1.6 MPa.

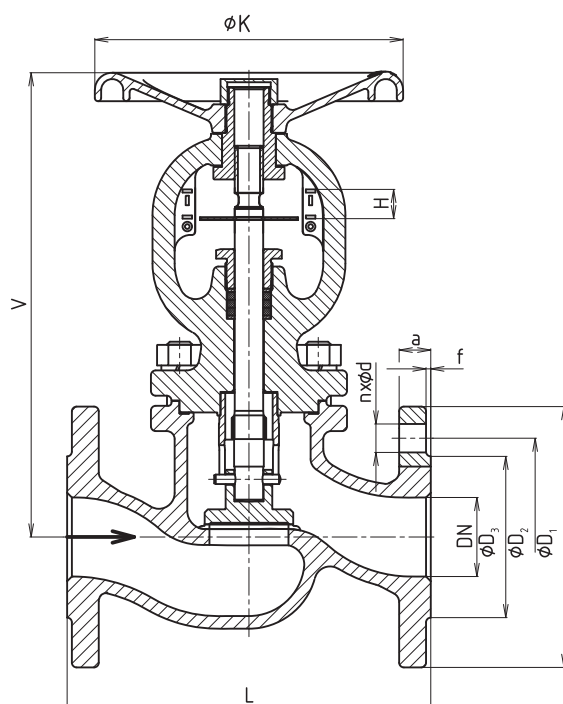
UV 2x6 R



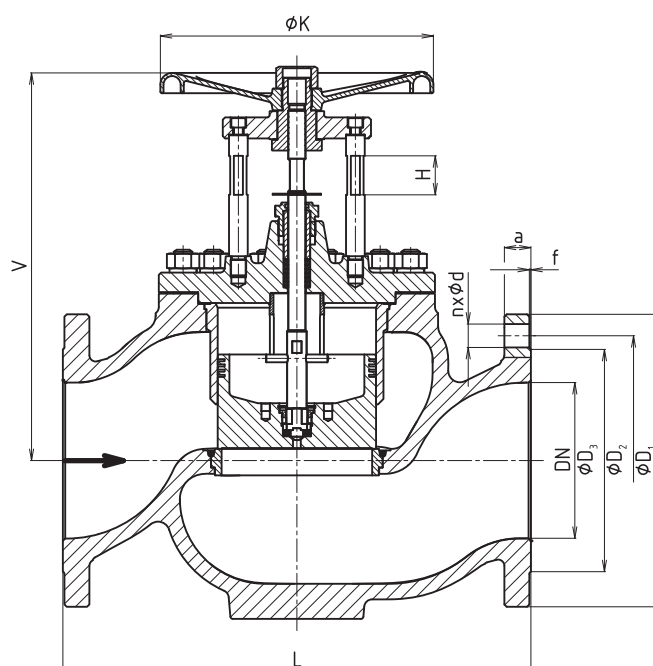
UV 2x6 V



UV 2x6 S



UV 2x6 B



Valve complete specification No. for ordering UV 2x6 (Ex)

		XX	XXX	XXX	XX	/	XXX	-	XXX	XX
1. Valve	Shut-off valve	UV								
2. Series	Globe valve made of cast steel 1.0619		226							
	Globe valve made of stainless steel 1.4581		236							
3. Type of actuating/packing <small>¹⁾ For DN 15 to 150 only ²⁾ For DN 150 to 400 only</small>	Bellows with safety graphite packing ¹⁾			R						
	Graphite packing ¹⁾			S						
	Pressure balanced plug / bellows with safety graphite packing ²⁾			V						
	Pressure balanced plug / graphite packing ²⁾			B						
4. Connection	Flanges with raised faces, type B1			1						
	Female flange, type F			2						
	Flange with groove, type D			3						
	Male flange, type E			7						
	Tongue flange, type C			8						
5. Body / bonnet material <small>³⁾ For R and V execution only</small>	Cast steel 1.0619 / Cast steel 1.0619			1						
	Stainless steel 1.4581 / Cast steel 1.0619 ³⁾			3						
	Stainless steel 1.4581 / Stainless steel 1.4581			8						
	Other material on request (e.g.: WN 1.7357, nickel alloys, etc.)			9						
6. Nominal pressure	PN 16						16			
	PN 25						25			
	PN 40						40			
7. Max. operating temp. °C	400°C							400		
8. Nominal size	DN 15 to 400								XXX	
9. Execution <small>⁴⁾ Only execution R and S; DN15-150</small>	Normal									
	Non - explosive									Ex
	Oxygen execution									Ox
	Air test									G
	With control plug ⁴⁾									R

Ordering example: UV227 R112 40/400-050REx

Optionally body / bonnet materials acc. to ASTM (non-standard)

Material number	Grade	Standard	Code (in a valve spec.nr.)	Temperature range
A216	WCB	ASTM A216	4	-29 až 400°C
A217	C5	ASTM A217	5	-29 až 400°C
A351	CF8	ASTM A351	6	-60 až 400°C
A351	CF8M	ASTM A351	B	-60 až 400°C
A352	LCB	ASTM A352	7	-46 až 345°C

Maximal permissible pressure values of ASTM materials acc. to EN 12516-1.

Maximal permissible pressure values acc. to ČSN EN 12516-1 [Mpa]

Material	PN	Temperature [°C]									
		RT ¹⁾	100	120	150	200	250	300	350	375	400
Cast steel 1.0619 (GP240GH)	16	1,56	1,36	1,32	1,27	1,14	1,04	0,94	0,88	0,86	0,84
	25	2,44	2,13	2,07	1,98	1,78	1,62	1,47	1,37	1,35	1,32
	40	3,90	3,41	3,31	3,17	2,84	2,60	2,35	2,19	2,16	2,11
Stainless steel 1.4581 (G17CrMo5-5)	16	1,59	1,44	1,39	1,33	1,25	1,17	1,10	1,06	1,05	1,02
	25	2,49	2,25	2,18	2,08	1,95	1,84	1,72	1,66	1,63	1,60
	40	3,98	3,6	3,49	3,33	3,13	2,94	2,75	2,65	2,61	2,56

¹⁾ -10°C to 50°C



UV 227 (Ex) UV 237 (Ex)

**Shut-off valves
DN 15 to 400, PN 16, 25 and 40
with hand wheel, hard metal overlay**

Description

Shut-off valves series UV 2x7 are hand-wheel valves that excel with unique features suitable for a long-time no maintenance service. The valve seat surface is made with hard metal overlay due to increased service life. If bellows is used, it ensures a hermetic tightness to environment and in addition it is added with a safety packing made of graphite. Valves with graphite packing are equipped with back seat. Between the valve body and cover the spiral-wound gasket is used. The most advantageous feature is low linear forces when opening or closing the valve which does not change during the life-time. Thanks to a yoke design, the valve can be easily insulated and its hand wheel can be operated even at high temperatures of process medium. The hand wheel is non-rising which enables the valves application in unaccessible places. The visible indicator ensures an easy identification of the valve position. The valves UV 2x7 acc. to ČSN EN 13709 (10/2003). The valves UV 2x7 Ex meet the requirements II 1/2G IIB acc. to ČSN-EN 13 463-1.

Application

The valves are especially designed for applications in chemical and petrochemical processing industries, warm-water and steam circuits in power plants, heating plants, heatexchange stations, heat transferring stations and common heating applications. Thanks to a great scale of available valve sizes, the valve is suitable for a tight closing (shutting down) of main branches, by-passes, extracting and sampling pipelines. The used materials enable the valves to be installed also in air-conditioning, refrigerating and other special applications.

Process media

The valves UV 2x7 are suitable for shutting off water, water vapour and other liquids and gases which are compatible with used materials of the valve body and internal materials. The valves UV 2x7 (Ex) can be also used for industrial and heating gases and flammable liquids.

To ensure a long-life of a valve seat, the producer 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 valves can be installed in any position, except execution V and B. The valves of execution V and B must be installed only in horizontal position to the vertical axis of the spindle. It is recommended to ensure enough space for hand wheel operating. The flow direction is indicated by the arrows on the valve body. The alternate flow direction through the valve is permissible, except execution V and B.

Detailed informations are given in the instruction for installation and service which is standard part of delivery.

Technical Data

Series	UV 227 (Ex)	UV 237 (Ex)
Execution	Shut-off valve, straight-through, with hard metal overlay seat and spiral-wound cover gasket	
Nominal size range	DN 15 to 400	
Nominal pressure	PN 16, 25 and 40	
Body material	Cast steel 1.0619 (GP240GH)	Stainless steel 1.4581 (GX5CrNiMoNb19-11-2)
Plug material (DIN W.Nr. / ČSN)	1.4021 / 17 022.6	1.4571 / 17 348.4
Operating temperature range ¹⁾	-10 to +400°C	-10 to +550°C
Connection	Type B1 (raised-faced flange) acc. to ČSN-EN 1092-1 (4/2002) Face to face dimensions comply with ČSN EN 558-1 (3/1997), section 1	
Type of plug	Disc; pressure-balanced plug with pilot system; control	
Flow characteristic	On-Off, linear	
Leakage rate ²⁾	Dle ČSN-EN 12266-1 (11/2003) - leakage rate class A	
Packing	Bellows with safety graphite packing or graphite packing	

1) The valves can be also used for temperatures from -60°C in the choice of suitable material with the agreement with the manufacturer.

2) The valves are tested with water commonly. In case of demand for air test it must be specified in the valve specification number.

Dimensions and weights for the type UV 2x7 (Ex)

DN	PN 16						PN 25						PN 40									
	D ₁ mm	D ₂ mm	D ₃ mm	d mm	n	a mm	D ₁ mm	D ₂ mm	D ₃ mm	d mm	n	a mm	D ₁ mm	D ₂ mm	D ₃ mm	d mm	n	a mm				
15	95	65	45	14	4	16	Same as PN 40						95	65	45	14	4	16				
20	105	75	58			18							18	18	18							
25	115	85	68			18							18	18	18							
32	140	100	78			18							18	18	18							
40	150	110	88	20	18	18							18									
50	165	125	102	18	4 ¹⁾	22							165	125	102	18	8	22	185	145	122	22
65	185	145	122			24							185	145	122			24				
80	200	160	138	8	8	24							200	160	138	8	8	24	235	190	162	24
100	220	180	158			26							235	190	162			26				
125	250	210	188	22	12	28							270	220	188	22	16	26	270	220	188	26
150	285	240	212			24							270	220	188			28				
200	340	295	268	26	12	24							360	310	278	26	12	30	375	320	285	30
250	405	355	320			26							425	370	335	30		32	450	385	345	33
300	460	410	378	30	16	28							485	430	395	36	16	34	515	450	410	39
400	580	525	490			30							620	550	505	36		40	660	585	535	39

DN	PN 16, PN 25, PN 40						
	H mm	L mm	V ^{R, S, B)} mm	V ^{V)} mm	K mm	f mm	m kg
15	6	130	195	125	2	4.3	
20	6	150	195	125		5.1	
25	6	160	195	125		5.8	
32	10	180	225	150		9.5	
40	10	200	225	150	3	9.8	
50	16.5	230	305	200		17.5	
65	16.5	290	305	200		20.5	
80	25	310	385	300		34	
100	25	350	385	300		44	
125	40	400	530	400		77	
150	40	480	530	565		400	113
200	50	600	510	721		400	240
250	75	730	670	945	400	410	
300	75	850	720	994	400	610	
400	100	1100	860	1166	400	1240	

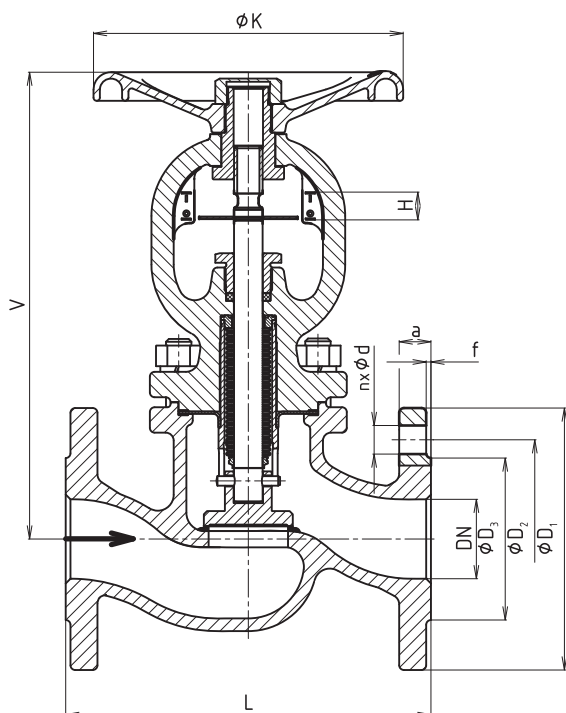
¹⁾ regarding the previous standards in force, we can optionally make an execution with No. of connection bolts corresponding to ČSN-EN 1092-1

Values of Kvs, differential pressure and pressure loss coefficient ζ (zeta)

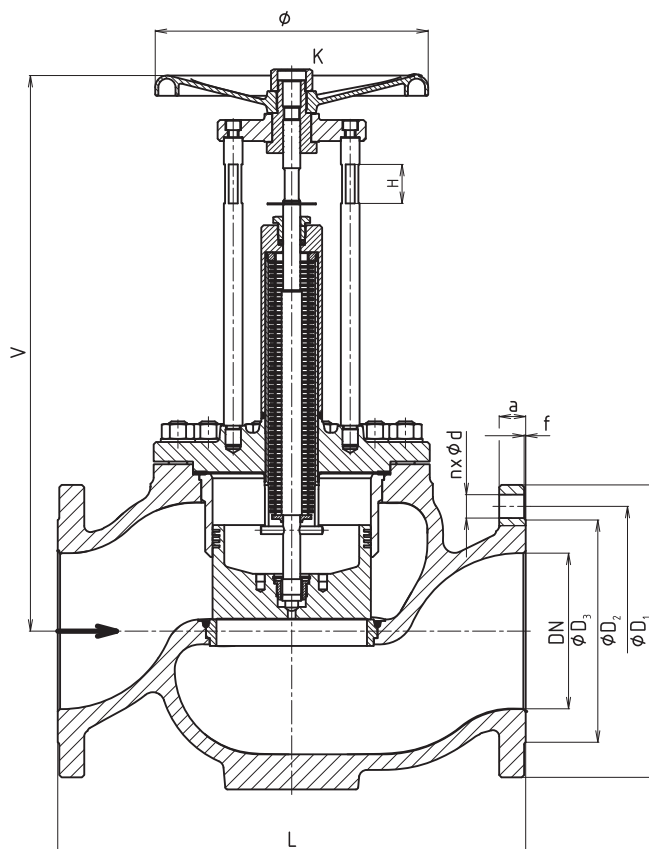
DN	Shut - off		Control		Δp _{max} [MPa]
	Kvs [m ³ /h]	ζ	Kvs [m ³ /h]	ζ	
15	4.3	4.4	4.0	5.1	4.00
20	7.0	5.2	6.6	5.9	4.00
25	11.0	5.2	10.0	6.2	4.00
32	17.5	5.5	16.0	6.5	4.00
40	27.0	5.6	24.0	7.1	4.00
50	47.0	4.5	39.0	6.6	4.00
65	68.0	6.2	56.0	9.1	4.00
80	116.0	4.9	80.0	10.2	4.00
100	162.0	6.1	140.0	8.2	4.00
125	250.0	6.2	184.0	11.5	4.00
150 UV 2x6 R,S	364.0	6.1	320.0	7.9	2.00
150 UV 2x6 B,V	364.0	6.1	350.0	6.6	4.00
200	570.0	7.9	540.0	8.8	4.00
250	800.0	9.8	800.0	9.8	4.00
300	1100.0	10.7	1000.0	13.0	4.00
400	1700.0	14.2	1800.0	12.6	4.00

Δp_{max} value is the valve max. differential pressure when open - close function is always guaranteed. In regard of service life of seat and plug, it is recommended so that permanent differential pressure at open valve would not exceed 1.6 MPa.

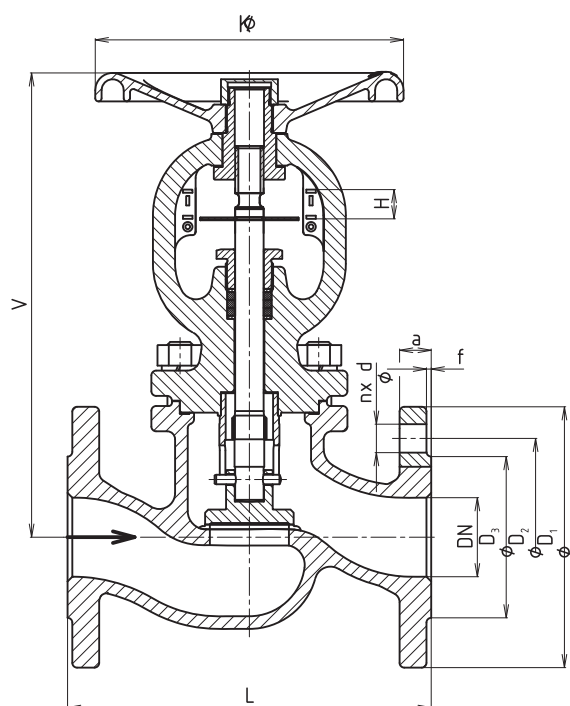
UV 2x7 R



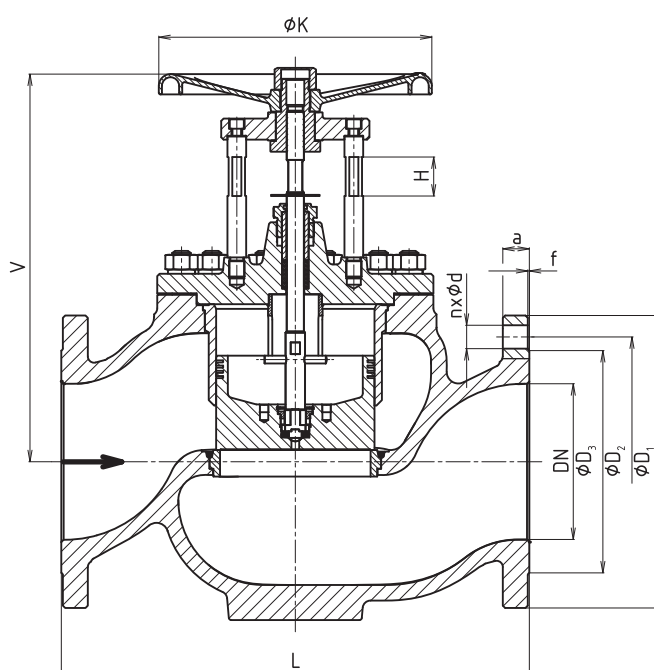
UV 2x7 V



UV 2x7 S



UV 2x7 B



Valve complete specification No. for ordering UV 2x7 (Ex)

		XX	XXX	XXXX	XX	/	XXX	-	XXX	XX
1. Valve	Shut-off valve	UV								
2. Series	Globe valve made of cast steel 1.0619		227							
	Globe valve made of stainless steel 1.4581		237							
3. Type of actuating/packing ¹⁾ For DN 15 to 150 only ²⁾ For DN 150 to 400 only	Bellows with safety graphite packing ¹⁾			R						
	Graphite packing ¹⁾			S						
	Pressure balanced plug / bellows with safety graphite packing ²⁾			V						
	Pressure balanced plug / graphite packing ²⁾			B						
4. Connection	Flanges with raised faces, type B1			1						
	Female flange, type F			2						
	Flange with groove, type D			3						
	Male flange, type E			7						
	Tongue flange, type C			8						
5. Body / bonnet material ³⁾ For R and V execution only	Cast steel 1.0619 / Cast steel 1.0619			1						
	Stainless steel 1.4581 / Cast steel 1.0619 ³⁾			3						
	Stainless steel 1.4581 / Stainless steel 1.4581			8						
	Other material on request (e.g.: WN 1.7357, nickel alloys, etc.)			9						
6. Seat material Plug / Body	CrNiMoTi / CrNiMn -execution UV 237			0						
	13Cr / CrNiMn -execution UV 227			1						
	CrNiMoTi / Stellite 6 -execution UV 237			2						
	Stellite 6 / Stellite 6 -execution UV 2x7			5						
	13Cr / Stellite 6 -execution UV 227			8						
7. Nominal pressure	PN 16						16			
	PN 25						25			
	PN 40						40			
8. Max. operating temp. °C	Bellows; 1.0619; 400°C							400		
	1.4581; 550°C							550		
9. Nominal size	DN 15 to 400								XXX	
10. Execution ⁴⁾ Only execution R and S; DN15-150	Normal									
	Non - explosive									Ex
	Oxygen execution									Ox
	Air test									G
	With control plug ⁴⁾									R

Ordering example: UV 227 R112 40/400-050REx

Optionally body / bonnet materials acc. to ASTM (non-standard)

Material number	Grade	Standard	Code (in a valve spec.nr.)	Temperature range
A216	WCB	ASTM A216	4	-29 to 400°C
A217	C5	ASTM A217	5	-29 to 400°C
A351	CF8	ASTM A351	6	-60 to 400°C
A351	CF8M	ASTM A351	B	-60 to 400°C
A352	LCB	ASTM A352	7	-46 to 345°C

Maximal permissible pressure values of ASTM materials acc. to EN 12516-1.

Maximal permissible pressure values acc. to ČSN EN 12516-1 [MPa]

Material	PN	Temperature [°C]													
		RT ¹⁾	100	120	150	200	250	300	350	400	450	475	500	525	550
Cast steel 1.0619 (GP240GH)	16	1,56	1,36	1,32	1,27	1,14	1,04	0,94	0,88	0,84	---	---	---	---	---
	25	2,44	2,13	2,07	1,98	1,78	1,62	1,47	1,37	1,32	---	---	---	---	---
	40	3,90	3,41	3,31	3,17	2,84	2,60	2,35	2,19	2,11	---	---	---	---	---
Stainless steel 1.4581 (G17CrMo5-5)	16	1,59	1,44	1,39	1,33	1,25	1,17	1,10	1,06	1,02	1,01	1,0	8,9	8,1	7,9
	25	2,49	2,25	2,18	2,08	1,95	1,84	1,72	1,66	1,60	1,58	1,56	1,39	1,27	1,23
	40	3,98	3,6	4,02	3,33	3,13	2,94	2,75	2,65	2,56	2,52	2,5	2,23	2,04	1,97

¹⁾ -10°C to 50°C



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