ARMATURY GROUP
20TH ANNIVERSARY

EXTRACTION CHECK VALVES

Multiplex ENGINEERING

In partnership with

ARMATURY Group

VEXVE ARMATURY GROUP

Multiplex Engineering
+44 (0) 1246 551839
info@multiplexeng.co.uk
www.multiplexeng.co.uk
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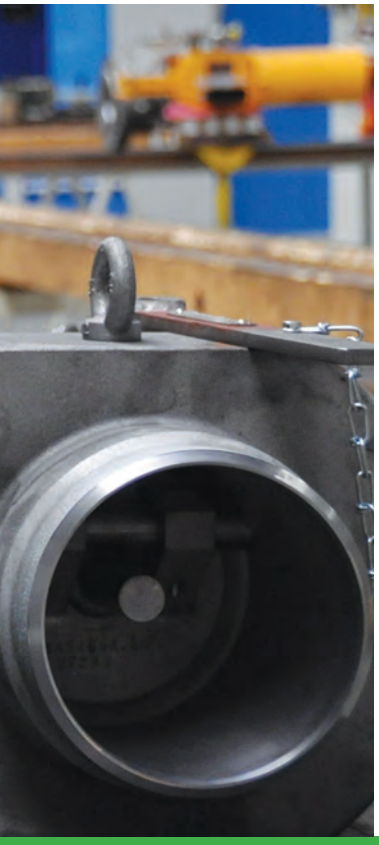
Unit 4, Old Brick Works Lane, Chesterfield,
Derbyshire, S41 7JD

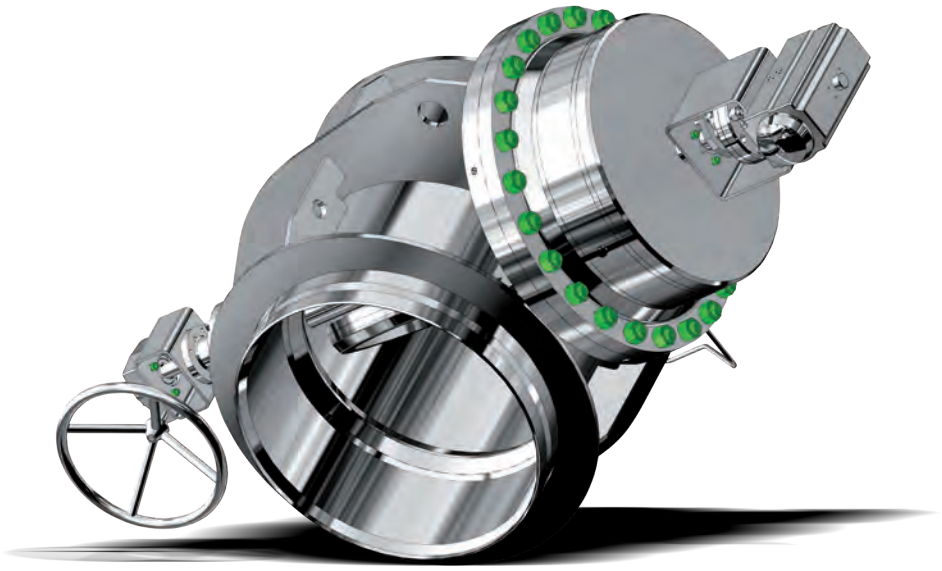
COMPANY PROFILE

The company ARMATURY Group a.s. is a leading European manufacturer of industrial valves and distributor of pipings, technological units and accessories. The company started its operations on January 2000, however, the tradition of this dynamically developing company is closely related to the 50-year history of valve production in Moravia and Silesia.

Since 2019, ARMATURY Group a.s. has been part of the Vexve Armatury Group, which offers an extensive portfolio of valves for a wide range of industrial applications. ARMATURY Group a.s. specializes in tailor-made solutions for the gas, power and metallurgical sectors, while Vexve Oy supplies valves solutions for heating and cooling systems.

Both ARMATURY Group a.s. and Vexve Oy are known for the superior quality of their products, fast delivery times combined with first-class customer service. The companies deliver their products to over 70 countries and employ around 750 people with factories in Czech Republic, Finland and Russia. The combined turnover of the Vexve Armatury Group is over €100m. The group is owned by DevCo Partners Oy, a long-term investor, which is dedicated to building world´s leading companies in selected niche markets.





CONTENT

Application
Extraction check valves are valves used to to prevent the back flow of the service fluid in extraction and bleed lines of steam turbines. Each extraction check valve is designed exactly for the specified extraction parameters.

Working medium
- steam

Maximum service temperature
+450°C to DN 1000, NPS 40
+350°C above DN 1000, NPS 40

Technical description
The extraction check valve is designed as a check valve with double eccentricity. The disc with conical sealing surface is swinging on a shaft which is carried in plain bearings. In the „CLOSED" position, the sealing surface of the disc is in contact with the valve body seat. The shaft bears also a counterweight to balance the mass of the disc. The balancing guarantees minimum pressure losses not exceeding 1%. This counterweight is situated, off the valve body bore, in a separated pressure-closed box. The extraction check valve can be equipped with an actuator which guarantees the quick-acting function of the valve and a lever to test the valve function as a standard. Both the actuator and the lever are carried on a separate shaft so that their passive resistances do not affect the valve function. The welded design of the extraction check valves meets the requirements of EN ISO 15614-1, PED 2014/68/EC or, if required by the customer, ASME CODE, Section IX.

Operation
Self-acting, the safe closing of the disc is realized by the ancillary actuator (pneumatic, hydraulic actuator). Actuator type as specified by the customer.

Possible valve equipment
- hand lever
- worm gear operator
- electric position sensor
- mechanical position indicator

Testing
The valves are tested in accordance with:
- EN 12266-1 / ISO 5208
- API 598
- ASME B16.34

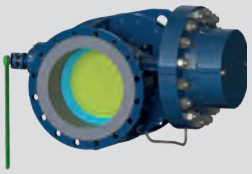
Connection to the piping
- **flanged ends** according to EN 1092-1, ASME B16.5, ASME B16.47, face-to-face dimensions according to EN 558, series 14,15
- **welding ends** according to EN 12627, ASME B16.25, end-to-end dimensions according to EN 12982

Installation
The extraction check valves C09.6 may be supplied with designs for either horizontal or vertical piping. The valve shall be positioned between the connecting ends of the piping in the direction in which the flow of the fluid from the turbine opens the disc. The main shaft of the valve (axis of disc rotation) has to be in horizontal position. The mounting, adjustment and testing of the actuators shall be performed by a trained supplier in accordance with instructions given by the manufacturer.

Advantages
- possibility of installation into both vertical and horizontal pipings
- unique design for the specified extraction parameters
- guaranteed tightness class
- low pressure loss
- low passive resistances
- no axial forces
- no castings are used
- maintenance-free valves with long service life
- design variability

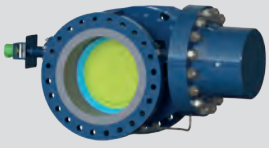

With top-mounted actuator and hand lever


With side-mounted actuator and hand lever


Without actuator, with hand lever

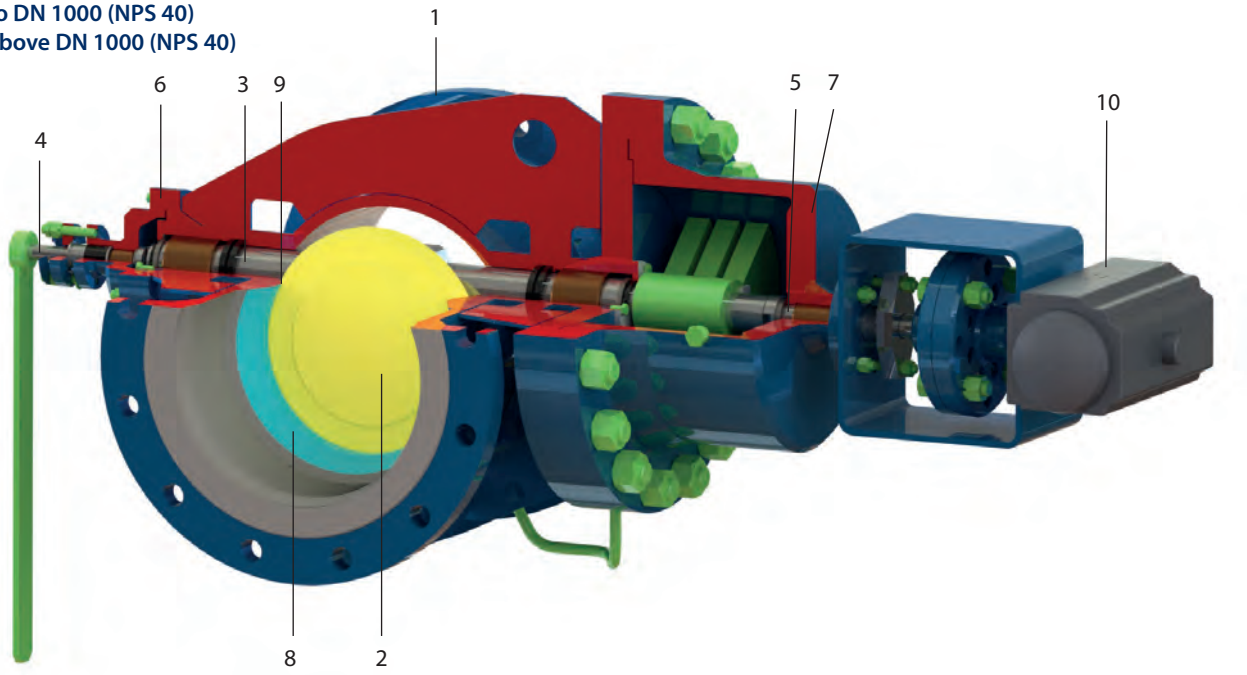

With side-mounted actuator and gear operator


With side-mounted actuator and position sensor


Without actuator, with position sensor

DN 80-1800 • PN 6-100
NPS 3-70 • Class 150-600
Tmax +450 °C to DN 1000 (NPS 40)
Tmax +350 °C above DN 1000 (NPS 40)

Connection: EN 1092-1, ASME B16.5, B16.47 FLANGED ENDS
EN 12627, ASME B16.25 WELDED ENDS



Material

Position	Component	EN		ASTM	
		DN 80 -DN 1000	DN 1200 - DN 1800	NPS 3 - NPS 40	NPS 44 - NPS 70
		to 450 °C	to 350 °C	to 450 °C	to 350 °C
1	Body	1.0425 (P265 GH) 1.7335 (13CrMo4-5)	1.0425 (P265 GH)	A387 Gr.22 * A105 A516 Gr.60 A182 F12 A387 Gr.12	A516 Gr.60
2	Disc				
6	Cover				
7	Counterweight cover				
8	Seat				
3, 4, 5	Shaft	1.4021 (17 022), 1.4923 (17 134)	1.4021 (17 022)	A276 420T, 1.4923	A276 420T
9	Seat hard facing	STELLIT6	13%Cr	STELLIT6	13%Cr
10	Actuator	Quarter-turn actuator, hydraulic actuator, linear actuator			

* on request

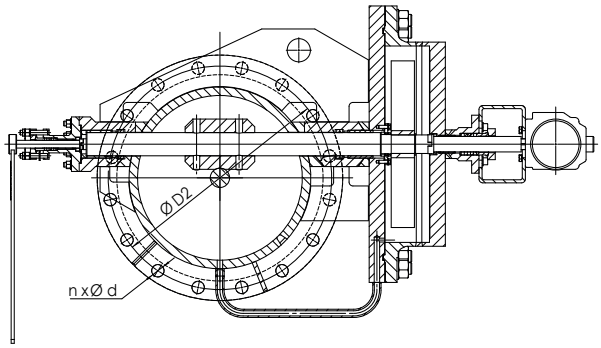
Production range

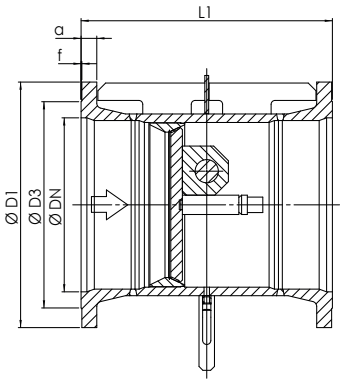
DN	NPS	PN							Class			
		6	10	16	25	40	63	100	150	300	400	600
80	3	•	•	•	•	•	•	•	•	•	•	•
100	4	•	•	•	•	•	•	•	•	•	•	•
125	5	•	•	•	•	•	•	•	•	•	•	•
150	6	•	•	•	•	•	•	•	•	•	•	•
200	8	•	•	•	•	•	•	•	•	•	•	•
250	10	•	•	•	•	•	•	•	•	•	•	•
300	12	•	•	•	•	•	•	•	•	•	•	•
350	14	•	•	•	•	•	•	•	•	•	•	•
400	16	•	•	•	•	•	•	•	•	•	•	•
450	18	•	•	•	•	•	•	•	•	•	•	•
500	20	•	•	•	•	•	•	•	•	•	•	•
600	24	•	•	•	•	•	•	•	•	•	•	•
700	28	•	•	•	•	•	•	•	•	•	•	•
800	32	•	•	•	•	•	•	•	•	•	•	•
900	36	•	•	•	•	•	•	•	•	•	•	•
1000	40	•	•	•	•	•	•	•	•	•	•	•
1200	48	•	•	•	•	•			•	•		
1400	56	•	•	•	•				•			
1500	60	•	•	•	•				•			
1600	64	•	•	•	•				•			
1800	70	•	•	•	•				•*			

* valves with welding ends only

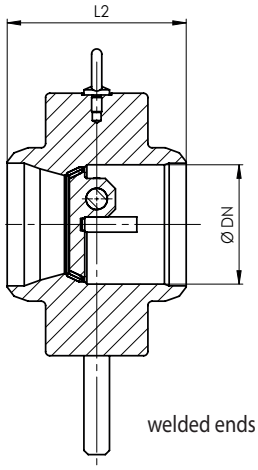
DN 80-1800 • PN 6-100 • Tmax +450 °C to DN 1000
Tmax +350 °C above DN 1000

Connection: EN 1092-1 FLANGED ENDS
EN 12 627 WELDED ENDS





flanged ends



welded ends

PN 6

DN	D1	D2	D3	a	f	d	n	L1	L2
80	190	150	128	16	3	18	4	280	180
100	210	170	148	16	3	18	4	305	190
125	240	200	178	18	3	18	8	325	200
150	265	225	202	18	3	18	8	350	210
200	320	280	258	20	3	18	8	400	230
250	375	335	312	22	3	18	12	450	250
300	440	395	365	22	4	22	12	500	270
350	490	445	415	22	4	22	12	550	550
400	540	495	465	22	4	22	16	600	600
450	595	550	520	22	4	22	16	650	650
500	645	600	570	24	4	22	20	700	700
600	755	705	670	30	5	26	20	800	800
700	860	810	775	30	5	26	24	900	900
800	975	920	880	30	5	30	24	1000	1000
900	1075	1020	980	34	5	30	24	1100	1100
1000	1175	1120	1080	38	5	30	28	1200	1200
1200	1405	1340	1295	42	5	33	32	1400	1400
1400	1630	1560	1510	56	5	36	36	1400	1400
1600	1830	1760	1710	63	5	36	40	1700	1700
1800	2045	1970	1920	69	5	39	44	1800	1800

PN 10

DN	D1	D2	D3	a	f	d	n	L1	L2
80	200	160	138	20	3	18	8	280	180
100	220	180	158	20	3	18	8	305	190
125	250	210	188	22	3	18	8	325	200
150	285	240	212	22	3	22	8	350	210
200	340	295	268	24	3	22	8	400	230
250	395	350	320	26	3	22	12	450	250
300	445	400	370	26	4	22	12	500	270
350	505	460	430	26	4	22	16	550	550
400	565	515	482	26	4	26	16	600	600
450	615	565	532	28	4	26	20	650	650
500	670	620	585	28	4	26	20	700	700
600	780	725	685	30	5	30	20	800	800
700	895	840	800	35	5	30	24	900	900
800	1015	950	905	38	5	33	24	1000	1000
900	1115	1050	1005	38	5	33	28	1100	1100
1000	1230	1160	1110	44	5	36	28	1200	1200
1200	1455	1380	1330	55	5	39	32	1400	1400
1400	1675	1590	1535	65	5	42	36	1400	1400
1600	1915	1820	1760	75	5	48	40	1700	1700
1800	2115	2020	1960	85	5	48	44	1800	1800

DN 80-1800 • PN 6-100 • Tmax +450 °C to DN 1000
Tmax +350 °C above DN 1000

Connection: EN 1092-1 FLANGED ENDS
EN 12 627 WELDED ENDS

PN 16

DN	D1	D2	D3	a	f	d	n	L1	L2
80	200	160	138	20	3	18	8	280	180
100	220	180	158	20	3	18	8	305	190
125	250	210	188	22	3	18	8	325	200
150	285	240	212	22	3	22	8	350	210
200	340	295	268	24	3	22	12	400	230
250	405	355	320	26	3	26	12	450	250
300	460	410	378	28	4	26	12	500	270
350	520	470	438	30	4	26	16	550	550
400	580	525	490	32	4	30	16	600	600
450	640	585	550	40	4	30	20	650	650
500	715	650	610	44	4	33	20	700	700
600	840	770	725	54	5	36	20	800	800
700	910	840	795	40	5	36	24	900	900
800	1025	950	900	41	5	39	24	1000	1000
900	1125	1050	1000	48	5	39	28	1100	1100
1000	1255	1170	1115	59	5	42	28	1200	1200
1200	1485	1390	1330	78	5	48	32	1400	1400
1400	1685	1590	1530	84	5	48	36	1400	1400
1600	1930	1820	1750	102	5	56	40	1700	1700
1800	2130	2020	1950	110	5	56	44	1800	1800

PN 25

DN	D1	D2	D3	a	f	d	n	L1	L2
80	200	160	138	24	3	18	8	280	180
100	235	190	162	24	3	22	8	305	190
125	270	220	188	26	3	26	8	325	200
150	300	250	218	28	3	26	8	350	210
200	360	310	278	30	3	26	12	400	230
250	425	370	335	32	3	30	12	450	250
300	485	430	395	34	4	30	16	500	270
350	555	490	450	38	4	33	16	550	550
400	620	550	505	40	4	36	16	600	600
450	670	600	555	46	4	36	20	650	650
500	730	660	615	48	4	36	20	700	700
600	845	770	720	58	5	39	20	800	800
700	960	875	820	50	5	42	24	900	900
800	1085	990	930	53	5	48	24	1000	1000
900	1185	1090	1030	57	5	48	28	1100	1100
1000	1320	1210	1140	63	5	56	28	1200	1200
1200	1530	1420	1350	70	5	56	32	1400	1400
1400	1755	1640	1560	*	5	62	36	1400	1400
1600	1975	1860	*	*	5	62	40	1700	1700
1800	2195	2070	*	*	5	70	44	1800	1800

* according to customer´s request

Face to face dimensions for valves with welding ends are identical to those of valves with flanged ends (valves with different face-to-face and end-to-end dimensions can be delivered by agreement with the manufacturer, if required by the customer).

DN 80-1800 • PN 6-100 • Tmax +450 °C to DN 1000
Tmax +350 °C above DN 1000

Connection: EN 1092-1 FLANGED ENDS
EN 12 627 WELDED ENDS

PN 40

DN	D1	D2	D3	a	f	d	n	L1	L2
80	200	160	138	24	3	18	8	280	180
100	235	190	162	24	3	22	8	305	190
125	270	220	188	26	3	26	8	325	200
150	300	250	218	28	3	26	8	350	210
200	375	320	285	34	3	30	12	400	230
250	450	385	345	38	3	33	12	450	250
300	515	450	410	42	4	33	16	500	270
350	580	510	465	46	4	36	16	550	550
400	660	585	535	50	4	39	16	600	600
450	685	610	560	57	4	39	20	650	650
500	755	670	615	57	4	42	20	700	700
600	890	795	735	72	5	48	20	800	800
700	995	900	840	85	5	48	24	900	900
800	1140	1030	960	98	5	56	24	1000	1000
900	1250	1140	1070	105	5	56	28	1100	1100
1000	1360	1250	1180	114	5	56	28	1200	1200
1200	1575	1460	1380	133	5	62	32	630	630

PN 63

DN	D1	D2	D3	a	f	d	n	L1	L2
80	215	170	138	28	3	22	8	280	180
100	250	200	162	30	3	26	8	305	190
125	295	240	188	34	3	30	8	325	200
150	345	280	218	36	3	33	8	350	210
200	415	345	285	42	3	36	12	400	230
250	470	400	345	46	3	36	12	450	250
300	530	460	410	52	4	36	16	500	270
350	600	525	465	56	4	39	16	550	550
400	670	585	535	60	4	42	16	600	600
500	800	705	615	68	4	48	20	700	700
600	930	820	735	76	5	56	20	800	800
700	1045	935	840	84	5	56	24	900	900
800	1165	1050	960	96	5	62	24	1000	1000
900	1285	1170	1070	*	5	62	28	1100	1100
1000	1415	1290	*	*	*	70	28	1200	1200

* according to customer´s request

PN 100

DN	D1	D2	D3	a	f	d	n	L1	L2
80	230	180	138	32	3	26	8	280	180
100	265	210	162	36	3	30	8	305	190
125	315	250	188	40	3	33	8	325	200
150	355	290	218	44	3	33	12	350	210
200	430	360	285	52	3	36	12	400	230
250	505	430	345	60	3	39	12	450	250
300	585	500	410	68	4	42	16	500	270
350	655	560	465	74	4	48	16	550	550
400	715	620	535	78	4	48	16	600	600
500	870	760	615	94	4	56	20	700	700
600	940	838	692	102	5	51	24	800	800
700	1073	965	800	112	5	54	28	900	900
800	1194	1080	915	118	5	61	28	1000	1000
900	1315	1194	1023	124	5	67	28	1100	1100
1000	1321	1212,9	*	*	*	61	32	1200	1200

Face to face dimensions for valves with welding ends are identical to those of valves with flanged ends (valves with different face-to-face and end-to-end dimensions can be delivered by agreement with the manufacturer, if required by the customer).

NPS 3 -70 • Class 150-600 • Tmax +450 °C to NPS 40
Tmax +350 °C above NPS 40

Connection: ASME B16.5, B16.47 FLANGED ENDS
ASME B16.25 WELDED ENDS

Class 150

NPS	DN	D1	D2	D3	a	f	d	n	L1	L2
3	80	190	152,4	127	24,3	2	19	4	280	180
4	100	230	190,5	157,2	24,3	2	19	8	305	190
5	125	255	215,9	185,7	24,3	2	22	8	325	200
6	150	280	241,3	215,9	25,9	2	22	8	350	210
8	200	345	298,5	269,9	29	2	22	8	400	230
10	250	405	362	323,8	30,6	2	25	12	450	250
12	300	485	431,8	381	32,2	2	25	12	500	270
14	350	535	476,3	412,8	35,4	2	29	12	550	550
16	400	595	539,8	469,9	37	2	29	16	600	600
18	450	635	577,9	533,4	40,1	2	32	16	650	650
20	500	700	635	584,2	43,3	2	32	20	700	700
24	600	815	749,3	692,2	48,1	2	35	20	800	800
28	700	925	863,6	800	71,9	2	35	28	900	900
30	750	985	914,4	857	75,1	2	35,1	28	950	950
32	800	1060	977,9	914	81,4	2	41,1	28	1000	1000
34	850	1110	1028,7	965	83	2	41,1	32	1050	1050
36	900	1170	1085,8	1022	90,9	2	41,1	32	1100	1100
38	950	1240	1149,4	1073	87,8	2	41,1	32	1150	1150
40	1000	1290	1200,2	1124,0	90,9	2	41,1	36	1200	1200
42	1050	1345	1257,3	1194	97,3	2	41,1	36	1250	1250
44	1100	1405	1314,4	1245	102,1	2	41,1	40	1300	1300
46	1150	1455	1365,2	1295	103,6	2	41,1	40	1350	1350
48	1200	1510	1422,4	1359	108,4	2	41,1	44	1400	1400
50	1250	1570	1479,6	1410	111,6	2	47,8	44	1400	1400
52	1300	1625	1536,7	1461	116,3	2	47,8	44	1400	1400
54	1350	1685	1593,8	1511	121,1	2	47,8	44	1450	1450
56	1400	1745	1651,0	1575	124,3	2	47,8	48	1500	1500
58	1450	1805	1708,2	1626	129	2	47,8	48	1550	1550
60	1500	1855	1759,0	1676	132,2	2	47,8	52	1600	1600
62	1550	1910	1810	1730	134	2	47,8	56	1650	1650
64	1600	1965	1860	1780	138	2	47,8	56	1700	1700
70 *	1800	1840	-	1770	-	-	-	-	1800	1800

* only for welded ends

Class 300

NPS	DN	D1	D2	D3	a	f	d	n	L1	L2
3	80	210	168,3	127	29	2	22	8	280	180
4	100	255	200	157,2	32,2	2	22	8	305	190
5	125	280	235	185,7	35,4	2	22	8	325	200
6	150	320	269,9	215,9	37	2	22	12	350	210
8	200	380	330,2	269,9	41,7	2	25	12	400	230
10	250	445	387,4	323,8	48,1	2	29	16	450	250
12	300	520	450,8	381	51,3	2	32	16	500	270
14	350	585	514,4	412,8	54,4	2	32	20	550	550
16	400	650	571,5	469,9	57,6	2	35	20	600	600
18	450	710	628,6	533,4	60,8	2	35	24	650	650
20	500	775	685,8	584,2	64	2	35	24	700	700
24	600	915	812,8	692,2	70,3	2	41	24	800	800
28	700	1035	939,8	800	86,2	2	45	28	900	900
32	800	1150	1054,1	914	98,9	2	51	28	1000	1000
36	900	1270	1168,4	1022	105,2	2	54	32	1100	1100
40	1000	1240	1155,7	1086	114,8	2	45	32	1200	1200
48	1200	1465	1371,6	1302	133,8	2	51	32	1400	1400

Face to face dimensions for valves with welding ends are identical to those of valves with flanged ends (valves with different face-to-face and end-to-end dimensions can be delivered by agreement with the manufacturer, if required by the customer).

NPS 3 -70 • Class 150-600 • Tmax +450 °C to NPS 40
Tmax +350 °C above NPS 40

Connection: ASME B16.5, B16.47 FLANGED ENDS
ASME B16.25 WELDED ENDS

Class 400

NPS	DN	D1	D2	D3	a	f	d	n	L1	L2
3	80	210	168,3	127	38,8	7	22	8	280	180
4	100	255	200	157,2	42	7	22	8	305	190
5	125	280	235	185,7	45,1	7	22	8	325	200
6	150	320	269,9	215,9	48,3	7	22	12	350	210
8	200	380	330	269,9	54,7	7	26	12	400	230
10	250	445	387,4	323,8	61	7	29	16	450	250
12	300	520	450,8	381	64,2	7	32	16	500	270
14	350	585	514,4	412,8	67,4	7	32	20	550	550
16	400	650	571,5	469,9	70,5	7	35	20	600	600
18	450	710	628,6	533,4	71,7	7	35	24	650	650
20	500	775	685,8	584,2	76,9	7	39	24	700	700
24	600	915	812,8	692,2	79,2	7	45	24	800	800
28	700	1035	939,8	800	102,3	7	51	28	900	900
32	800	1150	1054,1	914	115	7	54	28	1000	1000
36	900	1270	1168,4	1022	121,3	7	54	32	1100	1100
40	1000	1270	1174,8	1092,2	137	7	51	32	1200	1200

Class 600

NPS	DN	D1	D2	D3	a	f	d	n	L	L2
3	80	210	168,3	127	38,8	7	22	8	280	180
4	100	275	215,9	157,2	45,1	7	25	8	305	190
5	125	330	266,7	185,7	51,5	7	29	8	325	200
6	150	355	292,1	215,9	54,7	7	29	12	350	210
8	200	420	349,2	269,9	62,6	7	32	12	400	230
10	250	510	431,8	323,8	70,5	7	35	16	450	250
12	300	560	489	381	73,7	7	35	20	500	270
14	350	605	527	412,8	76,9	7	38	20	550	550
16	400	685	603,2	469,9	79,2	7	41	20	600	600
18	450	745	654	533,4	89,6	7	45	20	650	650
20	500	815	723,9	584,2	95,9	7	45	24	700	700
24	600	940	838,2	692,2	108,6	7	51	24	800	800
28	700	1075	965,2	800	118,2	7	54	28	900	900
32	800	1195	1079,5	914	124,5	7	61	28	1200	1200
36	900	1315	1193,8	1022	130,9	7	67	28	1300	1300
40	1000	1321	1212,9	1111,3	165,8	7	61	32	1400	1400

Face to face dimensions for valves with welding ends are identical to those of valves with flanged ends (valves with different face-to-face and end-to-end dimensions can be delivered by agreement with the manufacturer, if required by the customer).

Extraction check valves C09.6 DN 1800

Application
Extraction swing check valves are special valves used to prevent the back flow of the service fluid in extraction and bleed lines.

Working medium
- steam

Maximum service temperature:
to +530 °C to DN 900, NPS 36

Technical description
Bodies of extraction swing check valves L10.6 are made of forged, cast or welded semi-finished products depending on parameters specified by the customer. The seat ring is pressed into the body and secured by welding. Its seating surface is hard-faced. The shaft is carried in plain bearings and holds the disc arm with the disc which is secured by a pin. The seating surfaces of the seat and the disc have a plane contact surface. The welded design of the extraction swing check valves meets the requirements of EN ISO 15614-1, PED 2014/68/EC or, if required by the customer, ASME CODE, Section IX.

Construction types
- forged - to DN 350, NPS 14
- cast - above DN 350, NPS 14
- welded - from DN 200, NPS 8 to DN 1000, NPS 40

Operation
Self-acting, the safe closing of the disc is realized by the ancillary actuator (pneumatic, hydraulic actuator). Actuator type as specified by the customer.

Possible valve equipment
- hand lever
- electric position sensor

Testing
The valves are tested in accordance with:
- EN 12266-1 / ISO 5208
- API 598
- ASME B16.34

Connection to the piping
- **flanged ends** according to EN 1092-1, ASME B16.5, ASME B16.47
- **welding ends** according to EN 12627, ASME B16.25

Face-to-face and end-to-end dimensions according to manufacturer's specification.

Installation
The extraction check valves L10.6 may be installed into both horizontal and vertical pipings. When installing the extraction valve into a vertical piping, the fluid has to flow from under the disc (to lift it up), when installing it into a horizontal piping, the cover must be above the valve body (±10°).

Advantages
Possibility of use for high pressures PN 160, PN 250 and high temperatures exceeding 500 °C.

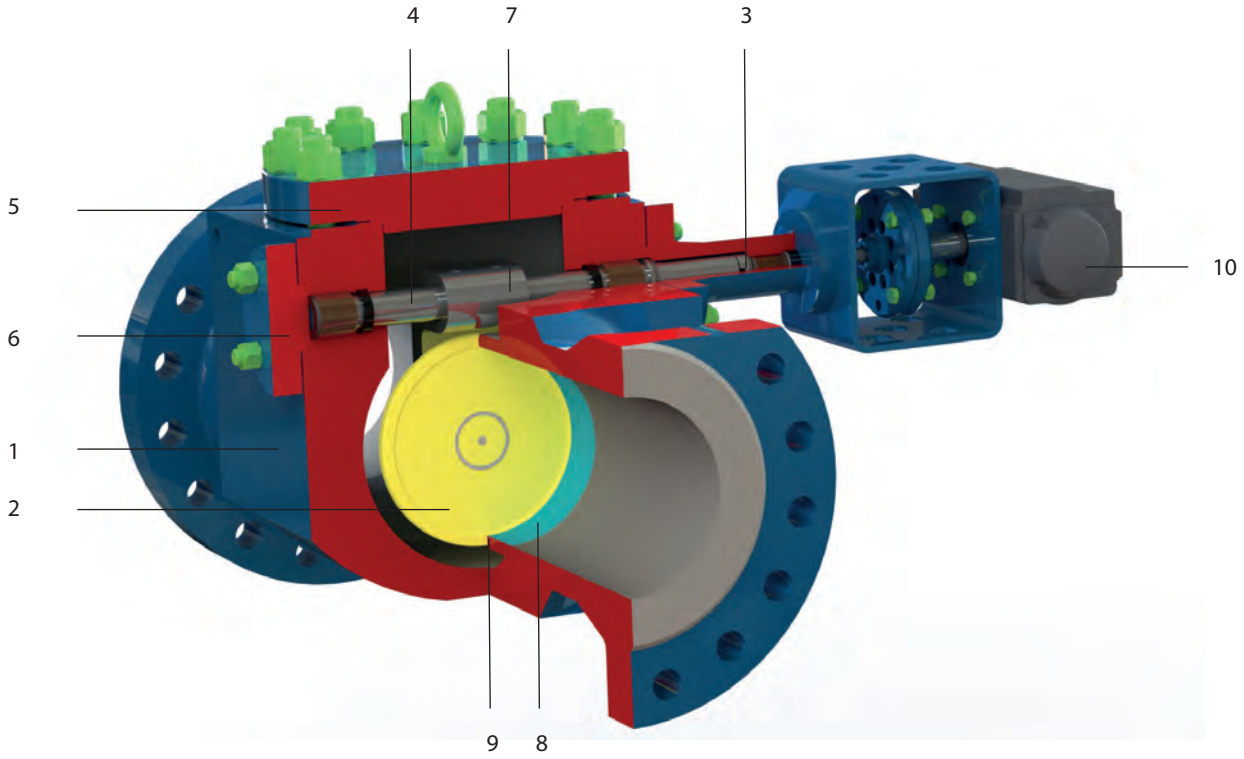
Forged design with pneumatic actuator

Cast design with pneumatic actuator

Welded design with linear actuator

DN 80-350 • PN 100-320 • Tmax 530 °C
NPS 3 -14 • Class 300-1500
Body design: forged

Connection: EN 1092-1, ASME B16.5, ASME B16.47 FLANGED ENDS
EN 12627, ASME B16.25 WELDED ENDS



Material

Position	Component	EN	ASTM
		DN 80 - DN 500 NPS 3-14	
1	Body	1.0425 (P265 GH) 1.7335 (13CrMo4-5) 1.7380 (10CrMo9-10)	A387 Gr. 22 A105 A516 Gr.60 A182 F12 A182 F22 A387 Gr. 12
2	Disc		
5, 6	Cover		
7	Arm		
8	Seat		
3, 4	Shaft	1.4021(17022) 1.4923(17134)	A276 420T
9	Seat hard facing	STELLIT6	
10	Actuator	Quarter-turn actuator, hydraulic actuator, linear actuator	

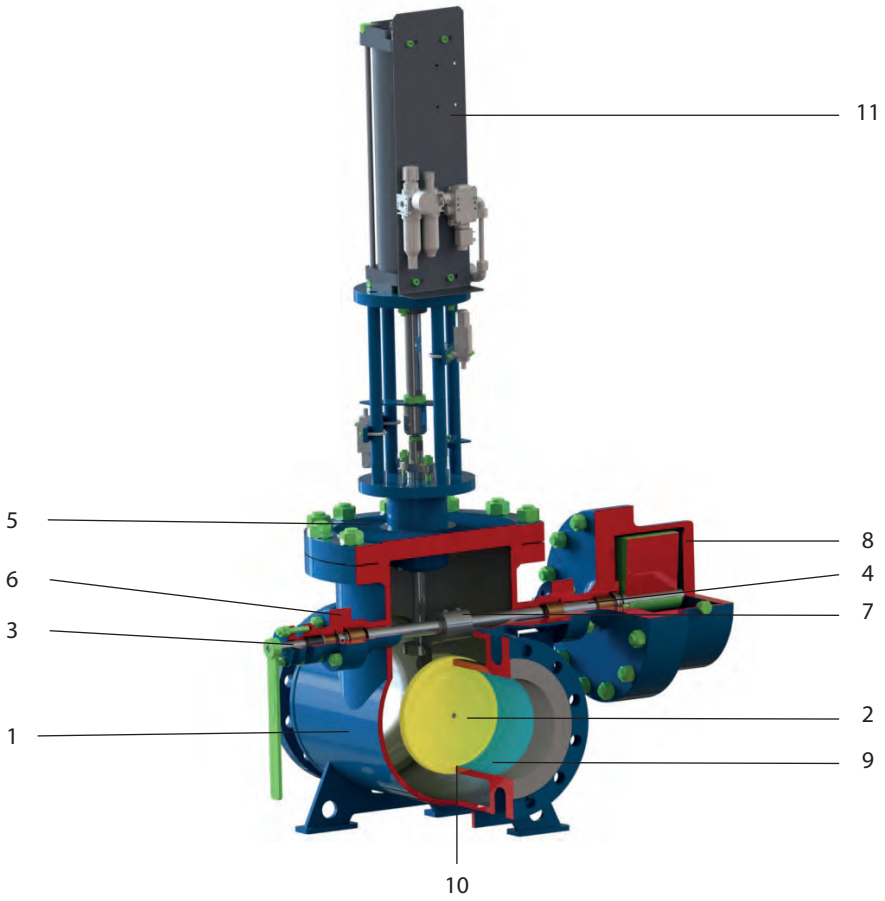
Production range

DN	NPS	PN				Class			
		100	160	250	320	300	600	900	1500
80	3	•	•	•	•	•	•	•	•
100	4	•	•	•	•	•	•	•	•
125	5	•	•	•	•	•	•	•	•
150	6	•	•	•	•	•	•	•	•
200	8	•	•	•	•	•	•	•	•
250	10	•	•	•	•	•	•	•	•
300	12	•	•	•	•	•	•	•	•
350	14	•	•	•	•	•	•	•	•

*other sizes upon customer's request

DN 200-1000 • NPS 8-40 • PN 10-40 • Tmax 300 °C
Body design: welded

Connection: EN 1092-1, ASME B16.5, ASME B16.47 FLANGED ENDS
EN 12627, ASME B16.25 WELDED ENDS



Material

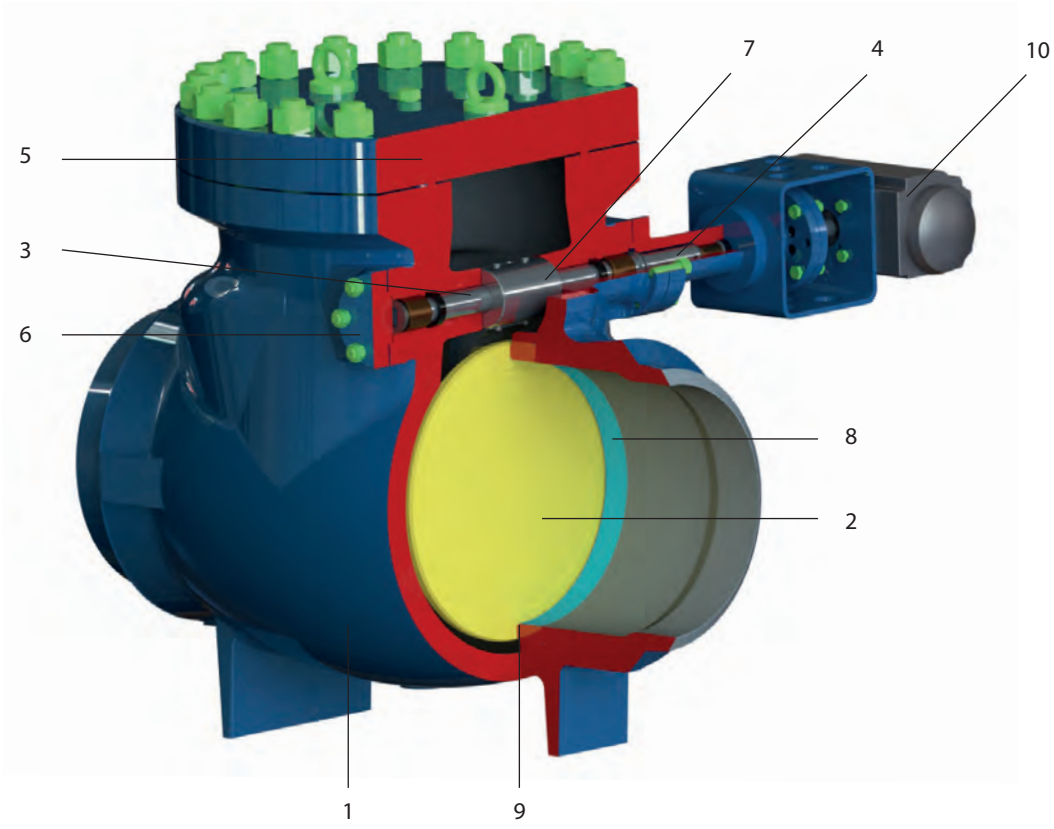
Position	Component	EN	ASTM
		DN 200 - DN 1000 NPS 8 - 40	
1	Body	1.0425 (P265 GH)	A105
2	Disc		
8	Counterweight cover		
5, 6	Cover		
7	Arm		
9	Seat		
3, 4	Shaft	1.4021(17022)	A276 420T
10	Seat hard facing	13%Cr	
11	Actuator	Quarter-turn actuator, hydraulic actuator, linear actuator	

Production range

DN	NPS	PN			
		10	16	25	40
200	8	•	•	•	•
250	10	•	•	•	•
300	12	•	•	•	•
350	14	•	•	•	
400	16	•	•	•	
450	18	•	•	•	
500	20	•	•	•	
600	24	•	•	•	
700	28	•	•		
800	32	•	•		
900	36	•	•		
1000	40	•	•		

DN 400-900 • PN 100 • Tmax 530 °C
NPS 16-36 • Class 150-600
Body design: cast

Connection: EN 1092-1, ASME B16.5, ASME B16.47 FLANGED ENDS
EN 12627, ASME B16.25 WELDED ENDS



Material

Position	Component	EN	ASTM
		DN 400-900	NPS 16-36
1	Body	1.0619, 1.7357, 1.0425, 1.7335, 1.7380, 1.7383, 1.7379	A216 WCB, A217 WC6, A105, A516 Gr.60, A182 F12 Cl.2, A182 F22 Cl.2 *, A387 Gr.12 Cl.2, A387 Gr.22 Cl.2 *, A217 WC9
2	Disc		
5, 6	Cover		
7	Arm		
8	Seat		
3, 4	Shaft	1.4021 (17022) 1.4923 (17134)	A276 420T
9	Seat hard facing	STELLIT6	
10	Actuator	Quarter-turn actuator, hydraulic actuator, linear actuator	

* on request

Production range

DN	NPS	PN	Class		
		100	150	300	600
400	16	•	•	•	•
450	18	•	•	•	•
500	20	•	•	•	•
600	24	•	•	•	•
700	28	•	•	•	•
800	32	•	•	•	•
900	36	•	•	•	•

Table of pressure-temperature ratings acc. to EN 1092-1:2014

Material P265GH - 1.0425, P250GH - 1.0460, P235GH - 1.0345 (group 3E0)

Temperature [°C]	Pressure [bar]							
	PN 6	PN 10	PN 16	PN 25	PN 40	PN 63	PN 100	PN 160
- 10 to 50	6,0	10,0	16,0	25,0	40,0	63,0	100,0	160,0
100	5,5	9,2	14,8	23,2	37,1	58,5	92,8	148,5
150	5,2	8,8	14,0	22,0	35,2	55,5	88,0	140,9
200	5,0	8,3	13,3	20,8	33,3	52,5	83,3	133,3
250	4,5	7,6	12,1	19,0	30,4	48,0	76,1	121,9
300	4,1	6,9	11,0	17,2	27,6	43,5	69,0	110,4
350	3,8	6,4	10,2	16,0	25,7	40,5	64,2	102,8
400	3,5	5,9	9,5	14,8	23,8	37,5	59,5	95,2
450	1,9*	3,1*	5,2*	8,2*	13,1*	20,7*	32,8*	52,5*

* in agreement with the manufacturer

Material 13CrMo45 - 1.7335; G17CrMo5-5 - 1.7357 (group 5E0)

Temperature [°C]	Pressure [bar]							
	PN 6	PN 10	PN 16	PN 25	PN 40	PN 63	PN 100	PN 160
-10 to +50	6,0	10,0	16,0	25,0	40,0	63,0	100,0	160,0
100	6,0	10,0	16,0	25,0	40,0	63,0	100,0	160,0
150	6,0	10,0	16,0	25,0	40,0	63,0	100,0	160,0
200	6,0	10,0	16,0	25,0	40,0	63,0	100,0	160,0
250	6,0	10,0	16,0	25,0	40,0	63,0	100,0	160,0
300	6,0	10,0	16,0	25,0	40,0	63,0	99,5	160,0
350	5,7	9,5	15,2	23,8	38,0	60,0	95,2	152,3
400	5,4	9,0	14,4	22,5	36,0	56,7	90,0	144,0
450	5,0	8,4	13,4	21,0	33,7	53,1	84,2	134,8
460	4,8	8,0	12,8	20,0	32,0	50,5	80,2	128,3
470	4,5	7,6	12,1	19,0	30,4	48,9	76,1	121,8
480	4,3	7,2	11,5	18,0	28,8	45,4	72,0	115,3
490	4,0	6,8	10,8	17,0	27,2	42,8	68,0	108,8
500	3,9*	6,5*	10,4*	16,3*	26,0*	41,1*	65,2*	104,3*
510	3,3*	5,5*	8,8*	13,8*	22,0*	34,8*	55,2*	88,3*
520	2,6*	4,4*	7,1*	11,1*	17,9*	28,2*	44,7*	71,6*
530	2,2*	3,7*	5,9*	9,2*	14,8*	23,4*	37,1*	59,4*

* in agreement with the manufacturer

Material 10CrMo910 - 1.7380; 11CrMo9-10 - 1.7383; G17CrMo9-10 - 1.7379 (group 6E0)

Temperature [°C]	Pressure [bar]									
	PN 6	PN 10	PN 16	PN 25	PN 40	PN 63	PN 100	PN 160	PN 250	PN 320
-10 to +50	6,0	10,0	16,0	25,0	40,0	63,0	100,0	160,0	250,0	320,0
100	6,0	10,0	16,0	25,0	40,0	63,0	100,0	160,0	250,0	320,0
150	6,0	10,0	16,0	25,0	40,0	63,0	100,0	160,0	250,0	320,0
200	6,0	10,0	16,0	25,0	40,0	63,0	100,0	160,0	250,0	320,0
250	6,0	10,0	16,0	25,0	40,0	63,0	100,0	160,0	250,0	320,0
300	6,0	10,0	16,0	25,0	40,0	63,0	100,0	160,0	250,0	320,0
350	5,8	9,7	15,6	24,4	39,0	61,5	97,6	156,1	244,0	312,3
400	5,5	9,2	14,8	23,2	37,1	58,5	92,8	1485	232,1	297,1
450	5,2	8,8	14,0	22,0	35,2	55,5	88,0	140,9	220,2	281,9
460	5,1	8,3	13,3	20,8	33,3	52,5	83,3	133,3	208,3	166,6
470	4,7	7,8	12,5	19,6	31,4	49,5	78,5	125,7	196,4	151,4
480	4,4*	7,3*	11,8*	18,4*	29,5*	46,5*	73,8*	118,0*	184,5*	136,1*
490	4,1*	6,9*	11,0*	17,2*	27,6*	43,5*	69,0*	110,4*	172,6*	220,9*
500	3,8*	6,4*	10,2*	16,0*	25,7*	40,5*	64,2*	102,8*	160,7*	205,7*
510	3,3*	5,6*	8,9*	14,0*	22,4*	35,4*	56,1*	89,9*	140,4*	179,8*
520	2,9*	4,9*	7,8*	12,2*	19,6*	30,9*	49,0*	78,4*	122,6*	156,9*
530	2,5*	4,2*	6,8*	10,7*	17,1*	27,0*	42,8*	68,5*	107,1*	137,1*

* in agreement with the manufacturer

Table of pressure-temperature ratings acc. to ASME/ANSI B16.34-2009

Material A 106-B, A516-60 - Gr.1. 4

Temperature [°C]	Pressure [bar]				
	CLASS 150 (PN 20)	CLASS 300 (PN 50)	CLASS 400 (PN 64)	CLASS 600 (PN 100)	CLASS 900 (PN 160)
-29 to 38	16,3	42,6	56,7	85,1	127,7
50	16,0	41,8	55,6	83,5	125,3
100	14,9	38,8	51,5	77,7	116,5
150	14,4	37,6	50,3	75,1	112,7
200	13,8	36,4	48,8	72,8	109,2
250	12,1	34,9	46,3	69,8	104,7
300	10,2	33,2	43,1	66,4	99,5
350	8,4	31,2	41,2	62,5	93,7
400	6,5	29,3	40,4	58,7	88,0
425	5,5	25,8	34,4	51,5	77,3
450	4,6	21,4	34,4	42,7	-
500	2,8	20,6	-	20,6	-
538	1,4	5,9	-	11,8	-

Material A 105 - Gr. 1.1

Temperature [°C]	Pressure [bar]				
	CLASS 150 (PN 20)	CLASS 300 (PN 50)	CLASS 400 (PN 64)	CLASS 600 (PN 100)	CLASS 900 (PN 160)
-29 to 38	19,6	51,1	68,1	102,1	153,2
50	19,2	50,1	66,8	100,2	150,4
100	17,7	46,6	62,1	93,2	139,8
150	15,8	45,1	60,1	90,2	135,2
200	13,8	43,8	58,4	87,6	131,4
250	12,1	41,9	55,9	83,9	125,8
300	10,2	39,8	53,1	79,6	119,5
350	8,4	37,6	50,1	75,1	112,7
400	6,5	34,7	46,3	69,4	104,2
450	4,6	23,0	30,7	46,0	69,0
500	2,8	11,8	15,7	23,5	35,3
538	1,4	5,9	7,9	11,8	17,7

A182 F12 Cl.2 - Gr. 1.17

Temperature [°C]	Pressure [bar]				
	CLASS 150 (PN 20)	CLASS 300 (PN 50)	CLASS 400 (PN 64)	CLASS 600 (PN 100)	CLASS 900 (PN 160)
-29 to 38	19,8	51,7	68,9	103,4	155,1
50	19,5	51,5	68,7	103,0	154,5
100	17,7	50,4	67,3	100,9	151,3
150	15,8	48,2	64,2	96,4	144,5
200	13,8	46,3	61,7	92,5	138,8
250	12,1	44,8	59,8	89,6	134,5
300	10,2	42,9	57	85,7	128,6
350	8,4	40,3	53,6	80,4	120,7
400	6,5	36,5	48,9	73,3	109,8
450	4,6	33,7	45,1	67,7	101,4
500	2,8	21,4	28,5	42,8	64,1
538	1,4[a]	13,7	18,3	27,4	41,1
550	1,4[a]	12,0	16,1	24,1	36,1
600	1,4[a]	6,1	8,1	12,1	18,2
650	0,9[a]	2,4	3,2	4,7	7,1

[a]) valves with welding ends only

Table of pressure-temperature ratings acc. to ASME/ANSI B16.34-2009

Material A 182 F22 Cl.3 - Gr. 1.10

Temperature [°C]	Pressure [bar]				
	CLASS 150 (PN 20)	CLASS 300 (PN 50)	CLASS 400 (PN 64)	CLASS 600 (PN 100)	CLASS 900 (PN 160)
-29 to 38	19,8	51,7	68,9	103,4	155,1
50	19,5	51,7	68,9	103,4	155,1
100	17,7	51,5	68,7	103,0	154,6
150	15,8	50,3	66,8	100,3	150,6
200	13,8	48,6	64,8	97,2	145,8
250	12,1	46,3	61,7	92,7	139,0
300	10,2	42,9	57,0	85,7	128,6
350	8,4	40,3	53,6	80,4	120,7
400	6,5	36,5	48,9	73,3	109,8
450	4,6	33,7	45,1	67,7	101,4
500	2,8	28,2	37,6	56,5	84,7
538	1,4	18,4	24,6	36,9	55,3
550	-	15,6	20,8	31,3	46,9
600	-	6,9	9,2	13,8	20,7
650	-	2,8	5,7	5,7	8,5

Table of pressure-temperature ratings acc. to ASME/ANSI B16.5 - 2013

Material A387 Gr.22 Cl.2 – Gr.1.10

Temperature [°C]	Pressure [bar]				
	CLASS 150 (PN 20)	CLASS 300 (PN 50)	CLASS 400 (PN 64)	CLASS 600 (PN 100)	CLASS 900 (PN 160)
-29 to 38	19,8	51,7	68,9	103,4	155,1
50	19,5	51,7	68,9	103,4	155,1
100	17,7	51,5	68,7	103,0	154,6
150	15,8	50,3	66,8	100,3	150,6
200	13,8	48,6	64,8	97,2	145,8
250	12,1	46,3	61,7	92,7	139,0
300	10,2	42,9	57,0	85,7	128,6
350	8,4	40,3	53,6	80,4	120,7
400	6,5	36,5	48,9	73,3	109,8
450	4,6	33,7	45,1	67,7	101,4
500	2,8	28,2	37,6	56,5	84,7
538	1,4	18,4	24,6	36,9	55,3
550	-	15,6	20,8	31,3	46,9
600	-	6,9	9,2	13,8	20,7
650	-	2,8	3,8	5,7	8,5

Table of pressure-temperature ratings acc. to ASME/ANSI B16.34 - 2013

Material A387 Gr.12 Cl.2 – Gr.1.8

Temperature [°C]	Pressure [bar]			
	CLASS 150 (PN 20)	CLASS 300 (PN 50)	CLASS 600 (PN 100)	CLASS 900 (PN 160)
-29 to 38	16,3	42,6	85,1	127,7
50	16,1	41,9	83,9	125,8
100	15,2	39,6	79,2	118,7
150	14,8	38,6	77,1	115,7
200	13,8	38,2	76,4	114,6
250	12,1	38,2	76,3	114,5
300	10,2	38,2	76,3	114,5
350	8,4	38,0	76,0	114,0
400	6,5	36,5	73,3	109,8
450	4,6	33,7	67,7	101,4
500	2,8	25,6	51,3	76,9
538	1,4	14,9	29,8	44,7
550	-	12,7	25,4	38,1
600	-	6,1	12,1	18,2
650	-	2,6	5,2	7,8

CERTIFICATION

QMS Certificate acc. to EN ISO 9001:2015

MS Certificate acc. to EN ISO 14001:2015

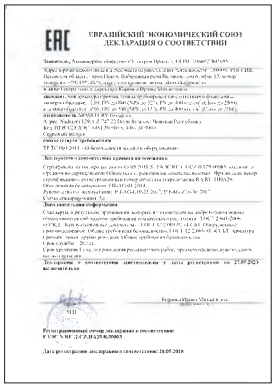
Certificate acc. to BS OHSAS 18001:2007

Certificate PED 2014/68/EU module H

Inspection certificate of Safety Integrity Level (SIL) of check valves L10

QMS Certificate in welding acc. to EN ISO 3834-2

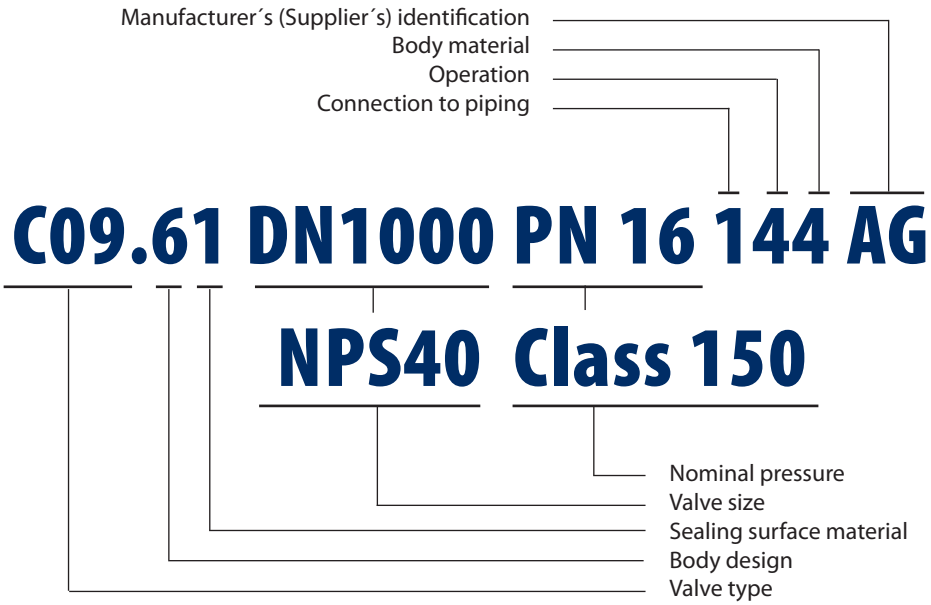
Certificate acc. to TP TC 032/2013 to the Euroasian Union



Declaration acc. to TC 010/2011 to the Euroasian Union

TYPE NUMBER POSITION

Type number uniquely describes the valve.
Type number is fixed by the manufacturer (supplier).
Type number serves to customers in subsequent communication with the manufacturer (supplier) valve.



Valve type
C09 - check valve
L10 - check valve

Body design
6 - extraction check valve

Sealing surface material
1 - 13Cr x 13Cr
5 - stellit x stellit
8 - 13Cr x stellit

Connection to piping
1 - flanged ends
2 - welded ends

Operation
4 - pneumatic actuator, hydraulic actuator
7 - self-acting (lever, weight)

Body material
2 - alloy steel
3 - forged alloy steel
4 - carbon forged steel
5 - carbon cast steel

Manufacturer´s (Supplier´s) identification
AG – ARMATURY Group a.s.

Type number composition in for example valve type C09.61 DN 1000 PN 16 144 AG - extraction check valve, seat and disc 13Cr x 13Cr, flanged ends, with pneumatic or hydraulic actuator, carbon steel.It is the same way for type number composition of every product range in this catalogue.

Czech Republic

ARMATURY Group a.s.

Production plant and Headquarters

Nádražní 129, 747 22 Dolní Benešov

tel.: +420/553 680 111

fax: +420/553 680 333

email: agroup@agroup.cz

Slovakia

ARMATÚRY GROUP, s.r.o.

Registered office

Jánošíkova 264, 010 01 Žilina

tel.: +421/41/707 77 77

fax: +421/41/707 77 70

email: zilina@agroup.cz

Austria

Armatury Group GmbH

ARMATURY Group a.s. official representative

Attemsgasse 45/1/7, A-1220 Wien

mob.: +43(0)/664/88 51 33 33

tel.: +43(0)/1/20 21 985

fax: +43(0)/1/20 21 985

email: david.styblo@armatury.at

Germany

Armatury Group GmbH

ARMATURY Group a.s. official representative

Technologie Centrum Bissendorf Gewerbepark 18,
49143 Bissendorf

mob.: +43(0)/664/88 51 33 33

tel.: +49(0)/5402/70/2532

fax: +49(0)/5402/70/2531

email: david.styblo@armatury.at

Russia

AO „ARMATURY Group a.s."

ARMATURY Group a.s. official representative

3rd street Tverskaya-Yamskaya, house 31/35,
125047 Moscow

tel./fax: +7/495 956 3335

email: moscow@agroup.cz

China

ARMATURY GROUP Co., Ltd

Subsidiary company

Xinjing road 18

Zhangjiagang Economic & Technological Development Zone

Jiangsu, China

mob. (China): +86/137 7326 6078

mob. (CZ): +420/606 713 721

email: radomir.lukes@agroup.cz

United Arab Emirates

ARMATURY Group a.s. DMCC

ARMATURY Group a.s. official representative

Unit 509, Goldcrest Executive, Cluster C, Jumeira Lake Towers

Dubai, United Arab Emirates

mob.: +971/564 167 600

tel.: +971/043 999 167

email: sivaram.jayaraman@agroup.cz

Other business representatives abroad:

Poland, Norway, Turkey, Estonia, Romania, Egypt,
Iraq, Pakistan, India, Algeria, Thailand, Sweden
and other countries.

www.armaturygroup.cz

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