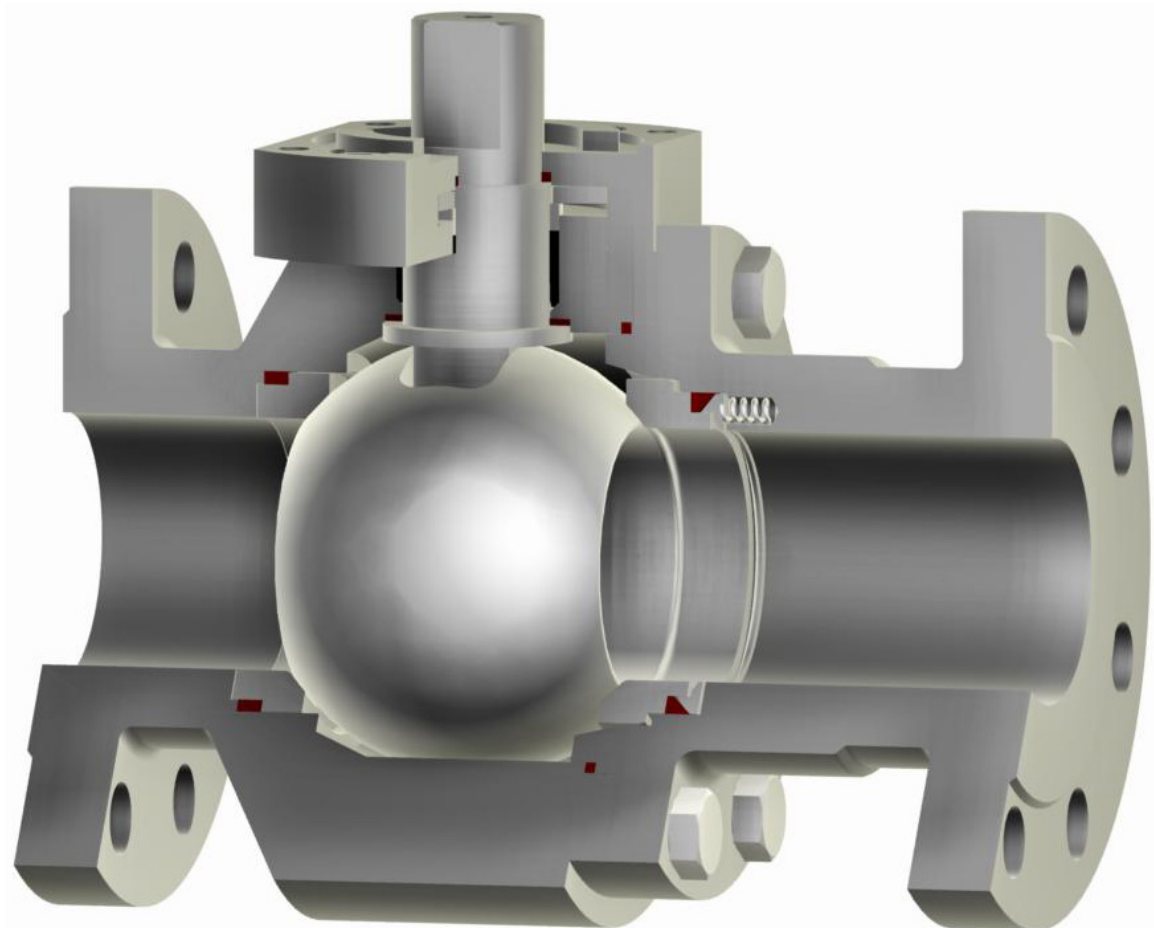




Two-Way Metal Seated Ball Valve Type 80-M



Design Characteristics

- ✓ Two piece body
- ✓ Floating ball
- ✓ Blow out proof stem
- ✓ Live loaded stem packing
- ✓ Spring loaded seat system
- ✓ Fire Safe design optional

Design Standards

- ✓ EN 12516, EN 1983, ISO 5211, AD-2000
- ✓ ASME B 16.34, API 608

Range of Application

- ✓ Diameter 1/2" to 12" / DN 15 to 300
- ✓ Class 150 to 1500 / PN 10 to 250
- ✓ -20°F to +850°F / -60°C to +450°C

Approvals

- ✓ "TA-Luft" certified for low fugitive emissions

Testing Standards

- ✓ EN 12266-1/2
- ✓ API 598



Main Parts

- 1 Body
- 2 Body End Connection
- 4 Retainer Ring
- 5 Ball
- 6 Stem
- 8 Gland Washer
- 10 Bearing Cover
- 16 Plate Spring
- 17 Coil Spring
- 19 Sealing Ring
- 20 Sealing Ring
- 21 Seat Ring
- 23 Body Gasket
- 24 Stem Packing
- 25 Bearing Ring
- 26 Bearing Ring
- 28 Screw
- 29 Screw

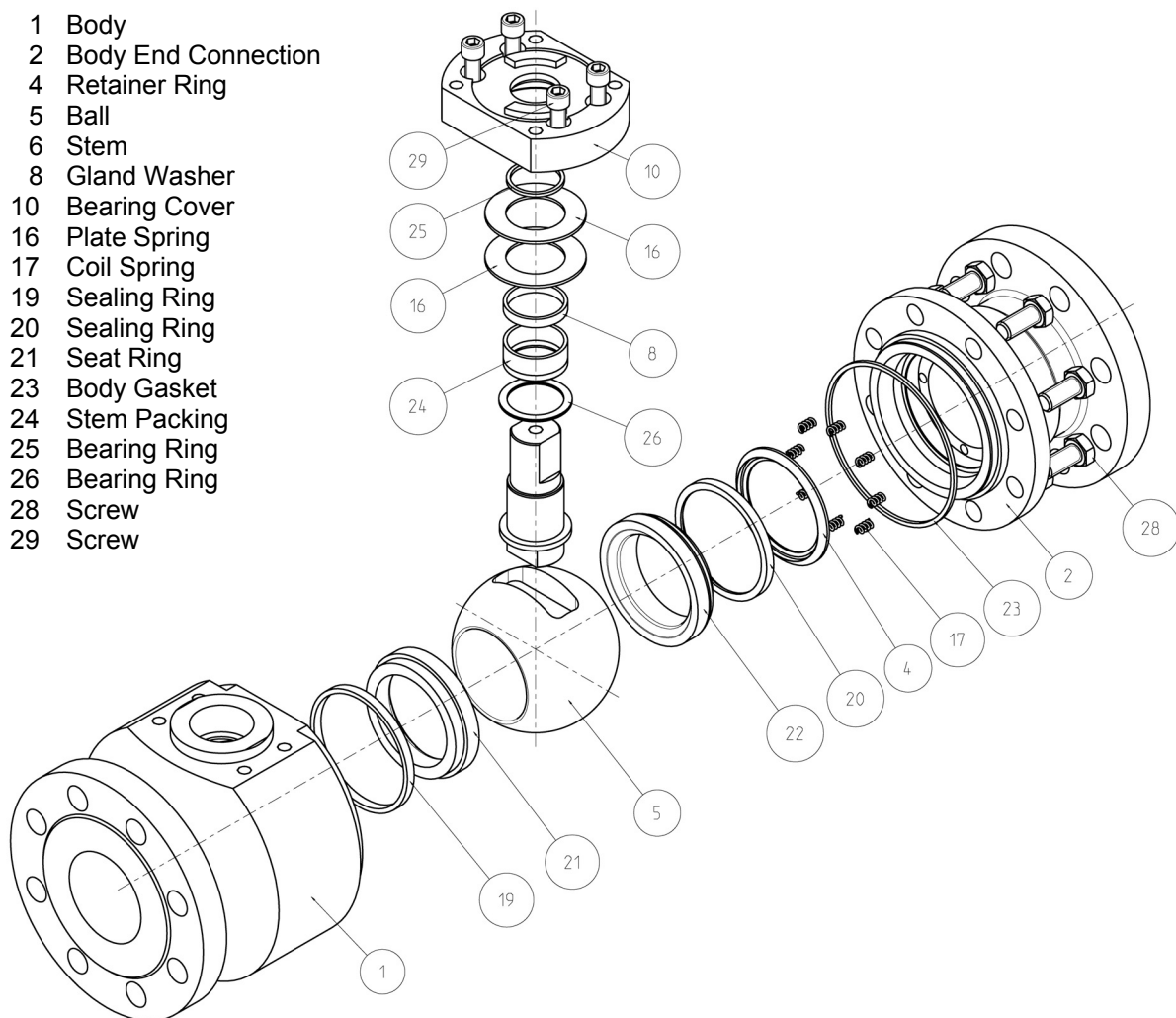


Fig. 1

Description

This PERRIN ball valve is a floating ball design with a two piece split body housing. The spring loaded metallic seat system and live loaded stem packing also provide continuous tightness during short-term temperature and pressure changes.

The valve is equipped with an integral actuator mounting flange for actuator connection according to ISO 5211. Stem extensions, locking devices and actuators with accessories, can be attached without operating interruptions.

The ball valve has an antistatic design with blow out proof stem. The stem packing and sealings are "TA-Luft" certified for low fugitive emissions.

Parts List / Materials

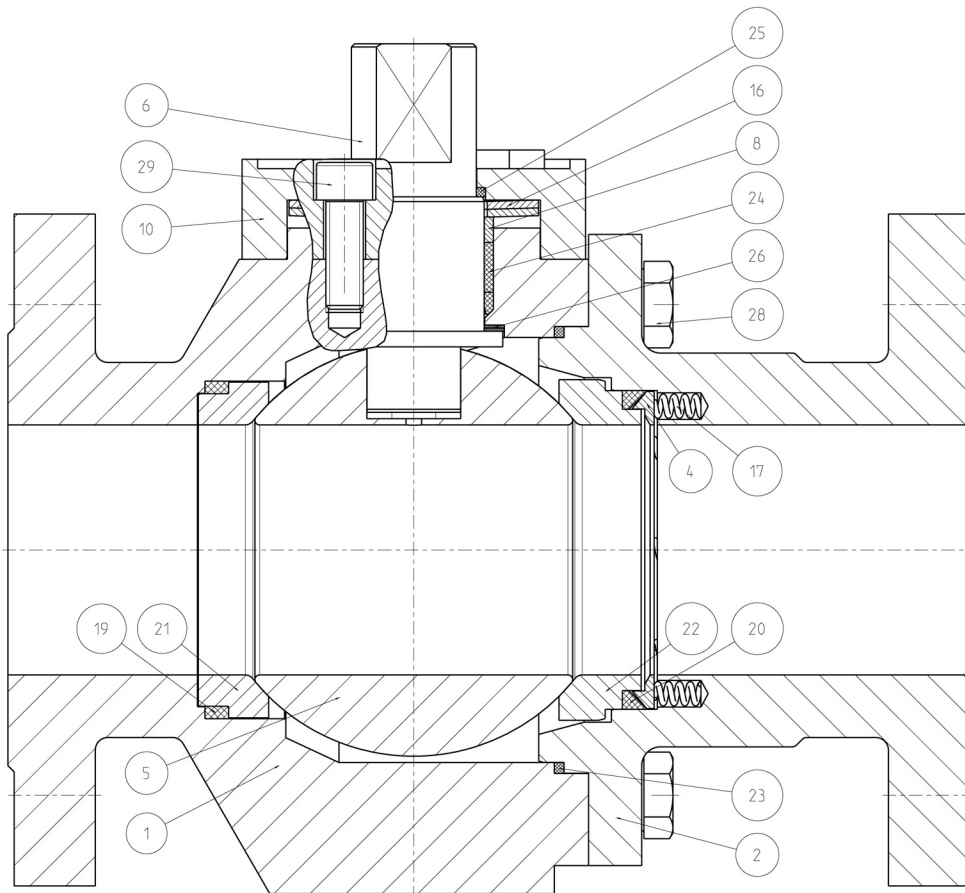


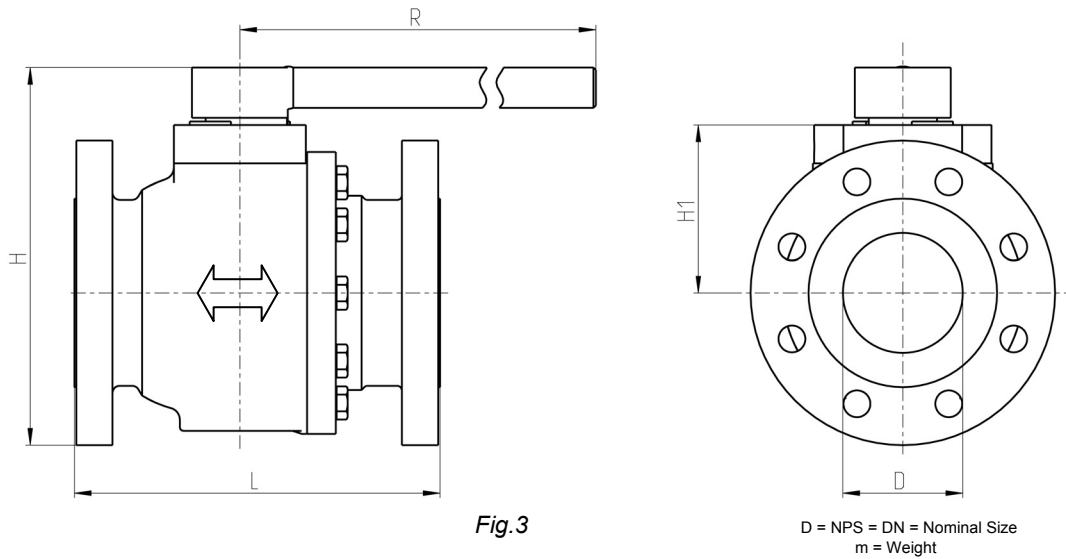
Fig. 2

Item	Designation	ASME		DIN EN	
		-20°F up to +850°F	-20°F up to +850°F	-60°C up to +450°C	-10°C up to +450°C
1	Body	A351 CF8M	A216 WCB	1.4408 ¹⁾	1.0619
2	Body End Connection	Type 316 (up to 2")	A105 (up to 2")	1.4571 (up to 2")	1.0460 (up to 2")
4	Retainer Ring	Type 316	Type 316	1.4571	1.4571
5	Ball	Type 316 coated A351 CF8M coated	Type 316 coated A351 CF8M coated	1.4571 coated 1.4408 ¹⁾ coated	1.4571 coated 1.4408 ¹⁾ coated
6	Stem	Type 51 ²⁾ Type 316	Type 51 ²⁾ Type 316	1.4462 ²⁾ 1.4571	1.4462 ²⁾ 1.4571
8	Gland Washer	Type 316	Type 316	1.4571	1.4571
10	Bearing Cover	Type 316	A105	1.4571	1.0460
16	Plate Spring ³⁾	Type 301	AISI 6150	1.4310	1.8159
17	Coil Spring	Type 316	Type 316	1.4571	1.4571
19	Sealing Ring	Graphite	Graphite	Graphite	Graphite
20	Sealing Ring				
21	Seat Ring	Type 316 coated	Type 316 coated	1.4571 coated	1.4571 coated
23	Body Gasket	Graphite	Graphite	Graphite	Graphite
24	Stem Packing				
25	Bearing Ring				
26	Bearing Ring	Graphite with SS	Graphite with SS	Graphite with SS	Graphite with SS
28	Screw	SS	SS	SS	SS
29	Screw	SS	SS	SS	SS

Tab. 1

- 1) Temperature limitation 300°C [576°F] acc. to German technical rule AD-2000 W5 if intercrystalline corrosion resistant is required
2) Temperature limitation 280°C [536°F]
3) Material 2.4668 (Inconel 718) is generally required for operating temperature over 200°C [392°F]
4) Materials for lower / higher temperature on request

Technical Data



CLASS 150 - Full Bore

NPS [inch]	DN [mm]	H		H1		R		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
½	15	5,9	150	2,0	51	7	180	4,25	108	27	9	4
¾	20	5,9	150	2,0	51	7	180	4,62	117	47	12	5,5
1	25	6,8	172	2	62	7	180	5	127	74	13	6
1¼	32	7	190	2,7	68	7	180	5,5	140	123	22	10
1½	40	8,1	206	3	81	12	300	6,5	165	191	31	14
2	50	8,9	226	4,0	101	12	300	7	178	298	37	17
2½	65	9,7	247	4,2	106	12	300	7,5	190	504	55	25
3	80	12,2	309	5	125	18	450	8	203	763	77	35
4	100	13	342	6	140	18	450	9	229	1192	97	44

Tab.2

CLASS 150 - Reduced Bore

NPS [inch]	NPS-R [inch]	H		H1		R		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
¾	½	6,3	161	2	51	7	180	4,62	117	24	10	4,5
1	¾	6,3	161	2	51	7	180	5	127	43	13	6
1¼	1	7	177	2,4	62	7	180	5,5	140	67	17	7,5
1½	1¼	7,9	201	2,7	68	7	180	6,5	165	110	25	11,5
2	1½	8,3	211	3,2	81	12	300	7	178	172	33	15
2½	2	9,4	239	4	101	12	300	7,5	190	268	44	20
3	2½	10,1	257	4,2	106	12	300	8	203	454	64	29
4	3	12,7	322	4,9	125	18	450	9	229	687	79	36

Tab.3



CLASS 300 - Full Bore

NPS [inch]	DN [mm]	H		H1		R		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
½	15	5,9	151	2,0	51	7	180	5,5	140	27	11	5
¾	20	6,2	157	2,0	51	7	180	6	152	47	14	7
1	25	6,6	168	2	62	7	180	6,5	165	74	18	8
1¼	32	7,3	186	2,7	68	12	300	7	178	123	29	13
1½	40	8,5	217	3	81	12	300	7,5	190	191	37	17
2	50	9	228	4,0	101	12	300	8,5	216	298	48	22
2½	65	9,7	247	4,2	106	12	300	9,5	241	504	73	33
3	80	12	305	4,9	125	18	450	11,12	282	763	92	42
4	100	13,5	343	6	140	28	700	12	305	1192	123	56

Tab.4

CLASS 300 - Reduced Bore

NPS [inch]	NPS-R [inch]	H		H1		R		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
¾	½	6,4	162	2	51	7	180	6	152	24	13	6
1	¾	6,4	162	2	51	7	180	6,5	165	43	16	7
1¼	1	6,8	173	2,4	62	7	180	7	178	67	20	9
1½	1¼	7,8	197	2,7	68	7	180	7,5	190	110	33	15
2	1½	8,7	222	3,2	81	12	300	8,5	216	172	43	20
2½	2	9,5	241	4	101	12	300	9,5	241	268	56	25
3	2½	10,1	257	4,2	106	12	300	11,12	282	454	83	38
4	3	12,4	315	4,9	125	18	450	12	305	687	106	48

Tab.5



CLASS 600 - Full Bore

NPS [inch]	DN [mm]	H		H1		R		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
½	15	6,4	163	2,2	55	12	300	6,5	165	27	15	7
¾	20	6,8	173	2,3	59,5	12	300	7	190	47	22	10
1	25	6,8	173	2,3	58	12	300	8,5	216	74	29	13

Tab.6

CLASS 900 - Full Bore

NPS [inch]	DN [mm]	H		H1		R		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
½	15	6,7	171	2,3	58	12	300	8,5	216	27	26	12
¾	20	6,9	176	2,3	58	12	300	9	229	47	29	13
1	25	7,4	187	2,3	59	12	300	10	254	74	37	17

Tab.7

CLASS 1500 - Full Bore

NPS [inch]	DN [mm]	H		H1		R		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
½	15	6,7	171	2,3	58	12	300	8,5	216	27	26	12
¾	20	6,9	176	2,3	58	12	300	9	229	47	29	13
1	25	7,4	187	2,3	59	12	300	10	254	74	37	17

Tab.8

PN 16 – PN 40

DN [mm]	H [mm]	H1 [mm]	R [mm]	L [mm] DIN EN 558		Kv [m³/h]	m [kg]	
				GR1	GR27		GR1	GR27
15	150	51	180	130	115	23	4	3
20	150	51	180	150	120	41	5	4
25	172	62	180	160	125	64	6	5
32	190	68	300	180	130	106	8	7
40	206	81	300	200	140	165	10	9
50	226	101	300	230	150	258	12	11
65	247	106	300	290	170	436	19	17
80	309	125	450	310	180	660	25	21
100	342	140	700	350	190	1031	35	29

Tab.9

Other dimensions and pressure classes on request.

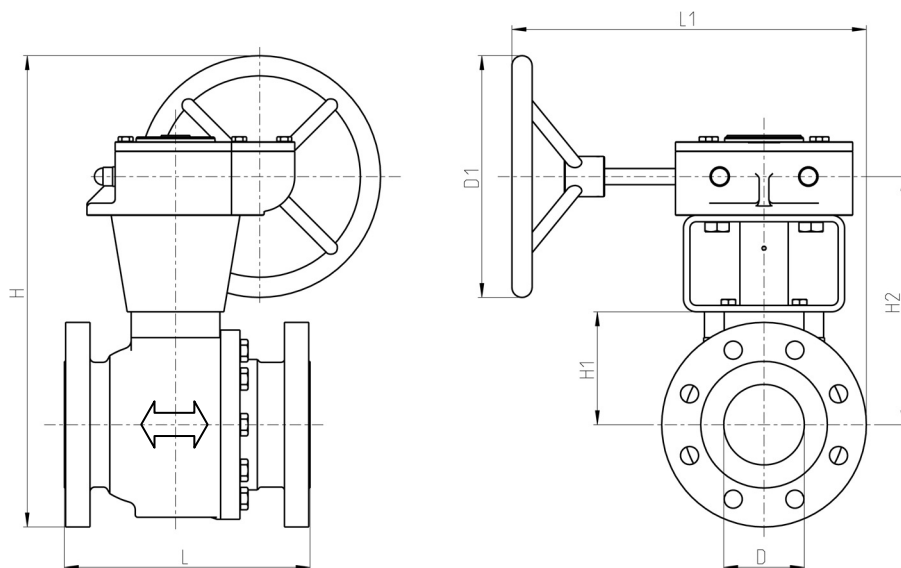


Fig.4

D = NPS = DN = Nominal Size
m = Weight

CLASS 150 - Full Bore

NPS [inch]	DN [mm]	H		H1		H2		L1		D1		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
6	150	31,9	811	7,8	197	13	321	14,7	373	28	700	15,5	394	2548	295	134
8	200	35,6	903	9,5	241	15	382	18	467	28	700	18	457	4528	486	221
10	250	38	966	11,1	282	18,2	463	21	528	24	600	21	533	7358	779	354
12	300	43	1097	13	338	21,9	556	24	600	24	600	24	610	10190	1118	508

Tab.10

CLASS 150 - Reduced Bore

NPS [inch]	NPS-R [inch]	H		H1		H2		L1		D1		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
6	4	19,3	489	5,5	140	10,4	264	12,3	312	18	450	15,5	394	1676	223	101
8	6	32,6	828	7,8	197	13,3	338	14,7	373	28	700	18	457	2414	339	154
10	8	37,1	943	9,5	241	16,6	422	18,4	467	28	700	21	533	4291	559	254
12	10	39,5	1003	11,1	282	19,7	500	20,8	528	24	600	24	610	6972	894	407

Tab.11

CLASS 300 - Full Bore

NPS [inch]	DN [mm]	H		H1		H2		L1		D1		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
6	150	33	841	9	241	15	382	20	515	24	600	15,9	403	2548	383	174
8	200	35	880	11	282	18	464	23	588	18	450	20	502	4528	608	277
10	250	42	1058	13	338	25	636	27	679	16	400	22	568	7358	938	427
12	300	52	1310	18	452	30	750	30	770	24	600	26	648	10190	1469	668

Tab.12

CLASS 300 - Reduced Bore

NPS [inch]	NPS-R [inch]	H		H1		H2		L1		D1		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
6	5	28	701	7,8	197	13	338	12	315	28	700	15,9	403	1676	319	145
8	6	34	865	9	241	15	382	20	515	24	600	20	502	2414	507	230
10	8	40	1006	11	282	18	464	23	588	18	450	22	568	4291	782	355
12	10	43	1083	13	338	25	636	27	679	16	400	26	648	6972	1224	556

Tab.13



CLASS 600 - Full Bore

NPS [inch]	DN [mm]	H		H1		H2		L1		D1		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
1½	40	19	478	4	89	8	201	10	247	8	200	9,5	241	191	73	33
2	50	22	553	4	89	8	213	11	285	12	300	11	292	298	108	49
3	80	35	877	5	125	11	292	12	294	28	700	14	356	763	191	87
4	100	41	1038	6	140	12	311	12	299	35	900	17	432	1192	317	144

Tab.14

CLASS 900 - Full Bore

NPS [inch]	DN [mm]	H		H1		H2		L1		D1		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
1½	40	21	540	4	101	9	225	11	290	10	250	12	305	191	97	44
2	50	26	659	4	101	9	225	12	309	18	450	14	368	298	134	61
3	80	35	892	5	125	12	296	14	351	28	700	15	381	763	264	120
4	100	36	918	7	171	14	354	20	503	18	450	18	457	1192	433	197

Tab.15

CLASS 1500 - Full Bore

NPS [inch]	DN [mm]	H		H1		H2		L1		D1		L ASME B16.10		Cv [gal/min]	m	
		[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
1½	40	22	566	4	89	8	213	11	290	14	350	12	305	191	114	52
2	50	34	862	4	114	9	240	12	297	31	800	14	368	298	205	93

Tab.16

PN 16

DN [mm]	H [mm]	H1 [mm]	H2 [mm]	L1 [mm]	D1 [mm]	L [mm] DIN EN 558		Kv [m³/h]	m [kg]	
						GR1	GR27		GR1	GR27
150	814	197	321	435	700	480	350	2320	117	101
200	902	241	382	526	700	600	400	4124	192	167
250	966	282	463	600	600	730	450	6701	307	267
300	1086	338	556	687	600	850	500	9279	441	384

Tab.17

PN 40

DN [mm]	H [mm]	H1 [mm]	H2 [mm]	L1 [mm]	D1 [mm]	L [mm] DIN EN 558		Kv [m³/h]	m [kg]	
						GR1	GR27		GR1	GR27
150	965	241	365	506	900	480	350	2320	151	132
200	836	282	423	585	450	600	400	4124	240	209
250	944	338	519	682	400	730	450	6701	371	322
300	1228	452	670	768	600	850	500	9279	580	505

Tab.18

Other dimensions and pressure classes on request.

Top Works

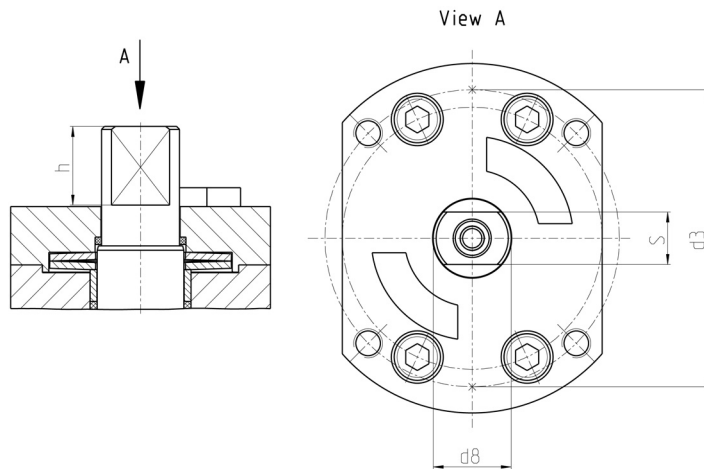


Fig.5

F	h		s		d3		d8	
	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
F05	17	0,7	10	0,4	50	2	13	0,5
F07	22	0,9	12	0,5	70	2,8	17	0,7
F10	27	1,1	18	0,7	102	4	27	1,1
F12	38	1,5	32	1,3	125	4,9	40	1,6
F14	38	1,5	38	1,5	140	5,5	57	2,2
F16	48	1,9	44	1,7	165	6,5	68	2,7
F25	48	1,9	55	2,2	254	10	82	3,2
F30	99	3,9	65	2,6	298	11,7	93	3,7

Tab.19

Actuator-Connection ISO 5211 Full Bore

NPS [inch]	DN [mm]	CLASS / PN				
		150 / 16	300 / 40	600 / 100	900 / 160	1500 / 250
½	15	F05	F05	F07	F07	F07
¾	20	F05	F05	F07	F07	F07
1	25	F05	F05	F07	F07	F07
1¼	32	F07	F07	F07	F07	F07
1½	40	F07	F10	F10	F10	F10
2	50	F07	F10	F10	F10	F10
2½	65	F07	F10	F10	F12	F12
3	80	F10	F12	F12	F12	F14
4	100	F10	F12	F16	F16	F16
6	150	F14	F14			
8	200	F14	F14*			
10	250	F16	F16*			
12	300	F25	F25*			

Reduced Bore

NPS [inch]	NPS-R [inch]	CLASS	
		150	300
½	-	-	-
¾	½	F05	F05
1	¾	F05	F05
1¼	1	F05	F05
1½	1¼	F07	F07
2	1½	F07	F10
2½	2	F07	F10
3	2½	F07	F10
4	3	F10	F12
6	4	F10*	F12
8	6	F14	F14
10	8	F14	F16
12	10	F16	F16*

* Feather Keyway

Tab.20

Pressure / Temperature Diagram

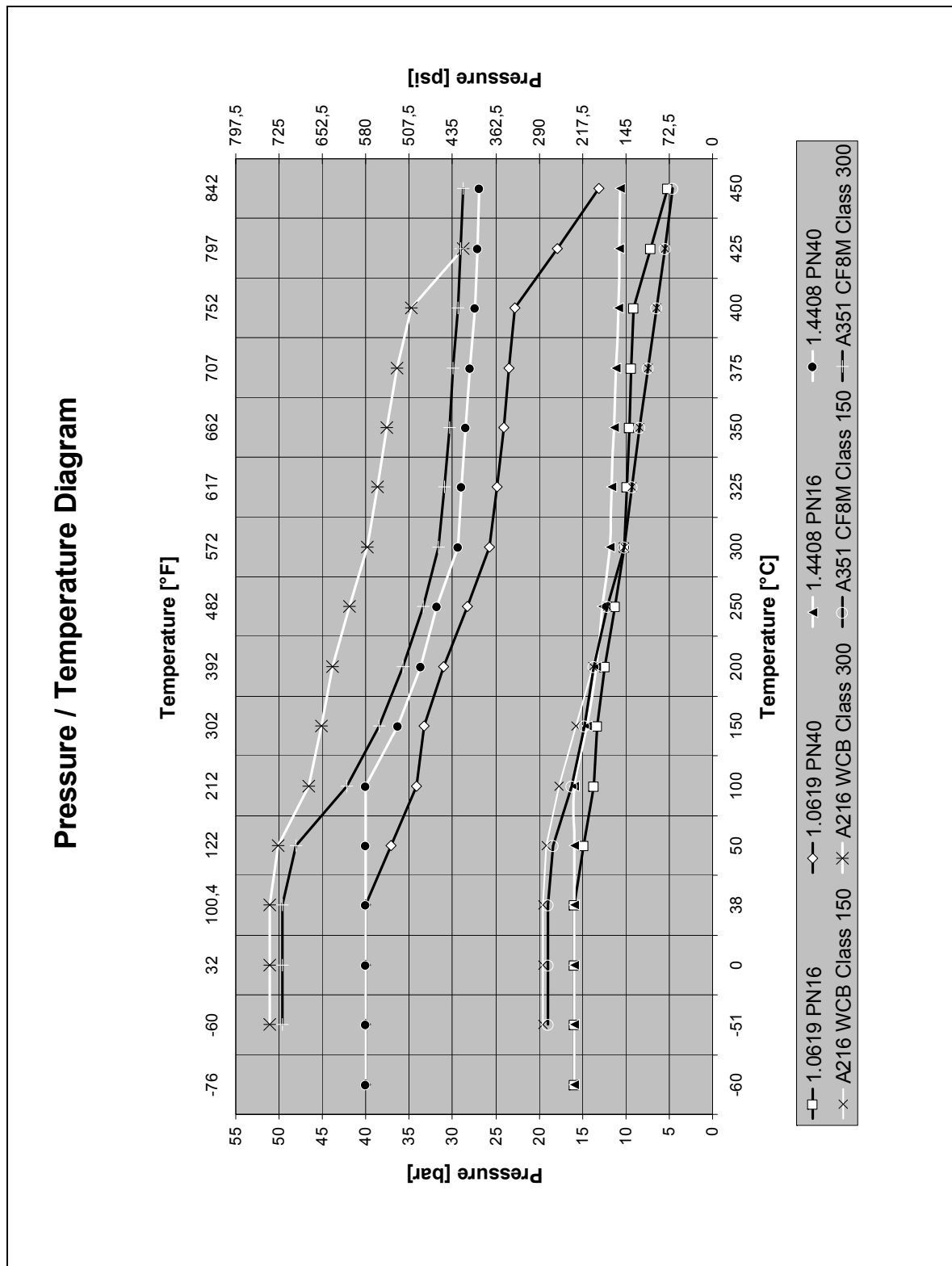


Fig.6

Options

1) Seat system with protected spring area

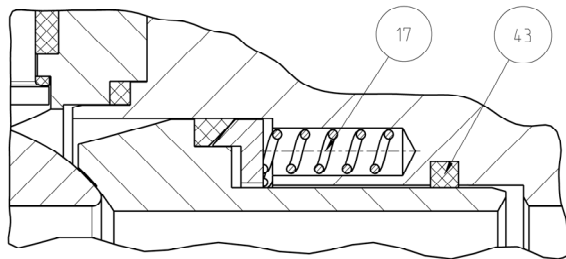


Fig.7

The area where the springs (17) are located is protected by graphite-based seal (43). This seal prevents material from entering the spring area or recess but allow the spring chamber to be energized by line pressure.

2) Adjustable stem packing

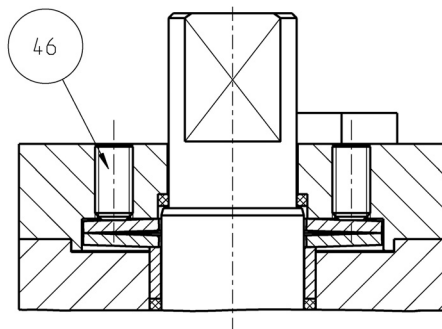


Fig.8

Additionally the live loaded stem packing may be equipped with hexagon socket screws (46). To fasten these screws it is possible to increase the spring force on the packing in the event of leakage.

3) Valve with heating jacket

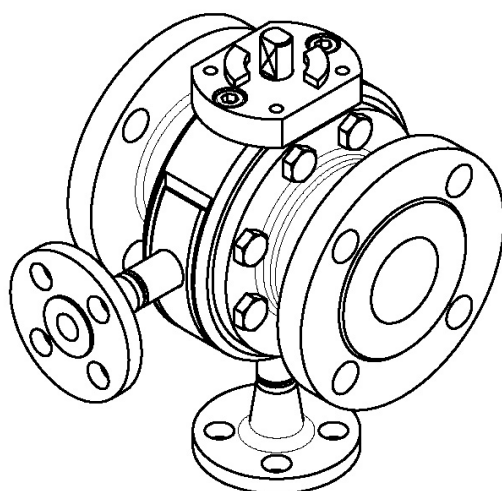


Fig.9



4) Valve with Belleville spring seat design

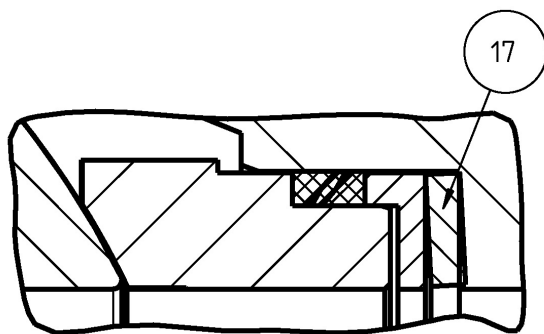


Fig.10

If required the valves can be equipped with Belleville spring (17) seat design.

Technical modifications are reserved.