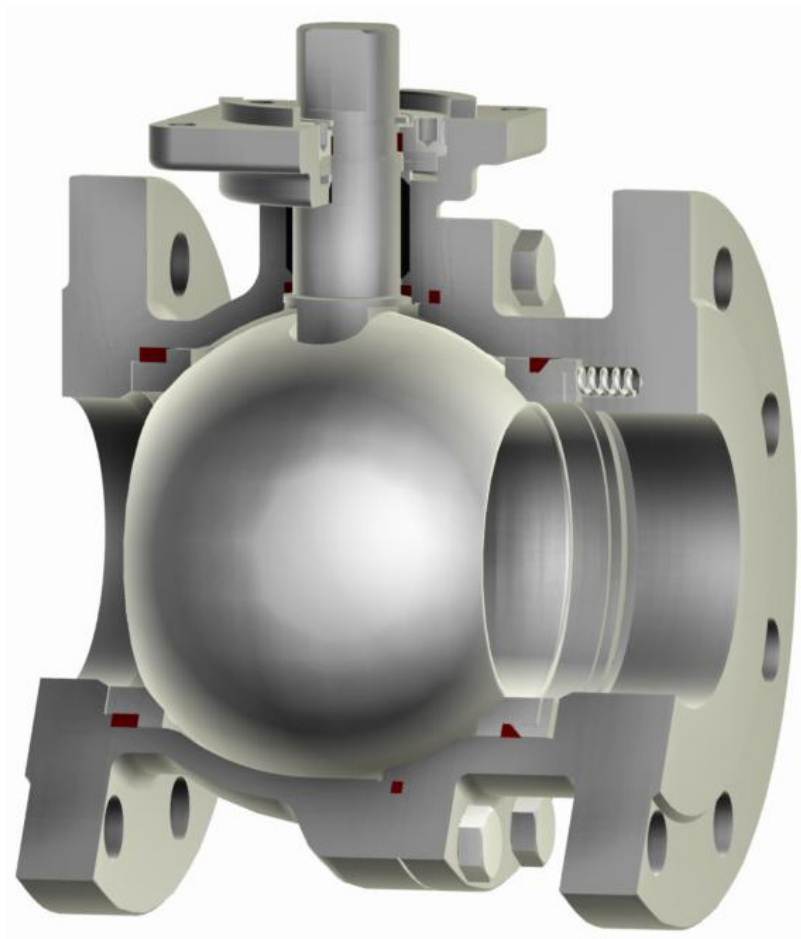




Two-Way Metal Seated Ball Valve Type 85-M



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 B16.34, API 608

Range of Application

- ✓ Diameter ½" to 6" / DN 15 to 150
- ✓ Class 150 to 300 / PN 10 to 40
- ✓ -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

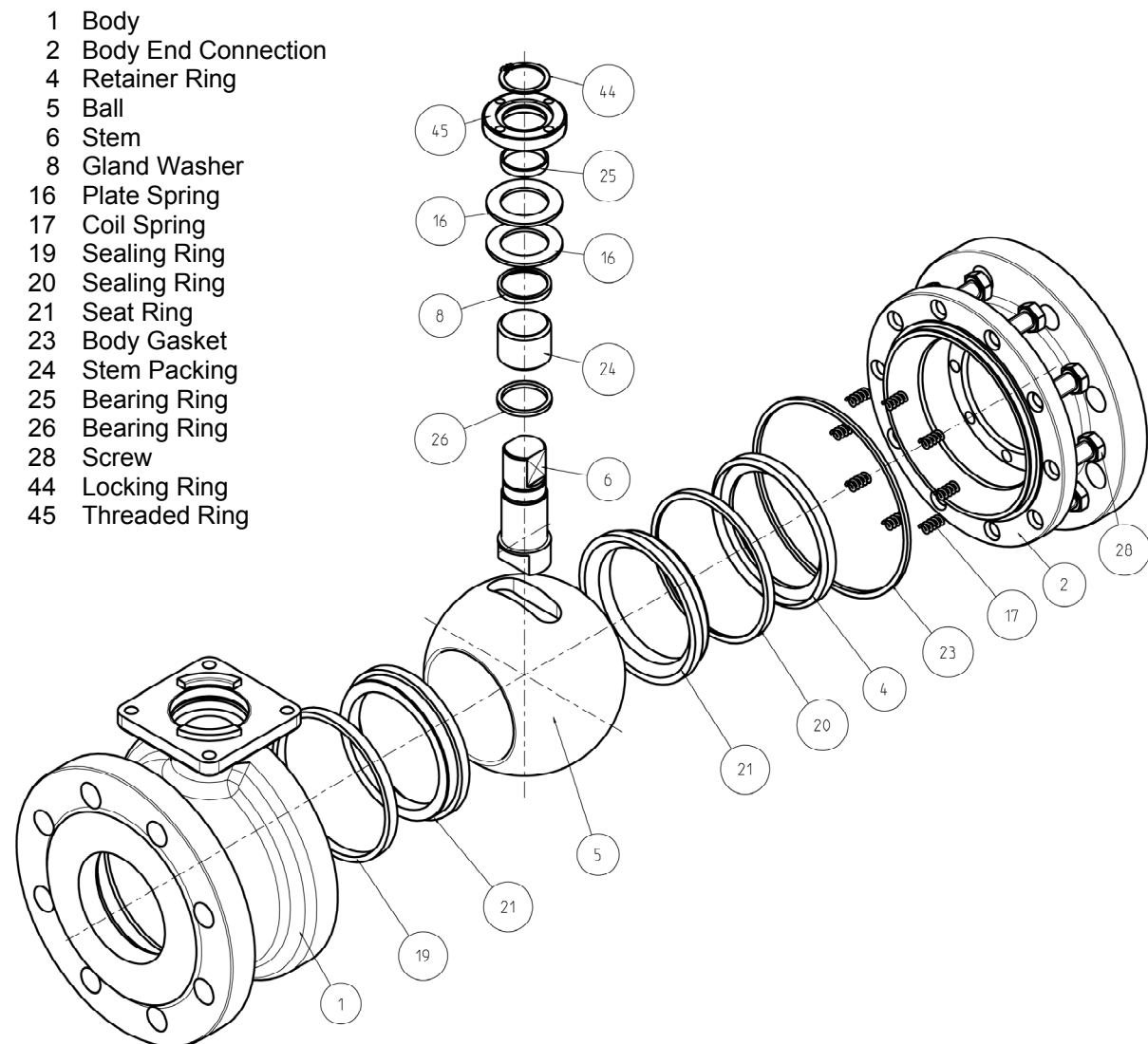


Fig. 1

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

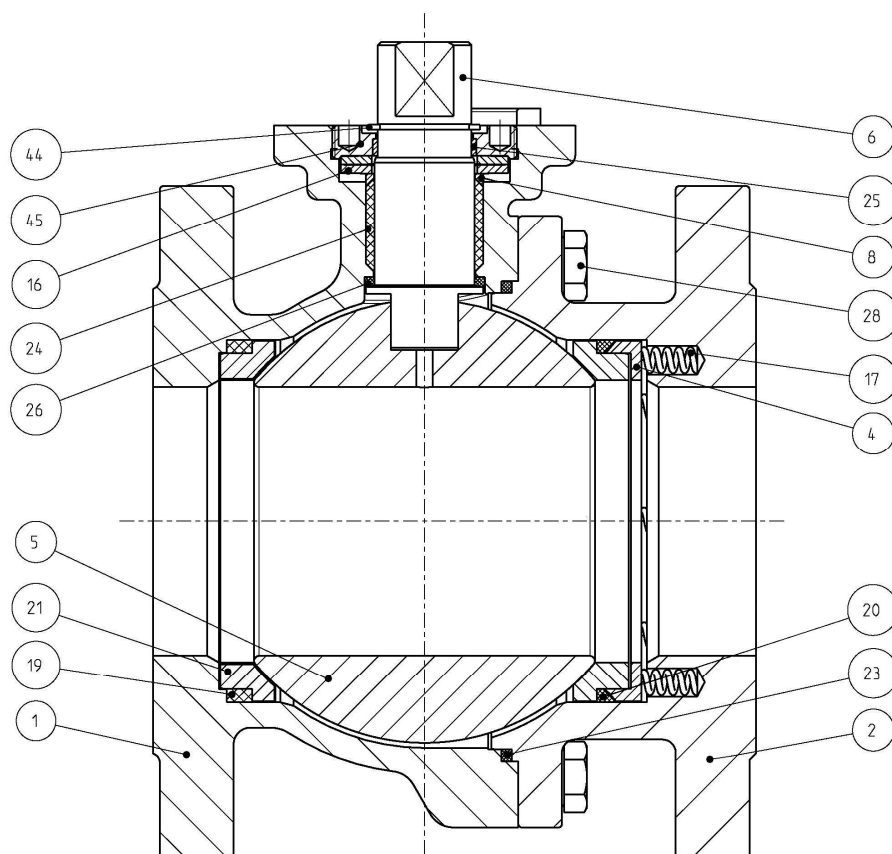


Fig.2

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				
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
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
44	Locking Ring	SS	SS	SS	SS
45	Threaded Ring	Type 316	Type 316	1.4571	1.4571

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

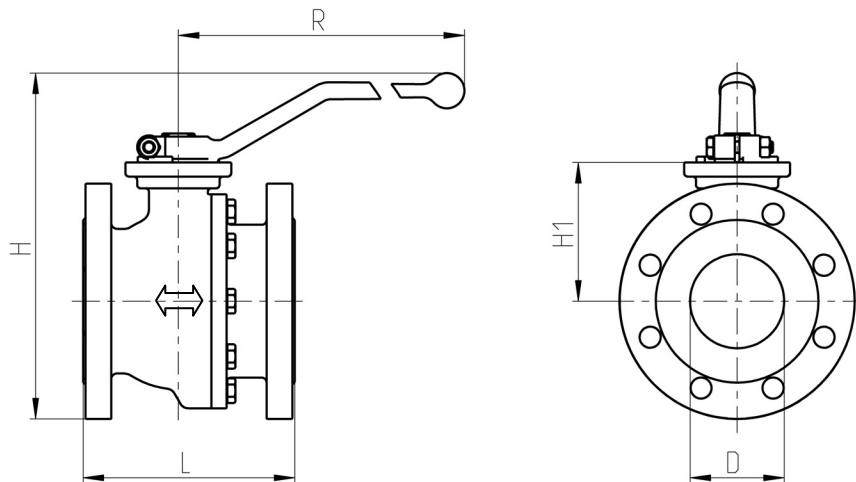


Fig.3

D = NPS = DN = Nominal Size
m = Weight

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	5,8	147	1,9	48	7	180	4,25	108	27	7	3
¾	20	5,8	147	1,9	48	7	180	4,62	117	47	9	4
1	25	6,3	160	2	50	7	180	5	127	74	11	5
1¼	32	7	178	2,2	56	7	180	5,5	140	123	15	7
1½	40	7,9	201	3	76	12	300	6,5	165	191	22	10
2	50	8,7	221	3,3	84	12	300	7	178	298	29	13
2½	65	9,5	242	3,7	94	12	300	7,5	190	504	42	19
3	80	11,7	297	4	113	18	450	8	203	763	48	22
4	100	13	329	5	127	18	450	9	229	1192	68	31
6	150	14,8	377	7,1	180	28	700	15,5	394	2682	176	80

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	152	1,9	48	7	180	4,62	117	24	7	3
1	¾	6	152	1,9	48	7	180	5	127	43	9	4
1¼	1	6,5	165	2	50	7	180	5,5	140	67	11	5
1½	1¼	7,2	183	2,2	56	7	180	6,5	165	110	15	7
2	1½	8,4	213	3	76	12	300	7	178	172	22	10
2½	2	9,2	234	3,3	84	12	300	7,5	190	268	33	15
3	2½	9,8	249	3,7	94	12	300	8	203	454	40	18
4	3	12,4	316	4,4	113	18	450	9	229	687	55	25
6	5	14	356	5	127	18	450	15,5	394	1676	112	51

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	1,9	48	7	180	5,5	140	27	9	4
¾	20	6,2	157	1,9	48	7	180	6	152	47	11	5
1	25	6,6	168	2	50	7	180	6,5	165	74	13	6
1¼	32	7,3	186	2,2	56	7	180	7	178	123	20	9
1½	40	8,5	217	3	76	12	300	7,5	190	191	29	13
2	50	9	228	3,3	84	12	300	8,5	216	298	33	15
2½	65	9,7	247	3,7	94	12	300	9,5	241	504	46	21
3	80	12	305	4,4	113	18	450	11,12	282	763	73	33
4	100	13,5	343	5	127	18	450	12	305	1192	97	44
6	150	15,6	395	7,1	180	28	700	15,88	403	2682	194	88

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	6,1	156	1,9	48	7	180	6	152	24	9	4
1	¾	6,4	162	1,9	48	7	180	6,5	165	43	11	5
1¼	1	6,8	173	2	50	7	180	7	178	67	18	8
1½	1¼	7,5	191	2,2	56	7	180	7,5	190	110	24	11
2	1½	9	229	3	76	12	300	8,5	216	172	29	13
2½	2	9,5	241	3,3	84	12	300	9,5	241	268	40	18
3	2½	10	253	3,7	94	12	300	11,12	282	454	57	26
4	3	12,8	324	4,4	113	18	450	12	305	687	88	40
6	5	14,5	368	5	127	18	450	15,88	403	1676	174	79

Tab.5

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	147	48	180	130	115	23	4	3
20	147	48	180	150	120	41	5	4
25	160	50	180	160	125	64	6	5
32	178	56	180	180	130	106	8	7
40	201	76	300	200	140	165	10	9
50	221	84	300	230	150	258	12	11
65	242	94	300	290	170	436	19	17
80	297	113	450	310	180	660	25	21
100	337	127	450	350	190	1031	35	29
150	385	180	700	480	350	2320	101	78

Tab.6

Other dimensions and pressure classes on request.

Top Works

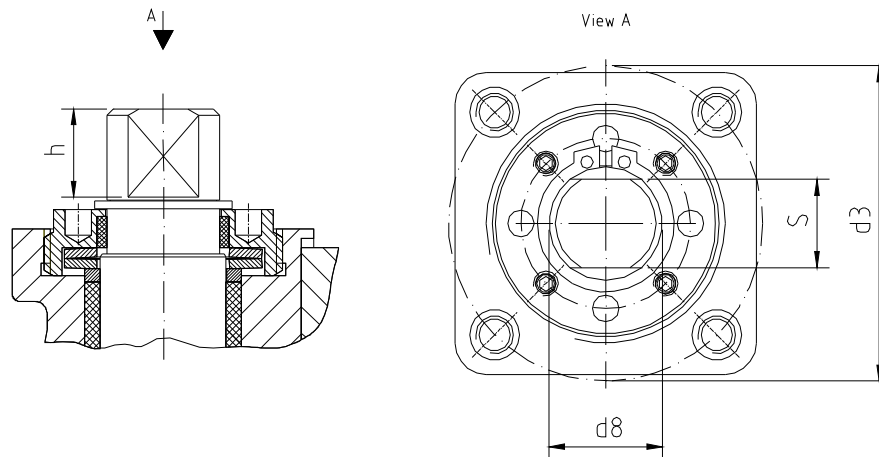


Fig.4

F	h		s		d3		d8	
	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
F05	14	0,6	14	0,6	50	2	18	0,7
F07	17	0,7	17	0,7	70	2,8	22	0,9
F10	22	0,9	22	0,9	102	4	28	1,1
F14	36	1,4	36	1,4	140	5,5	48	1,9

Tab.7

Actuator-Connection ISO 5211

Full Bore

Reduced Bore

NPS [inch]	DN [mm]	CLASS / PN		NPS [inch]	NPS-R [inch]	CLASS	
		150 / 16	300 / 40			150	300
1/2	15	F05	F05	1/2	-	-	-
3/4	20	F05	F05	3/4	1/2	F05	F05
1	25	F05	F05	1	3/4	F05	F05
1 1/4	32	F05	F05	1 1/4	1	F05	F05
1 1/2	40	F07	F07	1 1/2	1 1/4	F05	F05
2	50	F07	F07	2	1 1/2	F07	F07
2 1/2	65	F07	F07	2 1/2	2	F07	F07
3	80	F10	F10	3	2 1/2	F07	F07
4	100	F10	F10	4	3	F10	F10
6	150	F14	F14	6	4	F10	F10

Tab.8

Pressure / Temperature Diagram

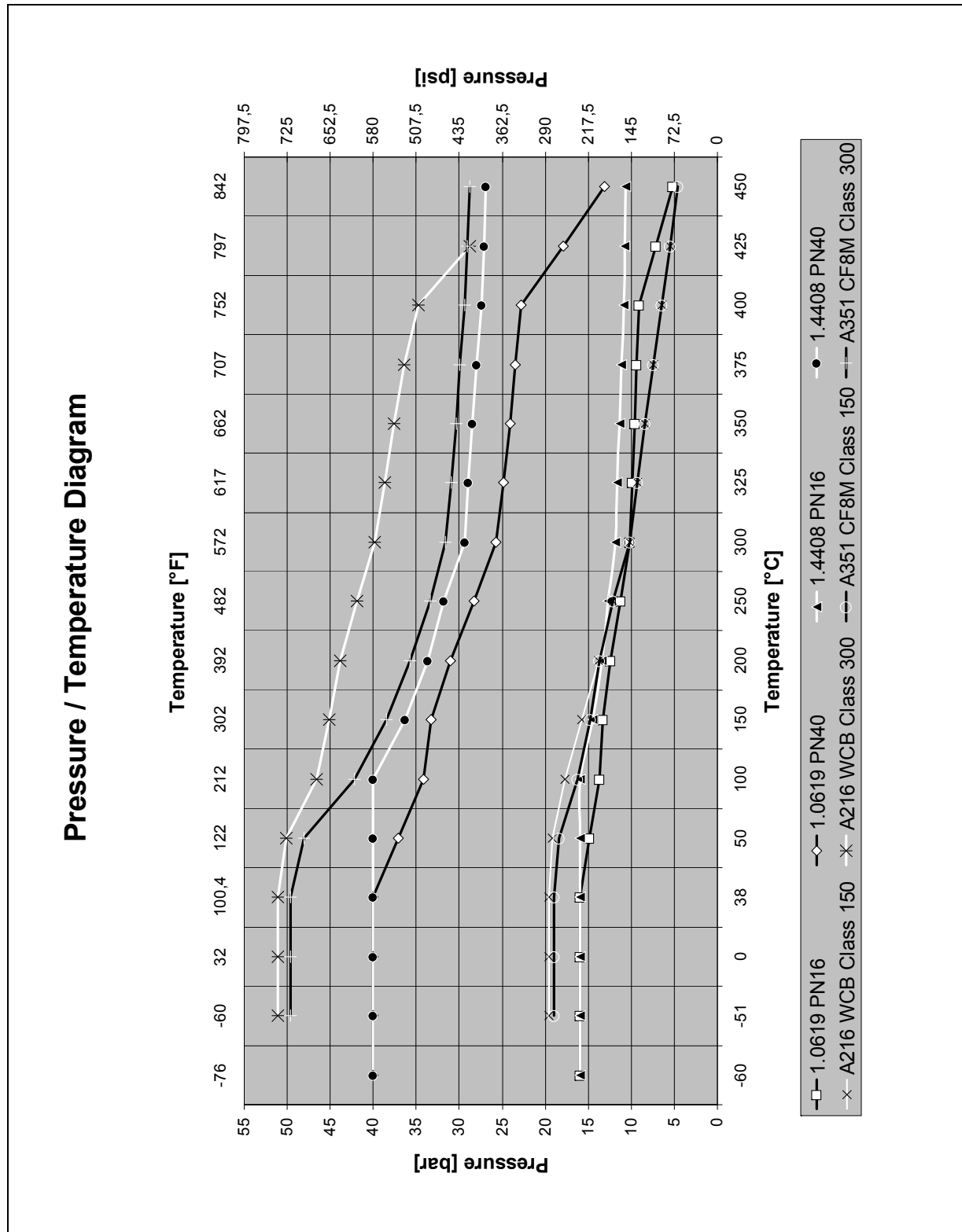


Fig.5

Options

1) Seat system with protected spring area

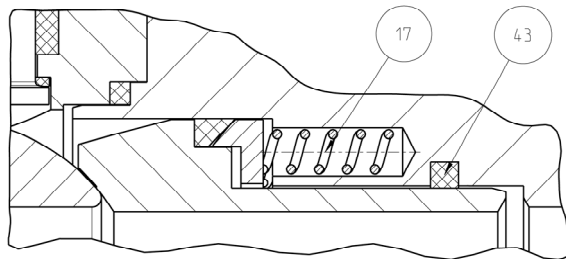


Fig.6

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

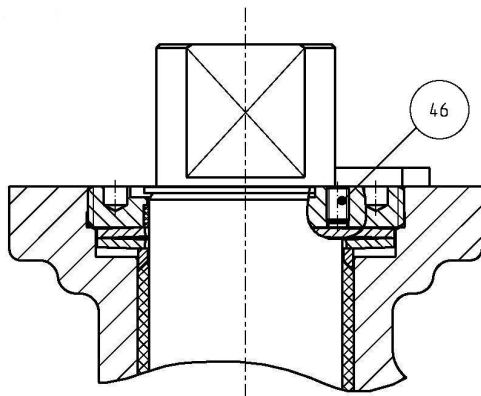


Fig.7

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

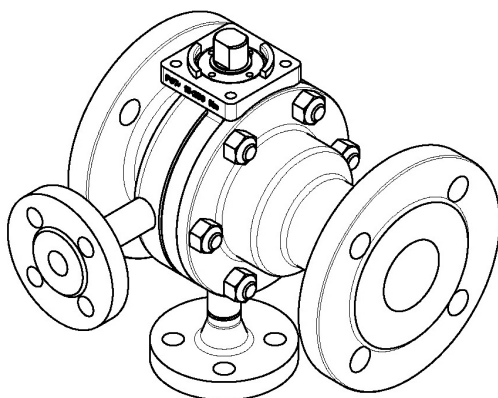


Fig.8

Technical modifications are reserved.



