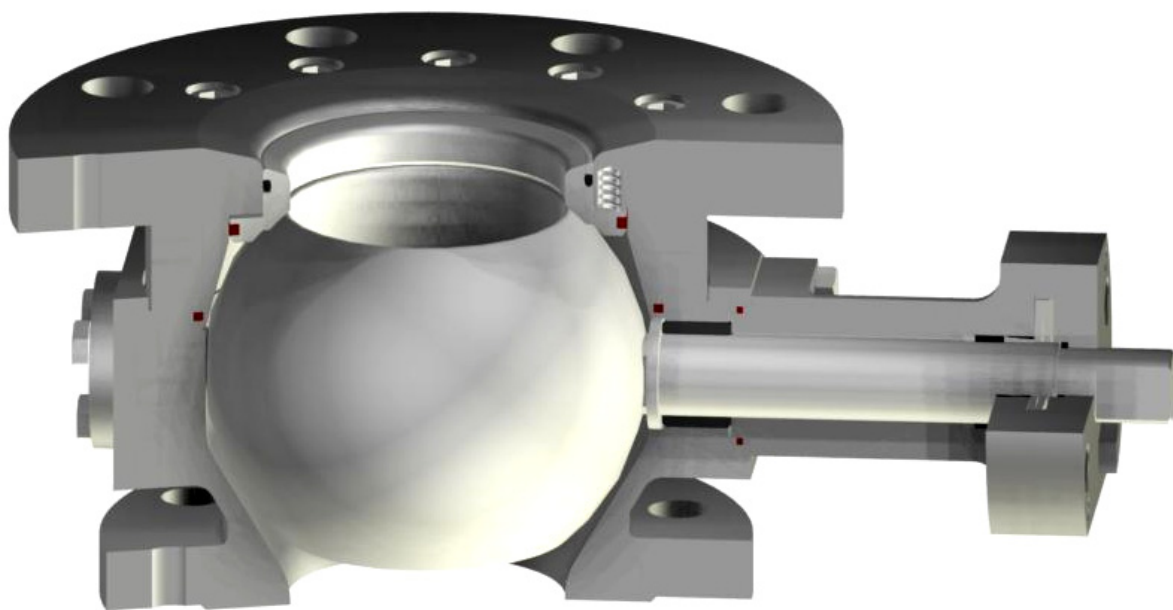




Tank-Bottom Ball Valve Type 15-M



Design Characteristics

- ✓ Two piece body
- ✓ Trunnion mounted 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 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

- 1 Body
- 2 Body End Connection
- 5 Ball
- 6 Stem
- 7 Lower Trunnion
- 8.1 Gland Washer
- 8.2 Gland Washer
- 9 Bearing Bush
- 10 Bearing Cover
- 11 Extension
- 16 Plate Spring
- 17 Coil Spring
- 18 Body Gasket
- 20 Round Ring
- 21 Seat Ring
- 23 Body Gasket
- 24 Stem Packing
- 25 Bearing Ring
- 26 Bearing Ring
- 27 Body Gasket
- 28 Socket Screw
- 29 Socket Screw
- 30 Hexagonal Screw
- 31 Hexagonal Screw
- 43 Sealing Ring

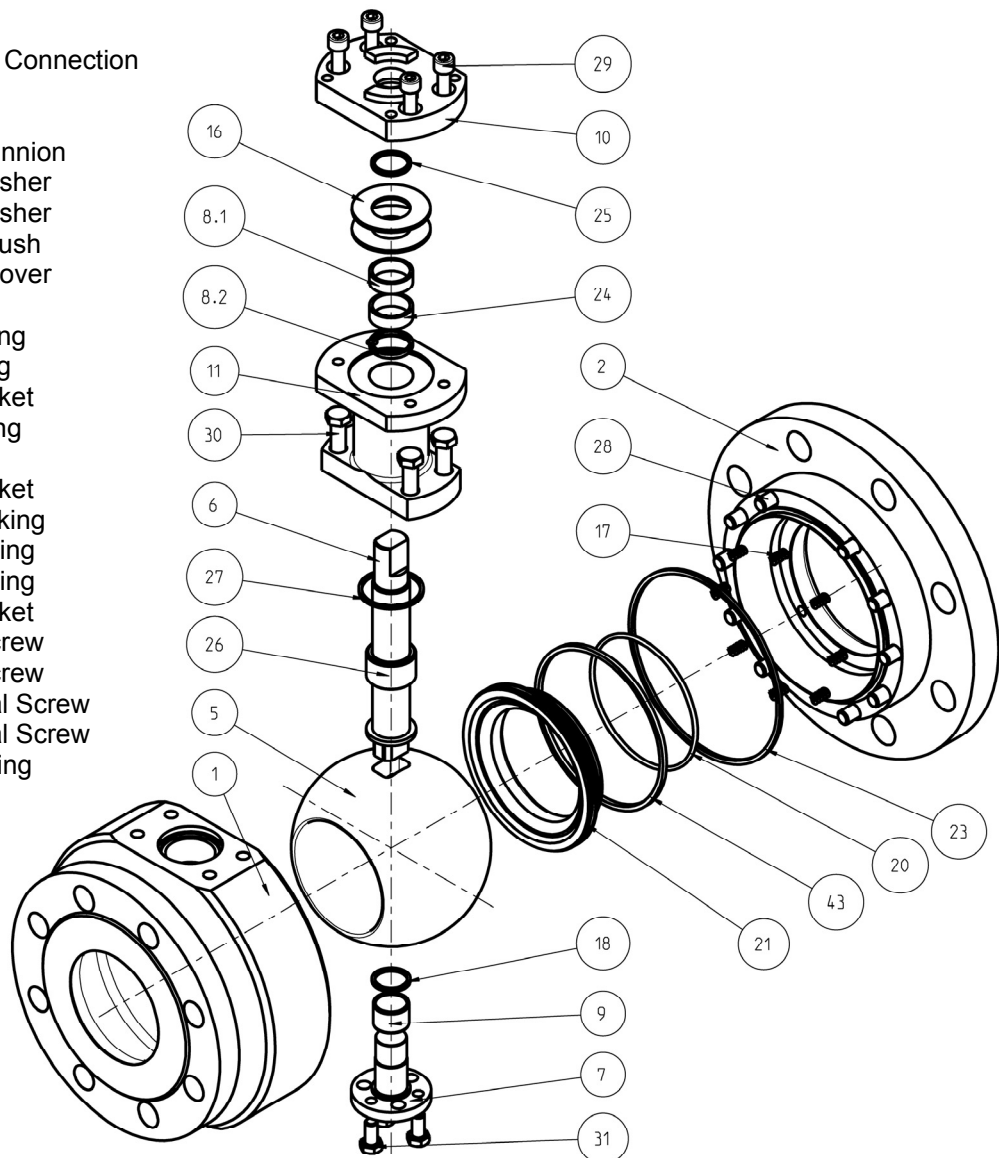


Fig. 1

Description

This PERRIN ball valve is a trunnion mounted ball design with split body housing and integral stem. The spring loaded metallic seat system and live loaded stem packing also provide continuous tightness during rapid temperature changes. By using the larger inlet-flange the clearance volume above the ball can be reduced to a minimum.

The valve is equipped with an integral actuator mounting flange for actuator connection according to ISO 5211 standard. 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

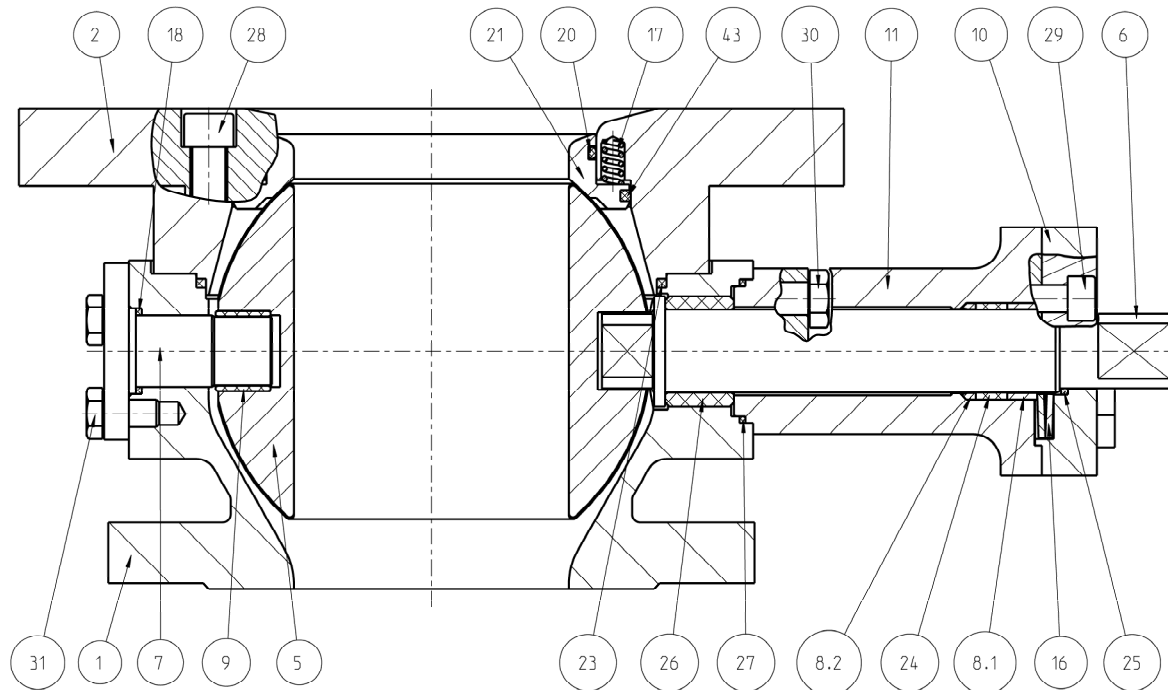


Fig. 2

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")
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
7	Lower Trunnion	Type 316	Type 316	1.4571	1.4571
8.1	Gland Washer	Type 316	Type 316	1.4571	1.4571
8.2	Gland Washer	Type 316	Type 316	1.4571	1.4571
9	Bearing Bush	Type 316 coated	Type 316 coated	1.4571 coated	1.4571 coated
10	Bearing Cover	Type 301	A105	1.4571	1.0460
11	Extension				
16	Plate Spring ³⁾	Type 301	AISI 6150	1.4310	1.8159
17	Coil Spring	Type 316	Type 316	1.4571	1.4571
18	Body Gasket	Graphite	Graphite	Graphite	Graphite
20	Round Ring	Polymer or Elastomer	Polymer or Elastomer	Polymer or Elastomer	Polymer or Elastomer
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	Carbon-Antimony	Carbon-Antimony	Carbon-Antimony	Carbon-Antimony
26	Bearing Ring	Carbon-Antimony	Carbon-Antimony	Carbon-Antimony	Carbon-Antimony
27	Body Gasket	Graphite	Graphite	Graphite	Graphite
28	Socket Screw	SS	SS	SS	SS
29	Socket Screw	SS	SS	SS	SS
30	Hexagonal Screw	SS	SS	SS	SS
31	Hexagonal Screw	SS	SS	SS	SS
43	Sealing Ring	Graphite	Graphite	Graphite	Graphite

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

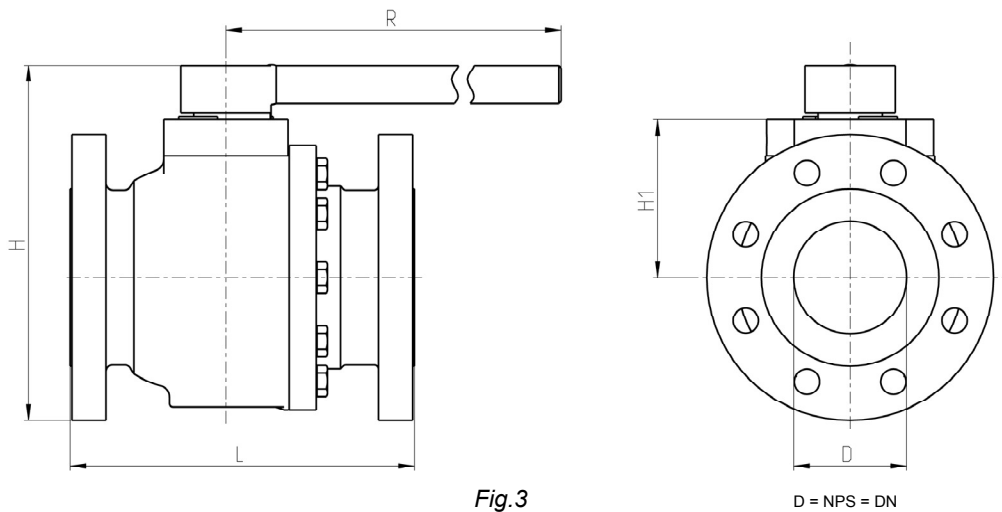


Fig.3

Nominal Size				Class 150 - Full Bore Dimensions acc. to ASME Standards						Face to Face Perrin Standard		Cv [gal/min]	Weights	
NPS [inch]		DN [mm]		H [inch]	H [mm]	H1 [inch]	H1 [mm]	R [inch]	R [mm]	L [inch]	L [mm]		kg	lbs
Inlet	Outlet	Inlet	Outlet											
1½	1	40	25	8.7	220	1.9	47	12	300	4	98	75	8	18
2	1¼	50	32	9	236	2	52	12	300	3.9	98	124	11	24
2½	1½	65	40	10.1	256	3	72	18	450	4.4	112	193	15	33
3	2	80	50	10.6	270	3.1	80	18	450	5	124	302	31	68
4	2½	100	65	11.6	294	3.5	90	18	450	5.3	135	510	48	106
5	3	125	80	15.4	392	4	104	31	800	6	164	772	72	158
6	4	150	100	17	425	5	124	31	800	7	174	1206	89	196

Tab.2

Nominal Size				Class 300 - Full Bore Dimensions acc. to ASME Standards						Face to Face Perrin Standard		Cv [gal/min]	Weights	
NPS [inch]		DN [mm]		H [inch]	H [mm]	H1 [inch]	H1 [mm]	R [inch]	R [mm]	L [inch]	L [mm]		kg	lbs
Inlet	Outlet	Inlet	Outlet											
1½	1	40	25	8.7	220	1.9	47	12	300	4	103	75	9	20
2	1¼	50	32	9	236	2	52	12	300	4.1	103	124	12	26
2½	1½	65	40	10.1	256	3	72	18	450	4.6	117	193	16	35
3	2	80	50	10.6	270	3.1	80	18	450	5	134	302	33	73
4	2½	100	65	11.6	294	3.5	90	18	450	5.7	145	510	53	117
5	3	125	80	15.4	392	4	104	31	800	7	174	772	79	174
6	4	150	100	17	425	5	124	31	800	7	184	1206	97	213

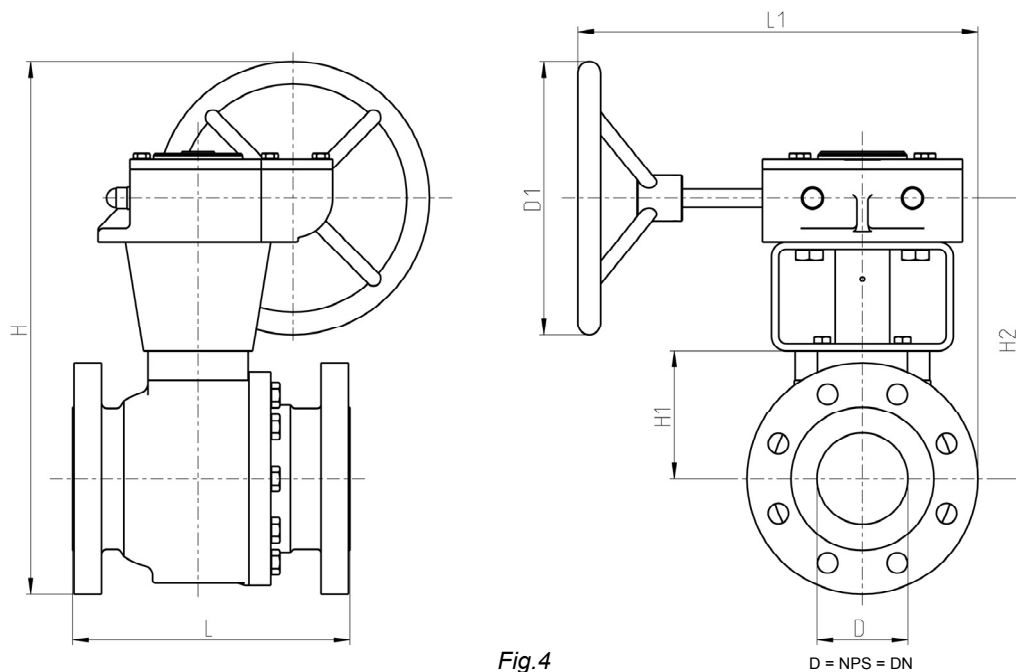
Tab.3



Nominal Size		PN 16 - PN 40 Dimensions [mm] acc. to DIN EN Standards			Face to Face Perrin Standard	Kv [m ³ /h]	Weights [kg]
		H	H1	R	L		
DN [mm]							
Inlet	Outlet						
40	25	220	47	300	98	64	8
50	32	236	52	300	98	106	11
65	40	256	72	450	112	165	15
80	50	270	80	450	124	258	31
100	65	294	90	450	135	436	48
125	80	392	104	800	164	660	72
150	100	425	124	800	174	1031	89

Tab.4

Other dimensions and pressure classes on request.



Nominal Size				Class 150 - Full Bore Dimensions acc. to ASME Standards										Face to Face Perrin Standard		Cv [gal/min]	Weights	
NPS [inch]		DN [mm]		H [inch]	H [mm]	H1 [inch]	H1 [mm]	H2 [inch]	H2 [mm]	L1 [inch]	L1 [mm]	D1 [inch]	D1 [mm]	L [inch]	L [mm]		kg	lbs
Inlet	Outlet	Inlet	Outlet															
8	5	200	125	23.7	602	5.2	132	10	256	14.7	373	14	350	10.8	275	1885	109	240
10	6	250	150	27.3	692	6.5	165	11	289	14.7	373	16	400	11.5	292	2714	125	275
10	8	250	200	39.8	1010	8.5	216	14	357	18	467	35	900	14	345	4825	285	627
12	10	300	250	42	1079	10.1	257	17.2	438	21	528	31	800	16	405	7840	375	825
14	12	350	300	47	1193	12	308	20.7	526	24	600	31	800	19	470	10856	585	1287

Tab.5

Nominal Size				Class 300 - Full Bore Dimensions acc. to ASME Standards										Face to Face Perrin Standard		Cv [gal/min]	Weights	
NPS [inch]		DN [mm]		H [inch]	H [mm]	H1 [inch]	H1 [mm]	H2 [inch]	H2 [mm]	L1 [inch]	L1 [mm]	D1 [inch]	D1 [mm]	L [inch]	L [mm]		kg	lbs
Inlet	Outlet	Inlet	Outlet															
8	5	200	125	24.5	622	5.2	132	10	256	14.7	373	14	350	11.2	285	1885	122	268
10	6	250	150	33.9	861	6.5	165	11	289	14.7	373	28	700	12.1	307	2714	145	319
10	8	250	200	38.6	979	8.5	216	14	357	18	467	31	800	14	360	4825	304	669
12	10	300	250	39	998	10.1	257	17.2	438	21	528	24	600	17	420	7840	401	882
14	12	350	300	42	1068	12	308	20.7	526	24	600	20	500	19	485	10856	623	1371

Tab.6



Nominal Size		PN 16 Dimensions [mm] acc. to DIN EN Standards					Face to Face Perrin Standard	Kv [m³/h]	Weights [kg]
		DN [mm]		H	H1	H2			
Inlet	Outlet								
200	125	601	132	256	373	350	275	1611	109
250	150	692	165	289	373	400	292	2320	125
250	200	1010	216	357	467	900	345	4124	285
300	250	1068	257	438	528	800	405	6701	375
350	300	1186	308	526	600	800	470	9279	585

Tab.7

Nominal Size		PN 40 Dimensions [mm] acc. to DIN EN Standards					Face to Face Perrin Standard	Kv [m³/h]	Weights [kg]
		DN [mm]		H	H1	H2			
Inlet	Outlet								
200	125	619	132	256	373	350	285	1611	113
250	150	864	165	289	373	700	307	2320	137
250	200	982	216	357	467	800	360	4124	296
300	250	996	257	438	528	600	420	6701	387
350	300	1066	308	526	600	500	485	9279	607

Tab.8

Other dimensions and pressure classes on request.



Top Works

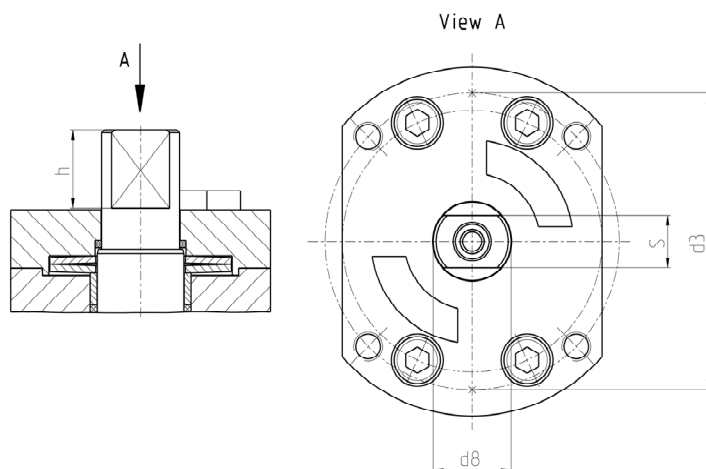


Fig.5

Dimensions								
F	h		s		d3		d8	
	mm	inch	mm	inch	mm	inch	mm	inch
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

Tab.9

Nominal Size			Actuator-Connection ISO 5211	
Inlet [inch]	Outlet [inch]	DN [mm]	Class 150	Class 300
1½	1	25	F07	F07
2	1¼	32	F07	F10
2½	1½	40	F07	F10
3	2	50	F10	F10
4	2½	65	F10	F10
5	3	80	F12	F12
6	4	100	F12	F12
8	5	125	F12	F14
10	6	150	F12	F14
10	8	200	F14	F16
12	10	250	F16	F25
14	12	300	F16	F25

Tab.10

Pressure / Temperature Diagram

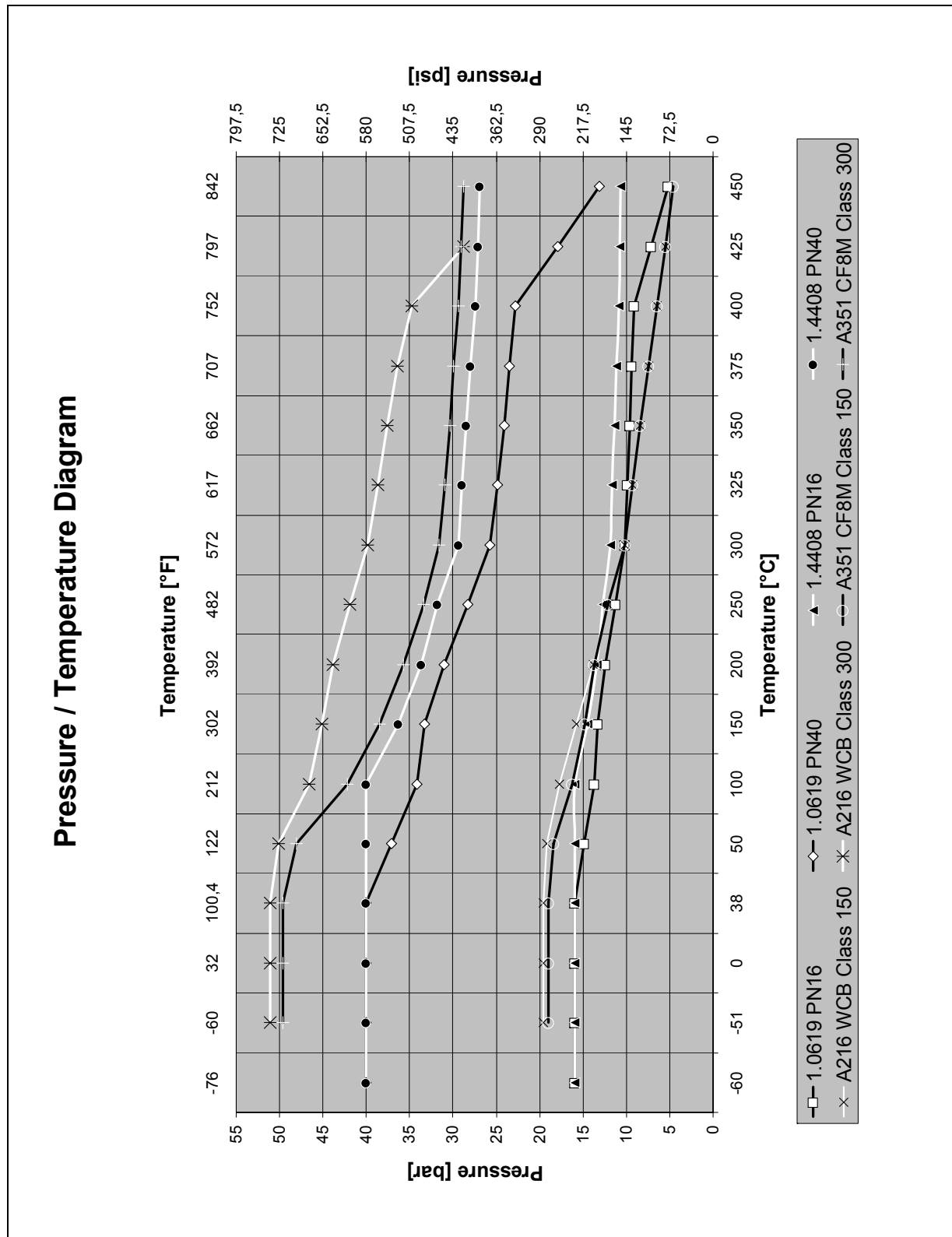


Fig.6

Options

1) Seat system with protected spring area

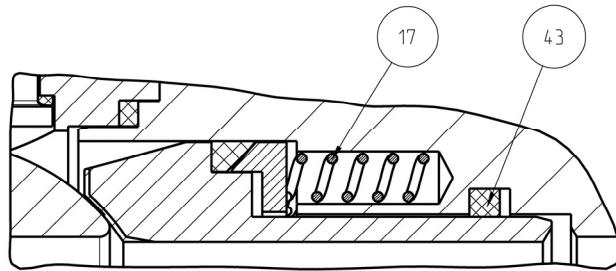


Fig.7

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

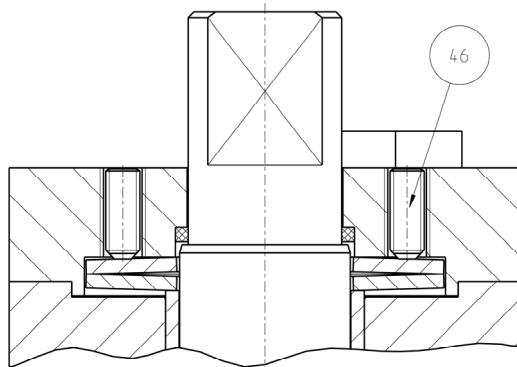


Fig.8

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) Double-stage gland packing with purge connection

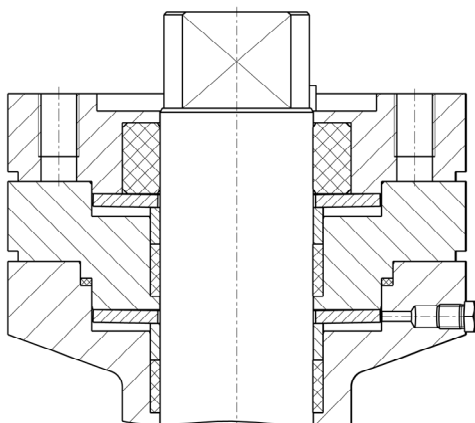


Fig.9



4) Valve with heating jacket

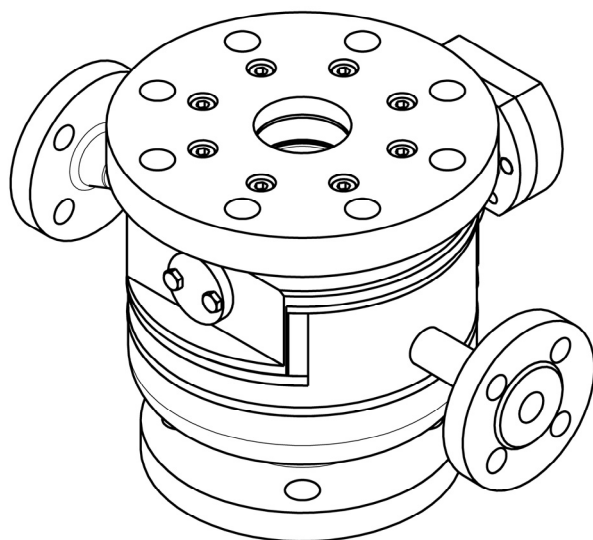


Fig.10

5) Valve with angular stem

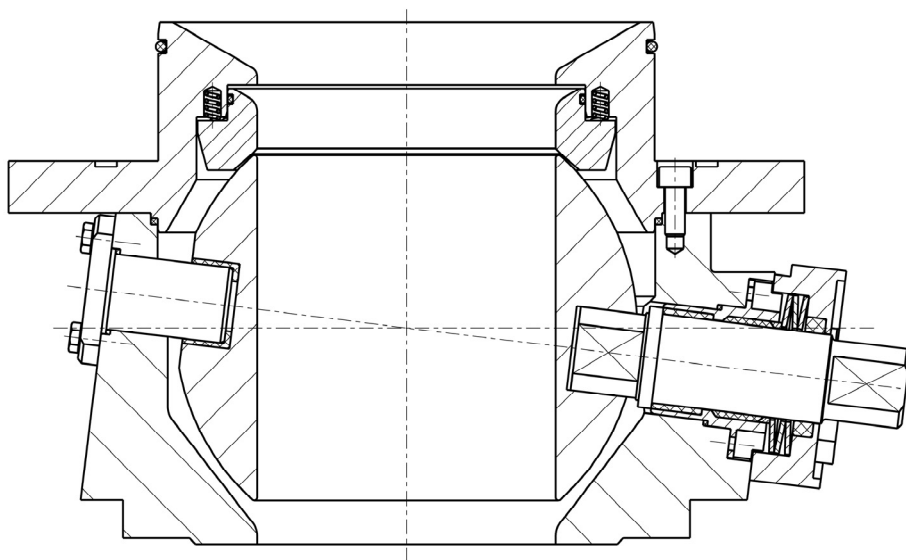


Fig.11

Technical modifications are reserved.

