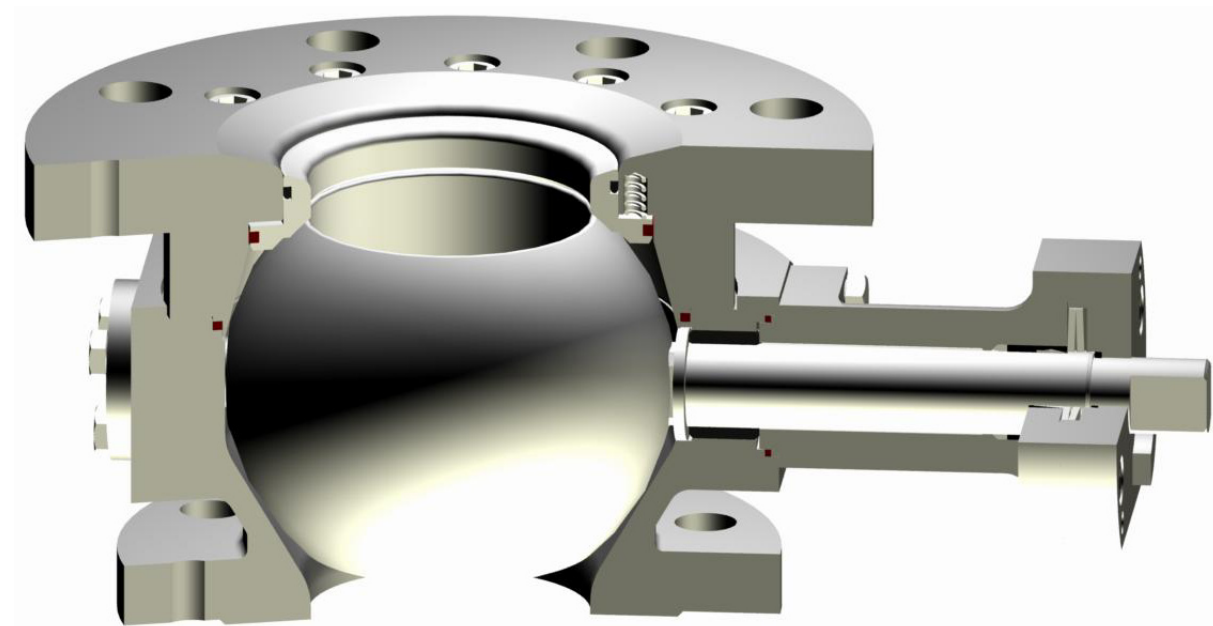




Tank-Bottom Ball Valve

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" 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 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 Screw
- 29 Screw
- 30 Screw
- 31 Screw
- 43 Sealing Ring

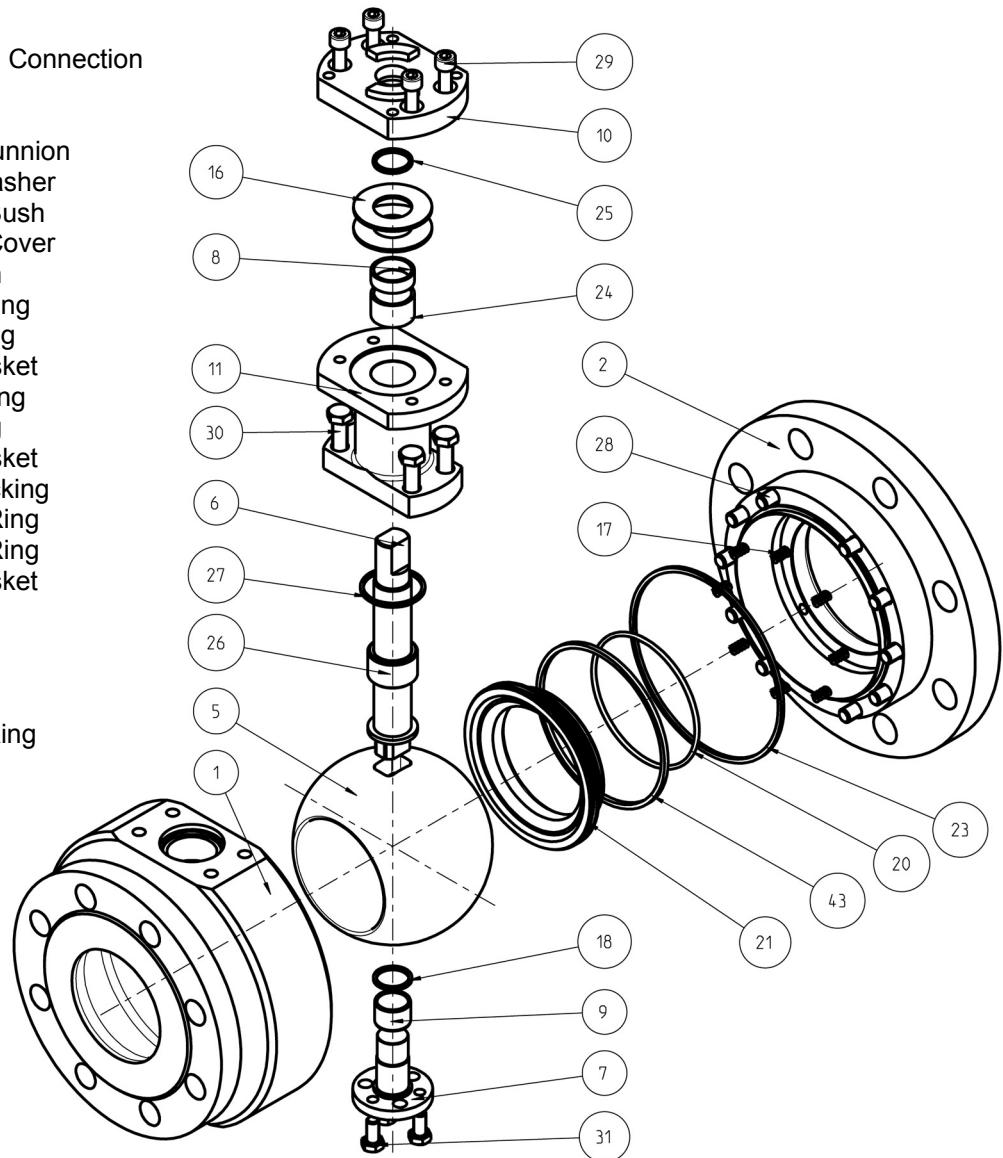


Fig.1

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 short-term temperature and pressure 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. 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

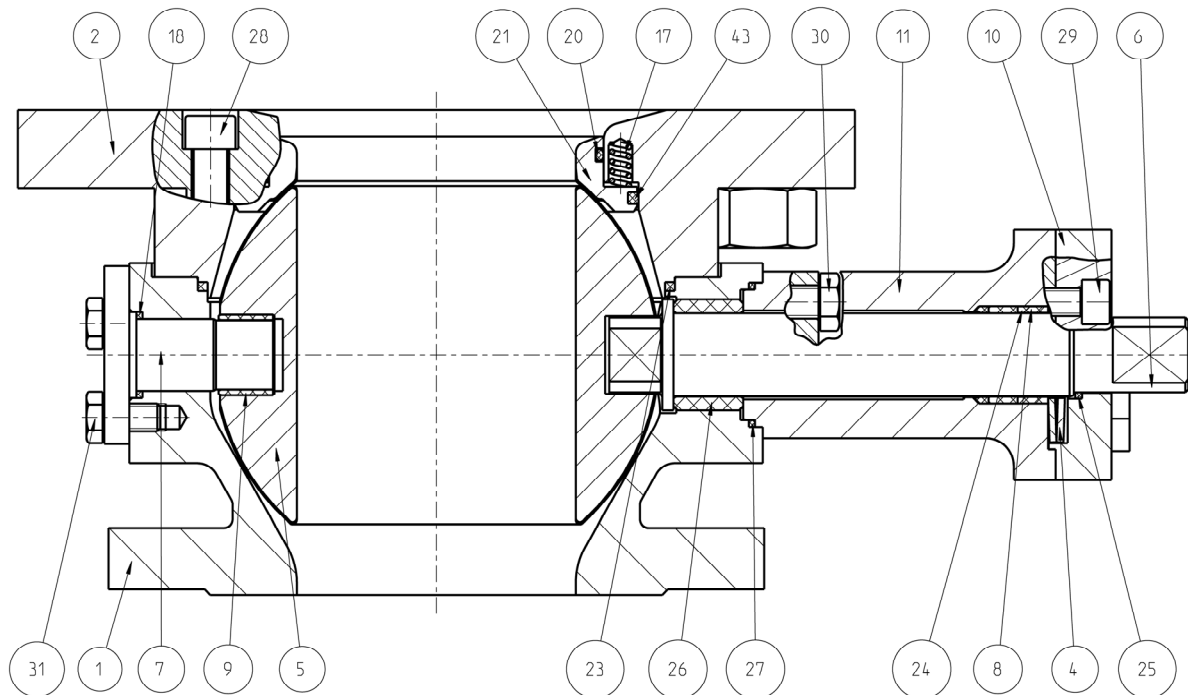


Fig. 2

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	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	Screw	SS	SS	SS	SS
29	Screw	SS	SS	SS	SS
30	Screw	SS	SS	SS	SS
31	Screw	SS	SS	SS	SS
43	Sealing Ring	Graphite	Graphite	Graphite	Graphite

Tab. 1

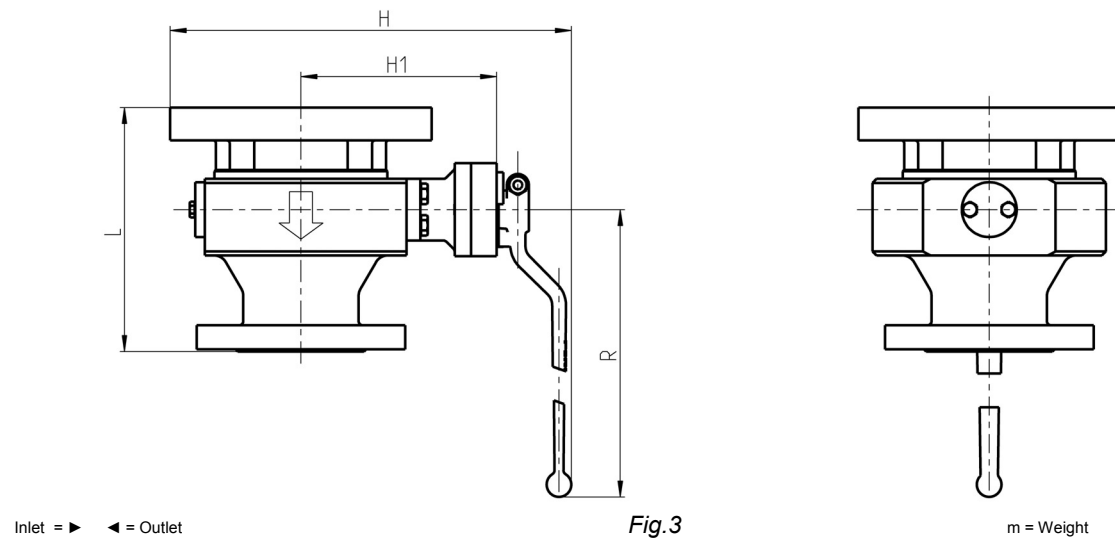
1) Temperature limitation 300°C [576°F] acc. to German technical rule AD-2000 W5 if intercrystalline corrosion resistant is required

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



CLASS 150

NPS [inch]		DN [mm]		H		H1		R		L Perrin Standard		Cv [gal/min]	m	
►	◄	►	◄	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
1½	1	40	25	11,3	287	4,5	114	12	300	3,9	98	67	18	8
2	1¼	50	32	11,9	303	4,7	119	12	300	3,9	98	110	24	11
2½	1½	65	40	13,4	340	6,1	156	18	450	4,4	112	172	33	15
3	2	80	50	14	355	6,5	165	18	450	4,9	124	268	68	31
4	2½	100	65	14,9	379	6,9	175	18	450	5,3	135	454	106	48
5	3	125	80	20,9	532	9,6	244	31	800	6,5	164	687	158	72
6	4	150	100	22,2	565	10,4	264	31	800	6,9	174	1073	196	89

Tab.2

CLASS 300

NPS [inch]		DN [mm]		H		H1		R		L Perrin Standard		Cv [gal/min]	m	
►	◄	►	◄	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
1½	1	40	25	11,3	287	4,5	114	12	300	4,1	103	67	20	9
2	1¼	50	32	11,9	303	4,7	119	12	300	4,1	103	110	26	12
2½	1½	65	40	13,4	340	6,1	156	18	450	4,6	117	172	35	16
3	2	80	50	14	355	6,5	165	18	450	5,3	134	268	73	33
4	2½	100	65	14,9	379	6,9	175	18	450	5,7	145	454	117	53
5	3	125	80	20,9	532	9,6	244	31	800	6,9	174	687	174	79
6	4	150	100	22,2	565	10,4	264	31	800	7,2	184	1073	213	97

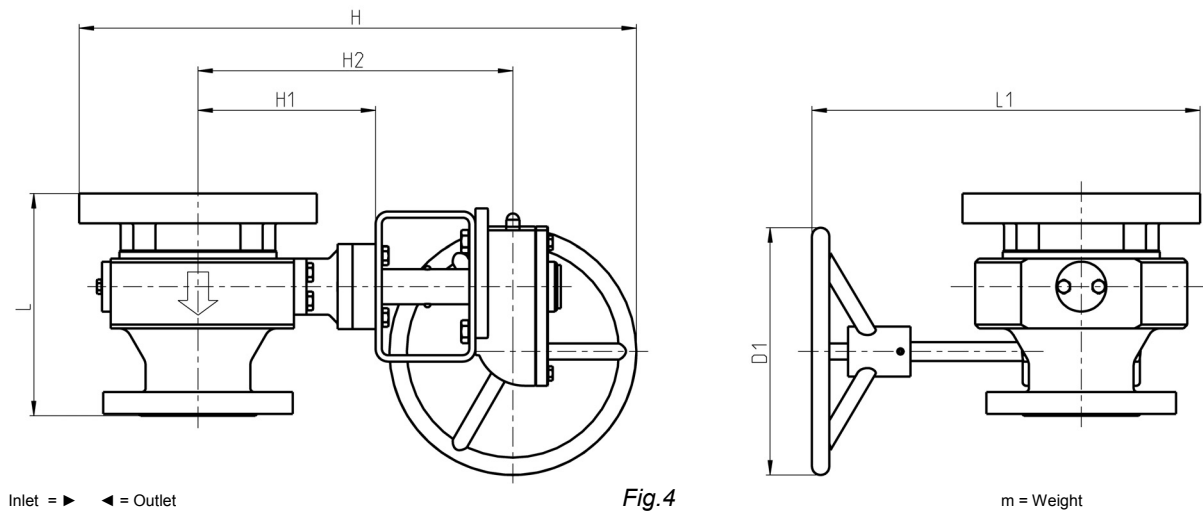
Tab.3

PN 16 – PN 40

DN [mm]		H [mm]	H1 [mm]	R [mm]	L [mm] Perrin Standard	Kv [m³/h]	m [kg]
▶	◀						
40	25	287	114	300	98	58	8
50	32	303	119	300	98	95	11
65	40	340	156	450	112	149	15
80	50	355	165	450	124	232	31
100	65	379	175	450	135	392	48
125	80	532	244	800	164	594	72
150	100	565	264	800	174	928	89

Tab.4

Other dimensions and pressure classes on request.



CLASS 150

NPS [inch]		DN [mm]		H		H1		H2		L1		D1		L Perrin Standard		Cv [gal/min]	m	
►	◄	►	◄	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
8	5	200	125	29	742	11	272	16	396	15	373	14	350	11	275	1676	240	109
10	6	250	150	33	834	12	307	17	431	15	373	16	400	12	292	2414	275	125
10	8	250	200	38	960	14	366	20	507	18	467	20	500	14	354	4291	627	285
12	10	300	250	42	1074	18	452	25	633	21	528	16	400	16	405	6972	825	375
14	12	350	300	52	1323	21	538	30	756	24	600	24	600	19	470	9654	1287	585

Tab.5

CLASS 300

NPS [inch]		DN [mm]		H		H1		H2		L1		D1		L Perrin Standard		Cv [gal/min]	m	
►	◄	►	◄	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]		[lbs]	[kg]
8	5	200	125	31	787	11	272	16	396	23	592	16	400	11	285	1676	268	122
10	6	250	150	34	853	12	307	17	431	25	640	16	400	12	307	2414	319	145
10	8	250	200	41	1029	14	366	20	507	27	675	24	600	14	360	4291	669	304
12	10	300	250	47	1193	18	452	25	633	30	770	24	600	17	420	6972	882	401
14	12	350	300	53	1348	21	538	30	756	33	847	24	600	19	485	9654	1371	623

Tab.6

PN 16

DN [mm]		H [mm]	H1 [mm]	H2 [mm]	L1 [mm]	D1 [mm]	L [mm] Perrin Standard	Kv [m³/h]	m [kg]
▶	◀								
200	125	741	272	396	373	350	275	1450	109
250	150	834	307	431	373	400	292	2088	125
250	200	960	366	507	467	500	345	3712	285
300	250	1063	452	633	528	400	405	6031	375
350	300	1316	538	756	600	600	470	8351	585

Tab.7

PN 40

DN [mm]		H [mm]	H1 [mm]	H2 [mm]	L1 [mm]	D1 [mm]	L [mm] Perrin Standard	Kv [m³/h]	m [kg]
▶	◀								
200	125	759	272	396	592	350	285	1450	113
250	150	856	307	431	640	400	307	2088	137
250	200	957	366	507	675	450	360	3712	296
300	250	1191	452	633	770	600	420	6031	387
350	300	1346	538	756	847	600	485	8351	607

Tab.8

Other dimensions and pressure classes on request.



Top Works

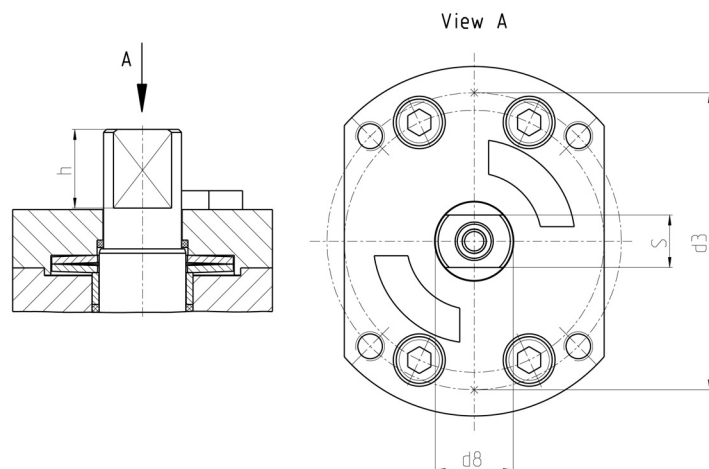


Fig.5

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

Actuator-Connection ISO 5211

NPS [inch]		DN [mm]		CLASS / PN	
▶	◀	▶	◀	150 / 16	300 / 40
1½	1	40	25	F07	F07
2	1¼	50	32	F07	F10
2½	1½	65	40	F07	F10
3	2	80	50	F10	F10
4	2½	100	65	F10	F10
5	3	125	80	F12	F12
6	4	150	100	F12	F12
8	5	200	125	F12	F14
10	6	250	150	F12	F14
10	8	250	200	F14	F16
12	10	300	250	F16	F25
14	12	350	300	F16	F25

Tab.10

Pressure / Temperature Diagram

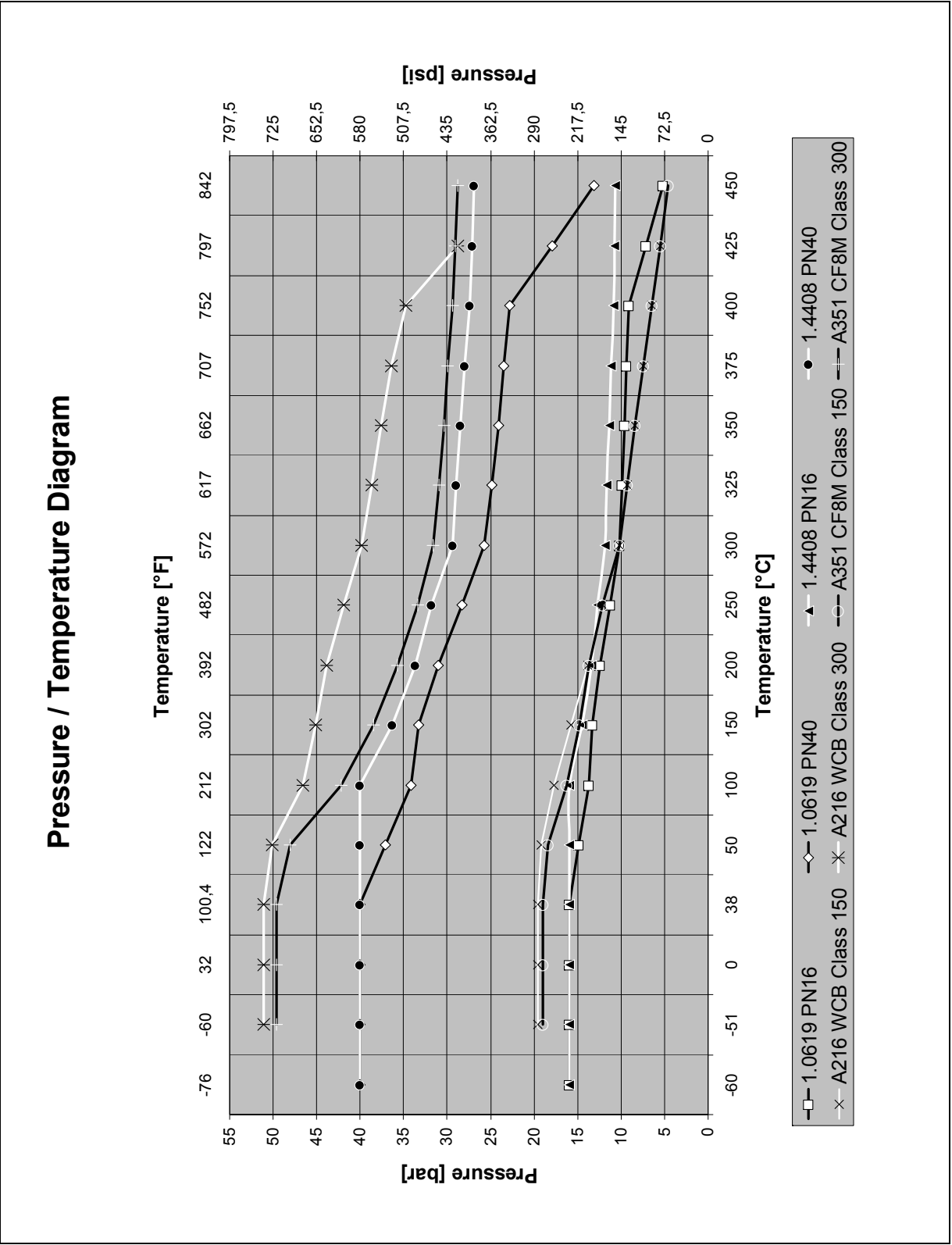


Fig.6



Options

1) Seat system with protected spring area

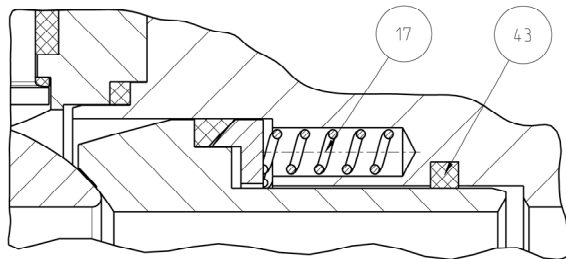


Fig.7

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

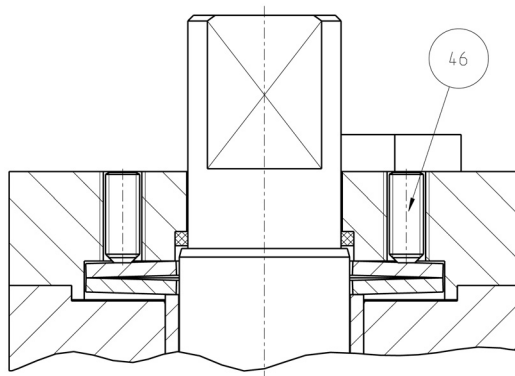


Fig.8

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

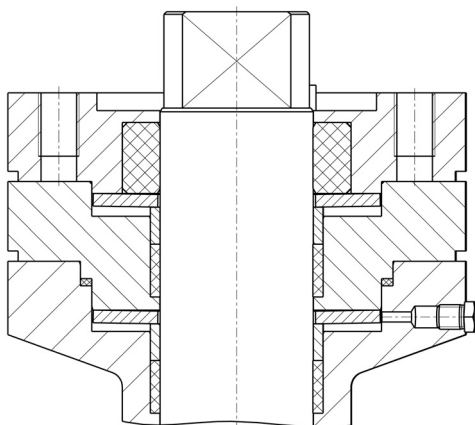


Fig.9



4) Valve with heating jacket

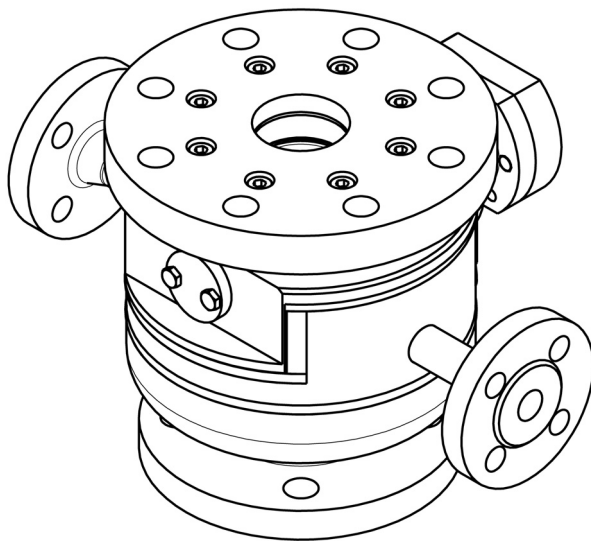


Fig.10

5) Valve with angular stem

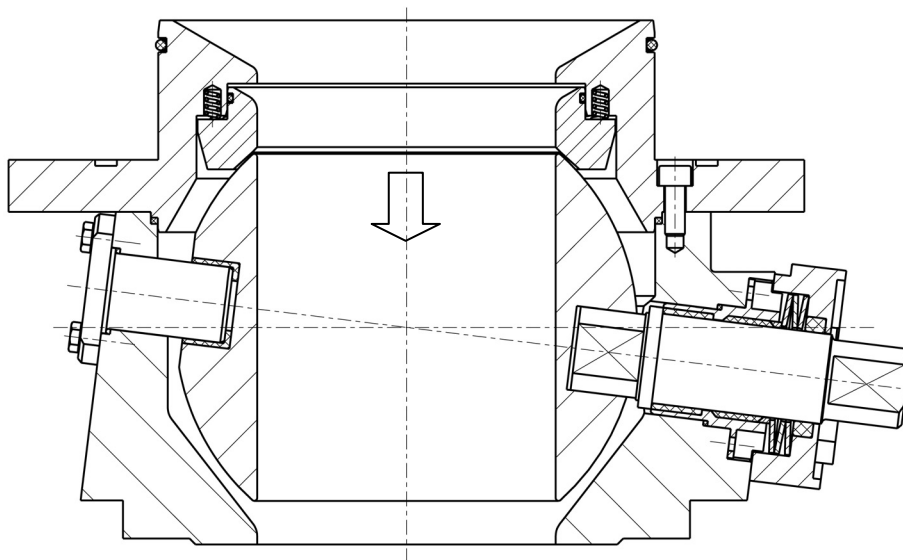


Fig.11

Technical modifications are reserved.

