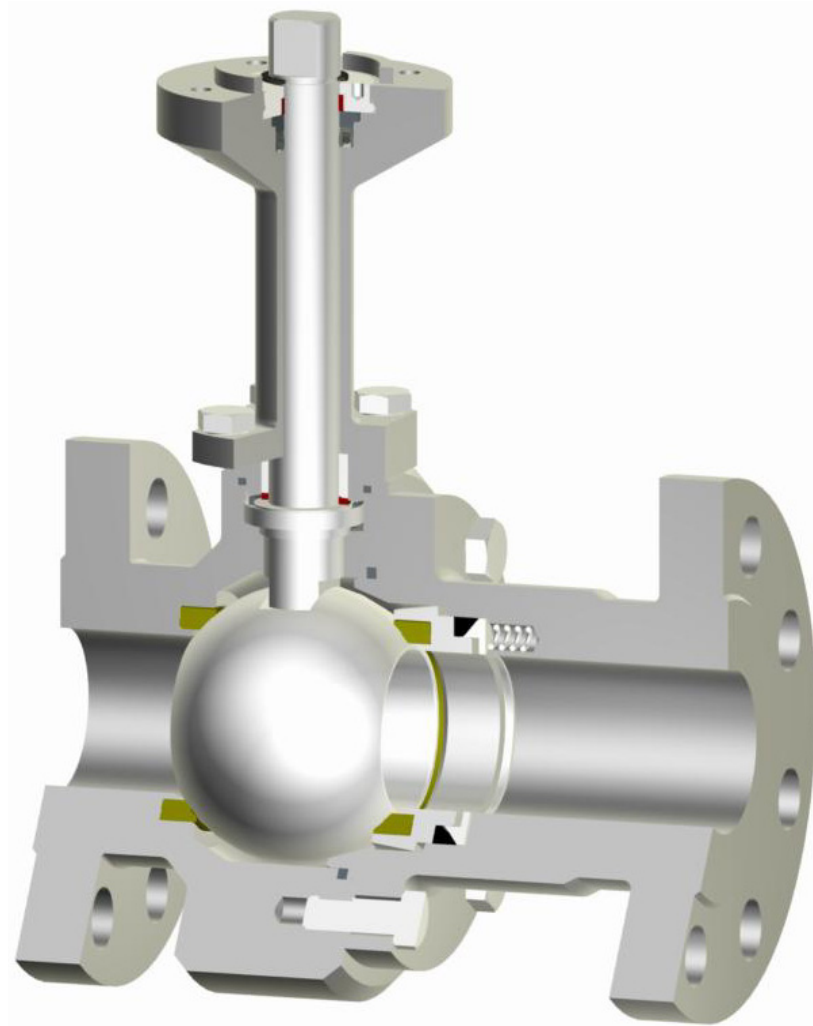




Two-Way Soft Seated Ball Valve Type 80-N



Design Characteristics

- ✓ Two piece body
- ✓ Floating ball
- ✓ Blow out proof stem
- ✓ Spring loaded seat system
- ✓ Integrated stem extension
- ✓ Stem with groove ring sealing
- ✓ Cryogenic application

Design Standards

- ✓ EN 12516, EN 1983, ISO 5211, AD-2000
- ✓ ASME B 16.34, API 608
- ✓ BS 6364, EN 1626, EN 12567

Range of Application

- ✓ Diameter 1/2" to 6" / DN 15 to 150
- ✓ Class 150 to 300 / PN 10 to 40
- ✓ -321°F to +392°F / -196°C to +200°C

Approvals

- ✓ Fire Safe acc. to API 607

Testing Standards

- ✓ EN 12266-1/2
- ✓ API 598



Main Parts

- 1 Body
- 2 Body End Connection
- 3 Retainer Ring
- 4 Retainer Ring
- 5 Ball
- 6 Stem
- 11 Extension
- 17 Coil Spring
- 20 Sealing Ring
- 21 Seat Ring
- 22 Seat Ring
- 23 Body Gasket
- 24 Groove Ring
- 25 Bearing Ring
- 26 Bearing Ring
- 27 Body Gasket
- 28 Screw
- 30 Screw
- 32 Groove Ring
- 40 Sealing Ring
- 41 Sealing Ring
- 44 Locking Ring
- 45 Threaded Ring
- 46 Disc

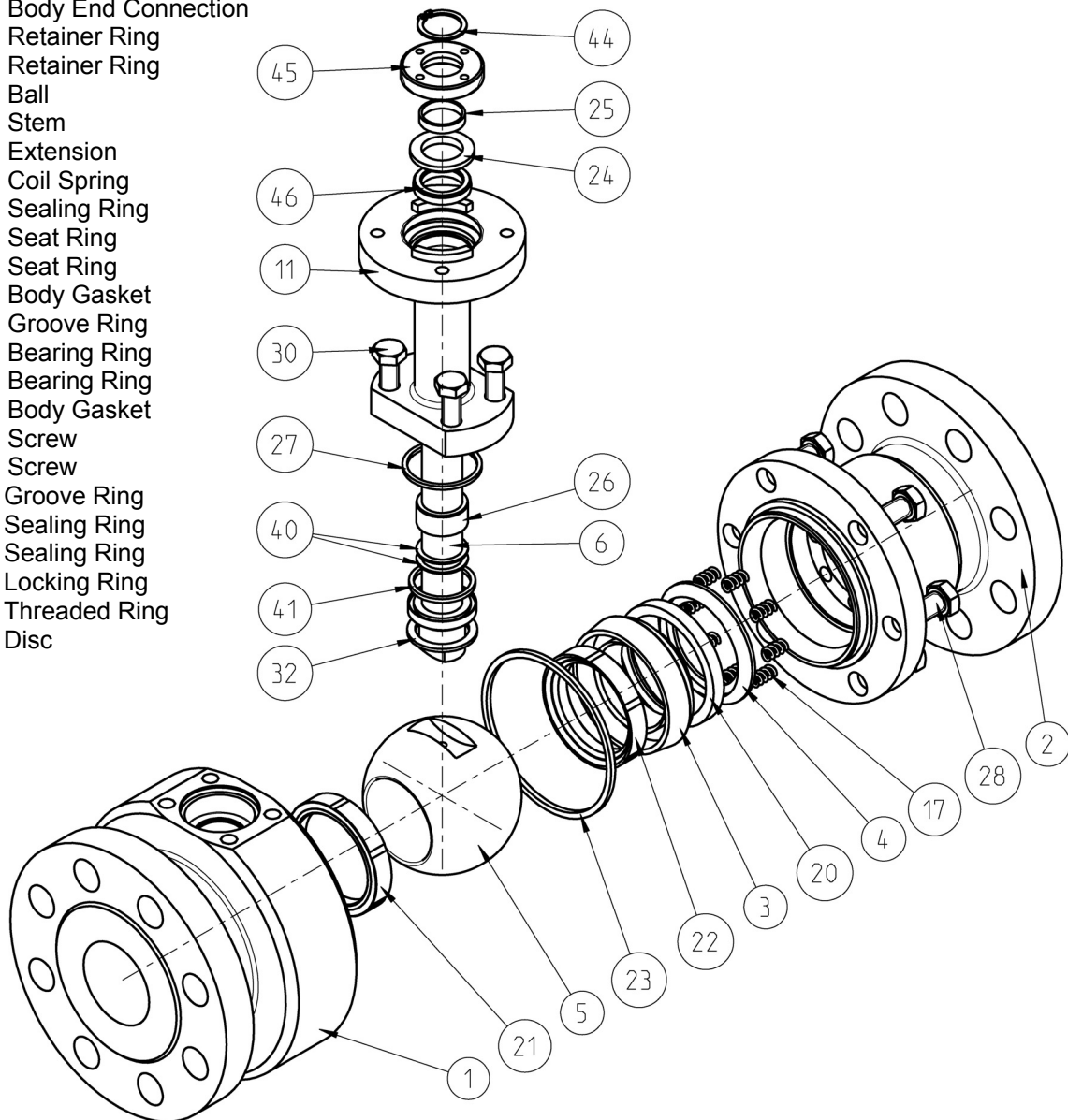


Fig. 1

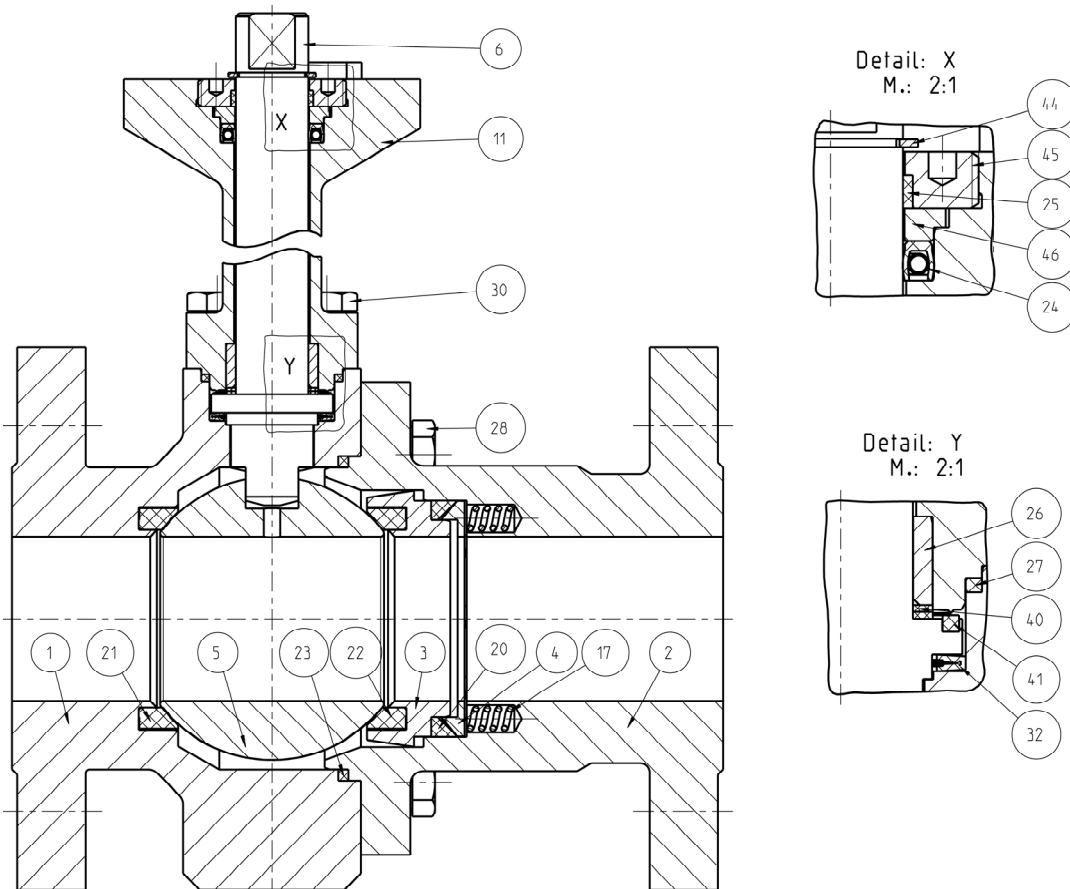
Description

This PERRIN ball valve is a floating ball design with a two piece split body housing. The spring-loaded seat system is pressure relieving and suitable at full differential pressure for both pressure directions. The integrated stem extension and materials suited to low temperature are the main features of this design. The stem seal is provided by torque optimised groove ring sealing.

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.

Parts List / Materials



Item	Designation	ASME	DIN EN
		-321°F bis +392°F	-196°C bis +200°C
1	Body	A351 CF8M	1.4408
2	Body End Connection	Type 316 (bis DN 2")	1.4571 (bis DN 50)
3-4	Retainer Ring	Type 316	1.4571
5	Ball	Type 316 / A351 CF8M	1.4571 / 1.4408
6	Stem	Type 316 / UNS S66286	1.4571 / 1.4980
11	Extension	Type 316	1.4571
17	Coil Spring	Type 316Ti	1.4571
20	Sealing Ring	Mod. PTFE	Mod. PTFE
21-22	Seat Ring	R-PTFE / Mod. PTFE / PCTFE ¹⁾	R-PTFE / Mod. PTFE / PCTFE ¹⁾
23	Body Gasket	Mod. PTFE	Mod. PTFE
24	Groove Ring ¹⁾	Mod. PTFE	Mod. PTFE
25-26	Bearing Ring	Mod. PTFE	Mod. PTFE
27	Body Gasket	Mod. PTFE	Mod. PTFE
28-30	Screw	A320 B8M CL.2	A2-70
32	Groove Ring ¹⁾	Mod. PTFE / UHMW – 304L ¹⁾	Mod. PTFE / UHMW – 1.4301 ¹⁾
40-41	Sealing Ring	Mod. PTFE	Mod. PTFE
44	Locking Ring	A182	1.4122
45	Threaded Ring	Type 316	1.4571
46	Disc	Type 316	1.4571

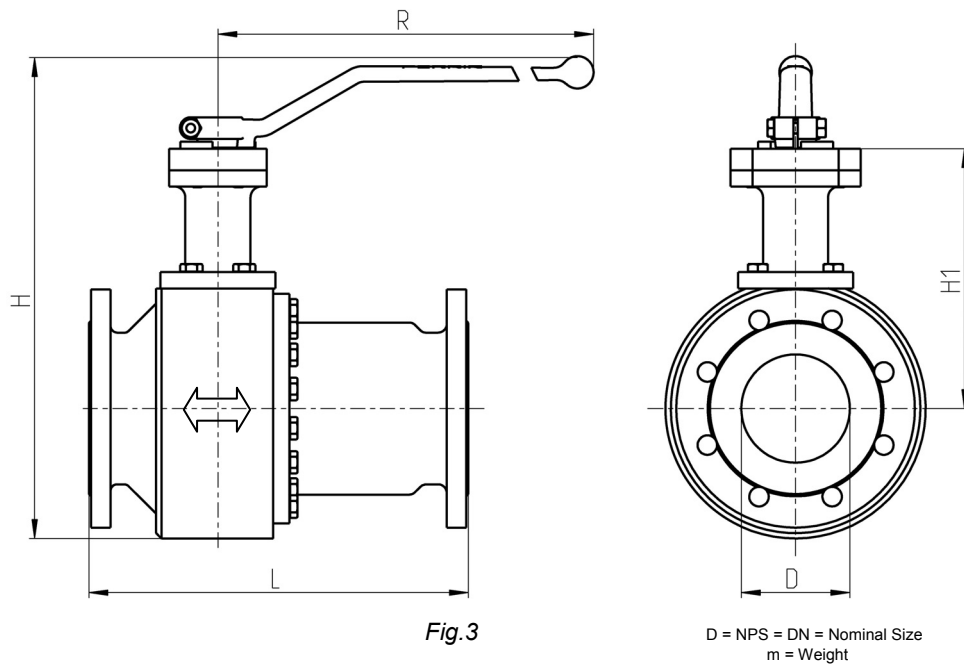
Tab.1

1) Material selection, depending on the operating temperatures (UHMW up to max. 90 °C / 194 °F and PCTFE up to max. 100 °C / 212 °F)

2) Materials for lower / higher temperature on request



Technical Data



CLASS 150 - Full Bore – 50°C

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	10,2	259	6,5	165	7	180	4,25	108	27	14	6,5
¾	20	10,4	264	6,5	165	7	180	4,62	117	47	18	8
1	25	11,4	289	7,3	185	7	180	5	127	74	20	9
1½	40	13,3	339	8,9	225	12	300	6,5	165	191	37	17
2	50	14,6	371	9,6	245	12	300	7	178	298	44	20
3	80	17,5	445	11,8	300	18	450	8	203	763	97	44
4	100	18,7	474	12,2	310	18	450	9	229	1192	132	60
6	150	21,6	550	14,2	360	28	700	15,5	394	2682	271	123

Tab.2

CLASS 150 - Reduced Bore -50°C

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	10,4	264	6,5	165	7	180	4,62	117	24	15	7
1	¾	10,6	269	6,5	165	7	180	5	127	43	20	9
1½	1¼	11,8	299	7,3	185	12	300	6,5	165	110	31	14
2	1½	13,8	351	8,9	225	12	300	7	178	172	40	18
3	2½	15,4	390	10	245	12	300	8	203	454	86	39
4	3	18,3	464	11,8	300	18	450	9	229	687	119	54
6	5	15,5	393	12,2	310	28	700	15,5	394	1676	88	118

Tab.3



CLASS 150 - Full Bore -100°C

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	12,2	309	8,5	215	7	180	4,25	108	27	15	7
¾	20	12,4	314	8,5	215	7	180	4,62	117	47	19	8,5
1	25	13,3	339	9,3	235	7	180	5	127	74	22	10
1½	40	15,3	389	10,8	275	12	300	6,5	165	191	40	18
2	50	16,6	421	11,6	295	12	300	7	178	298	46	21
3	80	19,9	505	14,2	360	18	450	8	203	763	101	46
4	100	21,0	534	14,6	370	18	450	9	229	1192	136	62
6	150	23,6	600	16,1	410	28	700	15,5	394	2682	284	129

Tab.4

CLASS 150 - Reduced Bore -100°C

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	12,4	314	8	215	7	180	4,62	117	24	18	8
1	¾	12,6	319	8,5	215	7	180	5	127	43	20	9
1½	1¼	13,7	349	9,3	235	12	300	6,5	165	110	35	16
2	1½	15,8	401	11	275	12	300	7	178	172	42	19
3	2½	17,3	440	12	295	12	300	8	203	454	95	43
4	3	20,6	524	14	360	18	450	9	229	687	128	58
6	5	22,0	560	14,6	370	28	700	15,5	394	1676	88	122

Tab.5

CLASS 150 - Full Bore -196°C

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	14,2	359	10,4	265	7	180	4,25	108	27	17	7,5
¾	20	14,3	364	10,4	265	7	180	4,62	117	47	20	9
1	25	15,3	389	11,2	285	7	180	5	127	74	22	10
1½	40	17,3	439	12,8	325	12	300	6,5	165	191	42	19
2	50	18,6	471	13,6	345	12	300	7	178	298	53	24
3	80	21,9	555	16,1	410	18	450	8	203	763	112	51
4	100	23,0	584	16,5	420	18	450	9	229	1192	143	65
6	150	25,6	650	18,1	460	28	700	15,5	394	2682	88	136

Tab.6

CLASS 150 - Reduced Bore -196°C

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	14,3	364	10	265	7	180	4,62	117	24	18	8
1	¾	14,5	369	10,4	265	7	180	5	127	43	22	10
1½	1¼	15,7	399	11,2	285	12	300	6,5	165	110	35	16
2	1½	17,8	451	13	325	12	300	7	178	172	48	22
3	2½	19,3	490	14	345	18	450	8	203	454	95	43
4	3	22,6	574	16	410	18	450	9	229	687	128	58
6	5	24	610	16,5	420	28	700	15,5	394	1676	88	131

Tab.7

CLASS 300 - Full Bore -50°C

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	10,3	263	6,5	165	7	180	5,5	140	27	19	8,5
¾	20	10,8	274	6,5	165	7	180	6	152	47	24	11
1	25	11,7	297	7,3	185	7	180	6,5	165	74	35	16
1½	40	13,9	353	8,9	225	18	450	7,5	190	191	57	26
2	50	14,9	378	9,6	245	18	450	8,5	216	298	66	30
3	80	16	415	10,2	260	18	450	11,12	282	763	119	54
4	100	17,2	437	10,2	260	28	700	12	305	1192	158	72
6	150	19,8	504	11,6	295	28	700	15,88	403	2682	310	141

Tab.8

CLASS 300 - Reduced Bore -50°C

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	10,8	274	6,5	165	7	180	6	152	24	20	9
1	¾	10,9	277	6,5	165	7	180	6,5	165	43	26	12
1½	1¼	12,3	313	7,3	185	12	300	7,5	190	110	51	23
2	1½	14,1	358	8,9	225	18	450	8,5	216	172	62	28
3	2½	16	400	9,6	245	18	450	11,12	282	268	101	46
4	3	17,2	437	10	260	28	700	12	305	687	141	64
6	4	18,5	469	10,2	260	28	700	15,88	403	1073	88	136

Tab.9

CLASS 300 - Full Bore -100°C

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	12,3	313	8,5	215	7	180	5,5	140	27	20	9
¾	20	12,7	324	8,5	215	7	180	6	152	47	29	13
1	25	13,7	347	9,3	235	7	180	6,5	165	74	42	19
1½	40	15,9	403	10,8	275	18	450	7,5	190	191	70	32
2	50	16,8	428	11,6	295	18	450	8,5	216	298	84	38
3	80	18,3	465	12,2	310	18	450	11,12	282	763	130	59
4	100	19,2	487	12,2	310	28	700	12	305	1192	178	81
6	150	21,8	554	13,6	345	28	700	15,88	403	2682	334	152

Tab.10

CLASS 300 - Reduced Bore -100°C

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	12,7	324	8,5	215	7	180	6	152	24	22	10
1	¾	12,9	327	8	215	7	180	6,5	165	43	33	15
1½	1¼	14,3	363	9	235	12	300	7,5	190	110	57	26
2	1½	16,0	408	10,8	275	12	300	8,5	216	172	75	34
3	2½	17,7	450	11,6	295	18	450	11,12	282	268	117	53
4	3	19,2	487	12	310	28	700	12	305	687	154	70
6	5	20,4	519	12,2	310	28	700	15,88	403	1073	88	138

Tab.11



CLASS 300 - Full Bore -196°C

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	14,3	363	10,4	265	7	180	5,5	140	27	22	10
¾	20	14,7	374	10,4	265	7	180	6	152	47	33	15
1	25	15,6	397	11,2	285	7	180	6,5	165	74	46	21
1½	40	17,8	453	12,8	325	18	450	7,5	190	191	86	39
2	50	18,8	478	13,6	345	18	450	8,5	216	298	101	46
3	80	20,3	515	14,2	360	18	450	11,12	282	763	147	67
4	100	21,1	537	14,2	360	28	700	12	305	1192	194	88
6	150	23,8	604	15,6	395	28	700	15,88	403	2682	88	159

Tab.12

CLASS 300 - Reduced Bore -196°C

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	14,7	374	10,4	265	7	180	6	152	24	26	12
1	¾	14,8	377	10,4	265	7	180	6,5	165	43	40	18
1½	1¼	16,2	413	11,2	285	12	300	7,5	190	110	64	29
2	1½	18,0	458	12,8	325	18	450	8,5	216	172	84	38
3	2½	19,7	500	13,6	345	18	450	11,12	282	268	139	63
4	3	21,1	537	14	360	28	700	12	305	687	174	79
6	5	22,4	569	14,2	360	28	700	15,88	403	1073	88	142

Tab.13

PN 16

DN [mm]	H [mm]			H1 [mm]			R [mm]	L [mm] DIN EN 558		Kv [m³/h]	m ca. [kg]	
	-50°C	-100°C	-196°C	-50°C	-100°C	-196°C		GR1	GR27		GR1	GR27
15	263	313	363	165	215	265	180	130	115	23	9	8
20	268	318	368	165	215	265	180	150	120	41	12	9
25	293	343	393	185	235	285	180	160	125	64	16	10
40	350	400	475	225	275	350	300	200	140	165	26	17
50	378	428	503	245	295	370	300	230	150	258	29	22
80	450	510	610	300	360	460	450	310	180	660	52	38
100	470	530	620	310	370	460	700	350	190	1031	68	46
150	503	563	653	310	370	460	700	480	350	2320	136	128

Tab.14

PN 40

DN [mm]	H [mm]			H1 [mm]			R [mm]	L [mm] DIN EN 558		Kv [m³/h]	m ca. [kg]	
	-50°C	-100°C	-196°C	-50°C	-100°C	-196°C		GR1	GR27		GR1	GR27
15	263	313	363	165	215	265	180	130	115	23	9	8
20	268	318	368	165	215	265	180	150	120	41	12	9
25	293	343	393	185	235	285	180	160	125	64	16	10
40	350	400	475	225	275	350	300	200	140	165	26	17
50	378	428	503	245	295	370	300	230	150	258	31	24
80	450	510	610	300	360	460	450	310	180	660	58	41
100	478	538	628	310	370	460	700	350	190	1031	75	53
150	510	570	660	310	370	460	700	480	350	2320	157	146

Tab.15

Other dimensions and pressure classes on request.



Top Works

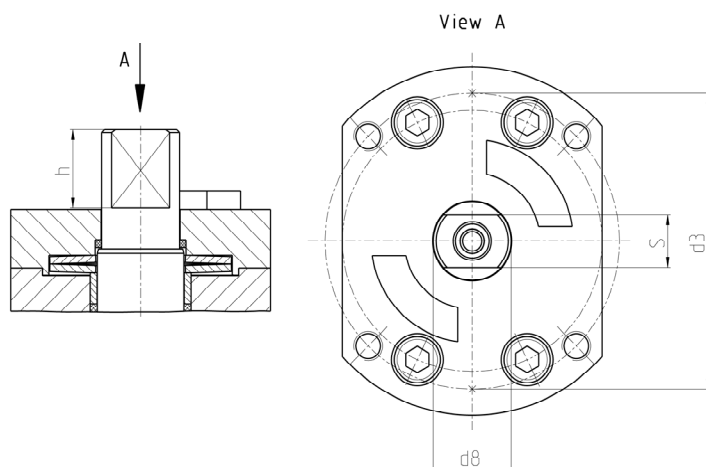


Fig.5

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

Tab.16

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
½	15	F05	F05	½	-	-	-
¾	20	F05	F05	¾	½	F05	F05
1	25	F05	F05	1	¾	F05	F05
1½	40	F07	F10	1½	1	F07	F07
2	50	F07	F10	2	1½	F07	F10
3	80	F10	F12	3	2	F07	F10
4	100	F10	F12	4	3	F10	F12
6	150	F12	F12	6	4	F12	F12

Tab.17



Pressure / Temperature Diagrams

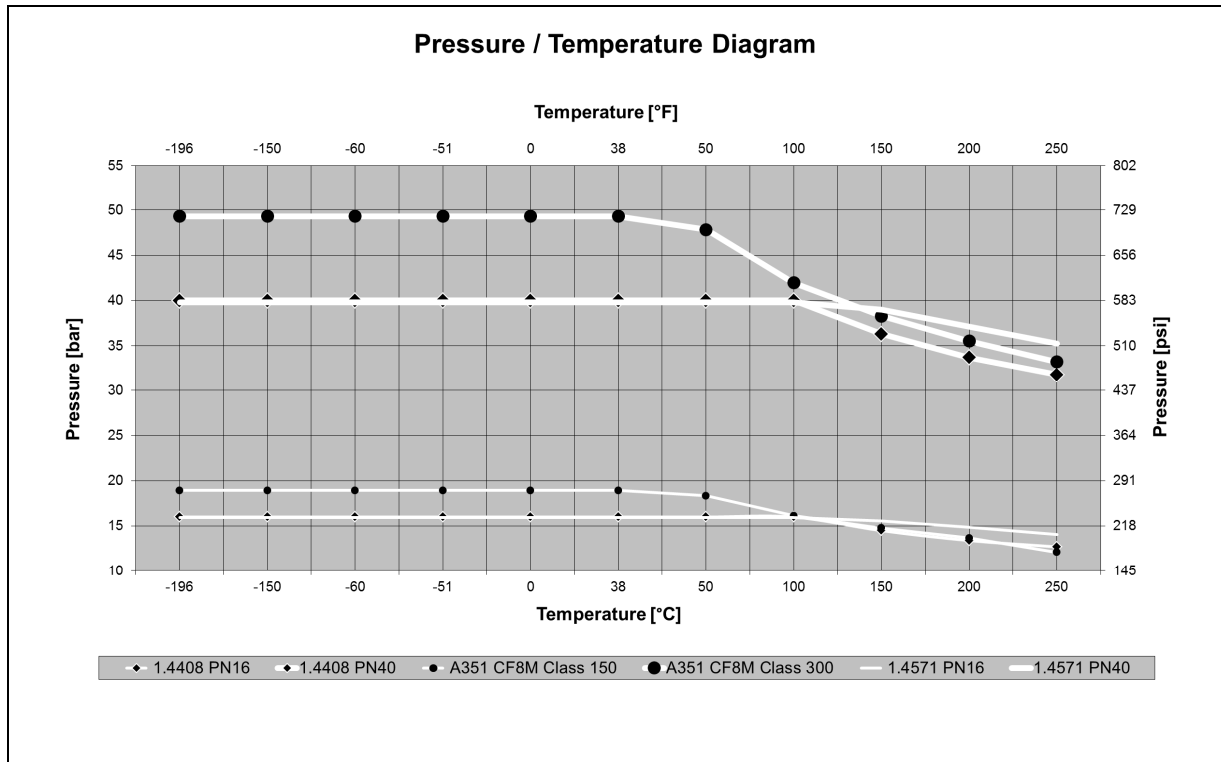


Fig.6

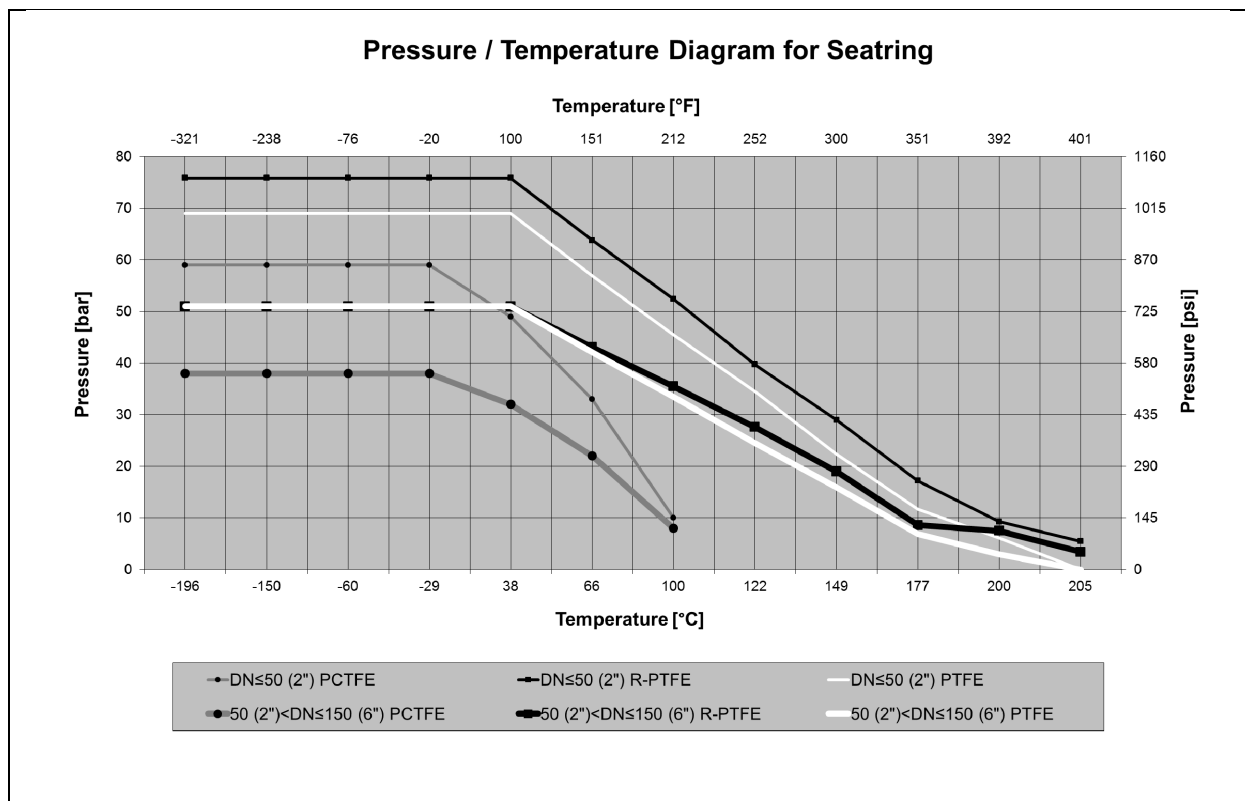


Fig.7



Options

1) Seat system with protected spring area

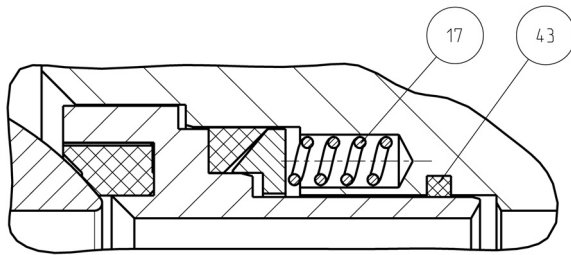


Fig.8

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.

Technical modifications are reserved.



