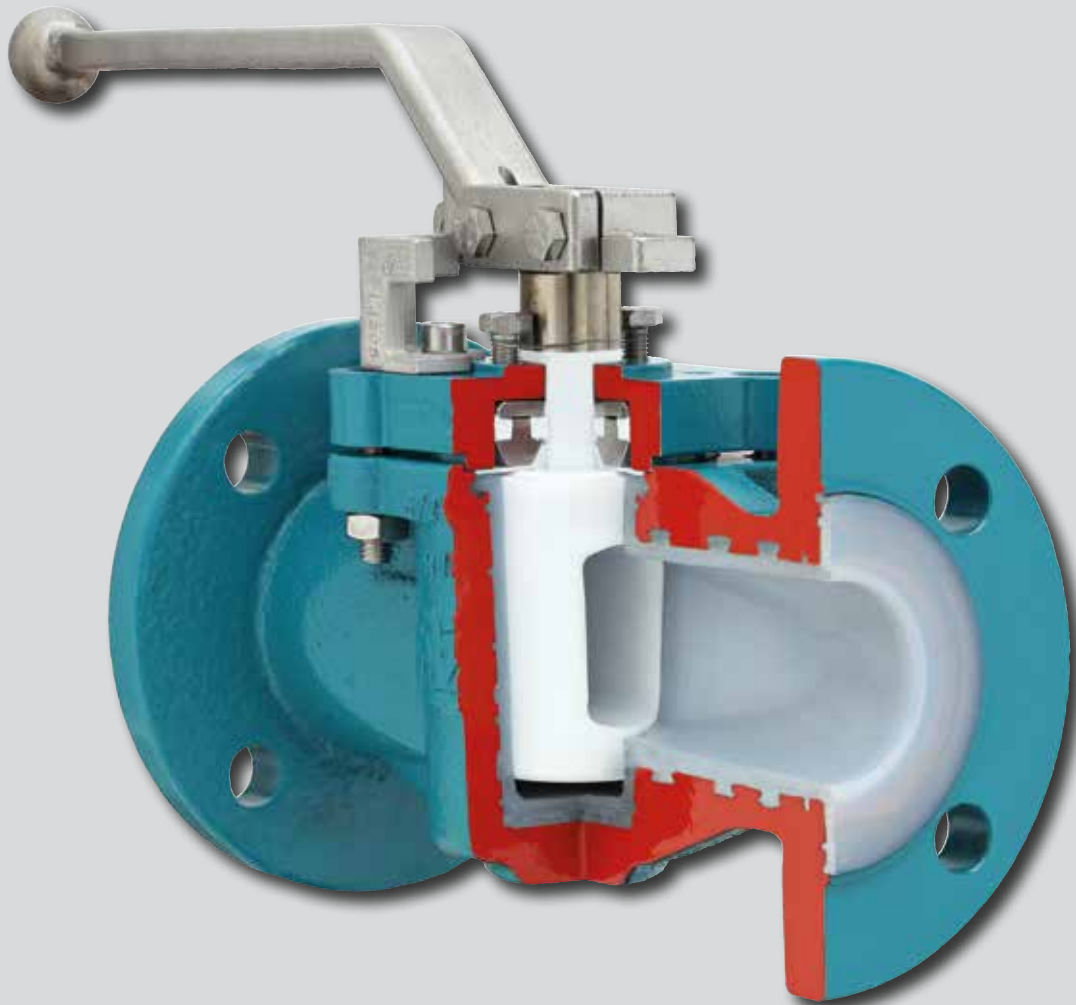


TYPE ISO-STANDARD A

Plug valve with chemical-resistant
vacuum-proof lining

DN 15 - 300 / PN 10 - 40

NPS ½" - 12" / class 150 - 300

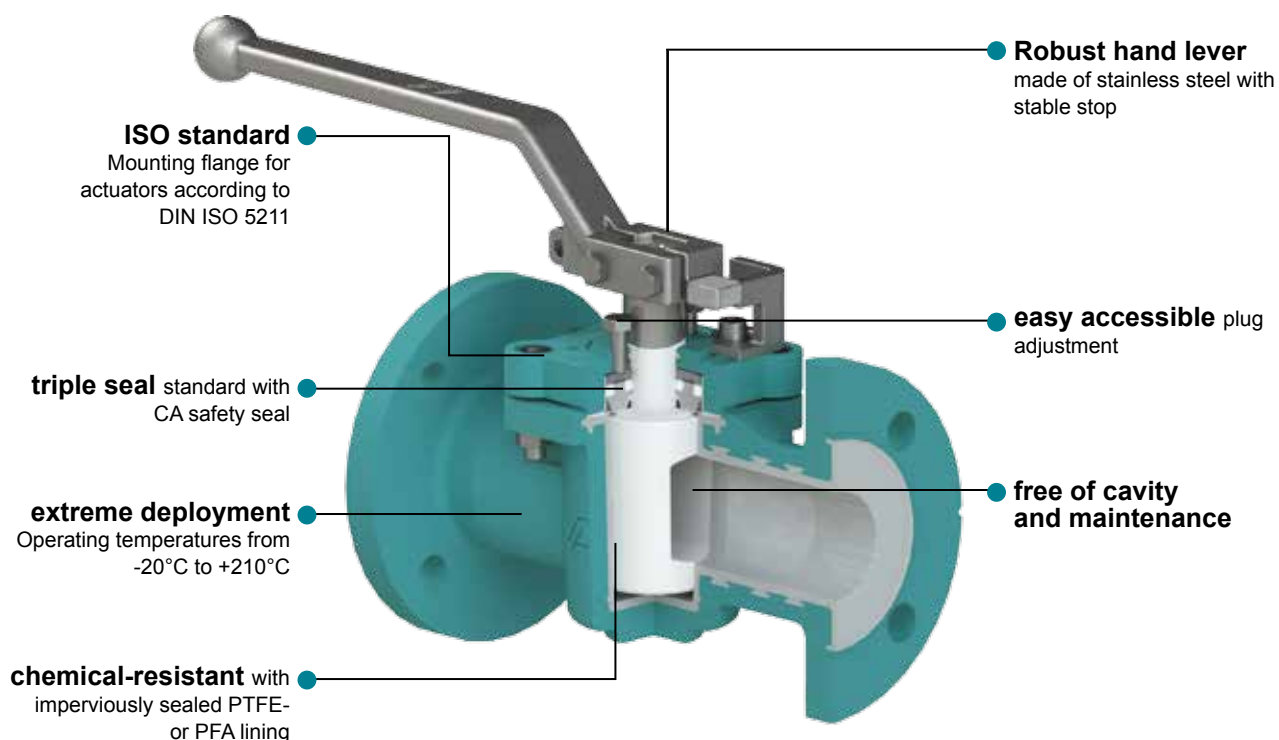


2.1

- free of cavities
- Maintenance free and self lubricating
- Resistant to chemicals, vacuum service compatible
- T_{max} = 210°C
- Mounting flange for actuators according to DIN ISO 5211
- Easy accessible plug adjustment
- Face-to-face dimensions according to DIN and ASME
- Type approved
- TA - Luft 2002 approval

TYPE ISO STANDARD A

Construction characteristics



The imperviously sealed, extremely resistant lining is at least 3 mm thick. Fresh granulate is used exclusively, no refurbished regenerates or similar materials.

Versions

F-2, F-3 standard, F-3-W, (F-4 and F-5 on request)
See brochures 1.1 - 1.3. Lined valves also available with heating jacket (see brochure 1.6 - 1.7 for details)

Nominal widths

DIN DN 15 - DN 300 / ASME 1/2" - 12"

Temperature - application range

-20°C to +210°C (material-dependent)

Nominal pressure

max. PN 25 or Class 150

Vacuum-proof (See P-T diagram, other pressure ranges and temperature ranges on request)

Safety seals

All ISO STANDARD-A valves are delivered as standard with the type CA chemical seal, on request with CASN-A seal. For systems that vary in temperature the CASN-A seal is recommended.

Carrier materials

Body:

- Ductile cast iron EN-GJS-400-18-LT (GGG 40.3) / ASTM A395 Gr 60-40-18

Special materials on request:

- Cast steel 1.0619 (GS-C25) / A216 WCB
- Low-temperature steel 1.1138 / A352 LCC
- Stainless steel 1.4408 / A351/CF8M

Plug:

- Cast stainless steel 1.4308 / A351/CF8 ($\leq$ DN100)
- Ductile cast iron EN-GJS-400-18-LT (GGG 40.3) / ASTM A395 Gr 60-40-18 ($\geq$ DN 150)

Plugs without lining in the special materials titanium, Monel, Hastelloy C, ceramic, etc. on request.

Lining materials

Body: PFA, PFA-conductive, FEP, PVDF

Plugs: PTFE, PFA, PFA-conductive, FEP, PVDF

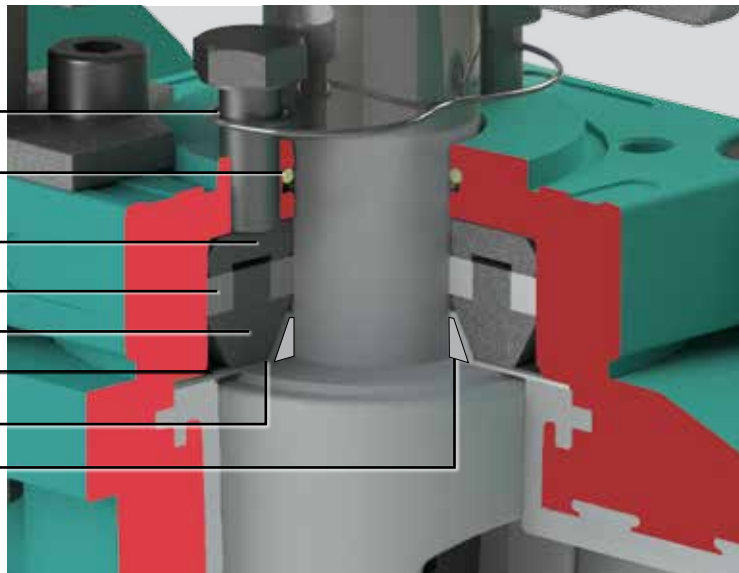


TYPE ISO STANDARD A

Safety seals

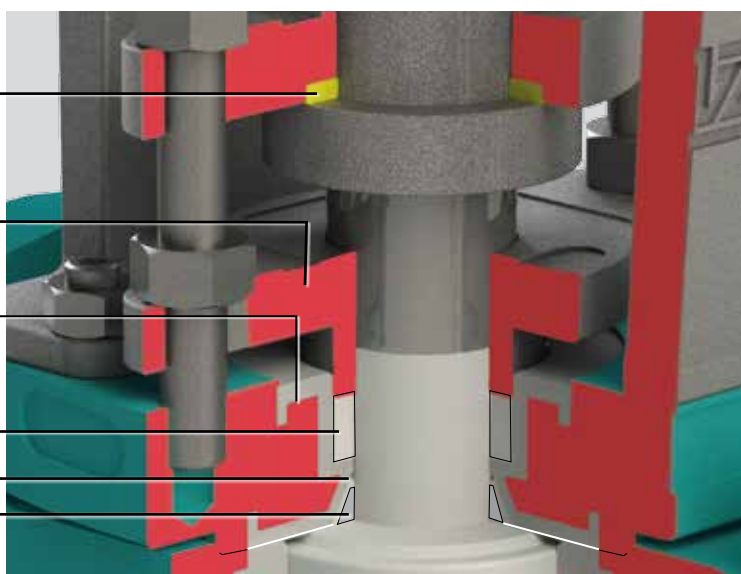
CA Seal

- antistatic element
- O-ring
- Thrust washer
- PTFE packs
- Thrust collar
- Stainless steel membrane
- V-membrane (PTFE)
- Delta ring

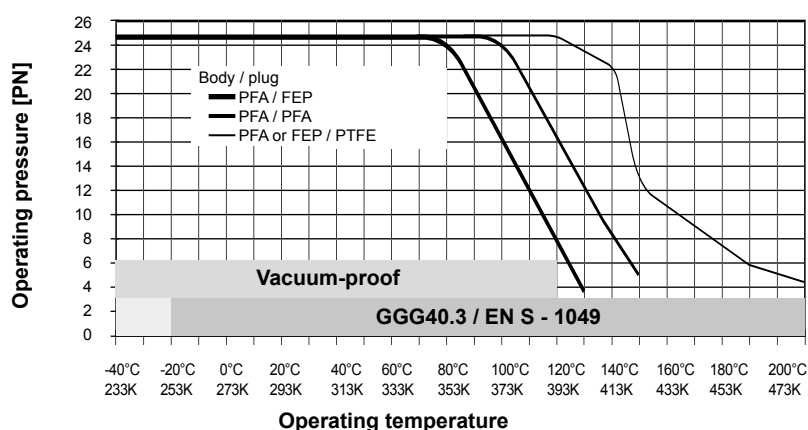


CASN-A Seal

- PEEK bearing
- Stuffing box ring
- Cover with lining
- Triple PTFE packs
- V-membrane (PTFE)
- Delta ring



General pressure-temperature diagram



Lining materials		
Body	Plug	T _{max}
PFA	PTFE	210 °C
PFA/FEP	PFA	150 °C
PFA	Special material	210°C
PFA conductive	PFA conductive	125°C
PVDF*	PVDF*	125°C

Standard lining materials:
PFA (body) and PTFE (plug)
*) Material PVDF with lotus effect

The specified values depend on the respective application (medium). Operating temperatures under -20°C only with body material 1.4408 or low-temperature steel. High pressure resistance / temperature resistance on request, e.g. PN 40.

TYPE ISO STANDARD A

3-way versions / plug shapes

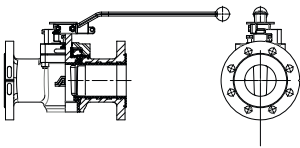
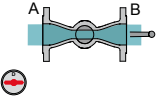
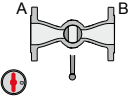
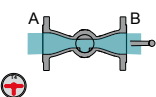
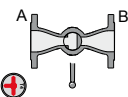
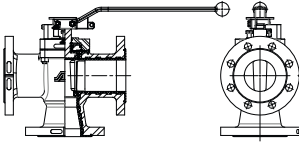
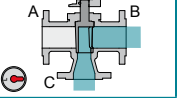
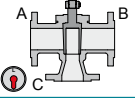
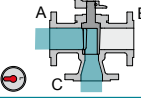
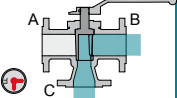
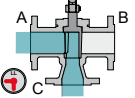
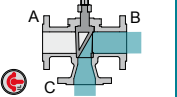
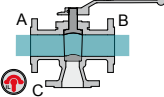
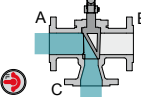
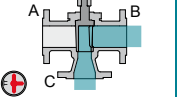
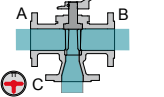
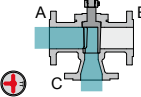
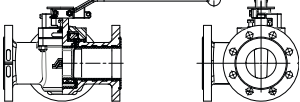
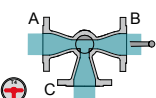
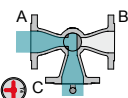
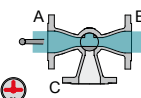
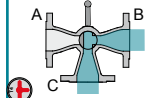
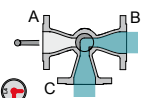
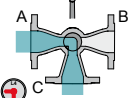
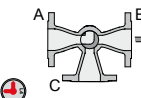


F-3-S ISO standard-A
Lined 3-way valve with
vertical third outlet



F-3-W ISO standard-A
Lined 3-way valve with
horizontal third outlet

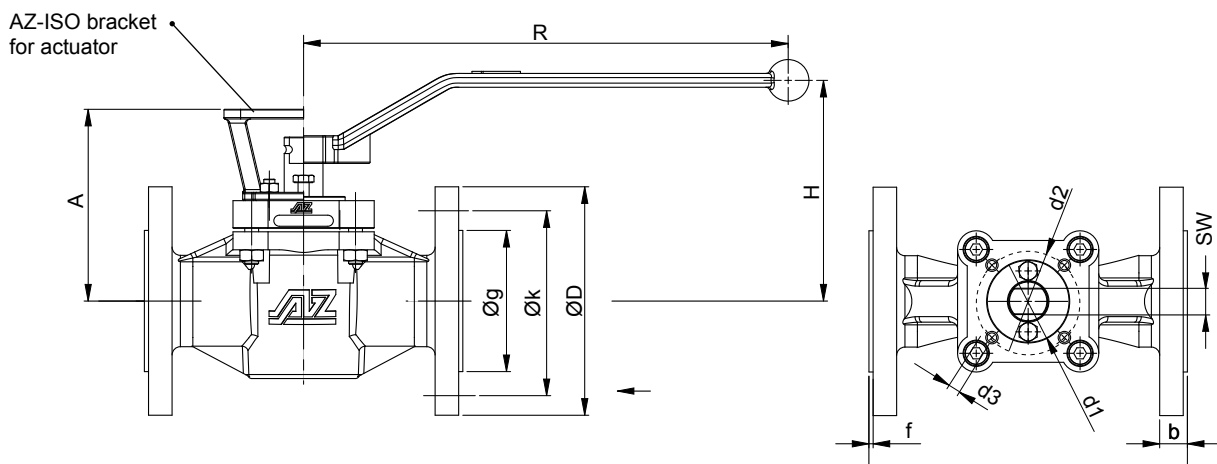
Position indicator
All F3/F4 valves are
equipped with cast, non-
rusting position indicators,
with non-twisting captive
connection.

Valve type	Plug type	Position I 0°	Position II 90°	Position III 180°	Position IV 270°
					
					
 Plug type "IL" only available in special materials (no plug lining)					
					
					
					
					
					

*) **Recommendations to plug type "IL" and "T4":**
Instead for plug type "IL" without lining for valve type F-3-S you can also use the lined plug type
"T4" with valve type F-3-W (position II, III, IV). Please check installation situation.

TYPE ISO - STANDARD A

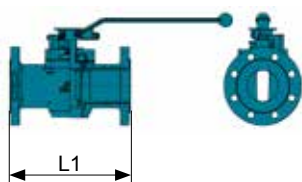
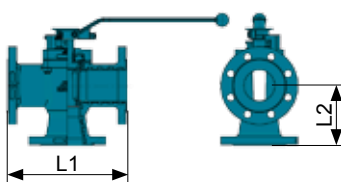
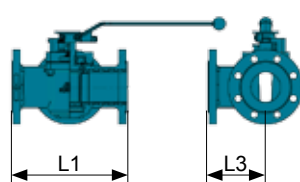
Dimension DN 15 - 100S NPS ½" - 4" according to DIN / ASME



ISO-STANDARD-A F-2

ISO-STANDARD-A F-3-S

ISO-STANDARD-A F-3-W



DIN EN 1092/1 / 558-1	DN	PN	L1	L2	L3	øD	Flange hole			øg	b	f	Bracket/Lever			Flange DIN ISO 5211			US-UNC d3**	SW dihedron	torque* [Nm]	Weight [kg]	K _{vs} value [m³/h]	C _v -value [US.gal/min]	
	øk	Units	ø	A	H	R	Type	d1	d2	d3	A	H	R	Type	d1	d2	d3	d3**	dihedron	[Nm]	[kg]	[m³/h]	[US.gal/min]		
	15	10-40	130			95	65	4	14	45	16	2	88	98	200	F05	35	50	M6	1/4"	11	40/---	3,8	7,1	8,2
	20	10-40	150	75	75	105	75	4	14	58	18	2	88	98	200	F05	35	50	M6	1/4"	11	40/---	4,0	5,8	6,7
	25	10-40	160	80	80	115	85	4	14	68	18	2	94	110	200	F07	35	70	M6	1/4"	11	90/60	6,5	32	37
	32	10-40	180	90	90	140	100	4	18	78	18	2	102	117	320	F07	55	70	M8	5/16"	14	90/60	7,5	51	59
	40	10-40	200	100	100	150	110	4	18	88	18	3	109	124	320	F07	55	70	M8	5/16"	14	160/80	10	79	92
	50	10-40	230	115	115	165	125	4	18	102	20	3	139	160	420	F07	55	70	M8	5/16"	17	250/120	12	127	147
	65	10-16 25-40	290			185	145	4 8 8	18	122	18 22	3	158	170	600	F10	70	102	M10	3/8"	22	400/260	20	179	207
	80	10-40	310	155	155	200	160	8	18	138	24	3	158	170	600	F10	70	102	M10	3/8"	22	400/260	20	246	285
100	10-16 25-40	350	175	175	220 235	180 190	8 22	18 162	158 24	20 24	3	158	170	600	F10	70	102	M10	3/8"	22	400/260	30	203	203	
ASME B 16.5 / 16.10	NPS	Class	L1	L2	L3	øD	Flange hole			øg	b	f	Bracket/Lever			Flange DIN ISO 5211			US-UNC d3**	SW dihedron	torque* [Nm]	Weight [kg]	K _{vs} value [m³/h]	C _v -value [US.gal/min]	
	øk	Units	ø	A	H	R	Type	d1	d2	d3	A	H	R	Type	d1	d2	d3	d3**	dihedron	[Nm]	[kg]	[m³/h]	[US.gal/min]		
	½"	150 300	108 140			90 95	60,3 66,7	4	15,7	34,9	10,0 14,7	2	88	110	200	F05	35	50	M6	1/4"	11	40/---	2,7 3,8	7,7	9,0
	¾"	150 300	117 152	64 83	64 83	100 115	69,9 82,5	4	15,7 19,1	42,9 16,3	10,9 16,3	2	88	110	200	F05	35	50	M6	1/4"	11	40/---	3,2 4,3	6,4	7,4
	1"	150 300	127 165			110 125	79,4 88,9	4	15,7 19,1	50,8 11,6 17,9	11,6 17,9	2	94	110	200	F05	35	50	M6	1/4"	11	90/60	3,5 6,0	35	41
	1¼"	150 300	140 178	89	89	115 135	88,9 98,4	4	15,7 19,1	63,5 13,2 19,5	13,2 19,5	2	102	???	320	F07	55	70	M8	5/16"	14	90/60	7,5 8,5	56	65
	1½"	150 300	165 190			125 155	98,4 114,3	4	15,7 22,3	73,0 14,7 21,1	14,7 21,1	2	109	124	320	F07	55	70	M8	5/16"	14	160/80	9 10	87	101
	2"	150 300	178 216			150 165	120,7 127,0	4 8	19,1 19,1	92,1 16,3 22,7	16,3 22,7	2	139	160	420	F07	55	70	M8	5/16"	19	250/120	13 16	140	162
	2½"	150 300	190 241			180 190	139,7 149,3	4 8	19,1 22,3	104,8 17,9 25,9	17,9 25,9	2	158		600	F10	70	102	M10	3/8"	22	400/260	16 19	197	228
	3"	150 300	203 282			190 210	152,4 168,3	4 8	19,1 22,3	127 19,5 29,0	19,5 29,0	2	158	170	600	F10	70	102	M10	3/8"	22	400/260	18 23	271	314
4"	150 300	229 305	154		230 255	190,5 200,0	8	19,1 22,3	157,2 24,3 32,2	24,3 32,2	2	158	170	600	F10	70	102	M10	3/8"	22	400/260	26 31	223	223	

ISO flange instructions, weights and Kvs values for straight-way valves

*) Maximum breakaway torque $M_{d, breakaway}$ for F2 and F3S ISO standard A depending on material combinations (PFA+PFA / PFA+PTFE). All data incl. 100% safety factor Breakaway torques for valves - types F-4 and F3W on request.

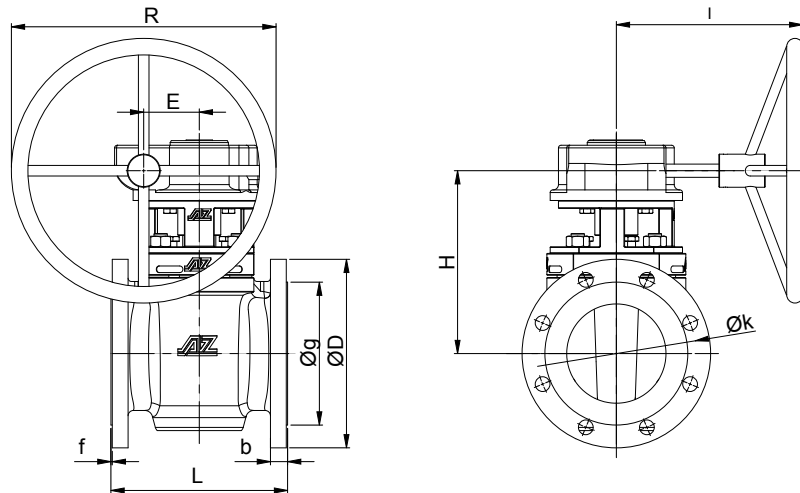
**) US DESIGN: Screws and nuts in accordance with ASTM / UNC ANSI B1.1

Order example: F-2-ISO-STANDARD-A DN50-PN25-GGG40.3-PFA-PTFE

F = Flange, 2 = two-way, ISO STANDARD-A = Type, DN50 = Nominal width, PN25 = Nominal pressure, GGG40.3 = Body material, PFA = body lining, PTFE = plug lining

TYPE ISO - STANDARD A

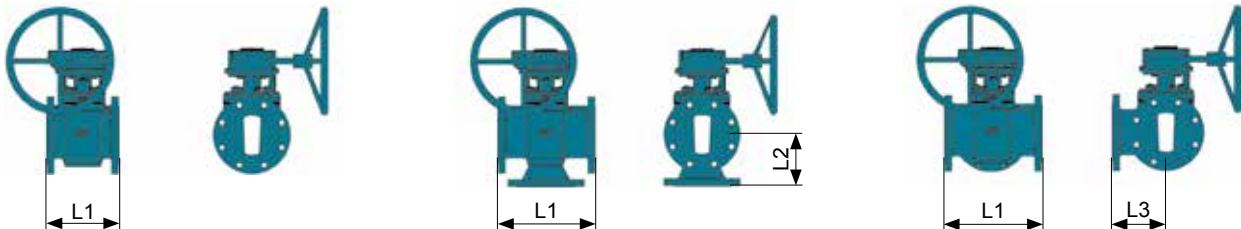
Dimension DN 100S - 300 NPS 4"S - 12" according to DIN / ASME



ISO-STANDARD-A F-2

ISO-STANDARD-A F-3-S

ISO-STANDARD-A F-3-W



DIN EN 10921 / 588-1	DN	PN	L1	L2	L3	øD	Flange holes			øg	b	f	Gear unit (Pro-gear)					Flange DIN ISO 5211			US-UNC d3**	SW dihedron	torque* [Nm]	Weight [kg]	K _{vs} value [m³/h]	C _v -value [US.gal/min]	
						øk	Units	ø				E	R	H	I	Type	Type	d1	d2	d3							
	100S	10-16 25-40	325			250 270	210 220	8	18 26	188 188	22 26	3	84	400	230	290	Q1500-S	F16	130	165	M20	¾"	36	600/350	32 32	447	517
	125	10-16 25-40	325			250 270	210 220	8	18 26	188 188	22 26	3	84	400	260	290	Q1500-S	F16	130	165	M20	¾"	36	1200/900	74 78	358	414
	150	10-16 25-40	350	200	200	285 300	240 250	8	22 26	212 218	22 28	3	84	400	265	290	Q1500-S	F16	130	165	M20	¾"	36	1200/900	85 87	822	951
	200	10-16 25 40	400			340 360 375	295 310 320	8/12	22 26 30	268 278 285	24 30 34	3	96,5	600	320	350	Q2000-S	F16	130	165	M20	¾"	36	2600/--	119 131	1727	1997
	250	10 16 25 40	450			395 405 425 450	350 355 370 385	12	22 26 30 33	320 335 345	26 32 38	3	117,5	600	352	465	Q5000-S	F16	130	165	M20	¾"	36	3200/--	195 253	2052	2373
	300	10 16 25 40	500			445 460 485 515	400 410 430 450	12 16	22 26 30 33	370 378 395 410	26 28 34 42	4	117,5	600	340	465	Q5000-S	F16	130	165	M20	¾"	36	3200/--	253 274	1707	1973
	ASME B 16.5 / 16.10	NPS	Class	L1	L2	L3	øD	Flange holes			øg	b	f	Gear unit (Pro-gear)					Flange DIN ISO 5211			US-UNC d3**	SW dihedron	torque* [Nm]	Weight [kg]	K _{vs} value [m³/h]	C _v -value [US.gal/min]
							øk	Units	ø				E	R	H	I	Type	Type	d1	d2	d3						
4"S		150 300	254 325	154	154	255 280	190,5 200,0	8	22,3	185,7	24,3 32,2	2	84	500	230	328	Q1500-S	F16	130	165	M20	¾"	27	600/350	27 32	492	569
5"		150 300	254 325			255 280	215,9 235	8	22,3	185,7	24,3 35,4	2	118	500	260	363	Q1500-S	F16	130	165	M20	¾"	27	1200/900	61 78	394	455
6"		150 300	267 403			280 320	241,3 269,9	8 12	22,3	215,9	25,9 37,0	2	118	500	265	363	Q1500-S	F16	130	165	M20	¾"	27	1200/900	66 77	904	1046
8"		150 300	292 419			345 380	298,5 330,2	8 12	22,4 25,4	269,9	29,0 41,7	2	138	500	320	440	Q2000-S	F16	130	165	M20	¾"	36	2600/--	103 138	1900	2197
10"		150 300	330 457			405 445	362 387,4	12 16	25,4 28,4	323,8	30,6 48,1	2	138	500	352	440	Q5000-S	F16	130	165	M20	¾"	36	3200/--	140 176	2257	2610
12"		150 300	356 502			485 520	431,8 450,8	12 16	25,4 31,7	381	32,2 51,3	2	138	500	340	440	Q5000-S	F16	130	165	M20	¾"	36	3900/--	168 187	1877	2170

ISO flange instructions and K_{vs} values for straight-way valves

*) Maximum breakaway torque Md_{breakaway [Nm]} for F2 and F3S ISO standard A depending on material combinations (PFA+PFA / PFA+PTFE). All data incl. 100% safety factor Breakaway torques for valves - types F-4 and F3W on request.

**) US DESIGN: Screws and nuts in accordance with ASTM / UNC ANSI B1.1

Order example: F-2-ISO-STANDARD-A DN250-PN16-GGG40.3-PFA-PTFE

F = Flange, 2 = two-way, ISO STANDARD-A = Type, DN250 = Nominal width, PN16 = Nominal pressure, GGG40.3 = Body material, PFA = body lining, PTFE = plug lining



AZ-ARMATUREN GmbH
D-78087 Mönchweiler
Waldstraße 7
Telefon: +49 (0)7721 7504-0
Telefax: +49 (0)7721 7504-13
info@az-armaturen.de
www.az-armaturen.de