

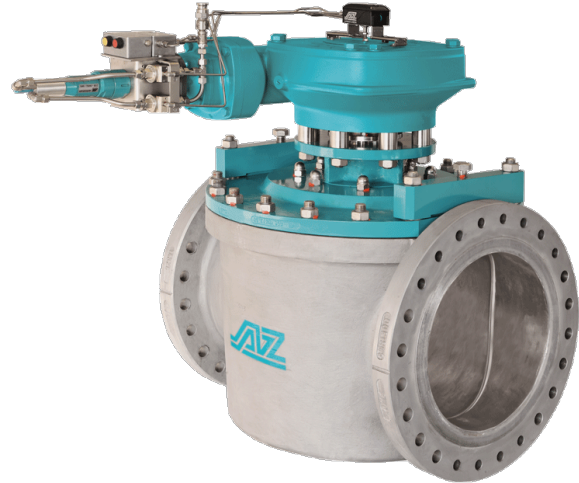
ISO EXTRA

Plug valve with full bore design

DIN-EN: DN 15 - 600 / PN 10 - 40

ASME: NPS ½" - 24" / class 150 - 300

PT range: $-30 < T < 230/280^{\circ}\text{C}$, vacuum 10-8 mbar



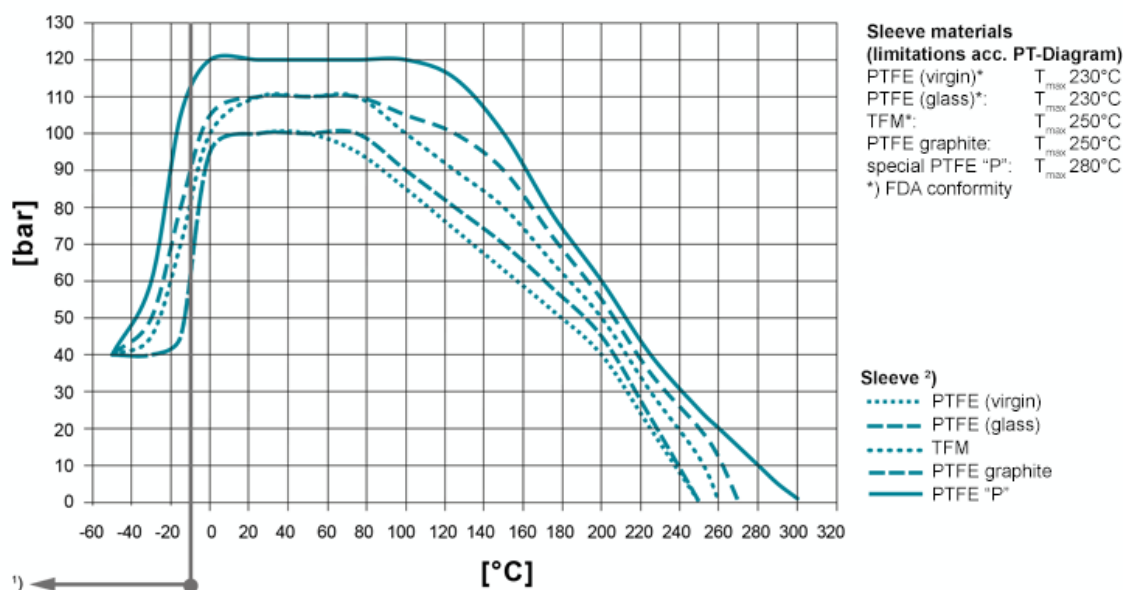
Design Features

Design Characteristics

- full bore
- free of cavities
- maintenance free - self lubricating
- easy accessible adjustment of the plug, even with mounted actuator
- pressure drop minimized
- piggable design available
- suitable for abrasive fluids
- vacuum tight
- fugitive emission resp. clean air act certified (TA - Luft 2002 approval)
- Directive 2014/68/EU
- fire safe design API 607 / ISO 10497
- FDA conformity

PT-Diagram

General Pressure-Temperature-Diagram



Operating temperatures < -30°C and > 220 °C have to be checked and approved by AZ according to the operating conditions. Besides the P/T value of the sleeve the limitations of the valve bodies also have to be considered. Please refer to the EN 12516-1 resp. ASME B16.34 in order to choose a proper pressure rating (PN/class). The shown values refer to austenitic stainless steel 1.4408 (A351 Gr. CF8M). 1) For operating temperatures below -10°C low temperature / austenitic steels are required. 2) Sleeve: There are different sleeve materials / compounds available.

Materials

Standard body materials

- Carbon Steel 1.0619, ASTM A216 WCB
- Stainless Steel 1.4408, ASTM A351 CF8M
- Stainless Steel 1.4308, ASTM A351 CF8
- Unalloyed stainless steel casting (low Temp.) 1.1138, LCC/LCB/A352 **Standard plug materials**
- Stainless Steel 1.4408, ASTM A351 CF8M
- Stainless Steel 1.4308, ASTM A351 CF8 **Special materials**

- Alloy
- Monel
- Nickel
- Zirconium
- Titan
- Tantal
- other materials on request

Sealing Systems

Standard sealing for all major applications;

T_{max} 230°C

Type STD

[read more \[...\]](#)

Firesafe sealing (API 607) with graphite packing for additional stem sealing; T_{max} 230°C

Type FS

[read more \[...\]](#)

Chemical sealing to prevent fugitive emission of aggressive and toxic media with PTFE packing for additional stem sealing;

T_{max} 230°C

Type CA

[read more \[...\]](#)

Firesafe safety sealing (API 607) for fluctuating temperatures

with 3x graphite packing (adjustable) for additional stem sealing; T_{max} 280°C

Type FSN

[read more \[...\]](#)

Firesafe safety sealing (API 607) for fluctuating temperatures

with 3x graphite packing (live loaded disc springs) for additional

stem sealing; T_{max} 280°C

Type FSN-SL

[read more \[...\]](#)

Chemical safety sealing for fluctuating temperatures with 3x PTFE packing (adjustment) for additional stem sealing;

T_{max} 230°C

Type CASN

[read more \[...\]](#)

Chemical safety sealing for fluctuation temperatures with 3x PTFE packing (live loaded disc springs) for additional

stem sealing; T_{max} 230°C

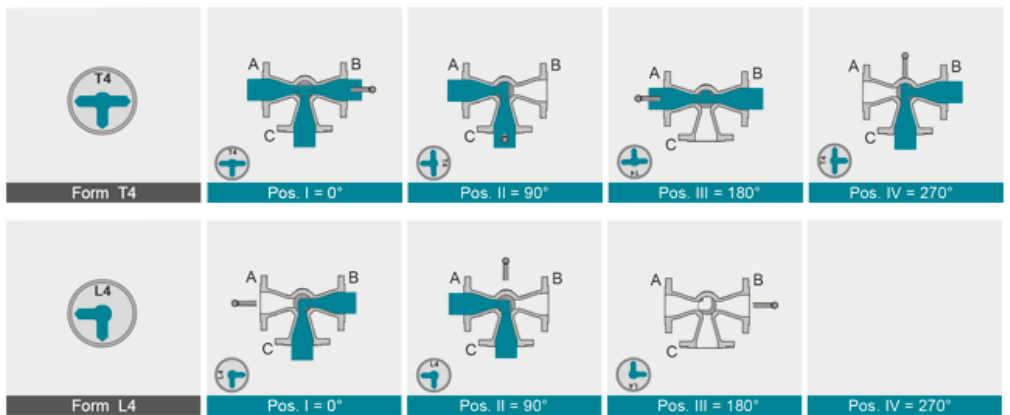
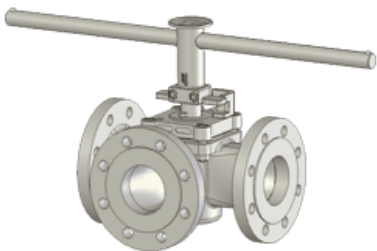
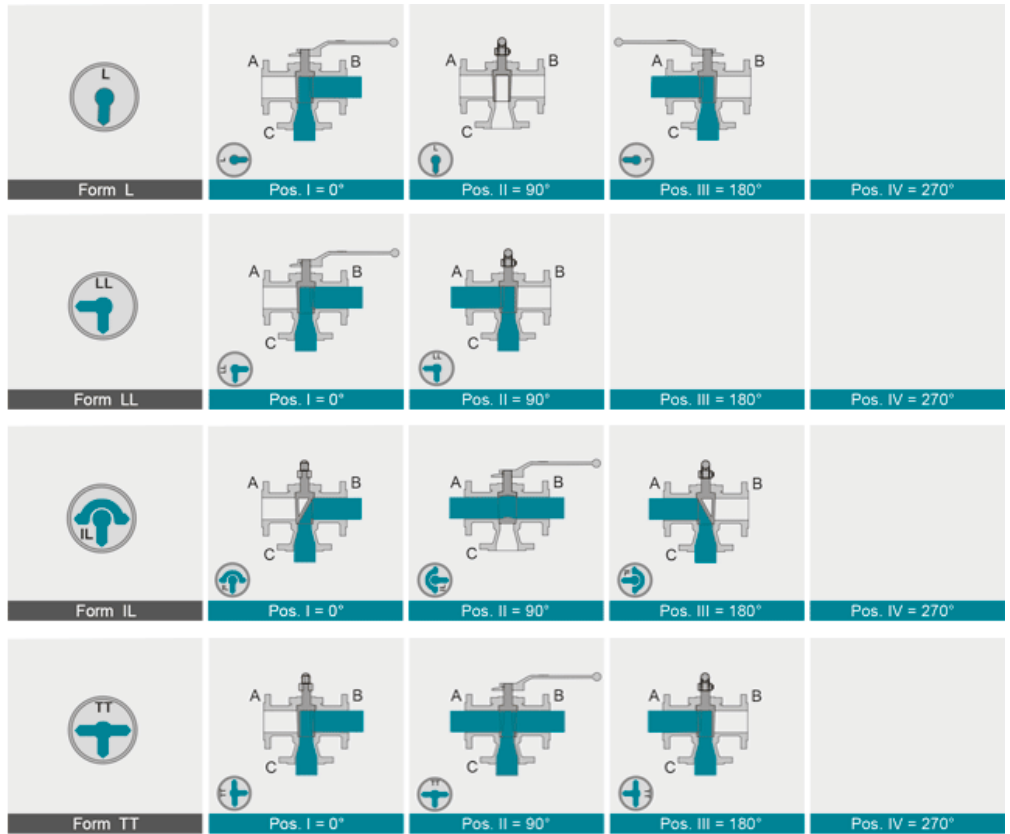
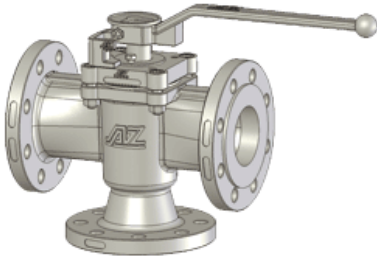
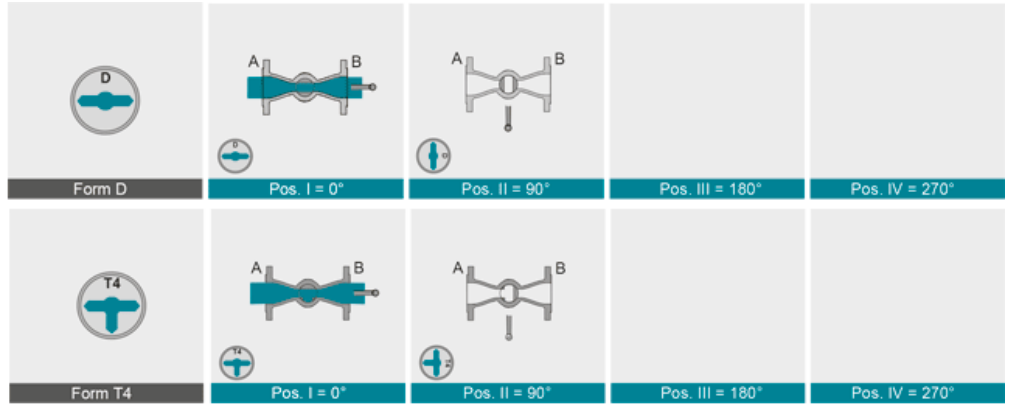
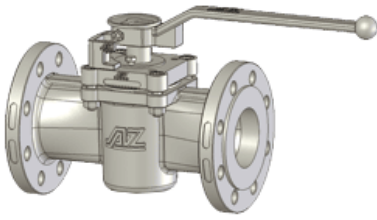
Type CASN-SL

[read more \[...\]](#)

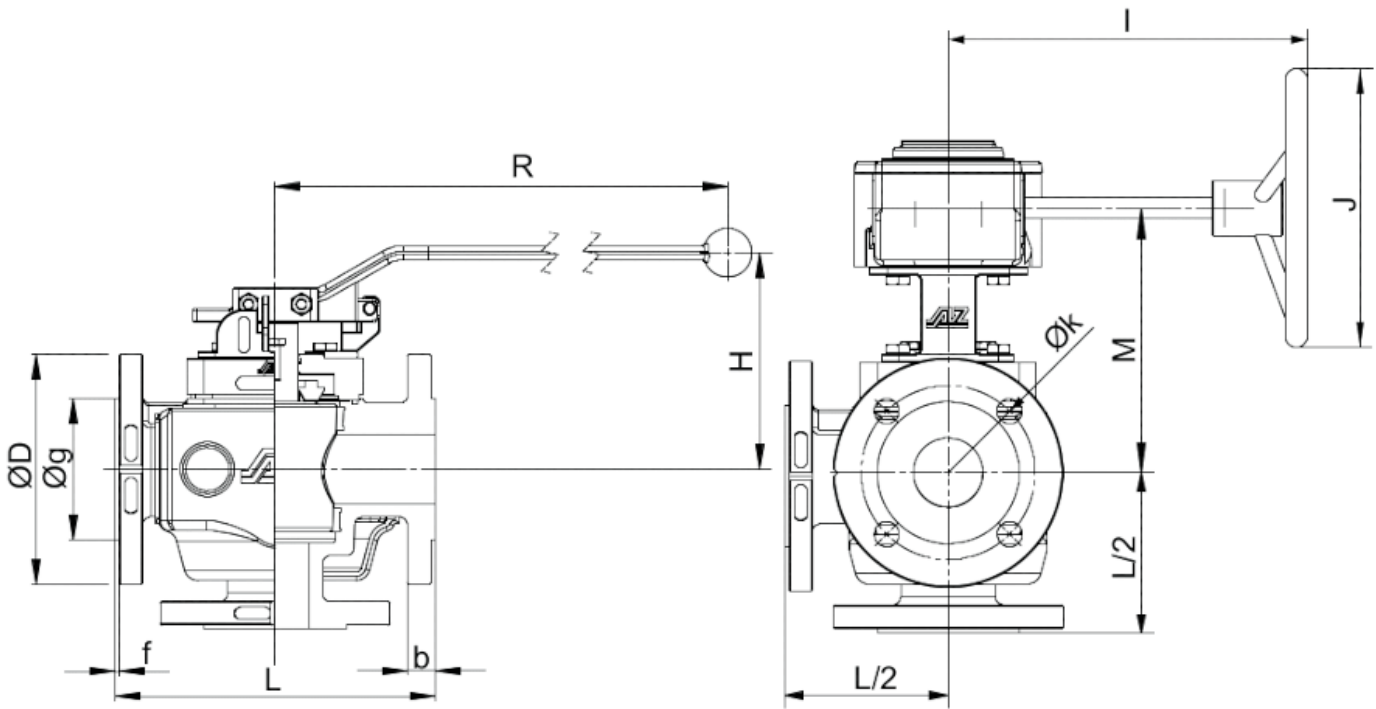
Port Forms



AZ plug valves are fitted with cast, rust proof position indicators. The position indicator is securely welded to the lever to prevent it from working loose.



Dimensions



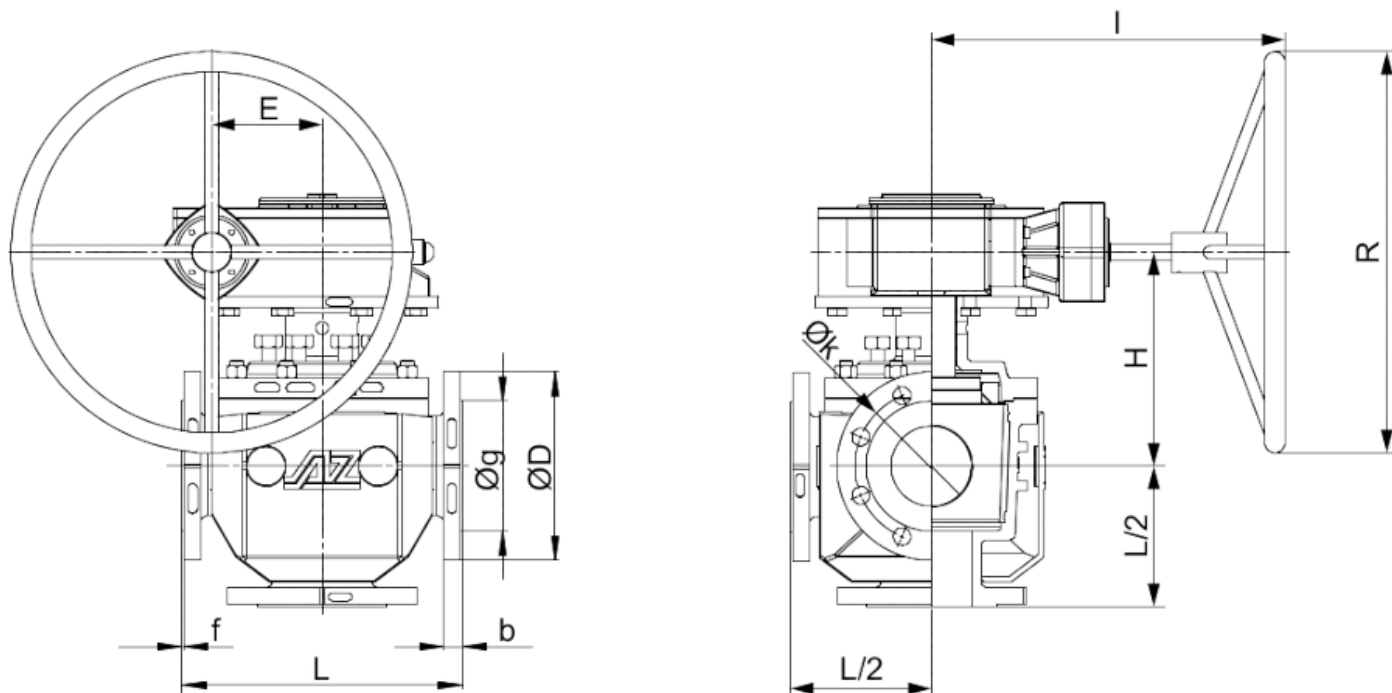
- multiport plug types please see leaflets 1.2 (3-way) and 1.3 (4- and 5-way)

DN	PN	L	L/2	øD	flange hole			øg	b	f	lever		gear				torque,* [Nm]	K _{v5} -value [m ³ /h] / C _v -value [US.gal/min]							
					øk	No.	ø				R	H	E	I	J	M		Typ	F-2 K _v	F-2 C _v	F-3-S K _v	F-3-S C _v	F-3-W K _v	F-3-W C _v	
DIN EN 1092/1 / 558-1	15	10-40 63-100	130 210	65 105	95 105	65 75	4	14	45 20	16 20	2	200	102,2					30	19 15	22 18	7 7	8 8	8 7	9 8	
	20	10-40 63-100	150 230	75 115	105 130	75 90	4	14	58 18	18 22	2	200	102,2					30	36 30	42 35					
	25	10-40 63-100	160 230	80 115	115 140	85 100	4	14	68 24	18 24	2	320	119					80	70 53	81 62	20 20	24 23	22 21	25 24	
	32	10-40 63-100	180 260	90 130	140 155	100 110	4	18	78 24	18 24	2	420	137					140	113 95	130 110	34 33	39 38	36 35	42 41	
	40	10-40 63-100	200 260	100 130	150 170	110 125	4	18	88 26	18 26	3	420	145	52,5	215	200	170	Q 400-S	240	193 173	223 200	53 52	61 60	57 57	66 66
	50	10-40 63 100	230 300	115 150	165 195	125 135 145	4	18	102 26 28	20 26 28	3	585	150	52,5	240	300	195	Q 400-S	350	323 282	374 327	85 83	98 96	90 89	105 102
	65	10/16/25/40 63	290	145	185 205	145 160	4 8	18 22	122	18 26	3			68,75	265	400	243	Q 800-S	500	569	658	143	166	154	176
	80	10-40 63	310	155	200 215	160 170	8	18 22	138	24 28	3			68,75	365	400	248	Q 800-S	600	947	1095	222	257	233	269
	ASME B 16.5 / 16.10	½"	150 300	108 140	54 70	90 95	60,3 66,7	4	15,7	34,9 14,7	10 14,7	2	200	102,5					30	20 18	23 21				
		¾"	150 300	117 152	58,5 76	100 115	69,9 82,6	4	15,7	42,9 19,1	10,9 16,3	2	200	102,5					30	41 36	48 42				
		1"	150 300	160 230	80 115	110 125	79,4 88,9	4	15,7	50,8 17,9	11,6 17,9	2	320	119					80	70 53	81 62	20 20	24 23	22 21	25 24
		1¼"	150 300	180 260	90 130	115 135	88,9 98,4	4	15,7	63,5 19,1	13,2 19,5	2	420	137					140	113 95	130 110	34 33	39 38	36 35	42 41
1½"		150 300	200 260	100 130	125 155	98,4 114,3	4	15,7	73 21,1	14,7 21,1	2	420	145	52,5	215	200	170	Q 400-S	240	193 170	223 196	53 52	61 60	57 57	66 66
2"		150 300	230 300	115 150	150 165	120,7 127	4 8	19,1 19,1	92,1	16,3 22,7	2	585	150	52,5	240	300	195	Q 400-S	350	323 282	374 327	85 83	98 96	90 89	105 102
2½"		150 300	290	145	180 190	139,7 149,2	4 8	19,1 22,3	104,8	17,9 25,9	2			68,75	265	400	243	Q 800-S	500	569	658	143	166	154	179
3"		150 300	310	155	190 210	152,4 168,3	4 8	19,1 22,3	127	19,5 29	2			68,75	265	400	243	Q 800-S	600	947	1095	222	257	233	269

The data was determined by flow simulation and based on the VDI/VDE 2173 (medium = water 20°C, pressure loss Δp = 1 bar).

Higher operating pressures on request

* 100% safety factor for actuators inclusive



• multiport plug types please see leaflets 1.2 (3-way) and 1.3 (4- and 5-way)

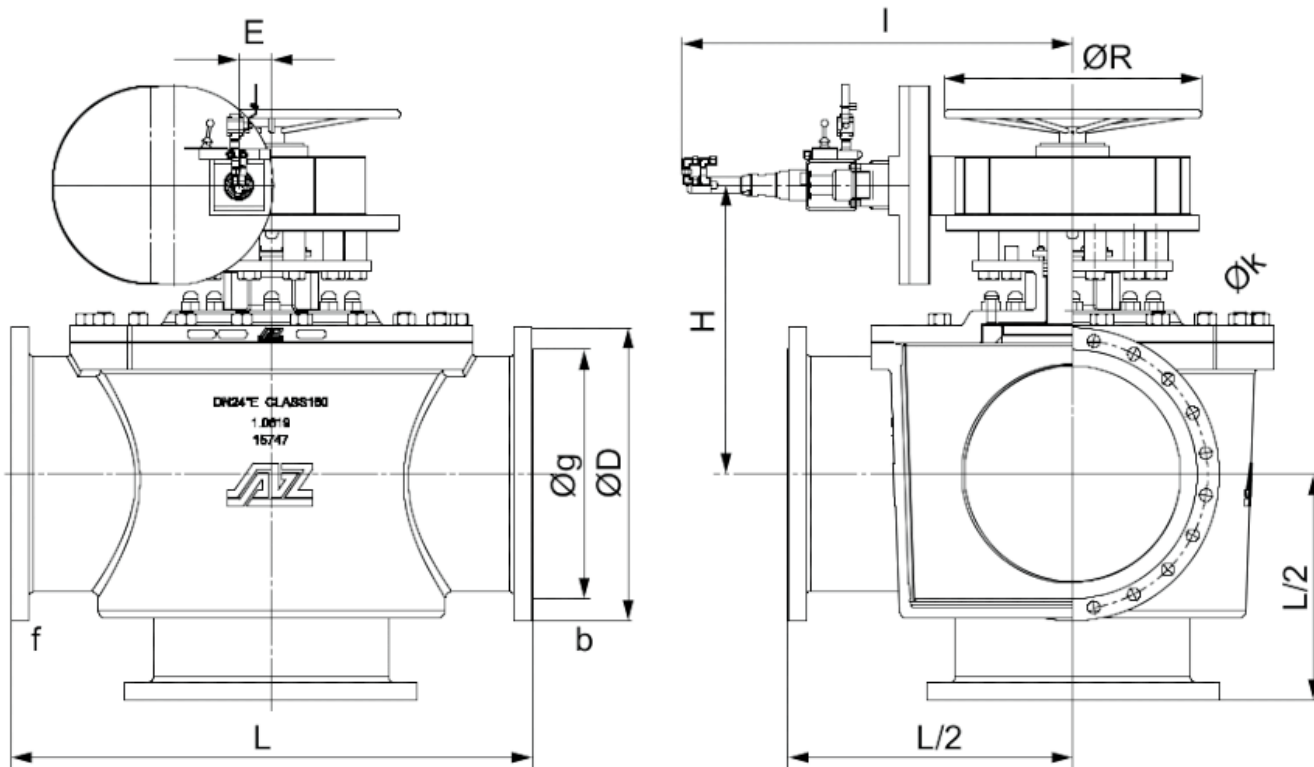
DN	PN	L	L/2	øD	flange hole				øg	b	f	gear				torque,* [Nm]	Kvs-value [m³/h] / Cv-value [US.gal/min]					
					øk	No.	e					E	R	H	I		Typ	F2Kv	F2Cv	F3S Kv	F3S Cv	F3WKv
DIN EN 1092/1 / 558-1	10 - 16	350	175	220	180	8	18	158	20	3	137,5	600	270	365	Q 6500-S	2000	1446	1672	338	391	361	417
	25/40 63	350/430	215	235/250	190/200	8	22/26	162	24/30	3	137,5	600	270	365	Q 6500-S	2000	1446/1319	1672/1525	338/335	391/388	361/357	417/413
	10 - 16	480	240	285	240	8	22	212	22	3	137,5	600	315	365	Q 6500-S	4000	3338	3859	775	895	816	943
	25/40 63	480/550	275	300/345	250/280	8	26/33	218	28/36	3	137,5	600	315	365	Q 6500-S	4000	3338/3155	3859/3647	775/768	895/888	816/818	943/945
	10 - 16	600	300	340	295	8 12	22	268	24	3	180	700	355	520	Q 12000-S	6500	6362	7356	1385	1601	1470	1698
	25 40	600	300	360/375	310/320	12	26/30	278/285	30/34	3	180	700	355	520	Q 12000-S	6500	6362	7356	1385	1601	1470	1698
ASME B 16.5 / 16.10	10 16	730	365	395/405	350/355	12	22/26	320	26	3	180	700	385	520	Q 12000-S	8500	10346	11961	2166	2504	2285	2642
	25 40	730	365	425/450	370/385	12	30/33	335/345	32/38	3	180	700	385	520	Q 12000-S	8500	10346	11961	2166	2504	2285	2642
	10 16	850	425	445/460	400/410	12 16	22/26	370/378	26/28	4	252,5	700	460	600	Q 24000-S	19500	15316	17707	3141	3631	3312	3829
	25 40	850	425	485/515	430/450	16	30/33	395/410	34/42	4	252,5	700	460	600	Q 24000-S	19500	15316	17707	3141	3631	3312	3829
	10 16	980	490	505/520	460/470	16	22/26	430/438	26/30	4	252,5	700	495	600	Q 32000-S	25000	21195	24504	4294	4964	4540	5249
	25 40	980	490	555/580	490/510	16	33/36	450/465	38/46	4	252,5	700	495	600	Q 32000-S	25000	21195	24504	4294	4964	4540	5249

The data was determined by flow simulation and based on the VDI/VDE 2173 (medium = water 20°C, pressure loss Δp = 1 bar).

Higher operating pressures on request

* 100% safety factor for actuators inclusive

** on request



• multiport plug types please see leaflets 1.2 (3-way) and 1.3 (4- and 5-way)

	DN	PN	L	L/2	øD	flange hole				øg	b	f	gear					torque* [Nm]	Kvs-value [m³/h] / Cv-value [US.gal/min]					
						øk	No.	ø					E	R	H	I	Typ		F-2Kv	F-2Cv	F-3SKv	F-3SCv	F-3WKv	F-3WCv
DIN EN 1092/1 / 558-1	400	10 16	1100	550	565 580	515 525	16	26 30	482 490	26 32	4	252,5	700	535	600	Q 32000-S	29000	28438	32878	5608	6484	5989	6923	
		25 40			620 660	550 585		36 39	505 535	40 50														
	450	10 16	1200	600	615 640	565 585	20	26 30	532 550	28 36	4	252,5	700	620	600	Q 50000-S	31000	37079	42867	7057	8158	7667	8864	
		25 40			670 685	600 610		36 39	555 560	46 57														
500	10 16	1250	625	670 715	620 650	20	26 33	585 610	28 38	4	291,5	700	640	740	Q 50000-S	33000	47672	55113	8890	10278	9442	10916		
	25 40			730 755	660 670		36 42	615 615	48 57															
600	10 16	1450	725	780 840	725 770	20	30 36	685 725	30 47	5	**	**	**	**	**	**	71299	82429	12646	14620	13439	15537		
	25 40			845 890	770 795		39 48	720 735	58 72															
ASME B 16.5 / 16.10	16"	150	838	550	595	539,8	16	28,4	469,9	37	2	252,5	700	535	600	Q 32000-S	29000	32823	37947	5638	6518	5991	6927	
		300			650	571,5		20	35	469,9														57,6
	18"	150	1200	600	635	577,9	16	31,8	533,4	40,1	2	252,5	700	620	600	Q 50000-S	31000	37078	42866	7067	8170	7667	8864	
		300			710	628,6		24	35	533,4														60,8
	20"	150	991	625	700	635	20	31,8	584,2	43,3	2	291,5	700	640	740	Q 50000-S	33000	54544	63058	8996	10400	9495	10977	
		300			775	685,8		24	35	584,2														64
	24"	150	1450	725	815	749,3	20	35,1	692,2	48,1	2	**	**	**	**	**	**	71301	82431	12489	14439	13439	15537	
		300			915	812,8		24	41,1	692,2														70,3

The data was determined by flow simulation and based on the VDI/VDE 2173 (medium = water 20°C, pressure loss Δp = 1 bar).

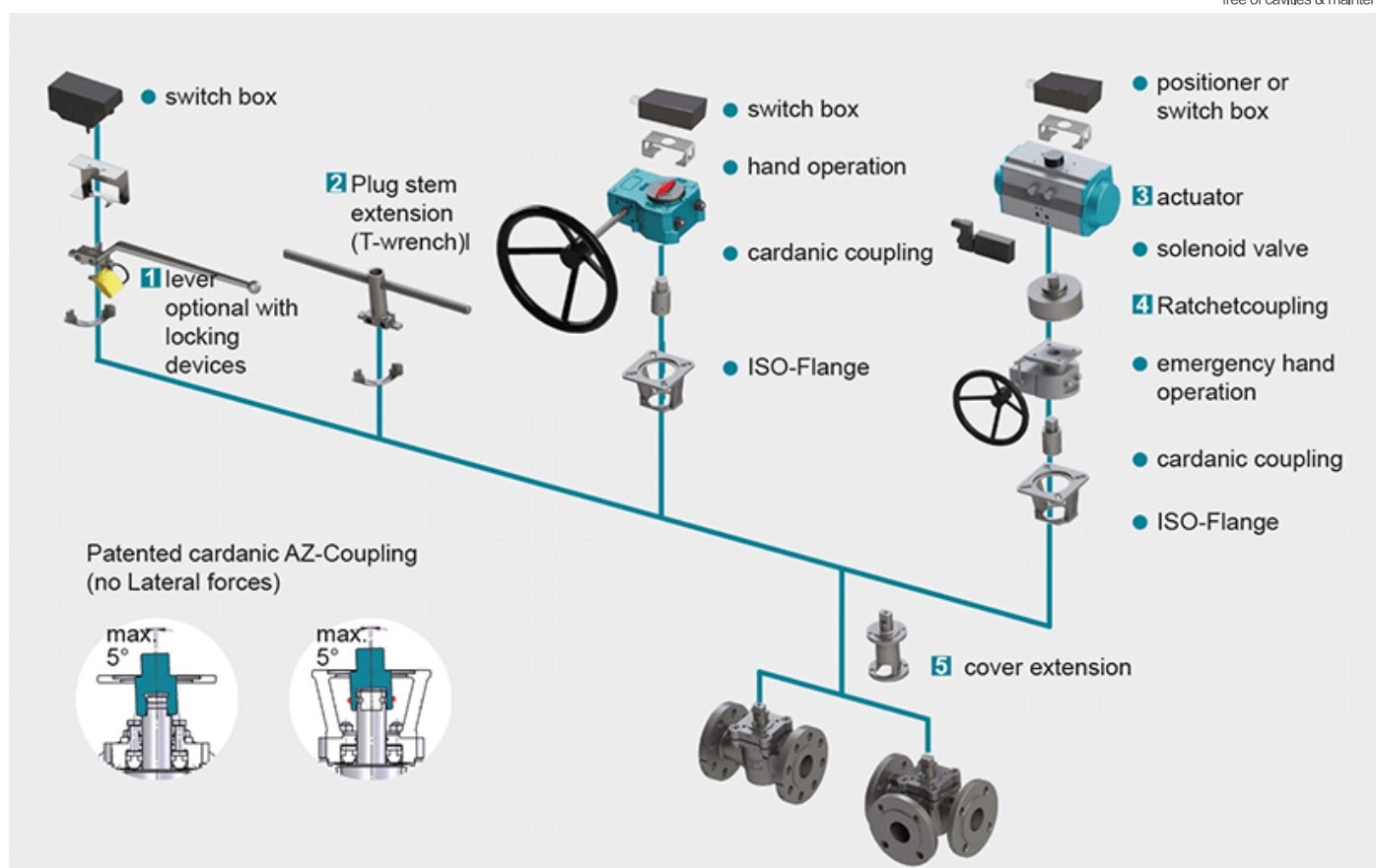
Higher operating pressures on request

* 100% safety factor for actuators inclusive

** on request

For geometric reasons, threads are used in the flange bores in a few cases

Actuation



1 Locking Devices

Pilot valve combinations, pad lock eyelets, linear key conception, indexing plunger arrestor.

[read more \[...\]](#) 2 Plug stem extension

Solid construction in stainless steel with T-wrench, Standard extension 100 mm or 150 mm, non standard lengths are available on request

[read more \[...\]](#) 3 Actuators

Actuators for mounting-flange acc. to DIN ISO 5211

[read more \[...\]](#) NEW: Pneumatic actuator AIR GEAR for plug valves with high torque ≥ 150.000 Nm

[read more \[...\]](#) 4 Ratched coupling

To usw on multiport valves with standard 90° actuator for bigger switchpositions than 90°

[read more \[...\]](#) 5 Cover extension

Solid construction in stainless steel, Standard extension 100 mm or 150 mm high, non standard lengths are available on request . Hexagonal bolts on adjustment ring freely accessible. Note: Don't use with sealing FSN/FSN-SL and CASN/CASN-SL

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