

F-3 ISO-STANDARD - 3 Way Plug Valve

Three way plug valve with ISO-top flange

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

ASME: NPS ½" - 24" / class 150 - 300

PT range: $-40 < T < 230/280^{\circ}\text{C}$, vacuum 10-8 mbar



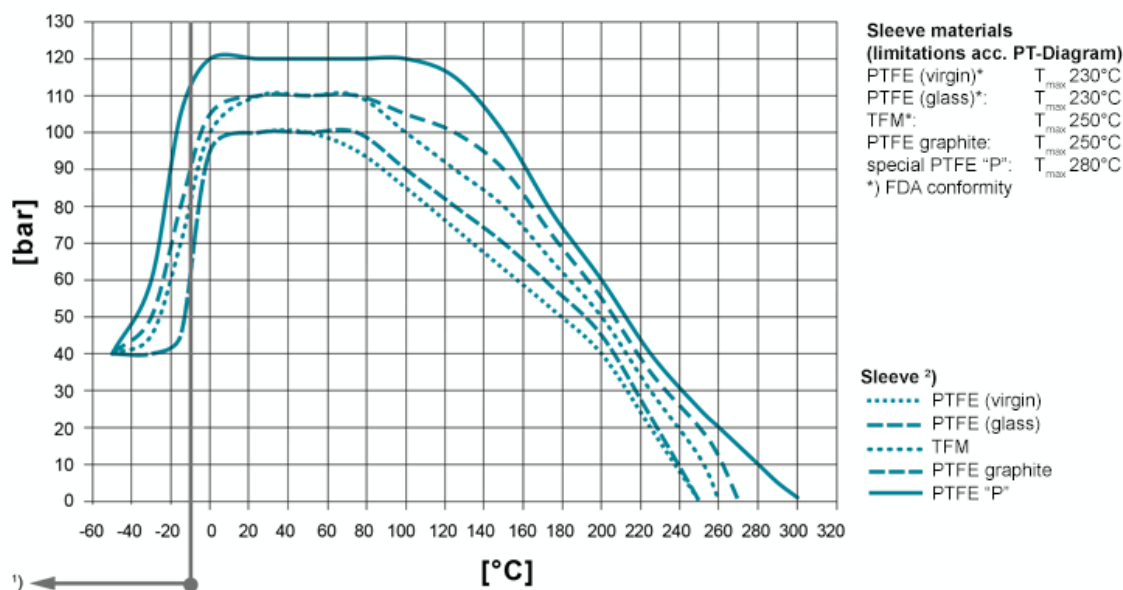
Design Features

Design Characteristics

- free of cavities
- maintenance free - self lubricating
- mounting-flange for actuators acc. to DIN ISO 5211
- easy accessible adjustment of the plug, even with mounted actuator
- vacuum tight
- fugitive emission resp. clean air act certified (TA-Luft 2002 approval)
- Directive 2014/68/EU
- Firesafe 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

- 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
- Stainless Steel 1.4408, ASTM A351 CF8M
- Stainless Steel 1.4308, ASTM A351 CF8

Standard plug materials

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

Sealing

Standard sealing for all major applications;
Tmax 230°C

Type STD

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Firesafe sealing (API 607) with graphite packing for additional stem sealing; Tmax 230°C

Type FS

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

T_{max} 230°C

Type CA

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Firesafe safety sealing (API 607) for fluctuating temperatures with 3x graphite packing (adjustable) for additional stem sealing; Tmax 280°C

Type FSN

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Firesafe safety sealing (API 607) for fluctuating temperatures with 3x graphite packing (live loaded disc springs) for additional stem sealing; Tmax 280°C

Type FSN-SL

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

Tmax 230°C

Type CASN

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

Chemical safety sealing for fluctuation temperatures with 3x PTFE packing (live loaded disc springs) for additional stem sealing; Tmax 230°C

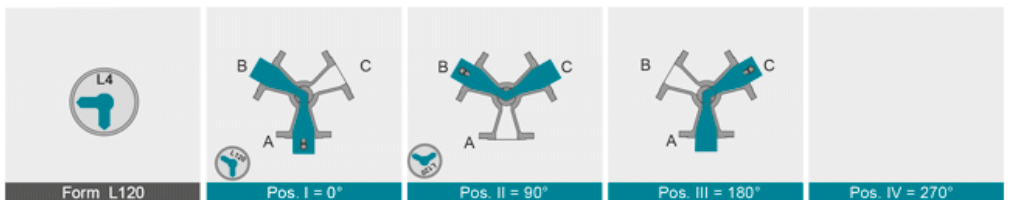
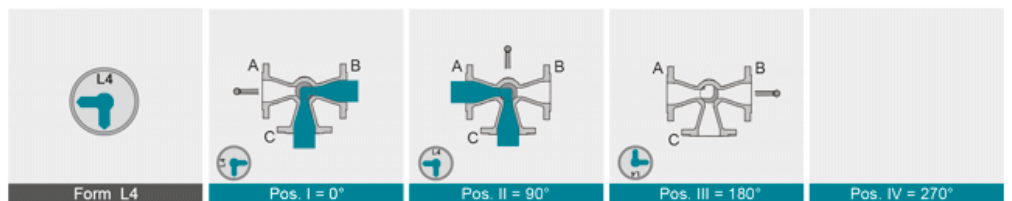
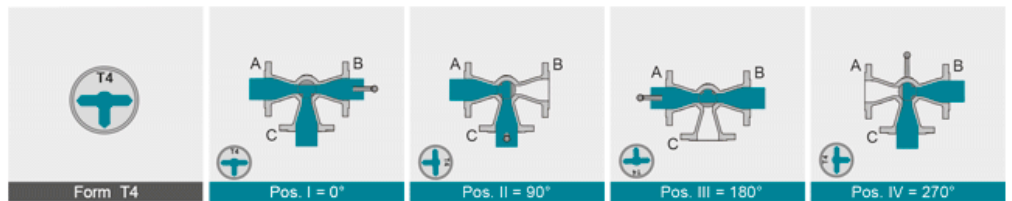
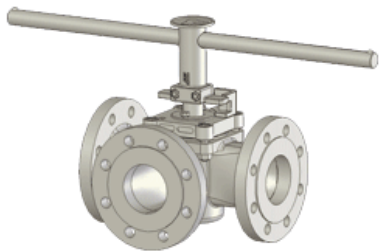
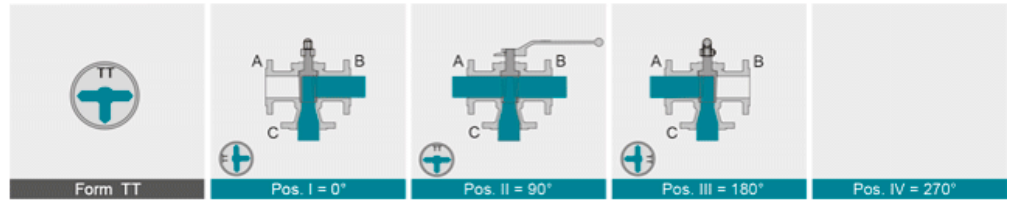
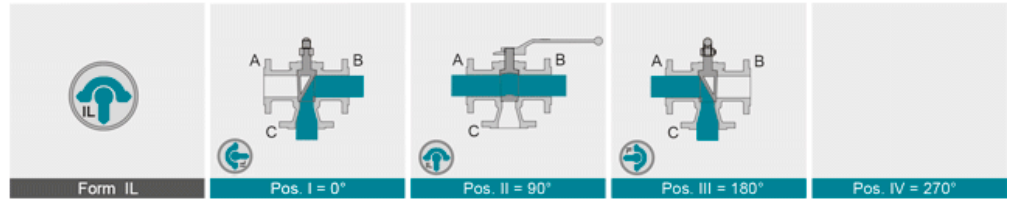
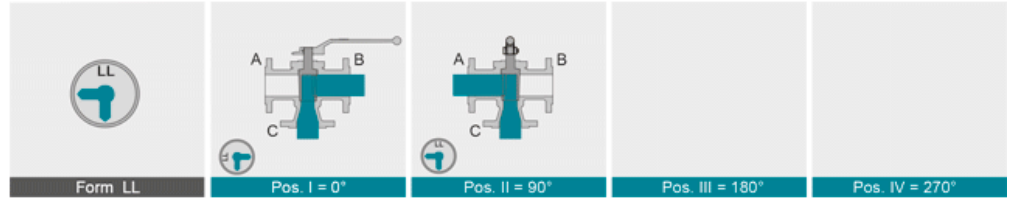
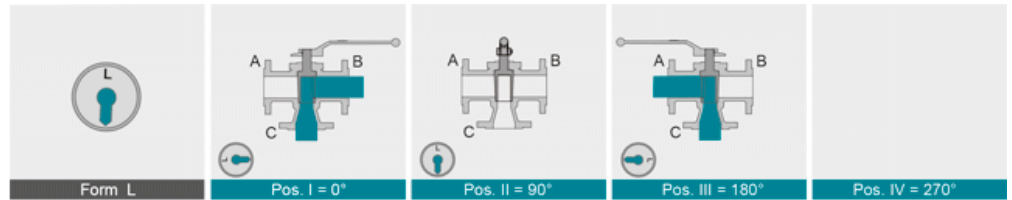
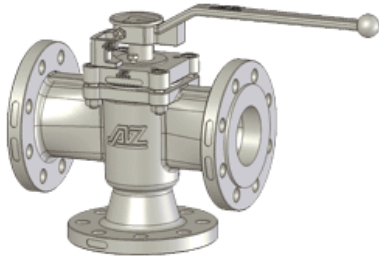
Type CASN-SL

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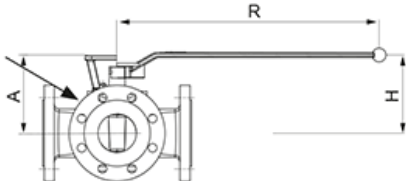
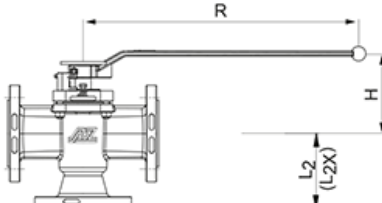
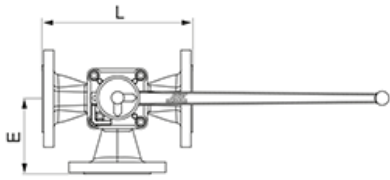
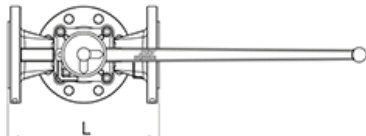
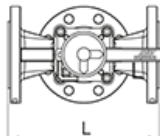
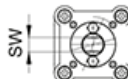
Port Forms



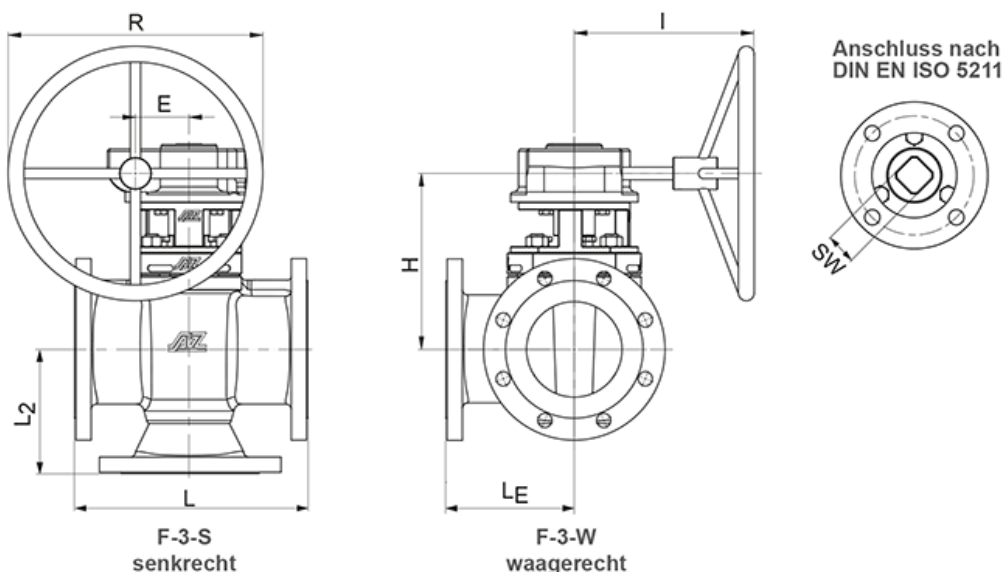
AZ plug valves are fitted with cast, rust proof position indicators
The position indicator is securely welded to the plug to prevent it from working loose.



Dimensions

	AZ-ISO-bracket for actuator		F-3-W horizontal		F-3-S vertical		connection acc. to DIN ISO 5211							
														
DIN EN 1092-1 / 588-1	DN	PN	L	L ₂ /E	L ₂ X	bracket / lever			flange	dihedron	torque [Nm]*	weight [kg]**	K _{vs} -value [m ³ /h]**	C _v -value [US.gal/min]**
						A	H	R	Type					
	15	10-40	130	65	***	88	103	200	F05	11	30	4	10	12
	20	10-40	150	75	***	88	103	200	F05	11	30	5	6	7
	25	10-40	160	80	***	94	109	200	F05	11	30	6	8	9
	25X	10-40	160	80	***	102	117	320	F07	14	70	8,5	18	21
	32	10-40	180	90	***	102	117	320	F07	14	70	10,5	28	32
	40	10-40	200	100	***	109	124	320	F07	14	80	17	55	64
	50	10-40	230	115	***	139	159	420	F07	19	120	20	89	103
	65	10-40	290	145	***	158	165	600	F10	22	200	26	99	115
	80	10-40	310	155	***	158	165	600	F10	22	200	28	164	190
	100	10-16	350	175	***	158	165	600	F10	22	200	27	60	69
100S	10-16	350	175	***	173	180	600	F10	22	300	32	147	169	
ASME B 16.5 / 16.10	NPS	class	L	L ₂ /E	L ₂ X	bracket / lever			flange	dihedron	torque [Nm]*	weight [kg]**	K _{vs} -value [m ³ /h]**	C _v -value [US.gal/min]**
						A	H	R	Type					
	½"	150	108	54	70	88	103	200	F05	11	30	3,5	10	11,7
		300	140	70	***							4		
	¾"	150	117	59	73	88	103	200	F05	11	30	3,4	6	7
		300	152	76	***							5		
	1"	150	127	64	89	94	109	200	F05	11	30	4,3	8	9
		300	165	83	***							6		
	1½"	150	165	82,5	105	102	124	320	F07	14	80	7,9	28	32
		300	190	95	***							10,5		
	2"	150	178	89	114	139	159	420	F07	19	120	12,3	55	64
		300	216	108	***							17		
	2½"	150	290	145	***	158	165	600	F10	22	200	20	99	115
		300	282	142	***							26		
	3"	150	203	102	130	158	165	600	F10	22	200	20	99	115
		300	282	142	***							26		
4"	150	228	152,5	***	158	165	600	F10	22	200	22	60	69	
	300	305	171,5	***							27			
4"S	150	228	152,5	***	158	180	600	F10	22	300	28	147	169	
	300	305	171,5	***							32			

- * inclusive 100% safety factor for actuators
- ** F-3-S valid for L, LL form of the plug
- *** on request



DIN EN 1092-1 / 588-1

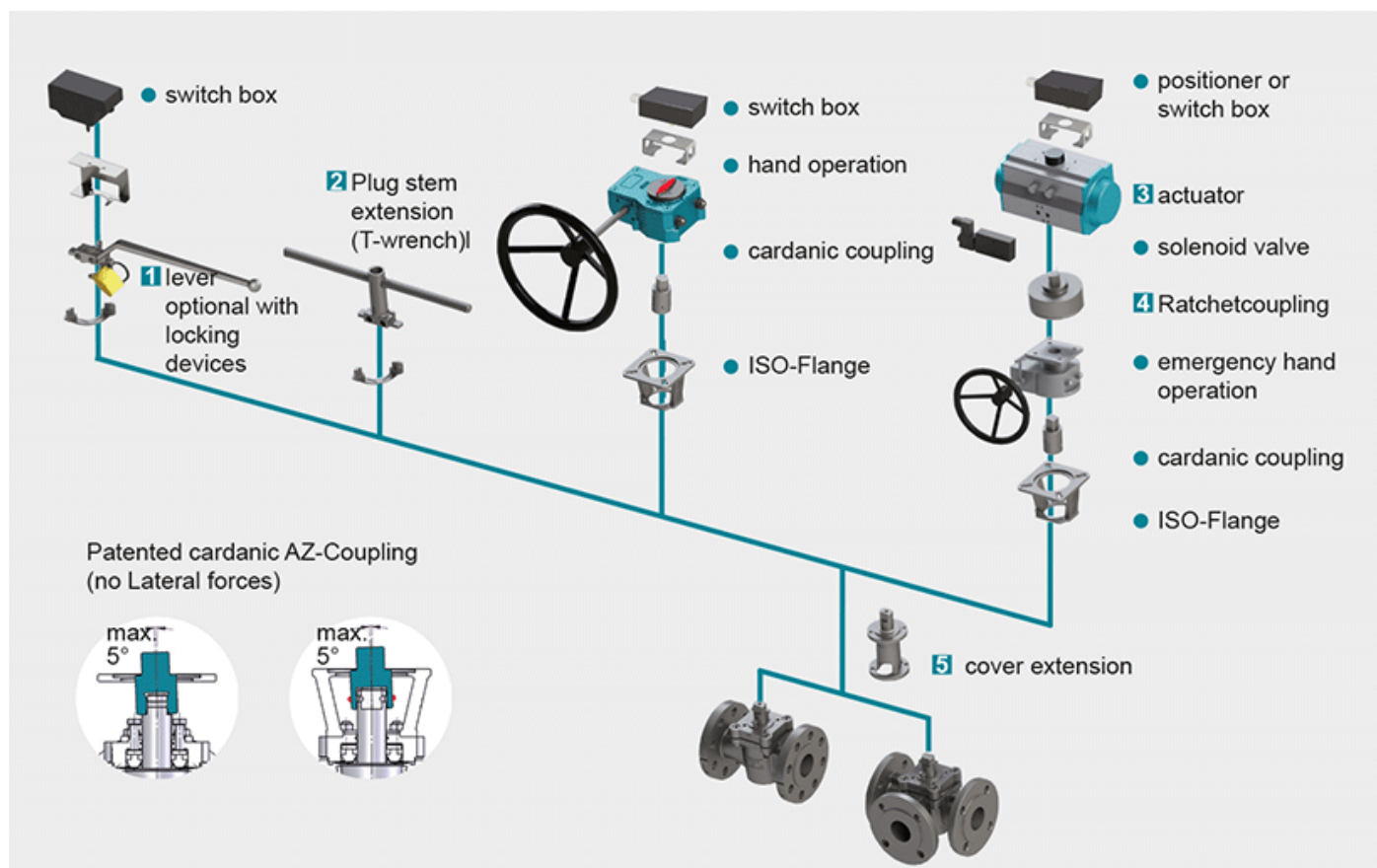
ASME B 16.5 / 16.10

DN	PN	L	L ₂	L _E	E	gear (Pro-Gear)			DIN flange	dihedron	torque [Nm]*	weight [kg]**	K _{vs} -value [m ³ /h]**	C _v -value [US.gal/min]**	
						R	H	I							Type
125	10-16 25-40	325	162	162	84	400	277	290	Q1500-S	F12	36	900	73 ***	284	329
150	10-16 25-40	350	200	175	84	400	277	290	Q1500-S	F12	36	900	85 ***	304	353
200	10-16 25 40	400	220	200	96,5	600	320	350	Q3000-S	F14	36	1200	130 ***	527	611
250	10 16 25 40	450	275	225	137,5	600	372	465	Q6500-S	F16	46	1500	172 ***	650	754
300	10 16 25 40	500	325	250	137,5	600	392	465	Q6500-S	F16	46	2600	182 ***	1100	1276
350	10 16 25 40	381 550	***	***	137,5	600	460	465	Q6500-S	F25	55	5500	225 ***	1491	1729
400	10 16 25 40	406 600	***	***	137,5	600	460	465	Q6500-S	F25	55	5500	330 ***	2082	2415
450	10 16 25 40	650	***	***	180	600	485	520	Q12000-S	F25	55	6400	***	***	***
500	10 16 25 40	700	***	***	180	600	510	520	Q12000-S	F25	55	7500	***	***	***
NPS	class	L	L ₂	L _E	E	gear (Pro-Gear)			DIN flange	dihedron	torque [Nm]*	weight [kg]**	K _{vs} -value [m ³ /h]**	C _v -value [US.gal/min]**	
		R	H	I	Type										
5"	150 300	254 325	178 163	127 162	84	400	277	290	Q1500-S	F12	27	900	73 74	284	329
6"	150 300	267 403	191 216	133 201	84	400	277	290	Q1500-S	F12	27	900	85 105	304	353
8"	150 300	292 419	228 254	146 209	96,5	600	320	350	Q3000-S	F14	36	1200	130 146	527	611
10"	150 300	330 457	311	165 228	137,5	600	372	465	Q6500-S	F16	46	1500	172 184	650	754
12"	150 300	356 502	349 356	178 251	137,5	600	392	465	Q6500-S	F16	46	2600	182 219	1100	1276
14"	150 300	381/686 762	***	***	137,5	600	460	465	Q6500-S	F25	55	5500	225 279	1491	1729
16"	150 300	406 600	***	***	137,5	600	460	465	Q6500-S	F25	55	5500	330 330	2082	2415
18"	150 300	864 914	***	***	180	600	485	520	Q12000-S	F25	55	6400	***	***	***
20"	150 300	914 991	***	***	180	600	510	520	Q12000-S	F25	55	7500	***	***	***

- * inclusive 100% safety factor for actuators
- ** F-3-S valid for L, LL form of the plug
- *** 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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