

F-3 ISO-STANDARD

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

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

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

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

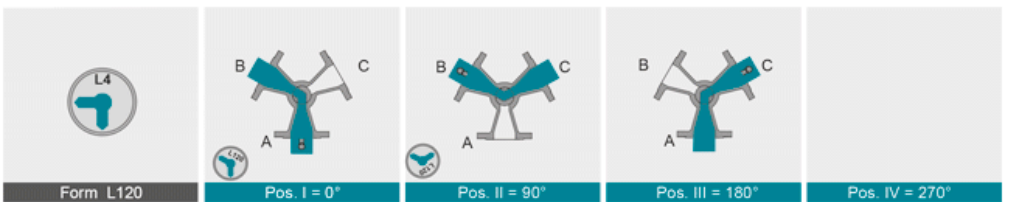
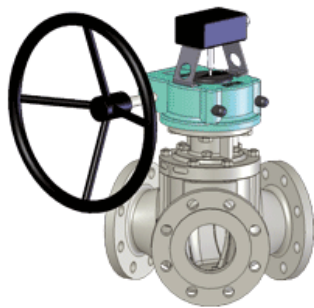
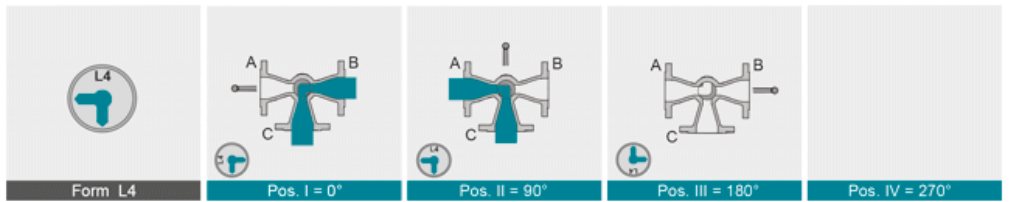
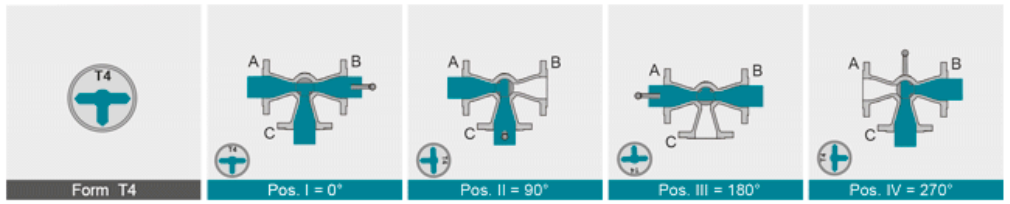
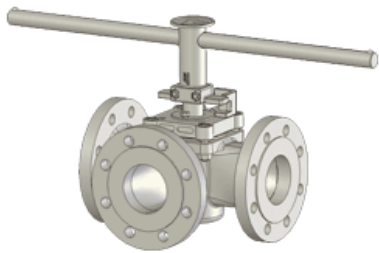
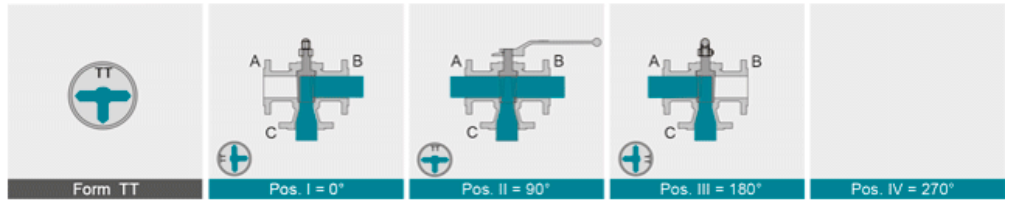
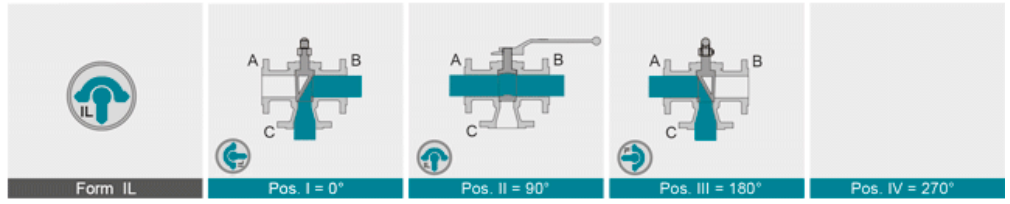
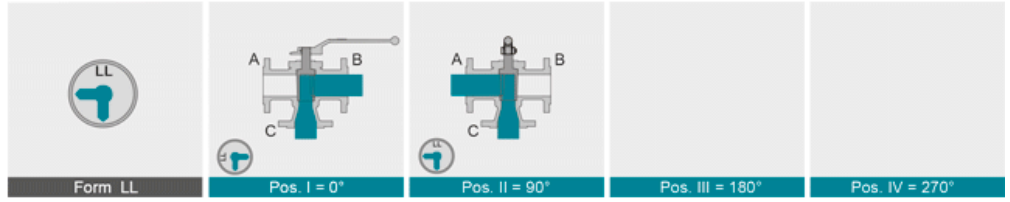
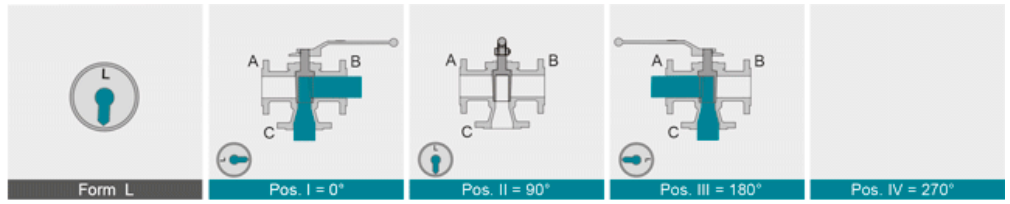
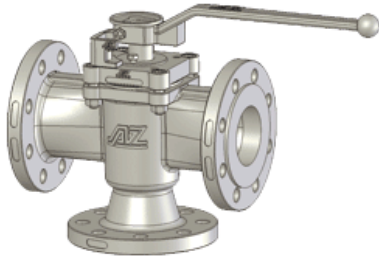
Type CASN-SL

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Port Forms



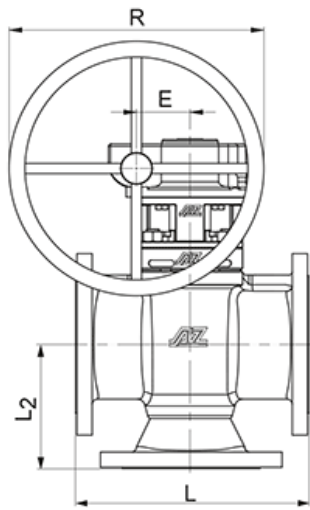
AZ plug valves are fitted with cast, rust proof position indicators.
The position indicator is securely welded to the lever to prevent it from working loose.



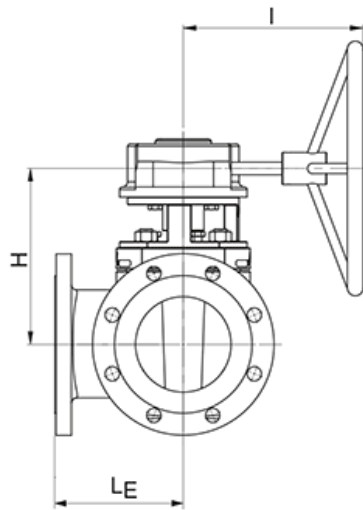
Dimensions

	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	203	102	130							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

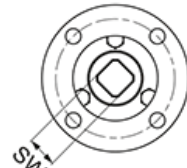


F-3-S
senkrecht



F-3-W
waagrecht

Anschluss nach
DIN EN ISO 5211



DIN EN 1092-1 / 588-1

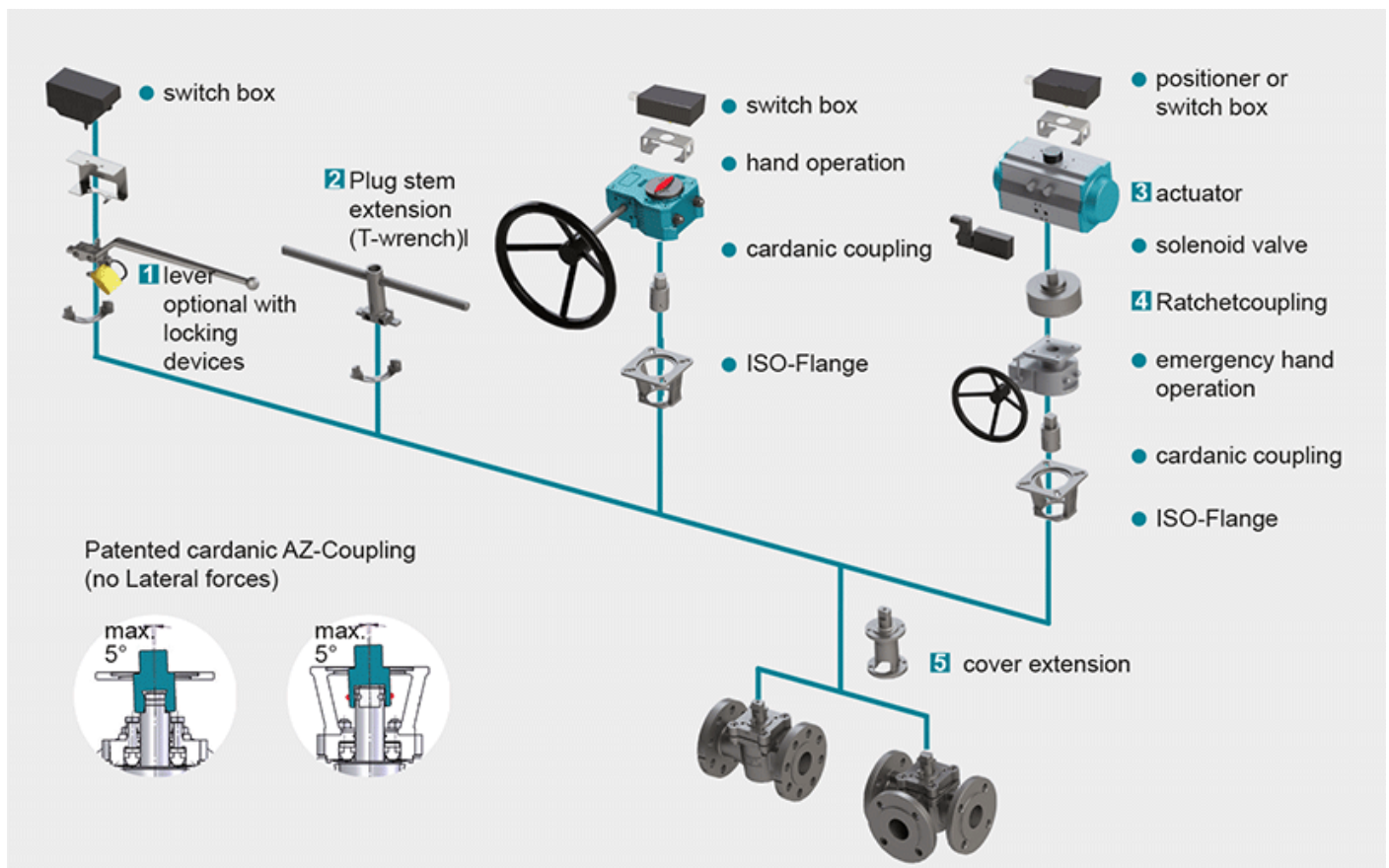
ASME B 16.5 / 16.10

DN	PN	L	L ₂	L _E	E	gear (Pro-Gear)			Type	DIN flange	dihe-dron	torque [Nm]*	weight [kg]**	K _{vs} -value [m ³ /h]**	C _v -value [US.gal/min]**
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)			Type	DIN flange	dihe-dron	torque [Nm]*	weight [kg]**	K _{vs} -value [m ³ /h]**	C _v -value [US.gal/min]**
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 ***	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.
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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
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3 Actuators

Actuators for mounting-flange acc. to DIN ISO 5211
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NEW: Pneumatic actuator AIR GEAR for plug valves with high torque ≥ 150.000 Nm
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4 Ratched coupling

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