

# ISO-FSN-HF

## Two way plug valve with safety stuffingbox packing, special design for HF alkylation, Monel materials

Type ISO-FS-HF with Fire Safe sealing

Type ISO FSN-HF with triple safety sealing for fluctuating temperatures

ASME: NPS ½" – 24" / class 300

PT range:  $-29 < T < 220^{\circ}\text{C}$



## Design Features

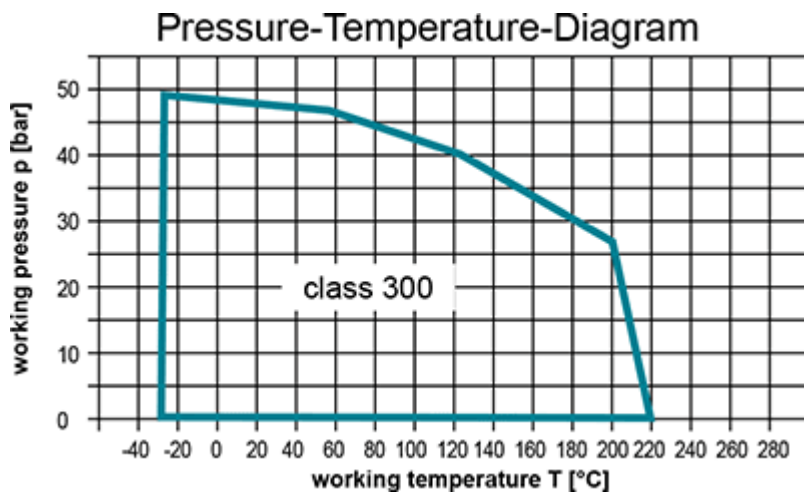
### Design Characteristics

- safety stem packing
- easily accessible plug adjustment
- UOP approved design for HF Alkylation
- free of cavities
- maintenance free / self lubricating
- HF detection coat for leakage identification
- actuator mounting flange acc. to DIN ISO 5211

### Approved for the highest HF Alkylation UOP Process Specifications

- AZ HF plug valves are specially designed for the use in any HF Alkylation processes and hydrofluoric acid applications
- design and material requirements as well as manufacturing and testing procedures are in accordance to the UOP process and piping specifications HF1, HF10, HF2 and HF20

## PT-Diagram



Operating temperatures  $< -29^{\circ}\text{C}$  and  $> 220^{\circ}\text{C}$  have to be checked and approved by AZ according to the operating conditions.

## Materials

### Standard body material

- Monel, ASTM A494 M35.1

### Standard plug material

- Monel, ASTM A494 M35.1

### Standard cover material

- ASTM A216 / WCB (Monel, ASTM A494 M35.1 on request)

## Sealing Systems

Firesafe sealing (API 607) with graphite packing for additional stem sealing; Tmax 220°C

### Type FS-HF

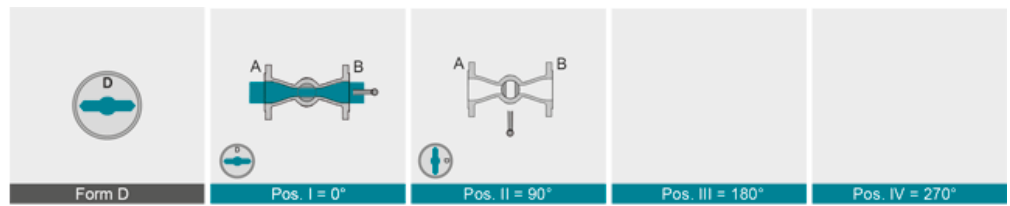
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Firesafe safety sealing (API 607) for fluctuating temperatures with 3x graphite packing (adjustable) for additional stem sealing, Tmax 220°C

### Type FSN-HF

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

## Plug Forms

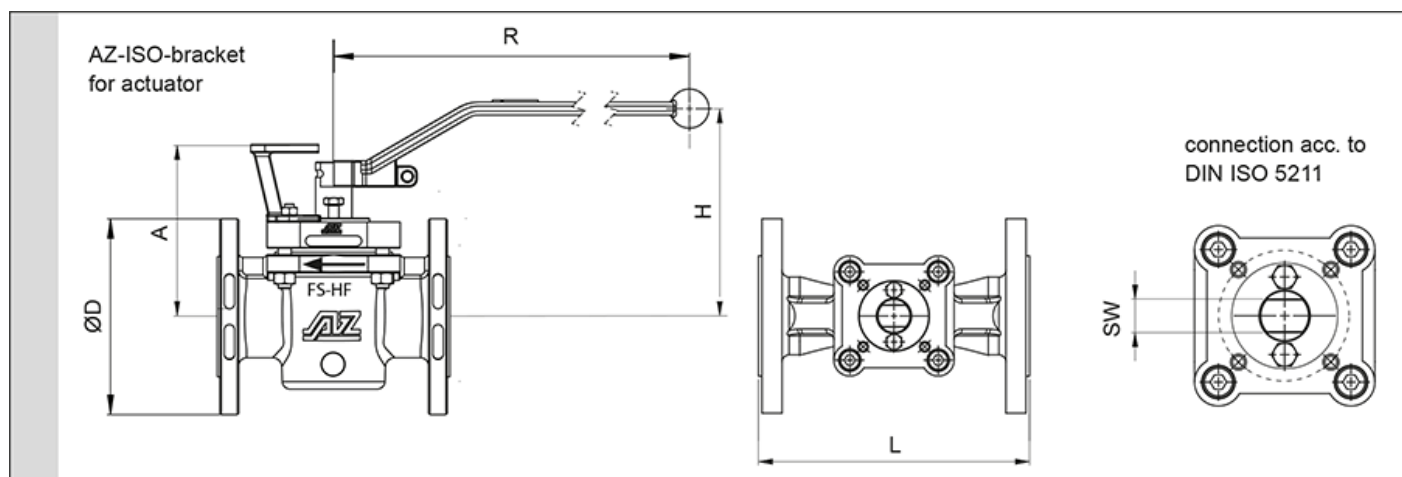


**Fully vented Plug (FVP) prevent possibility of pressure build-up due to thermal expansion**

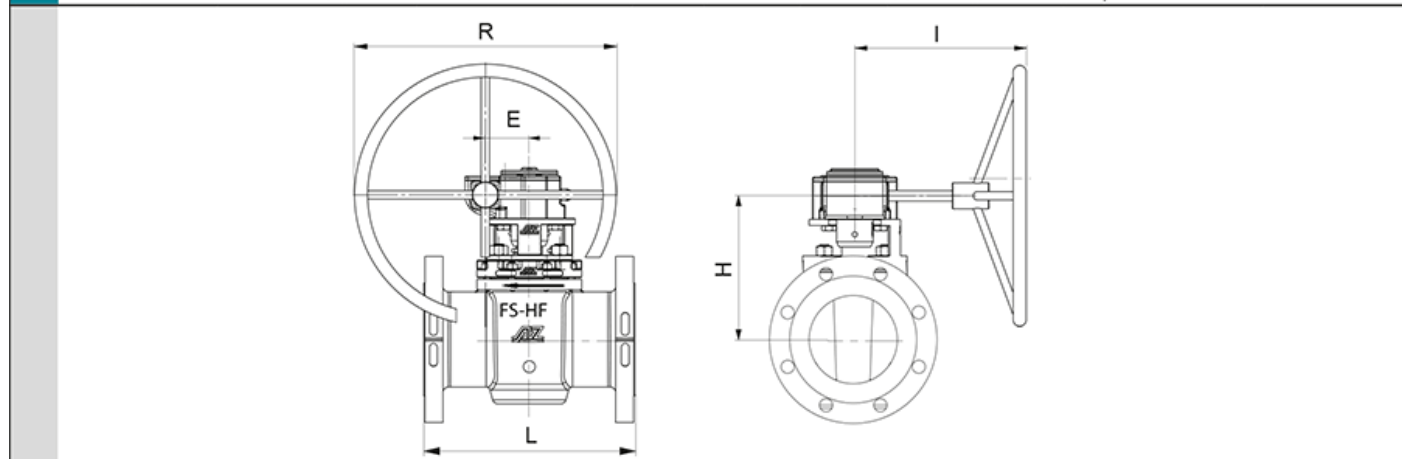
- vented plug buttom
- vented plug side

## Dimensions

**Type ISO-FS-HF**



ASME B 16.34	NPS	class	UOP-Nr.	L	ØD	bracket / lever			DIN flange	dihe-dron	torque* [Nm]	weight [kg]	K <sub>vs</sub> -value [m³/h]	C <sub>v</sub> -value [US.gal/min]
	½	300	016580-1/H	140	95	88	102	200	F05	11	30	3,1	13	15
	¾	300	016580-1/H	152	115	88	102	200	F05	11	30	4,0	13	15
	1	300	016580-1/H	165	125	94	110	200	F05	11	30	4,9	26	31
	1½	300	016580-1/H	190	155	109	125	320	F07	14	80	9,6	79	92
	2	300	016580-1/H	216	165	139	160	420	F07	19	120	13,3	156	180
	3	300	016580-1/H	283	210	158	165	600	F10	22	200	24,5	228	264
	4	300	016580-1/H	305	255	158	165	600	F10	22	200	33,5	198	229



ASME B 16.34	NPS	class	UOP-Nr.	L	E	gear (Pro-Gear)			Typ	DIN flange	dihe-dron	torque* [Nm]	weight [kg]	K <sub>vs</sub> -value [m³/h]	C <sub>v</sub> -value [US.gal/min]
	4S	300	016580-5/G	305	69	300	225	280	Q1500-S	F16	27	900	68	542	627
	6	300	016580-3/F	403	84	500	277	328	Q1500-S	F16	27	900	97	775	896
	8	300	016580-3/F	419	118	500	321	363	Q3000-S	F16	36	1200	113	1978	2286
	10	300	016580-3/F	457	118	500	361	328	Q5000-S	F16	36	1500	181	2382	2754
	12	300	016580-3/F	502	118	500	377	328	Q5000-S	F16	36	2600	216	1925	2225
	14	300	016580-13/A	762	138	500	460	465	Q6500-S	F25	46	5500	210	2394	2768
	16	300	016580-13/A	600	138	700	475	465	Q6500-S	F25	46	5500	410	4618	5339
	18	300	016580-13/A	914	180	700	515	545	Q12000-S	F30	55	6400	780	9135	10561
	20	300	**	991	180	700	515	520	Q12000-S	F30	55	7500	825	9863	11405
	24	300	**	1143	180	700	515	520	Q12000-S	F30	55	7500	1070	9509	10993

\*) inclusive 100 % safety factor on torques

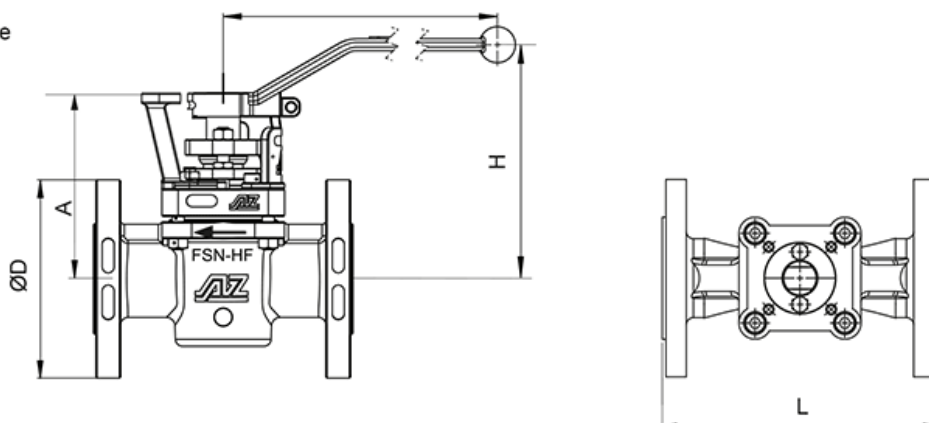
\*\*) in preparation for UOP certification

Geometric reasons partly threaded holes in flange drilling

Temperature range: T<sub>min</sub> -29°C / T<sub>max</sub> 220°C

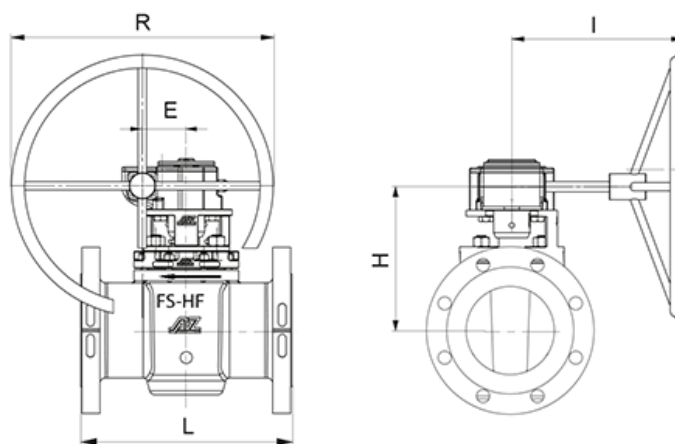
## Type ISO-FSN-HF

AZ-ISO-Konsole  
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ASME B 16.34

NPS	class	UOP-Nr.	L	ØD	bracket / lever			DIN flange	dihe- dron	torque* [Nm]	weight [kg]	K <sub>vs</sub> -value [m³/h]	C <sub>v</sub> -value [US.gal/min]
½	300	016580/I	140	95	88	125	200	F05	11	30	4,0	13	15
¾	300	016580/I	152	115	88	125	200	F05	11	30	4,3	13	15
1	300	016580/I	165	125	94	135	200	F05	11	30	4,9	26	31
1½	300	016580/I	190	155	109	170	320	F07	14	80	10,5	79	92
2	300	016580/I	216	165	139	195	420	F07	19	120	15,3	156	180
3	300	016580/I	283	210	158	205	600	F10	22	200	25,5	228	264
4	300	016580/I	305	255	158	238	600	F10	22	200	34,5	198	229



ASME B 16.34

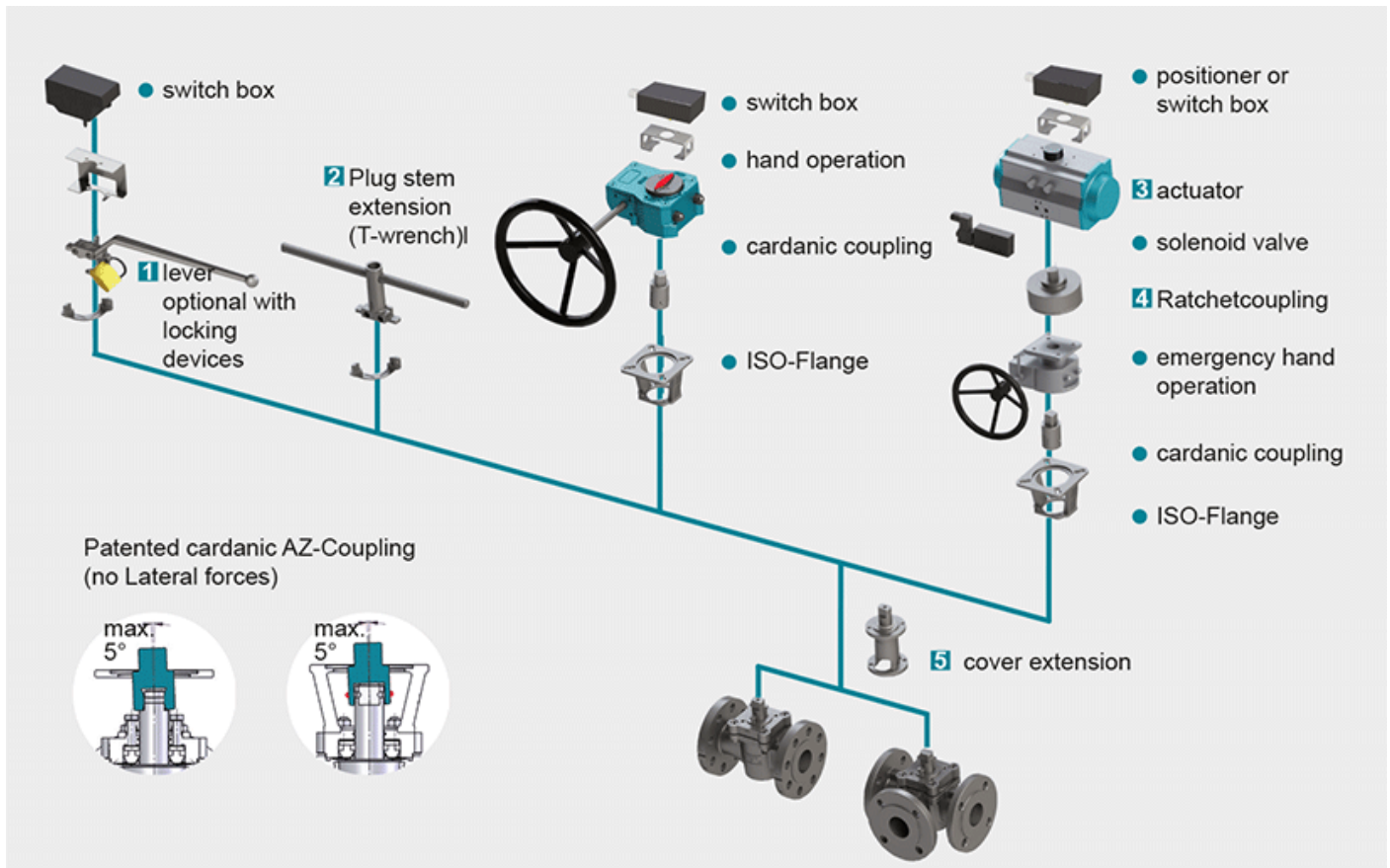
NPS	class	UOP-Nr.	L	E	gear (Pro-Gear)			Typ	DIN flange	dihe- dron	torque* [Nm]	weight [kg]	K <sub>vs</sub> -value [m³/h]	C <sub>v</sub> -value [US.gal/min]
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4S	300	016580-5/G	305	69	300	260	280	Q1500-S	F16	27	900	68	542	627
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## 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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