

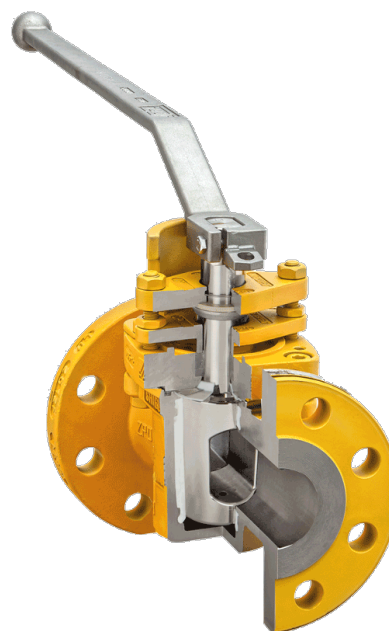
ISO-FSN-HF

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

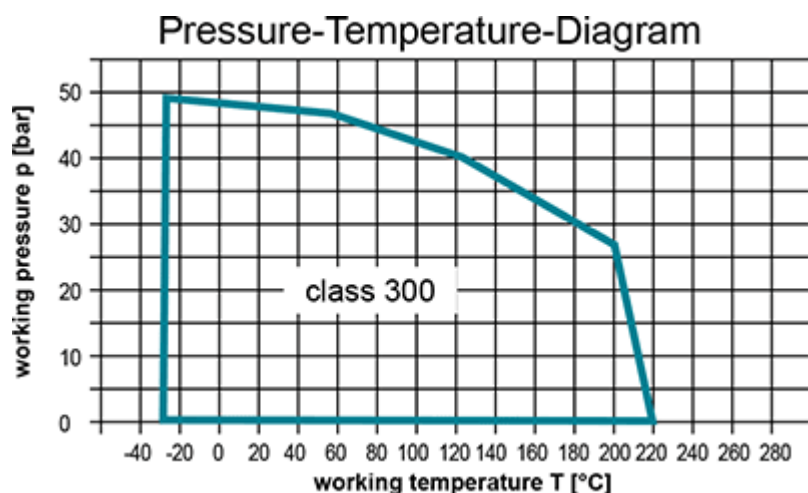
Design Characteristics

- 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°C and > 220 °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

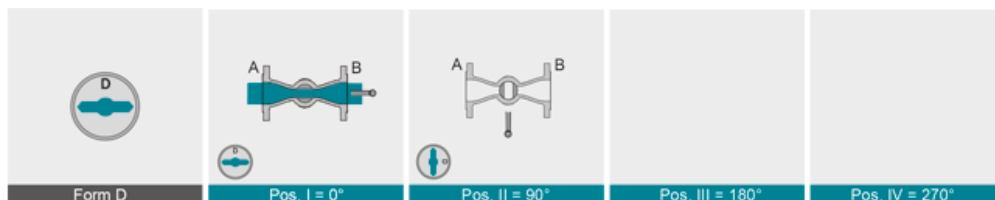
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Firesafe safety sealing (API 607) for fluctuating temperatures with 3x graphite packing (adjustable) for additional stem sealing, Tmax 220°C

Type FSN-HF

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

Plug Forms



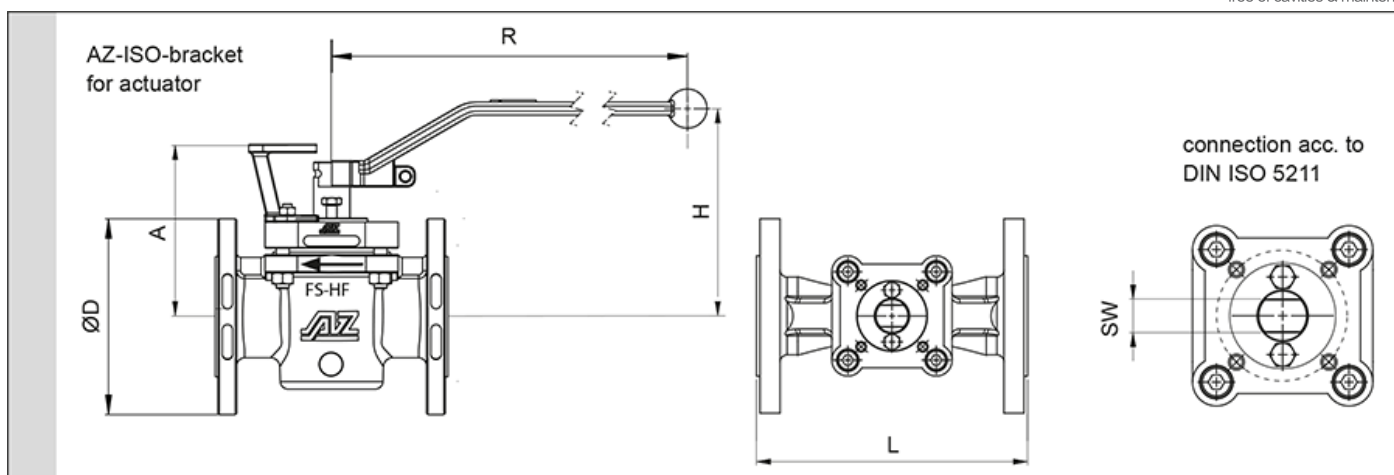
Fully vented Plug (FVP) prevent possibility of pressure build-up due to thermal expansion

- vented plug bottom
- vented plug side

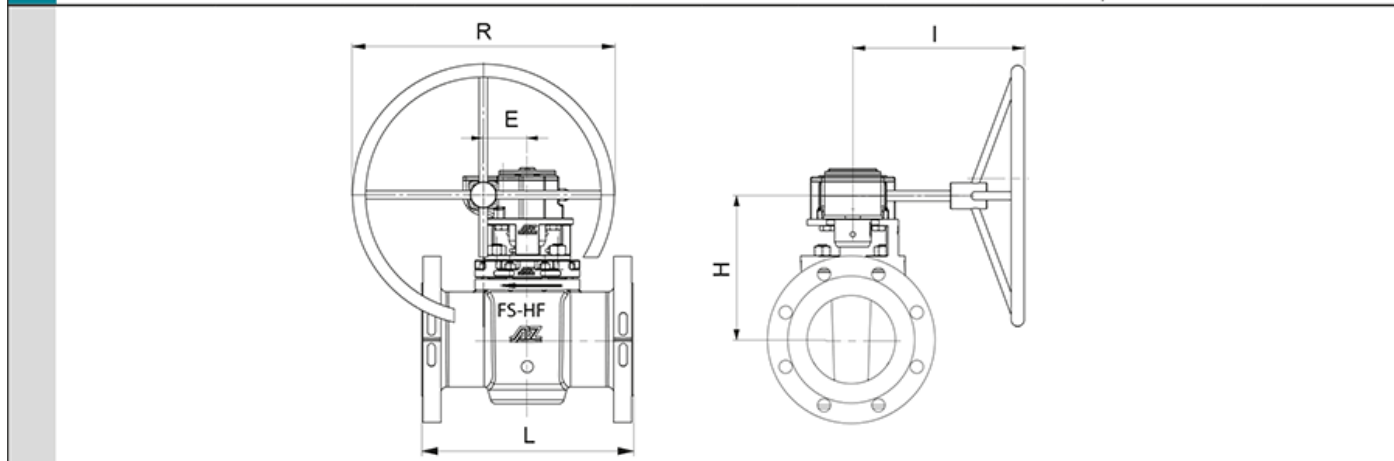
Dimensions

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 _{vs} -value [m³/h] | C _v -value [US.gal/min] |
|--------------|-----|-------|------------|-----|-----|-----|-----|-----|-----|-----------------|-----|------|------------|-----------|--------------|-------------|-------------------------------|------------------------------------|
| | | | | A | H | R | A | H | R | | | | | | | | | |
| | 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 | | gear (Pro-Gear) | | | Typ | DIN flange | dihe-dron | torque* [Nm] | weight [kg] | K _{vs} -value [m³/h] | C _v -value [US.gal/min] |
|--------------|-----|-------|-------------|------|-----|-----------------|-----|-----|----------|------------|-----------|--------------|-------------|-------------------------------|------------------------------------|
| | | | | E | R | H | I | | | | | | | | |
| | 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

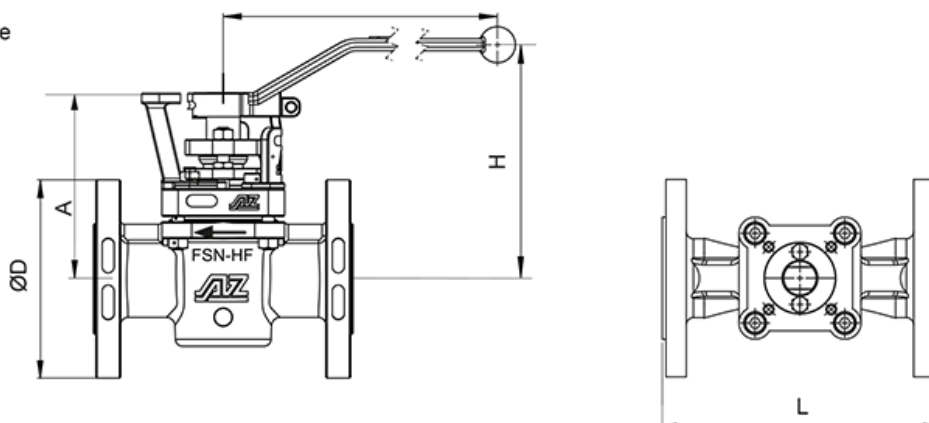
Geometric reasons partly threaded holes in flange drilling

Temperature range: T_{min} -29°C / T_{max} 220°C

Type

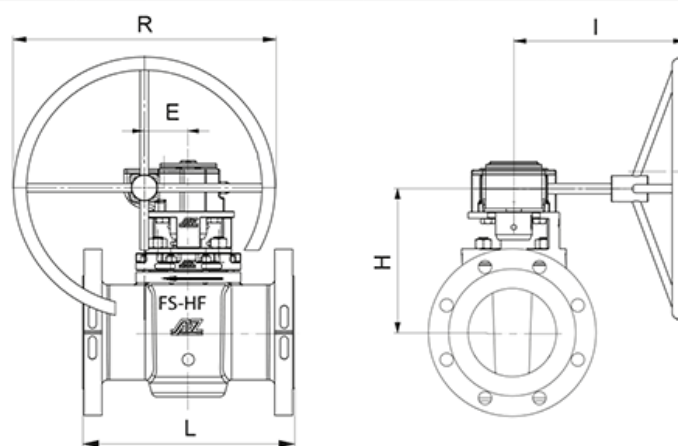
ISO-FSN-HF

AZ-ISO-Konsole für Antrieb



ASME B 16.34

| NPS | class | UOP-Nr. | L | ØD | bracket / lever | | | DIN flange | dihe-dron | torque* [Nm] | weight [kg] | K _{vs} -value [m³/h] | C _v -value [US.gal/min] |
|-----|-------|----------|-----|-----|-----------------|-----|-----|------------|-----------|--------------|-------------|-------------------------------|------------------------------------|
| | | | | | A | H | R | | | | | | |
| 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

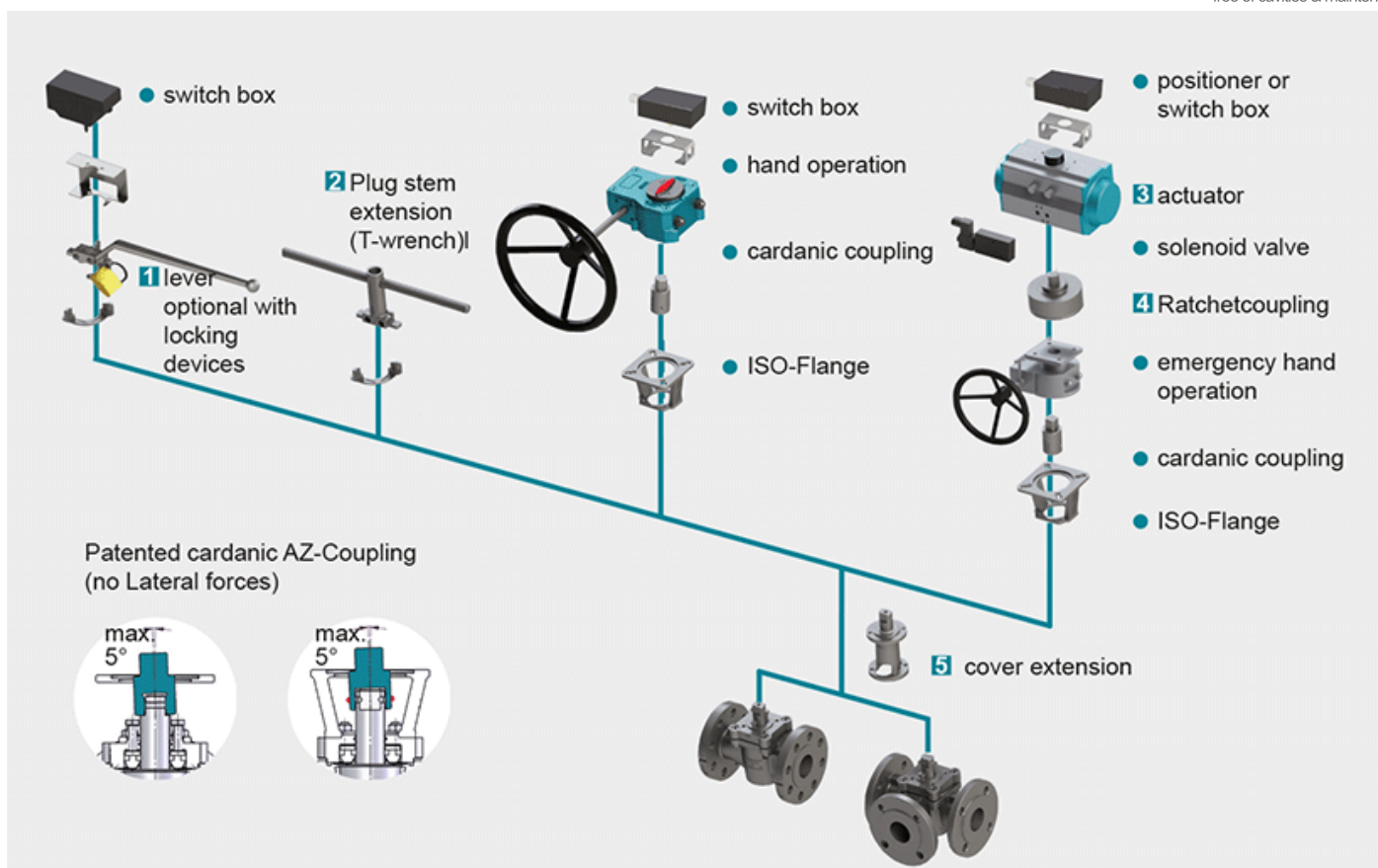
| NPS | class | UOP-Nr. | L | E | gear (Pro-Gear) | | | Typ | DIN flange | dihe-dron | torque* [Nm] | weight [kg] | K _{vs} -value [m³/h] | C _v -value [US.gal/min] |
|-----|-------|-------------|------|-----|-----------------|-----|-----|----------|------------|-----------|--------------|-------------|-------------------------------|------------------------------------|
| | | | | | R | H | I | | | | | | | |
| 4S | 300 | 016580-5/G | 305 | 69 | 300 | 260 | 280 | Q1500-S | F16 | 27 | 900 | 68 | 542 | 627 |
| 6 | 300 | 016580-2/I | 403 | 84 | 500 | 330 | 328 | Q1500-S | F16 | 27 | 900 | 100 | 775 | 896 |
| 8 | 300 | 016580-2/I | 419 | 118 | 500 | 385 | 363 | Q3000-S | F16 | 36 | 1200 | 116,5 | 1978 | 2286 |
| 10 | 300 | 016580-2/I | 457 | 118 | 500 | 435 | 328 | Q5000-S | F16 | 36 | 1500 | 185 | 2382 | 2754 |
| 12 | 300 | 016580-2/I | 502 | 118 | 500 | 450 | 328 | Q5000-S | F16 | 36 | 2600 | 220 | 1925 | 2225 |
| 14 | 300 | 016580-14/A | 762 | 138 | 500 | 510 | 465 | Q6500-S | F25 | 46 | 5500 | 220 | 2394 | 2768 |
| 16 | 300 | 016580-14/A | 600 | 138 | 700 | 525 | 465 | Q6500-S | F25 | 46 | 5500 | 425 | 4618 | 5339 |
| 18 | 300 | 016580-14/A | 914 | 180 | 700 | 565 | 545 | Q12000-S | F30 | 55 | 6400 | 795 | 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

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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