

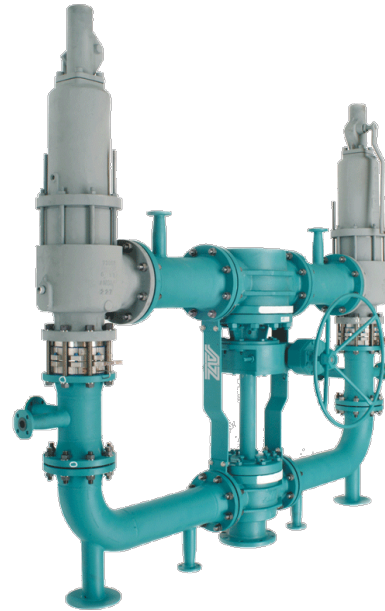
# SAVA

## Special cross-over combinations for Safety (Relief) valves

DIN: 25E - 500E / PN 10 - 40

ASME: NPS 1"E - 20"E / class 150 300

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

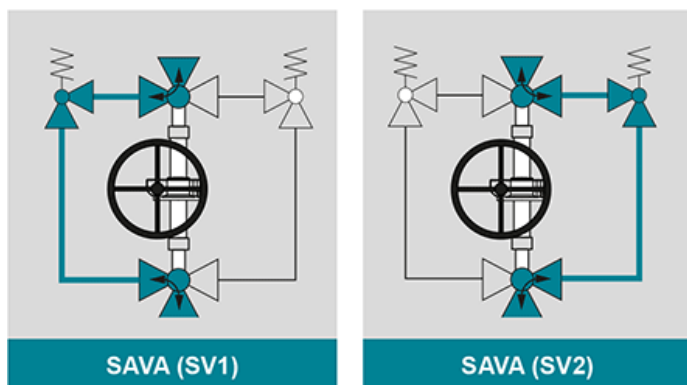


## Design Features

### Design Characteristics

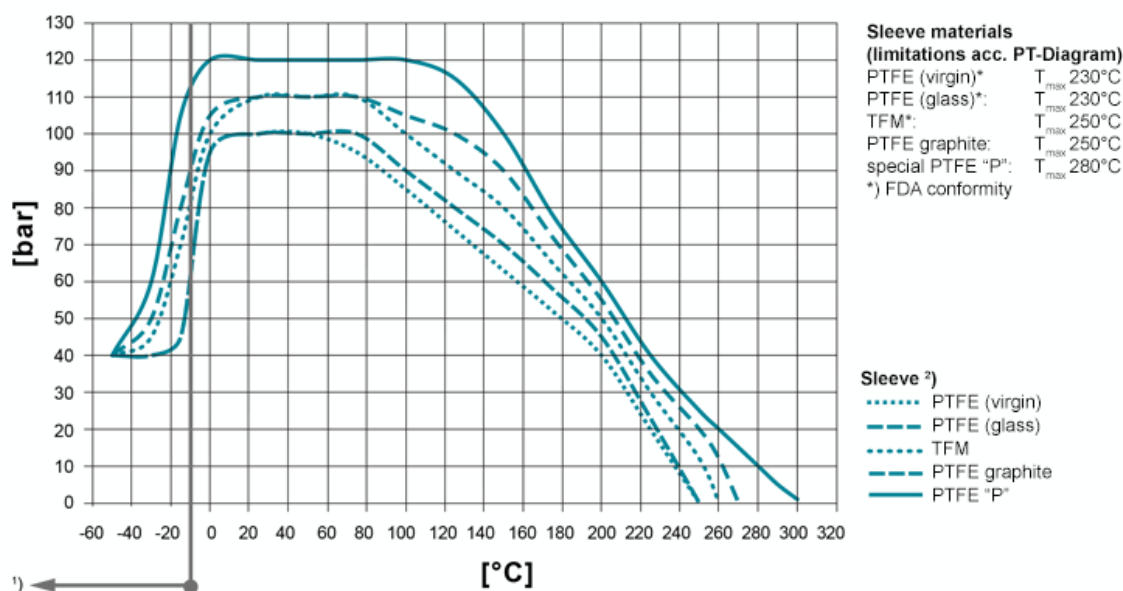
- full-flow, round bore
- cavity free (no medium contact of sealing surfaces)
- tight for years (DIN EN 12266-1)
- safe exchange of safety valves
- transflow during cross-over action
- operation errors impossible design-wise
- safe backflow of blow off capacity
- economic combination of different valve sizes
- TÜV approved

The basic principle of the safety valve exists therein, that dependent on the construction, a least cross section ( $A_{min}$ ) is guaranteed during the cross-over phase from safety valve I to safety valve II. Therefore a minimal flow (protection of the vessel) is always given.



## 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;  
Tmax 230°C

### Type STD

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

Firesafe sealing (API 607) with graphite  
packing for additional  
stem sealing; Tmax 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<sub>max</sub> 230°C

### Type CA

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

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

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

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

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

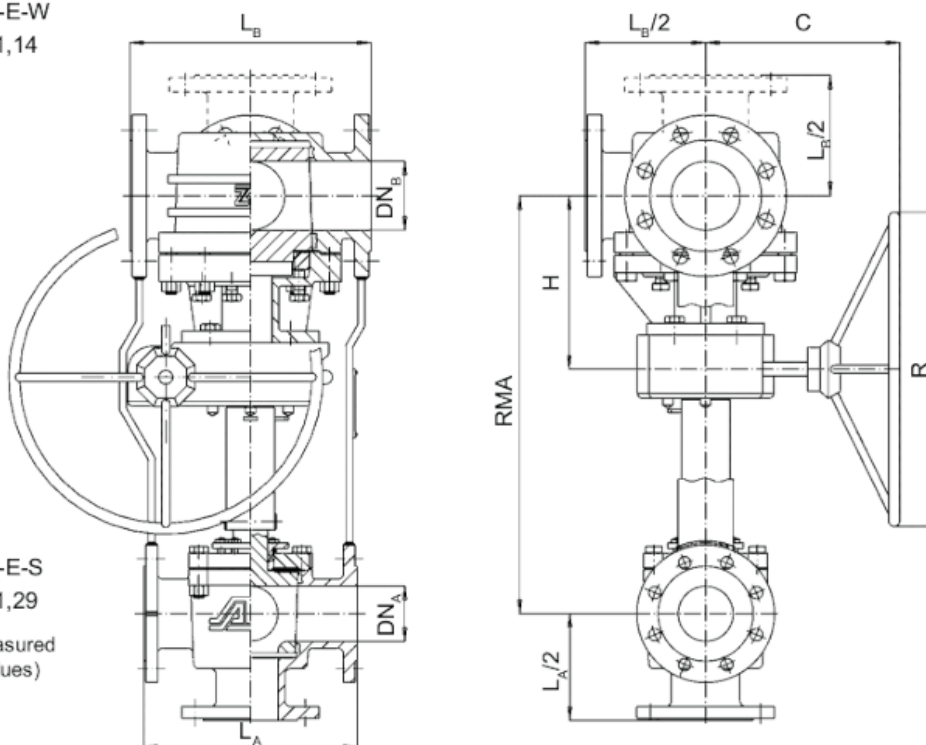
## Port Forms

on request

## Dimensions

F-3-E-W  
 $\zeta = 1,14$

F-3-E-S  
 $\zeta = 1,29$   
(measured  
 $\zeta$ -values)



| Classe 150 <sup>3)</sup> |        | DN <sub>A</sub>   | DN <sub>B</sub>   | A <sub>min</sub> | RMA<br>min <sup>1)</sup> | C   | H   | LA <sup>3)</sup> | L <sub>A</sub> /2 | L <sub>B</sub> <sup>5)</sup> | L <sub>B</sub> /2 | R   |
|--------------------------|--------|-------------------|-------------------|------------------|--------------------------|-----|-----|------------------|-------------------|------------------------------|-------------------|-----|
| 1"                       | 1"     | 25 <sup>4)</sup>  | 25 <sup>4)</sup>  | 225              | 280                      | 170 | 135 | 160              | 80                | 160                          | 80                | 200 |
|                          | 2"     | 25                | 50                | 225              | 360                      | 230 | 205 | 160              | 80                | 230                          | 115               | 350 |
| 1 1/2"                   | 1 1/2" | 40                | 40                | 708              | 360                      | 230 | 195 | 200              | 100               | 200                          | 100               | 350 |
|                          | 2"     | 40                | 50                | 708              | 370                      | 230 | 205 | 200              | 100               | 230                          | 115               | 350 |
|                          | 3"     | 40                | 80                | 708              | 450                      | 280 | 275 | 200              | 100               | 310                          | 155               | 457 |
| 2"                       | 2"     | 50                | 50                | 1296             | 420                      | 230 | 205 | 230              | 115               | 230                          | 115               | 350 |
|                          | 3"     | 50                | 80                | 1296             | 450                      | 280 | 275 | 230              | 115               | 310                          | 155               | 457 |
| 3"                       | 3"     | 80                | 80                | 3754             | 500                      | 280 | 275 | 310              | 155               | 310                          | 155               | 457 |
|                          | 4"     | 80                | 100               | 3754             | 480                      | 330 | 265 | 310              | 155               | 350                          | 175               | 457 |
| 4"K                      | 4"K    | 100               | 100               | 5184             | 500                      | 365 | 265 | 350              | 175               | 350                          | 175               | 457 |
| 4"                       | 6"     | 100               | 150               | 5184             | 500                      | 415 | 310 | 350              | 175               | 480                          | 240               | 610 |
|                          | 6"     | 150               | 150               | 14386            | 580                      | 425 | 330 | 480              | 240               | 480                          | 240               | 610 |
| 6"                       | 8"     | 150               | 200               | 14386            | 750                      | 425 | 350 | 480              | 240               | 600                          | 300               | 610 |
|                          | 8"     | 200               | 200               | 25833            | 660                      | 455 | 350 | 600              | 300               | 600                          | 300               | 610 |
| 8"                       | 10"    | 200               | 250               | 25833            | 700                      | 455 | 385 | 600              | 300               | 730                          | 365               | 610 |
|                          | 10"    | 250               | 250               | 42102            | 720                      | 590 | 385 | 730              | 365               | 730                          | 365               | 610 |
| 10"                      | 12"    | 250 <sup>2)</sup> | 300 <sup>2)</sup> | 42102            | ---                      | --- | --- | 730              | 365               | 850                          | 425               | --- |
|                          | 12"    | 300 <sup>2)</sup> | 300 <sup>2)</sup> | ---              | ---                      | --- | --- | 850              | 425               | 850                          | 425               | --- |

<sup>1)</sup> bigger pipe centre line (RMA) on request

<sup>2)</sup> size on request

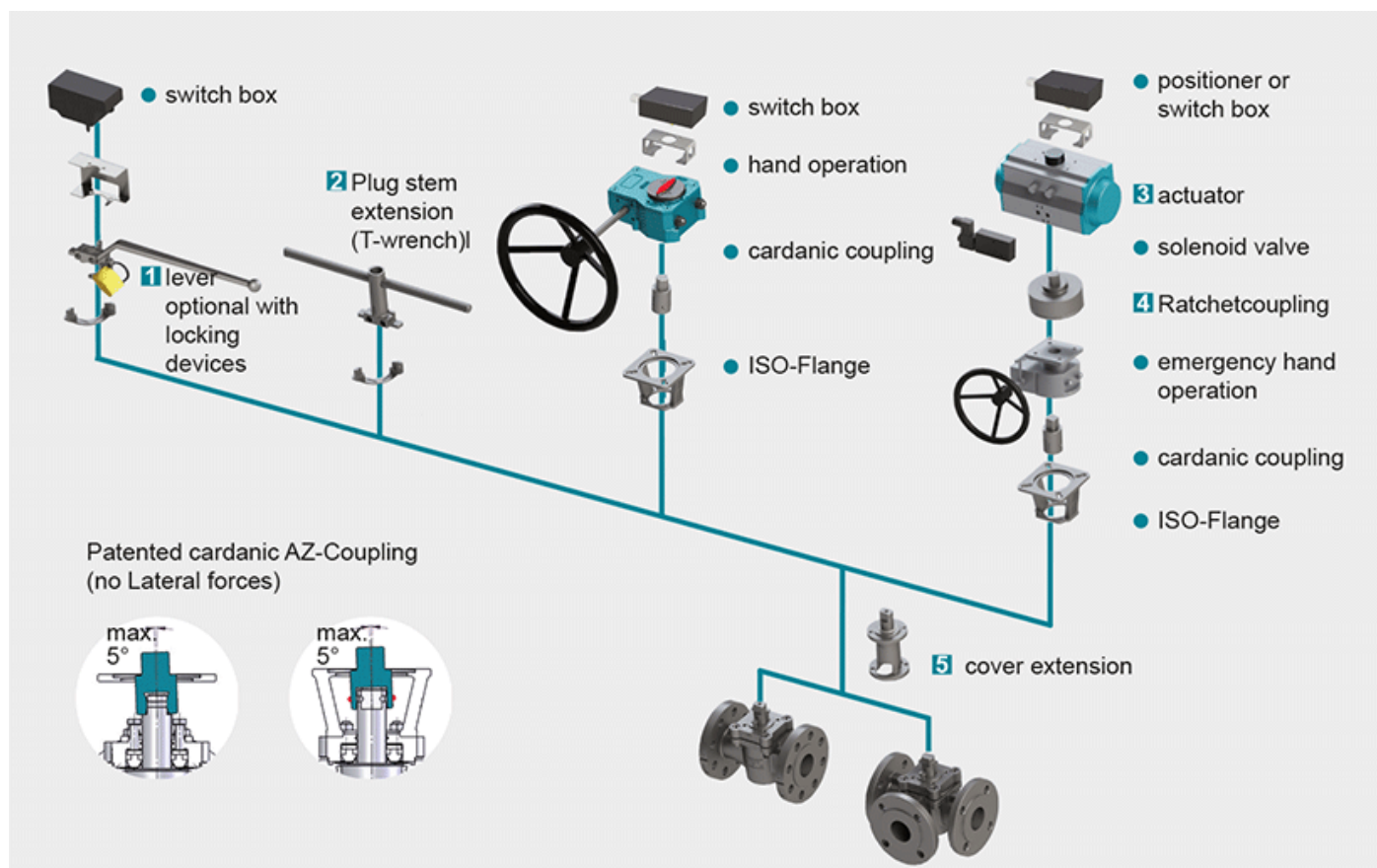
<sup>3)</sup> Flanges acc. to ASME class 300/600 or others on request

<sup>4)</sup> also available with T-wrench

<sup>5)</sup> F/F dimension acc. to DIN 3202/EN 558-1

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 use 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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