SAVA

Special cross-over combinations for Safety (Relief) valves

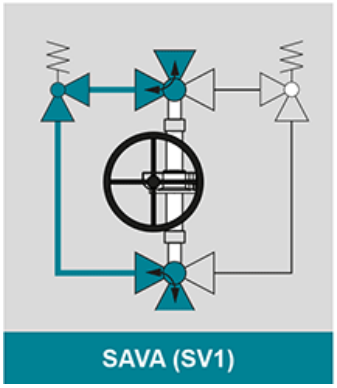
DIN: 25E – 500E / PN 10 – 40
ASME: NPS 1″E – 20“E / class 150 300
PT range: -30 < T < 230/280°C, vacuum 10-8 mbar

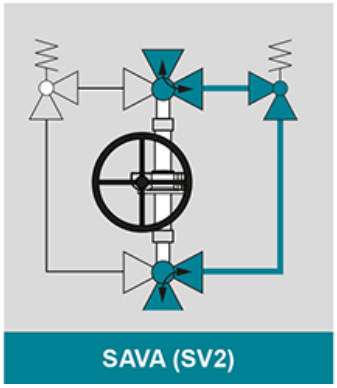
Design Features

Design Characteristics

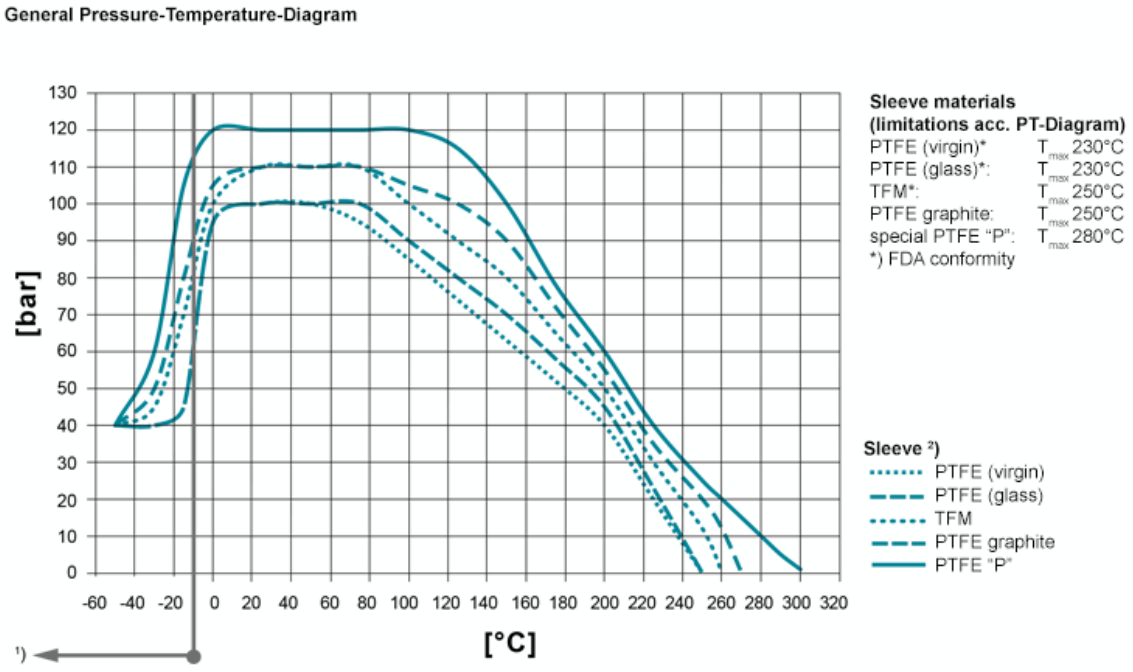
- full-flow, round bore
- cavity free (no medium contact of sealing surfaces)
- tight for years (DIN EN 12266-1)
- safe exchange of safety valves
- transflow during cross-over action
- operation errors impossible design-wise
- safe backflow of blow off capacity
- economic combination of different valve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

The basic principle of the safety valve exists therein, that dependent on the construction, a least cross section (Amin) 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



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

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

Type FS

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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 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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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

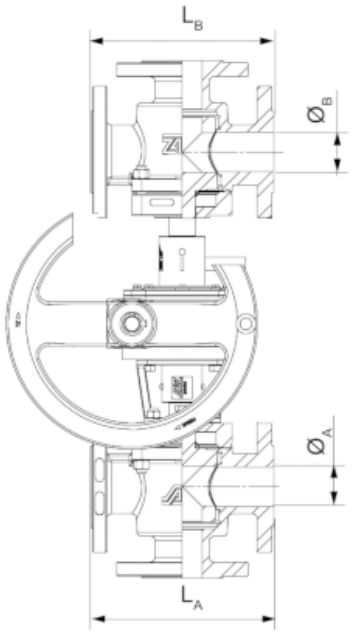
on request

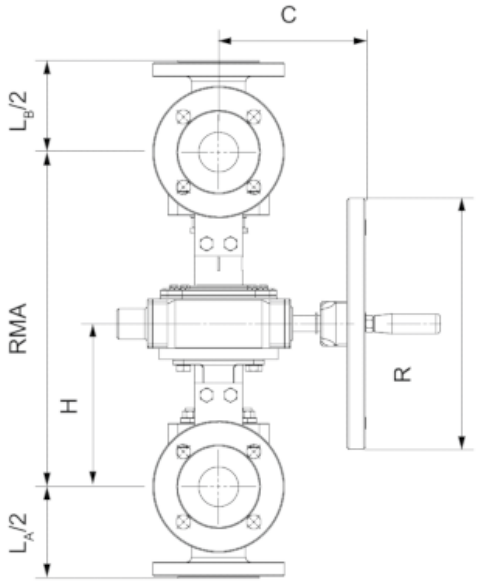
Dimensions

F-3-E-W: ζ= 1,14
F-3-E-S: ζ= 1,29

F-3-E-S: ζ= 1,29

(measured ζ-values,
valid for all nominal sizes)





Dimensions acc. to ASME B16.5 / 16.10 - DIN EN 1092-1 / 558 for type ISO-EXTRA / EXTRA

Class 150 [3]		PN10 - PN 40 [3]		A_{min}	RMA_{min} [1] [mm]		C	H	L_A [3]	$L_A/2$	L_B [5]	$L_B/2$	R
$Ø_A$ [NPS]	$Ø_B$ [NPS]	$Ø_A$ [DN]	$Ø_B$ [DN]	[mm²]	ISO-EXTRA	EXTRA	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
1E	1E	25 [4]	25E [4]	225	320		132	180	160	80	160	80	160
	1½E		40E		330		165	188	200	100	200	100	160
	2E		50E		340		170	205	160	80	230	115	315
1½E	1½E	40E	40E	708	360		165	188	200	100	200	100	160
	2E		50E		360		170	205	200	100	230	115	315
	3E		65E		390		170	215	200	100	310	155	315
2E	2E	50E	50E	1296	400		170	205	230	115	230	115	315
	2½E		65E		410		170	215	230	115	290	145	315
	3E		80E		430		170	235	230	115	310	155	400
3E	3E	80E	80E	3754	460		170	235	310	155	310	155	400
	4E		100E		530		299	290	310	155	350	175	400
	6E		150E		480		324	342	350	175	480	240	500
4E	4E	100E	100E	5184		590	299	290	310	155	350	175	400
	6E		150E			640 (F25)	324	342	350	175	480	240	500
	8E		200E			680 (F30	380	381	480	240	600	300	400
6E	6E	150E	150E	14386		720 F30)	324	342	480	240	480	240	500
	8E		200E			730 (F30)	380	381	480	240	600	300	400
8E	8E	200E	200E	25833		760 (F30)	380	381	600	300	600	300	400
	10E		250E			830 (F35)	510	434	600	300	730	365	800
10E	10E	250E	250E	42102		850 (F35)	510	434	730	365	730	365	800
	12E		300E [2]						730	365	850	425	
12E	12E	300E [2]	300E [2]						850	425	850	425	

[1]) larger pipe centre line (RMA) on request

[2]) All details for PN10 - PN 40 and Class 150, higher sizes or ratings on request

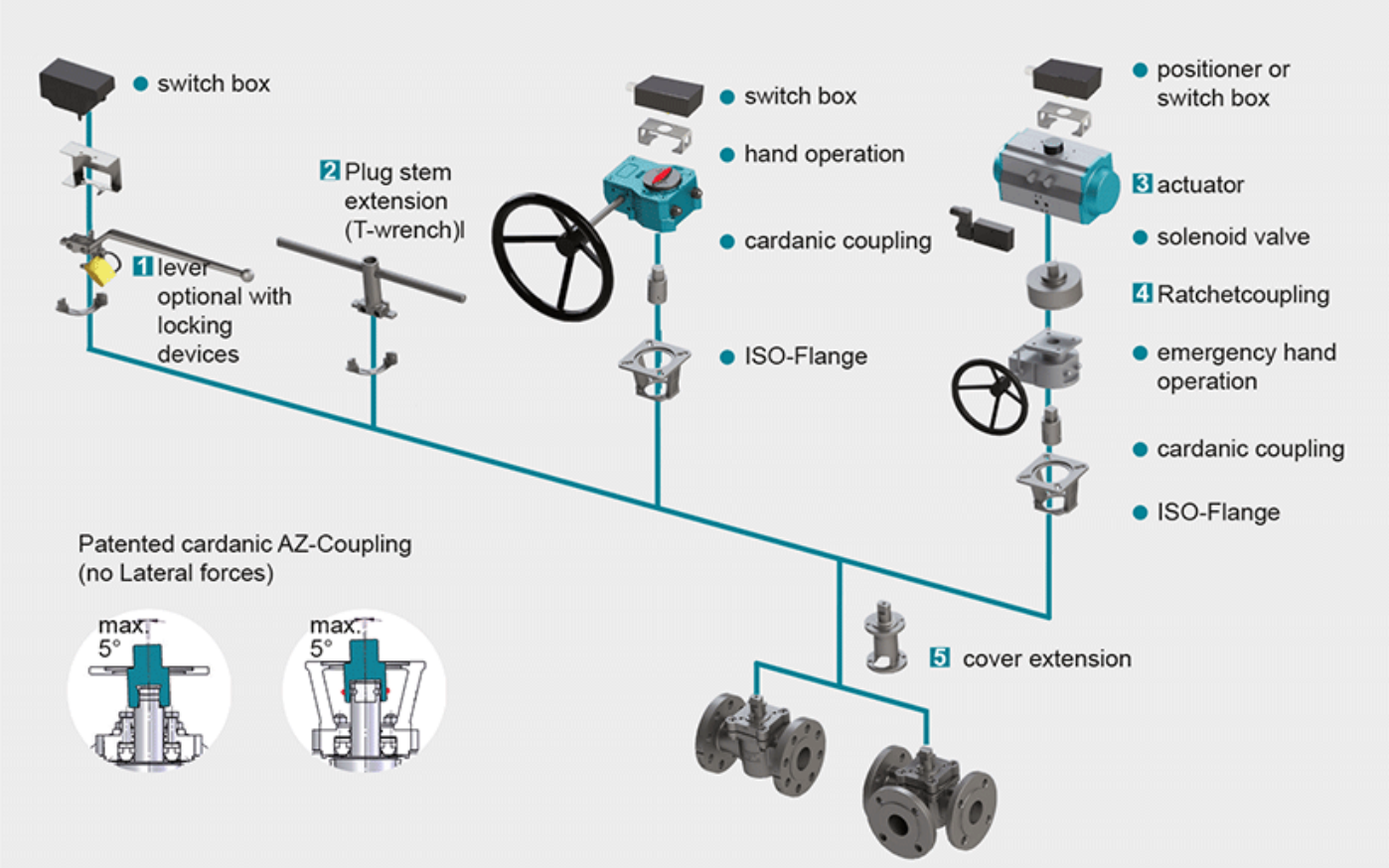
[3]) Flanges acc. to ASME, Class 300/600 or others on request

[4]) also available with T-wrench

[5]) 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.
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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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