

Crossover Valve Combinations

DIN: 15 - 500 / PN 10 - 40

ASME: NPS 1/2" - 20" / class 150 300

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

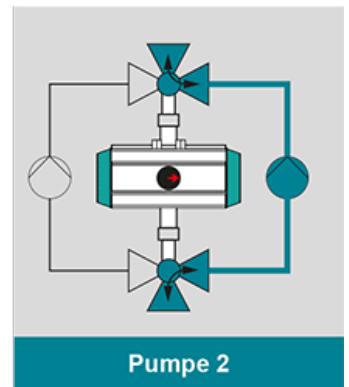
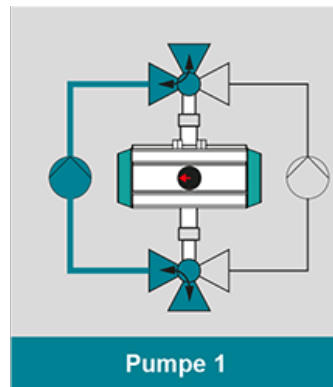
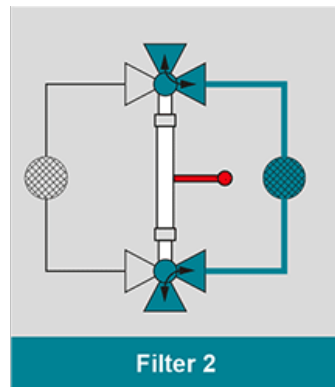
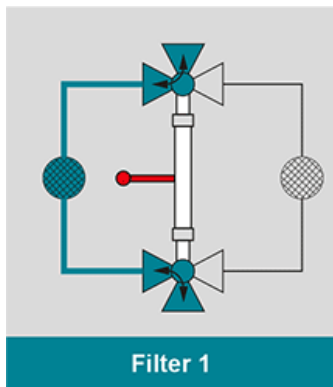


Design Features

Design Characteristics

- all types of AZ-valves combinable
- for cooling and heating cycles
- for pump cycles
- for safety-valves
- for filter-cycles
- for reactor cycles
- available hand-operated, gear-operated and with actuators

Sample applications



Filter-cycle

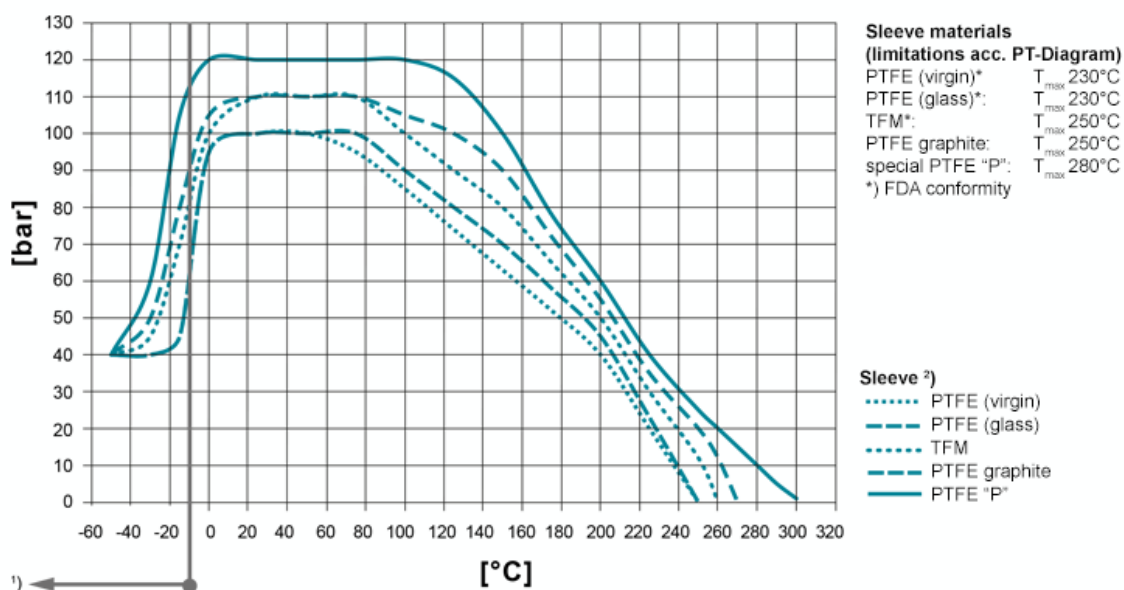
Replacement or cleaning of filter is possible without any problems by application of AZ-crossover-valve-combinations. When filter 1 is blocked up the valve combination is switched over to flow consequently regulated by filter 2. Therefore it is possible to replace the filter 1 without interruption of the continuous flow. If "LL"- plug is used moreover a continuous flow during the phase of switching is guaranteed. In this case a complete closing during switching is not possible.

Pump-cycle

On break-down of pump 1 an easy replacement of pump 1 is possible by switching the valve combination to pump 2 without interruption of the continuous flow. If "LL"- plug is used moreover a continuous flow during the phase of switching is guaranteed. In this case a complete closing during switching is not possible.

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

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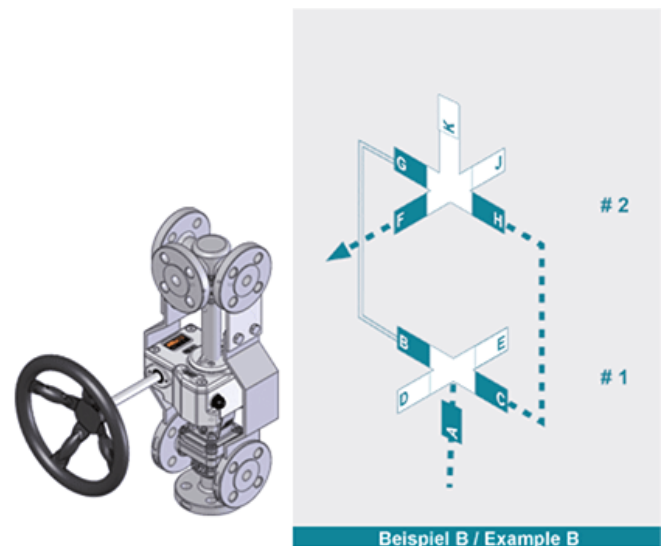
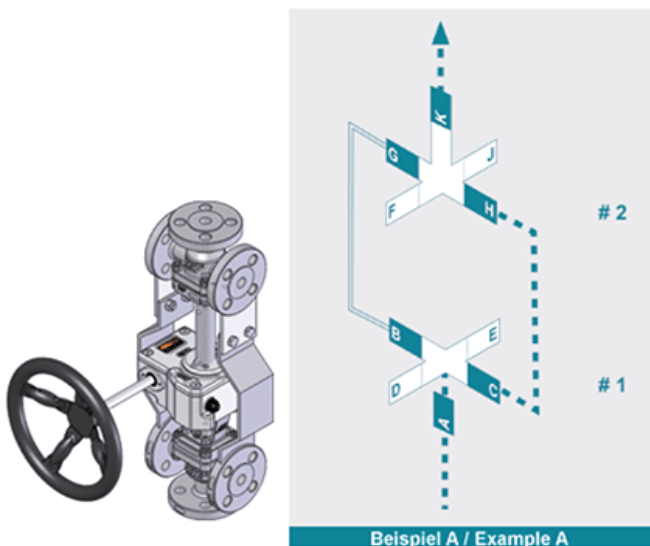
Chemical safety sealing for fluctuation temperatures with 3x PTFE packing (live loaded disc springs) for additional stem sealing; Tmax 230°C

Type CASN-SL

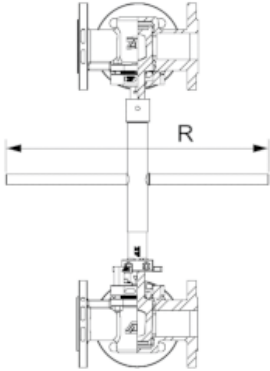
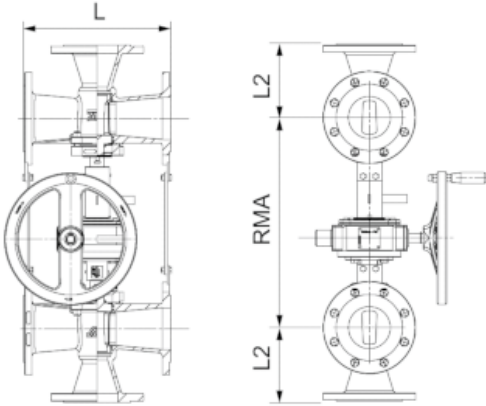
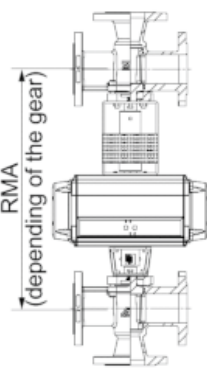
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Port Forms

Order the desired combination, port form select by AZ.



Dimensionsn

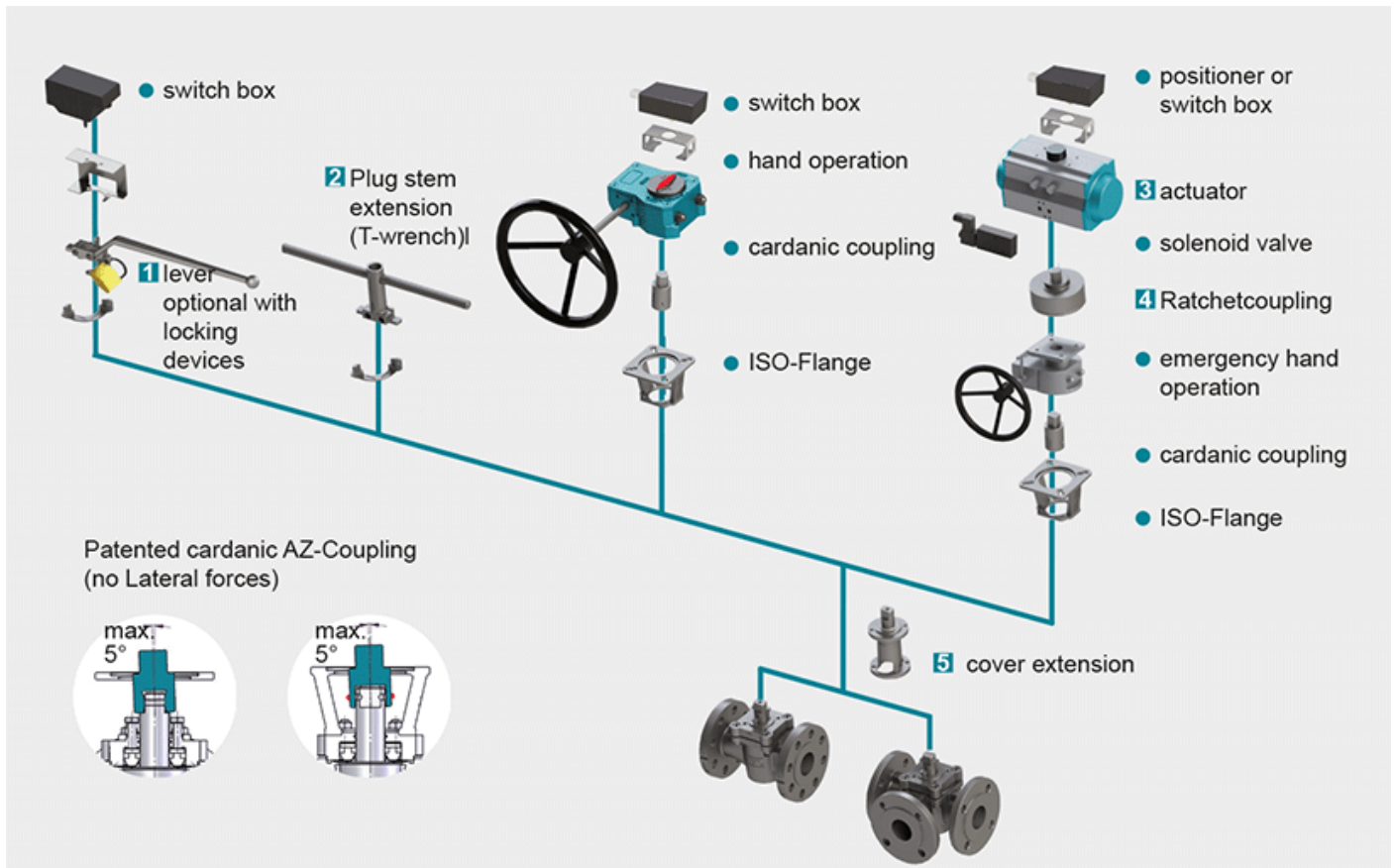
Type UK with plug stem extension (T-wrench)					Typ UK with gearbox					Type UK with pneumatic actuator				
														
für Typ ISO-STANDARD, PN 10 - 40 gemäß DIN EN 1092-1 / 558	DN	PN	L [mm]	L2 [mm]	für Typ ISO-STANDARD, Class 150 / 300 gemäß ASME B16.10	NPS	L [mm]	L2 [mm]	Umschaltkombinationen für Typ ISO-STANDARD	Valve 1	Valve 2	R [mm]	RMA _{min} [mm] T-wrench	gearbox
	15	10 - 40	130	65		1/2"	150	108		15	15	250	200	270
	20	10 - 40	150	75		3/4"	300	140		20	20	250	200	270
	25	10 - 40	160	80		1"	150	118		25	25	250	210	280
	32	10 - 40	180	90		1 1/2"	300	152		32	32	250	200	270
	40	10 - 40	200	100		2"	150	127		40	40	250	210	280
	50	10 - 40	230	115		2 1/2"	300	165		50	50	250	240	310
	65	10 - 40	290	245		3"	150	165		65	65	250	220	280
	80	10 - 40	310	155		4"	300	191		80	80	250	240	320
	100	10 - 40	350	175		5"	150	178		100	100	250	270	330
	125	10 - 40	325	162		6"	300	216		125	125	250	260	340
	150	10 - 40	350	200		8"	150	203		150	150	400	290	350
	200	10 - 40	400	220		10"	300	283		200	200	400	310	360
	250	10 - 40	450	275		12"	150	228		250	250	500	340	380
							300	305					310	370
							150	254					340	380
							300	325						400
							150	267						430
							300	403						500
							150	292						450
							300	418						510
							150	330						590
							300	457						570
							150	356						650
							300	502						690
														720
														750

*) UK design with gearbox

other nominal sizes on request

Specify desired dimension (RMA), minimum size = RMA_{min}

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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