

**UK**

## 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



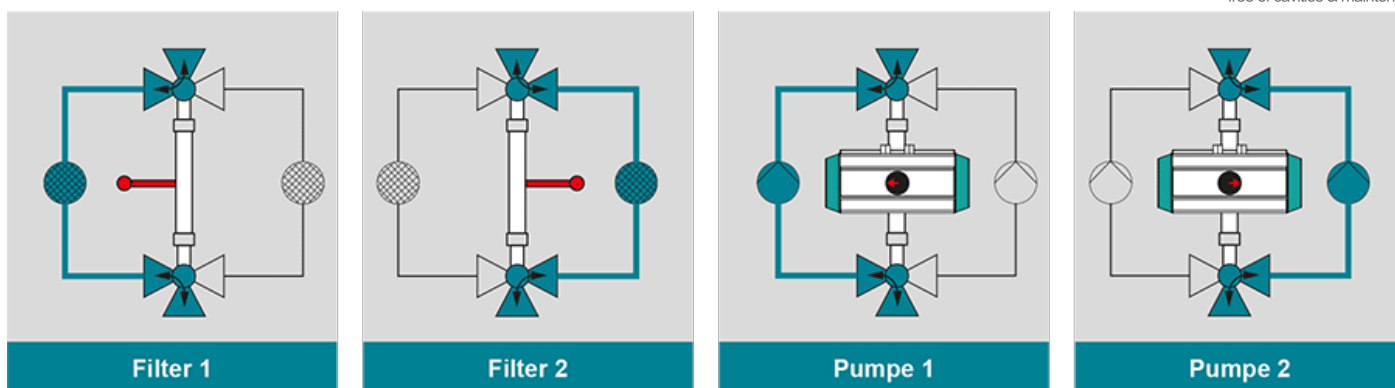
## Design Features

### 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**



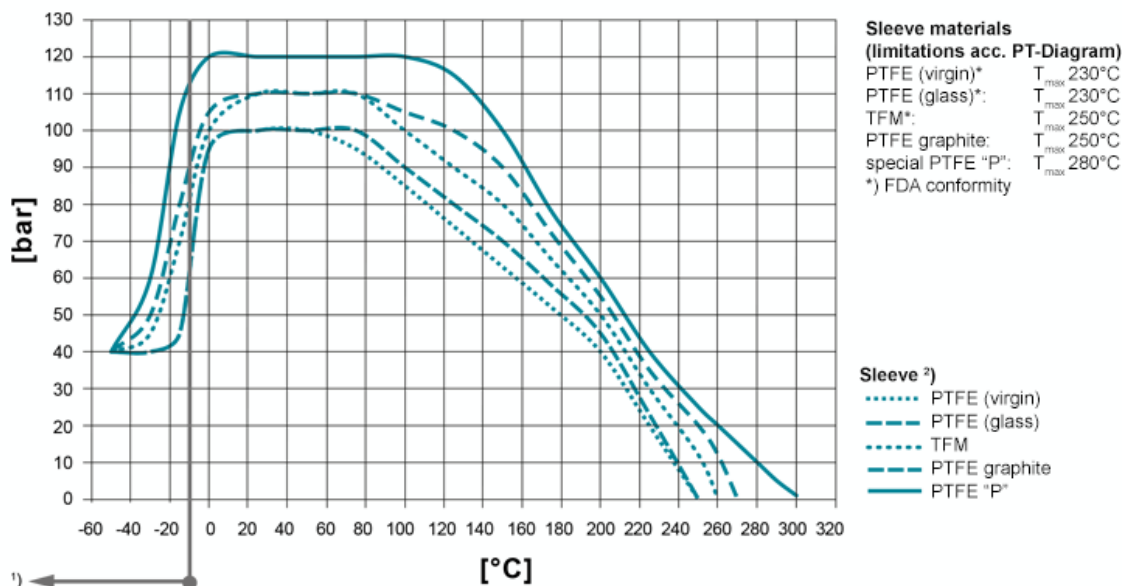
### Filter-cycle

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
- Stainless Steel 1.4408, ASTM A351 CF8M
- Stainless Steel 1.4308, ASTM A351 CF8

### Standard plug materials

### Special materials

- Alloy
- Monel
- Nickel
- Zirconium
- Titan
- Tantal
- other materials on request

## Sealing Systems

Standard sealing for all major applications;

T<sub>max</sub> 230°C

### Type STD

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

Firesafe sealing (API 607) with graphite packing for additional stem sealing; T<sub>max</sub> 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; T<sub>max</sub> 280°C

### Type FSN

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

Firesafe safety sealing (API 607) for fluctuating temperatures

with 3x graphite packing (live loaded disc springs) for additional stem sealing; T<sub>max</sub> 280°C

### Type FSN-SL

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

Chemical safety sealing for fluctuating temperatures with 3x PTFE packing (adjustment) for additional stem sealing;

T<sub>max</sub> 230°C

### Type CASN

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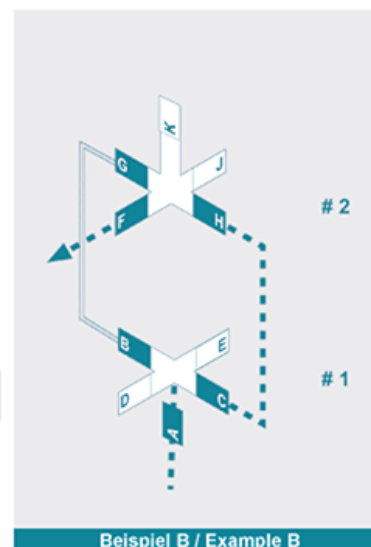
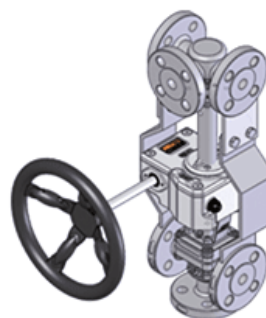
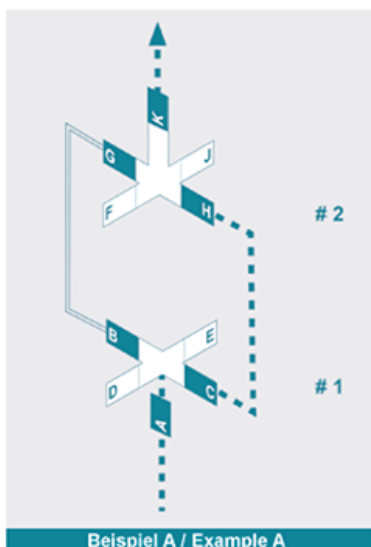
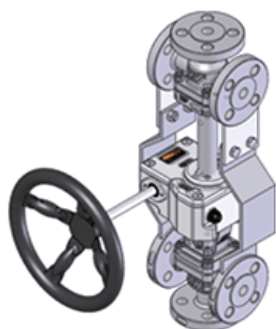
Chemical safety sealing for fluctuation temperatures  
with 3x PTFE packing (live loaded disc springs) for additional  
stem sealing; Tmax 230°C

**Type CASN-SL**

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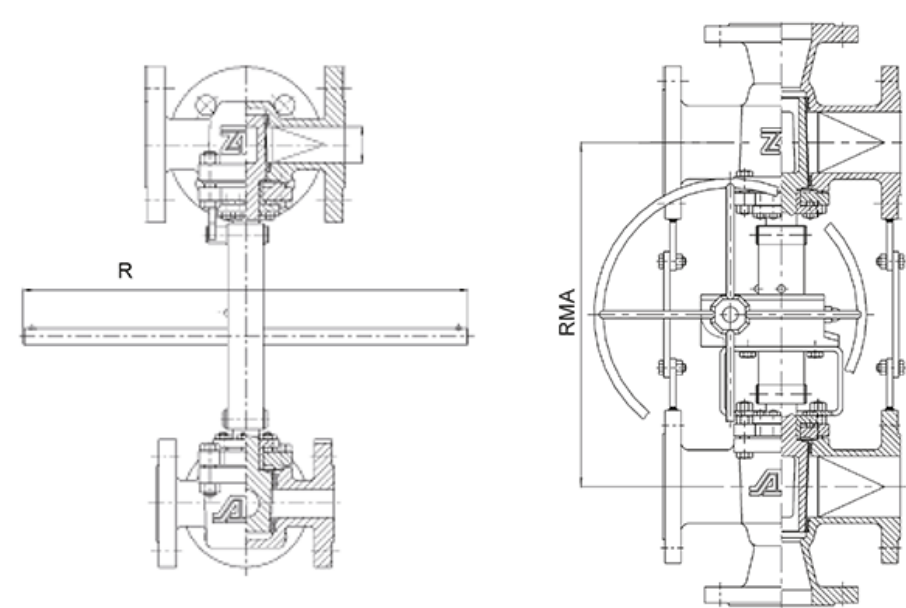
**Port Forms**

Order the desired combination, port form select by AZ.

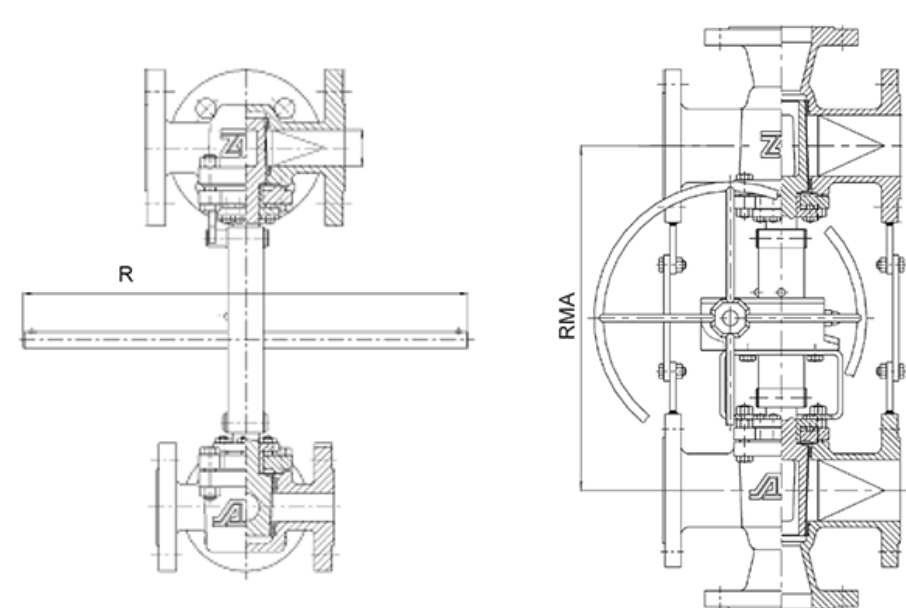


**Dimensionsn**

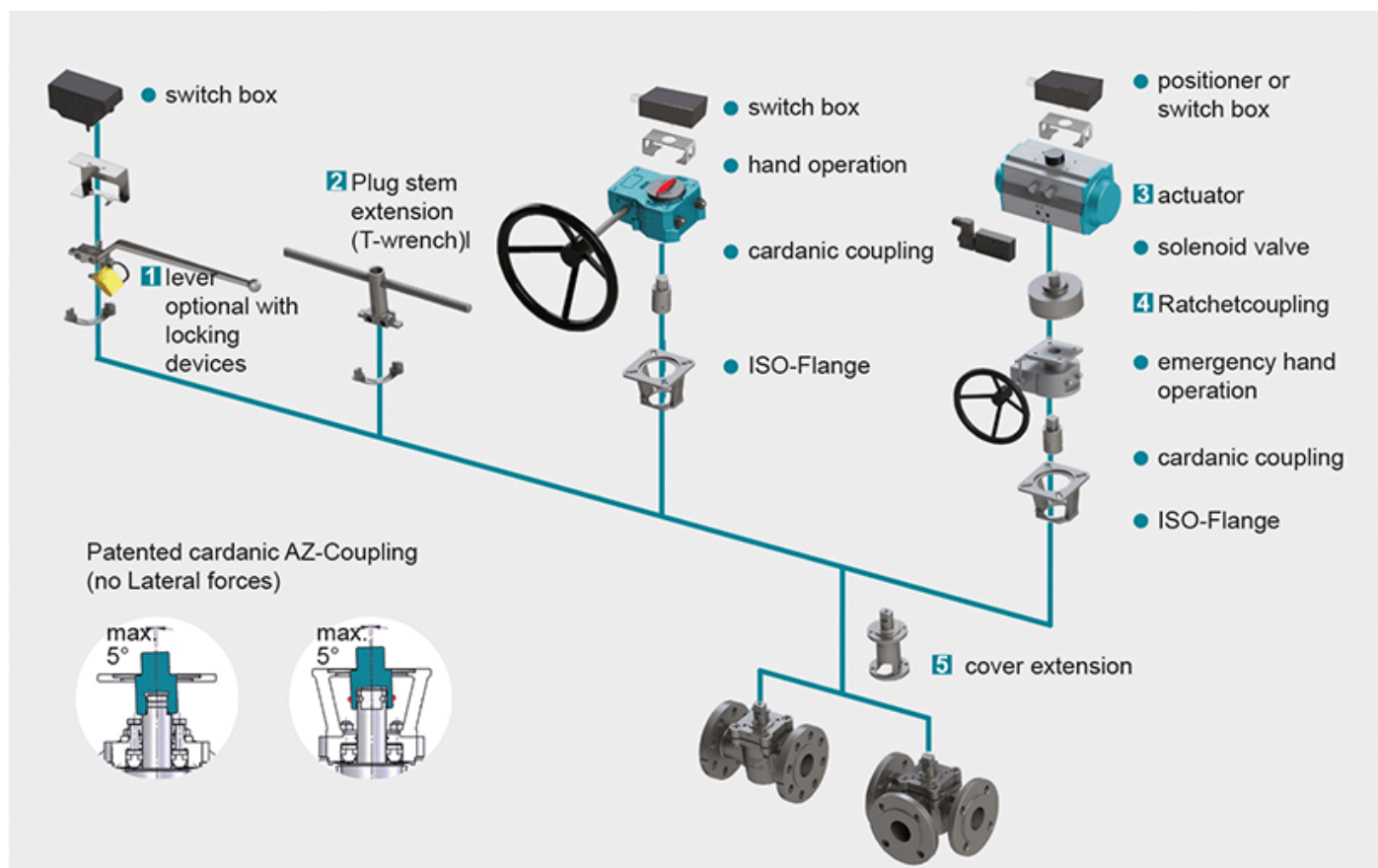
| min. Rohrmittelabstand (RMA) |        |     |     | Betätigung |
|------------------------------|--------|-----|-----|------------|
| Hahn 1                       | Hahn 2 | RMA | R   |            |
| 15                           | 15     | 170 | 250 | Handhebel  |
|                              | 20     | 170 | 250 |            |
|                              | 25     | 190 | 250 |            |
| 20                           | 20     | 170 | 250 |            |
|                              | 25     | 190 | 250 |            |
|                              | 40     | 200 | 250 |            |
| 25                           | 25     | 200 | 250 |            |
|                              | 40     | 210 | 250 |            |
|                              | 50     | 240 | 250 |            |
| 40                           | 40     | 240 | 400 |            |
|                              | 50     | 270 | 400 |            |
|                              | 65     | 290 | 400 |            |
| 50                           | 50     | 290 | 500 |            |
|                              | 65     | 310 | 500 |            |
|                              | 80     | 310 | 500 |            |
| 80<br>100                    | 80     | 460 | -   | Getriebe   |
|                              | 100    | 500 | -   |            |
|                              | 150    | 510 | -   |            |
| 100S                         | 100    | 510 | -   |            |
|                              | 150    | 520 | -   |            |
|                              | 200    | 570 | -   |            |
| 150                          | 150    | 550 | -   |            |
|                              | 200    | 580 | -   |            |
|                              | 200    | 650 | -   |            |
| 200                          | 250    | 680 | -   |            |
|                              | 250    | 750 | -   |            |



| pipe centre line min (RMA) |         |     |     | actuation |
|----------------------------|---------|-----|-----|-----------|
| valve 1                    | valve 2 | RMA | R   |           |
| 15                         | 15      | 170 | 250 | lever     |
|                            | 20      | 170 | 250 |           |
|                            | 25      | 190 | 250 |           |
| 20                         | 20      | 170 | 250 |           |
|                            | 25      | 190 | 250 |           |
|                            | 40      | 200 | 250 |           |
| 25                         | 25      | 200 | 250 |           |
|                            | 40      | 210 | 250 |           |
|                            | 50      | 240 | 250 |           |
| 40                         | 40      | 240 | 400 |           |
|                            | 50      | 270 | 400 |           |
|                            | 65      | 290 | 400 |           |
| 50                         | 50      | 290 | 500 |           |
|                            | 65      | 310 | 500 |           |
|                            | 80      | 310 | 500 |           |
| 80<br>100                  | 80      | 460 | -   | gear      |
|                            | 100     | 500 | -   |           |
|                            | 150     | 510 | -   |           |
| 100S                       | 100     | 510 | -   |           |
|                            | 150     | 520 | -   |           |
|                            | 200     | 570 | -   |           |
| 150                        | 150     | 550 | -   |           |
|                            | 200     | 580 | -   |           |
|                            | 200     | 650 | -   |           |
| 200                        | 250     | 680 | -   |           |
|                            | 250     | 750 | -   |           |



## 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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