

# Pneumatically Operated 3-way Seat Valve

## Series TV800/TV200

### 3/2-way Seat Valve

#### Pneumatically Operated, for medium up to +180° C, threaded port & tri-clamp connection DN 15-50

- For mixing or distributing mediums;
- Controlled by a pilot valve;
- Flow optimized body in stainless steel;
- Long service life and maintenance-free operation.

#### ◆ How to Order

TV100 P 015 NC S 1 x 63mm

| Versions (standard) |           |
|---------------------|-----------|
| 1                   | version 1 |
| 2                   | version 2 |
| 3                   | version 3 |

| Acting Type |               |   |               |
|-------------|---------------|---|---------------|
| S           | Single acting | D | Double acting |

| Body Material |                    |
|---------------|--------------------|
| Blank         | S.S 304 (standard) |
| 4             | S.S 316            |
| 5             | S.S 316L           |

| Control Function |                            |
|------------------|----------------------------|
| NO               | Normally open              |
| NC               | Normally closed (standard) |

| Nominal Diameter |        |    |        |
|------------------|--------|----|--------|
| 15               | G1/2   | 20 | G3/4   |
| 25               | G 1    | 32 | G1 1/4 |
| 40               | G1 1/2 | 50 | G 2    |

| Actuator Material code |                   |
|------------------------|-------------------|
| P                      | PA Actuator       |
| S                      | S.S. Actuator     |
| A                      | Aluminum Actuator |

| Model |                                   |
|-------|-----------------------------------|
| TV100 | 3/2-way Seat Valve Threaded Ends  |
| TV200 | 3/2-way Seat Valve Tri-Clamp Ends |

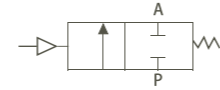
#### ◆ Actuator Size

| Port Size | Standard Actuator Size (mm) |          |           |
|-----------|-----------------------------|----------|-----------|
|           | PA                          | S.S.     | AL        |
| DN15      | 40,50                       | 40,50    | 40,50     |
| DN20      | 50,63,80                    | 50,63,90 | 50,63,80  |
| DN25      | 50,63,80                    | 50,63,90 | 50,63,80  |
| DN32      | 63,80,100                   | 63,90    | 63,80,100 |
| DN40      | 63,80,100                   | 63,90    | 63,80,100 |
| DN50      | 63,80,100                   | 63,90    | 63,80,100 |

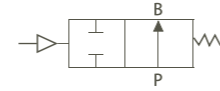
TV100 Series 3-way seat valve consists of a pneumatically operated actuator and a 3-way valve body. The actuator is available in three different materials, PA, aluminum or stainless steel, depending on the ambient temperature and customer requirements. Materials available for the valve body are stainless steel 304,316 and 316L. Interchanging of pressure and service ports enables different fluidic circuit functions, such as mixing or distributing mediums. The flow-optimized valve body of TV100 allows excellent flow rates. The tried and tested self-adjusting gland secures a high level of tightness and thus ensures reliable operation over years. The 3-way valve TV100 is controlled by a pilot valve. It can be equipped easily with an electrical position indicator. For the user, the compact TV100 is often an economical alternative to two single shut-off valves.

#### Symbol

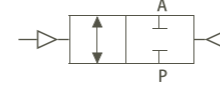
**Control function A**  
(closed by spring force in rest position)



**Control function B**  
(open in rest position)



**Control function I**  
(double-acting actuator)



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#### ◆ Connections for fluidic circuit functions C, D, E, F and G

| Fluidic circuit function | Connection-port |   |    |
|--------------------------|-----------------|---|----|
|                          | 1               | 2 | 3  |
| C                        | P               | A | R  |
| D                        | R               | A | P  |
| E                        | P1              | A | P2 |
| F                        | A               | P | B  |
| G                        | A               | B | P  |

Actuator with control function A  
When de-energised, port connection 1 is closed with spring

A,B service port  
P,P1,P2 pressure port  
R exhaust port

When de-energised, pressure port 1 closed, service port 2 exhausted.

When de-energised, pressure port 3 connected to service port 2, exhaust port 1 closed

Mixer valve  
When de-energised, pressure port 3 connected to service port 2, pressure port 1 closed

Distributor valve 1  
When de-energised, pressure port 2 connected to service port 3, service port 1 closed

Distributor valve 2  
When de-energised, pressure port 3 connected to service port 2 closed, service port 1 closed

#### ◆ Ordering chart for valves with port 1 closed by spring action (other versions on request)

#### ◆ Specifications

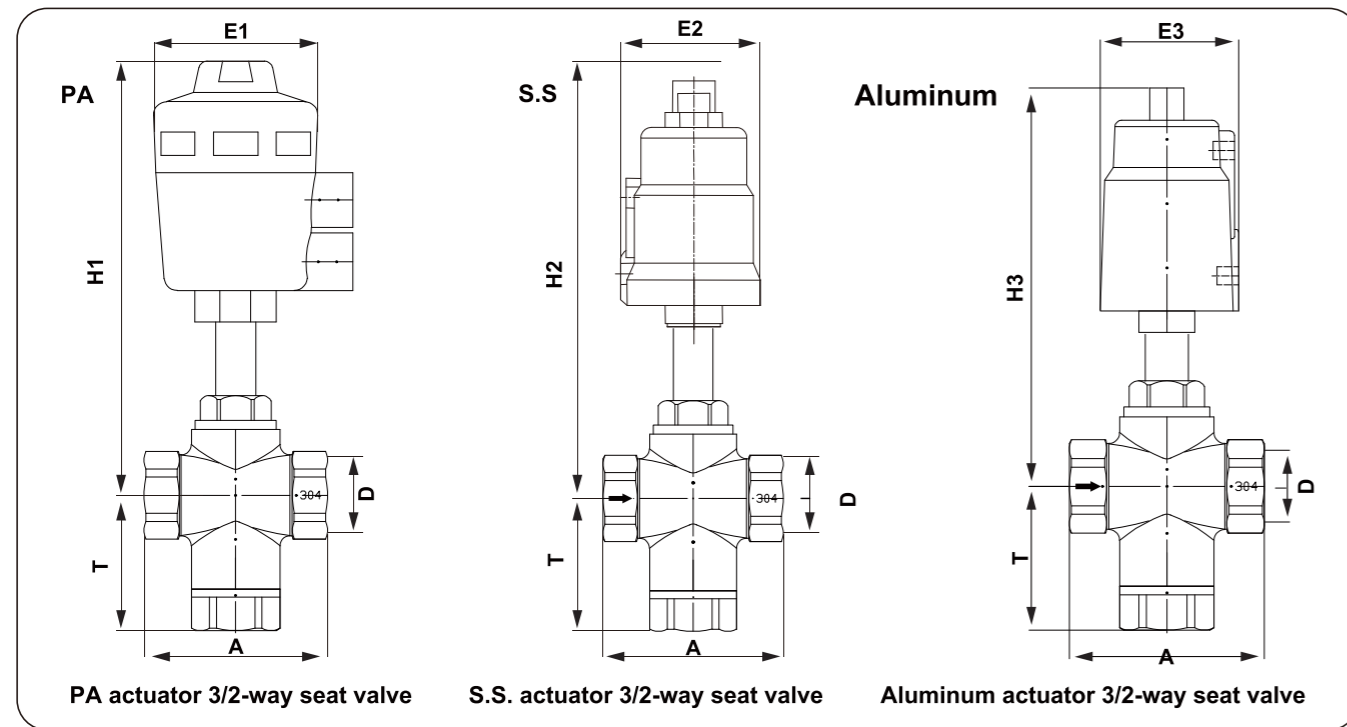
| Model / Specifications               | DN15   | DN20 | DN25 | DN32   | DN40   | DN50 |
|--------------------------------------|--|------|------|--------|--------|------|
| Control Function                     | 3/2-way normally closed(NC) (port 1)   |      |      |        |        |      |
| Actuator Material                    | PA Actuator /S.S. Actuator /Aluminum Actuator  |      |      |        |        |      |
| Valve Body Material                  | S.S304 /316 /316L  |      |      |        |        |      |
| Nominal Pressure                     | PN16(body)   |      |      |        |        |      |
| Operating Method                     | Plunger Pilot  |      |      |        |        |      |
| Ambient and Fluid                    | Water,alcohol,oils, fuels,hydraulic fluid,alkaline solutions, salt solution,organic solutions, hot water,steam |      |      |        |        |      |
| Viscosity                            | Max.600 <sup>o</sup> mm /s   |      |      |        |        |      |
| Media Temperature                    | - 10 ~180 <sup>o</sup> C   |      |      |        |        |      |
| Ambient Temperature                  | PA Actuator: - 10 ~60 <sup>o</sup> C<br>S.S. Actuator/Aluminum Actuator: - 10 ~140 <sup>o</sup> C              |      |      |        |        |      |
| Installation                         | As required, preferably with actuator in upright position  |      |      |        |        |      |
| Control Medium                       | Neutral gases,air  |      |      |        |        |      |
| Packing Gland (with silicone grease) | PTFE V-rings with spring compensation  |      |      |        |        |      |
| Seat Seal                            | PTFE/FPM/NBR   |      |      |        |        |      |
| Stem Seal                            | PTFE/FPM   |      |      |        |        |      |
| Piston Seal                          | FPM/NBR  |      |      |        |        |      |
| Mini.Pilot Pressure (Bar)            | 4.5  | 4.5  | 4.5  | 5.0    | 5.2    | 5.2  |
| Port Size                            | G1/2   | G3/4 | G 1  | G1 1/4 | G1 1/2 | G 2  |
| Nominal Diameter (mm)                | 13   | 18   | 24   | 31     | 35     | 45   |
| Kv (m <sup>3</sup> /h)               | 1 → 2  | 7    | 9    | 16     | 30     | 50   |
|                                      | 2 → 3  | 5    | 6    | 11     | 21     | 35   |

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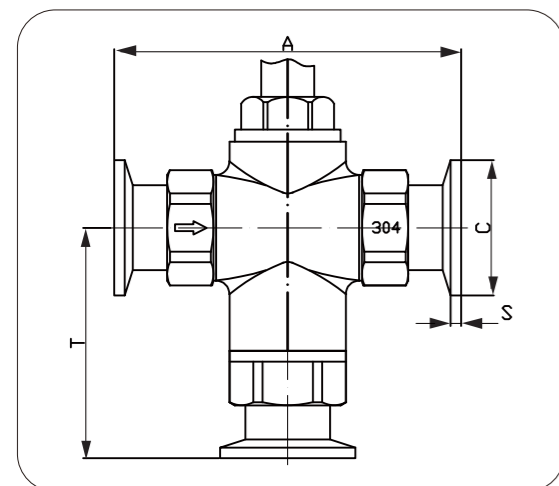
## ◆ Dimensions [mm]

### 3/2-way Seat Valve Threaded Ends



| Type  | Actuator size | Port size | A   | D       | T  | H1  | H2  | H3  | E1  | E2  | E3 |
|-------|---------------|-----------|-----|---------|----|-----|-----|-----|-----|-----|----|
| DN 15 | 50            | G 1/2     | 76  | G 1/2   | 58 | 185 | 188 | 188 | 63  | 63  | 65 |
|       | 63            | G 3/4     | 76  | G 3/4   | 58 | 224 | 223 | 218 | 80  | 76  | 77 |
| DN 20 | 50            | G 1       | 90  | G 1     | 68 | 188 | 191 | 191 | 63  | 63  | 65 |
|       | 63            | G 1       | 90  | G 1     | 68 | 227 | 226 | 221 | 80  | 76  | 77 |
| DN 25 | 63            | G 1-1/4   | 120 | G 1-1/4 | 85 | 238 | 237 | 232 | 80  | 76  | 77 |
|       | 80            | G 1-1/4   | 120 | G 1-1/4 | 85 | 255 | 257 | 247 | 100 | 101 | 96 |
| DN 32 | 63            | G 1-1/2   | 120 | G 1-1/2 | 85 | 239 | 238 | 233 | 80  | 76  | 77 |
|       | 80            | G 1-1/2   | 120 | G 1-1/2 | 85 | 256 | 258 | 248 | 100 | 101 | 96 |
| DN 40 | 63            | G 2       | 150 | G 2     | 93 | 256 | 255 | 250 | 80  | 76  | 77 |
|       | 80            | G 2       | 150 | G 2     | 93 | 273 | 275 | 265 | 100 | 101 | 96 |

### ◆ 3/2-way Seat Valve Tri-Clamp Ends



| Type  | A   | C    | S   | T   |
|-------|-----|------|-----|-----|
| DN 15 | 116 | 50.5 | 3.5 | 78  |
| DN 20 | 116 | 50.5 | 3.5 | 78  |
| DN 25 | 130 | 50.5 | 3.5 | 88  |
| DN 32 | 146 | 50.5 | 4.5 | 108 |
| DN 40 | 146 | 64   | 4.5 | 108 |
| DN 50 | 205 | 64   | 4.5 | 120 |