

## Ball valves VAPB, VZBA

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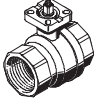
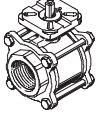
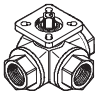
# Ball valves VAPB, VZBA, mechanically actuated

Key features and product range overview

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## Brief description

- 2 and 3-part designs
- Connecting thread to DIN 2999 or DIN ISO 228-1
- PN class to DIN EN 1333
- Mounting flange to ISO 5211
- Length to DIN 3202-M3
- Corrosion and acid resistant designs
- Blow-out proof shaft assembled from inside
- Housing made of brass and high grade-steel
- Ball valves capable of being automated

| Function            | Version                                                                             | Type        | Connection valve <sup>1)</sup>                                                                | Internal dia.<br>[mm]                                           | Flange hole pattern<br>to ISO 5211                                                            | Max. operating<br>pressure<br>[bar]                | → Page/Internet |
|---------------------|-------------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------|
| Ball valve<br>2-way | <b>Brass</b>                                                                        |             |                                                                                               |                                                                 |                                                                                               |                                                    |                 |
|                     |    | VAPB        | Rp1/4<br>Rp3/8<br>Rp1/2<br>Rp3/4<br>Rp1<br>Rp1 1/4<br>Rp1 1/2<br>Rp2<br>Rp2 1/2               | 15<br>15<br>15<br>20<br>25<br>32<br>40<br>50<br>63              | F03<br>F03<br>F03<br>F03<br>F0304<br>F0405<br>F0405<br>F05<br>F07                             | 40<br>40<br>40<br>40<br>40<br>40<br>25<br>25<br>25 | 4               |
| Ball valve<br>2-way | <b>Stainless steel, corrosion-resistant</b>                                         |             |                                                                                               |                                                                 |                                                                                               |                                                    |                 |
|                     |  | VAPB-...-CR | Rp1/4<br>Rp3/8<br>Rp1/2<br>Rp3/4<br>Rp1<br>Rp1 1/4<br>Rp1 1/2<br>Rp2<br>Rp2 1/2<br>Rp3<br>Rp4 | 15<br>15<br>15<br>20<br>25<br>32<br>40<br>50<br>63<br>80<br>100 | F0304<br>F0304<br>F0304<br>F0304<br>F0405<br>F0405<br>F0507<br>F0507<br>F0710<br>F0710<br>F10 | 63                                                 | 7               |
| Ball valve<br>3-way | <b>Stainless steel, corrosion-resistant</b>                                         |             |                                                                                               |                                                                 |                                                                                               |                                                    |                 |
|                     |  | VZBA        | Rp1/4<br>Rp3/8<br>Rp1/2<br>Rp3/4<br>Rp1<br>Rp1 1/4<br>Rp1 1/2<br>Rp2                          | 11.6<br>12.5<br>12.5<br>15<br>20<br>25<br>32<br>40              | F0304<br>F0304<br>F0304<br>F0405<br>F0405<br>F0405<br>F0405<br>F0507                          | 63                                                 | 11              |

1) Cylindrical barrel with female thread to DIN 2999

# Ball valves VAPB, mechanically actuated

Type codes

|  |  |      |   |       |   |   |   |    |   |       |   |    |
|--|--|------|---|-------|---|---|---|----|---|-------|---|----|
|  |  | VAPB | - | 1 1/2 | - | F | - | 63 | - | F0507 | - | CR |
|--|--|------|---|-------|---|---|---|----|---|-------|---|----|

| Type |                                   |
|------|-----------------------------------|
| VAPB | Ball valve for process automation |

| Connection to DIN 2999 |                                   |
|------------------------|-----------------------------------|
| 1/4                    | Barrel with female thread Rp1/4   |
| 3/8                    | Barrel with female thread Rp3/8   |
| 1/2                    | Barrel with female thread Rp1/2   |
| 3/4                    | Barrel with female thread Rp3/4   |
| 1                      | Barrel with female thread Rp1     |
| 1 1/4                  | Barrel with female thread Rp1 1/4 |
| 1 1/2                  | Barrel with female thread Rp1 1/2 |
| 2                      | Barrel with female thread Rp2     |
| 2 1/2                  | Barrel with female thread Rp2 1/2 |
| 3                      | Barrel with female thread Rp3     |
| 4                      | Barrel with female thread Rp4     |

| Connection type |               |
|-----------------|---------------|
| F               | Female thread |

| Nominal pressure of process valve PN |       |
|--------------------------------------|-------|
| 25                                   | PN 25 |
| 40                                   | PN 40 |
| 63                                   | PN 63 |

| Flange hole pattern to ISO 5211 |                                           |
|---------------------------------|-------------------------------------------|
| F03                             | 1 pitch circle diameter of 36 mm          |
| F0304                           | 2 pitch circle diameters of 36 and 42 mm  |
| F0405                           | 2 pitch circle diameters of 42 and 50 mm  |
| F05                             | 1 pitch circle diameter of 50 mm          |
| F0507                           | 2 pitch circle diameters of 50 and 70 mm  |
| F07                             | 1 pitch circle diameter of 70 mm          |
| F0710                           | 2 pitch circle diameters of 70 and 102 mm |
| F10                             | 1 pitch circle diameter of 102 mm         |

| Material |                       |
|----------|-----------------------|
|          | Brass                 |
| CR       | Special steel casting |

# Ball valves VAPB, mechanically actuated

Technical data – Brass design

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-  - Connecting thread  
Rp1/4 ... Rp2 1/2

-  - Flow rate Kv  
5.9 ... 535 m³/h

- Connecting thread to DIN 2999
- Mounting flange to ISO 5211
- PN class to DIN EN 1333
- Blow-out proof shaft assembled from inside
- Centring attachment for simple automation
- O-ring seal for use with a vacuum



| General technical data     |                                 |       |       |       |       |         |         |       |         |
|----------------------------|---------------------------------|-------|-------|-------|-------|---------|---------|-------|---------|
| Connection                 | Rp1/4                           | Rp3/8 | Rp1/2 | Rp3/4 | Rp1   | Rp1 1/4 | Rp1 1/2 | Rp2   | Rp2 1/2 |
| Nominal size               | DN 15                           | DN 15 | DN 15 | DN 20 | DN 25 | DN 32   | DN 40   | DN 50 | DN 63   |
| Valve function             | 2/2                             |       |       |       |       |         |         |       |         |
| Design                     | 2-way ball valve                |       |       |       |       |         |         |       |         |
| Sealing principle          | Soft                            |       |       |       |       |         |         |       |         |
| Actuation type             | Mechanical                      |       |       |       |       |         |         |       |         |
| Switching position display | Slot direction = flow direction |       |       |       |       |         |         |       |         |
| Direction of flow          | Reversible                      |       |       |       |       |         |         |       |         |
| Type of mounting           | In-line installation            |       |       |       |       |         |         |       |         |
| Assembly position          | Any                             |       |       |       |       |         |         |       |         |
| Working port 1, 2          | 1/4                             | 3/8   | 1/2   | 3/4   | 1     | 1 1/4   | 1 1/2   | 2     | 2 1/2   |
| Internal dia. [mm]         | 15                              | 15    | 15    | 20    | 25    | 32      | 40      | 50    | 63      |
| Flow rate Kv [m³/h]        | 5.9                             | 9.4   | 17    | 41    | 70    | 121     | 200     | 292   | 535     |
| Product weight [g]         | 500                             | 500   | 400   | 500   | 800   | 1,300   | 1,900   | 3,100 | 3,100   |

| Operating and environmental conditions                                                              |                                                                |       |       |       |       |        |        |                                    |        |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------|-------|-------|-------|--------|--------|------------------------------------|--------|
| Connection                                                                                          | Rp1/4                                                          | Rp3/8 | Rp1/2 | Rp3/4 | Rp1   | Rp11/4 | Rp11/2 | Rp2                                | Rp21/2 |
| Operating medium                                                                                    | Compressed air, water, neutral gases, neutral fluids<br>Vacuum |       |       |       |       |        |        |                                    |        |
| Nominal pressure of process valve <sup>1)</sup>                                                     | PN 40                                                          | PN 40 | PN 40 | PN 40 | PN 40 | PN 40  | PN 25  | PN 25                              | PN 25  |
| Temperature of medium      [°C]                                                                     | -20 ... +150                                                   |       |       |       |       |        |        |                                    |        |
| Breakaway torque at differential pressure of 0 bar                                                  | 3.1                                                            | 3.1   | 3.1   | 4.6   | 6.5   | 10.8   | 13.5   | 20                                 | 30     |
| Breakaway torque at differential pressure of 10 bar                                                 | 3.5                                                            | 3.5   | 3.5   | 5.1   | 7.2   | 11.9   | 14.9   | 22                                 | 33     |
| Breakaway torque at differential pressure of process valve PN                                       | 5                                                              | 5     | 5     | 6     | 8.5   | 15     | 19     | 29                                 | 45     |
| Corrosion resistance class CRC                                                                      | 1 <sup>2)</sup>                                                |       |       |       |       |        |        |                                    |        |
| CE marking<br>(see declaration of conformity)<br>➔ <a href="http://www.festo.com">www.festo.com</a> | -                                                              |       |       |       |       |        |        | To EU Pressure Equipment Directive |        |
| Approved for use in the food industry                                                               | No                                                             |       |       |       |       |        |        |                                    |        |

1) PN class to DIN EN 1333

2) Corrosion resistance class 1 according to Festo standard 940 070

Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

# Ball valves VAPB, mechanically actuated

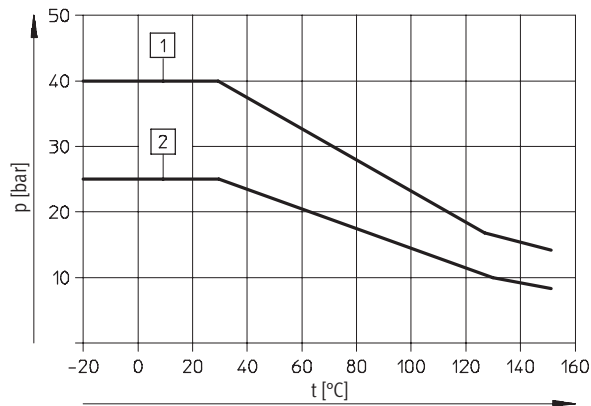
Technical data – Brass design

| Materials         |         | Material information        | Material number                         |
|-------------------|---------|-----------------------------|-----------------------------------------|
| Housing           |         | Brass, nickel-plated        | CW 617 N                                |
| Ball              |         | Brass, hard-chromium plated | up to Rp1½ CW 614 N, above Rp¾ CW 617 N |
| Shaft             |         | Brass, nickel-plated        | CW 617 N                                |
| Seals             | Housing | PTFE, HNBR                  |                                         |
|                   | Shaft   | PTFE                        |                                         |
| Note on materials |         | RoHS-compliant              |                                         |

| Torque <sup>1)</sup> [Nm] |     |     |     |     |     |      |      |     |      |
|---------------------------|-----|-----|-----|-----|-----|------|------|-----|------|
| Connection, valve         | Rp¼ | Rp¾ | Rp½ | Rp¾ | Rp1 | Rp1¼ | Rp1½ | Rp2 | Rp2½ |
| Δp = 0 bar                | 3.1 | 3.1 | 3.1 | 4.6 | 6.5 | 10.8 | 13.5 | 20  | 30   |
| Δp = 10 bar               | 3.5 | 3.5 | 3.5 | 5.1 | 7.2 | 11.9 | 14.9 | 22  | 33   |
| Δp = pN                   | 5   | 5   | 5   | 6   | 8.5 | 15   | 19   | 29  | 45   |

1) Torque required for actuating the ball valve

## Permissible operating pressure p as a function of the temperature of the medium t



- 1 Rp¼ ... Rp1¼
- 2 Rp1½ ... Rp2½

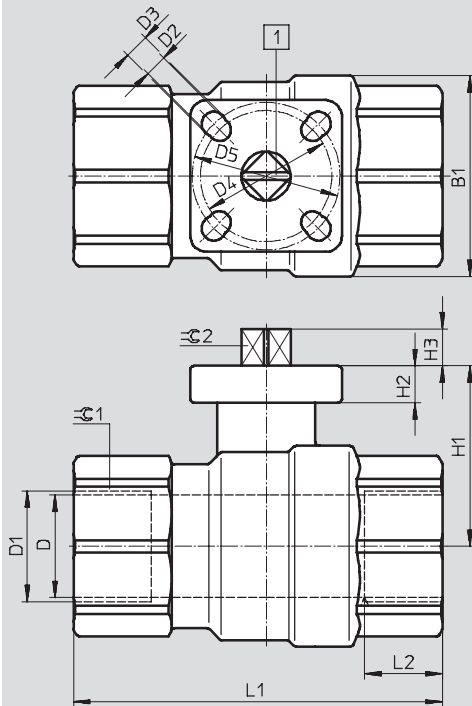
# Ball valves VAPB, mechanically actuated

Technical data – Brass design

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## Dimensions

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### Note

Switching position display: the slot direction **1** corresponds to the flow direction.

| Connection, valve<br>D1 <sup>1)</sup> | B1  | D<br>Ø<br>±0.15 | D2<br>Ø | D3<br>Ø | D4<br>Ø | D5<br>Ø | H1 | H2 | H3   | L1<br>±2 | L2<br>max. | ⌀ 1 | ⌀ 2<br>-0.1 |
|---------------------------------------|-----|-----------------|---------|---------|---------|---------|----|----|------|----------|------------|-----|-------------|
| Rp1/4                                 | 35  | 15              | 5.5     | —       | 36      | —       | 40 | 9  | 9    | 75       | 15         | 26  | 9           |
| Rp3/8                                 | 35  | 15              | 5.5     | —       | 36      | —       | 40 | 9  | 9    | 75       | 15         | 26  | 9           |
| Rp1/2                                 | 35  | 15              | 5.5     | —       | 36      | —       | 40 | 9  | 9    | 75       | 15         | 26  | 9           |
| Rp3/4                                 | 45  | 20              | 5.5     | —       | 36      | —       | 45 | 9  | 9    | 80       | 16         | 32  | 9           |
| Rp1                                   | 55  | 25              | 5.5     | 5.5     | 36      | 42      | 45 | 9  | 9    | 90       | 19         | 41  | 9           |
| Rp1 1/4                               | 65  | 32              | 5.5     | 6.5     | 42      | 50      | 60 | 10 | 11   | 110      | 21         | 50  | 11          |
| Rp1 1/2                               | 75  | 40              | 5.5     | 6.5     | 42      | 50      | 65 | 10 | 11   | 120      | 21         | 55  | 11          |
| Rp2                                   | 90  | 50              | 6.5     | —       | 50      | —       | 75 | 12 | 14   | 140      | 25         | 70  | 14          |
| Rp2 1/2                               | 110 | 65              | 8.5     | —       | 70      | —       | 85 | 10 | 15.5 | 143      | 24         | 83  | 14          |

1) Cylindrical barrel with female thread to DIN 2999

## Ordering data

| Version | Connection, valve <sup>1)</sup> | Part No. | Type                  |
|---------|---------------------------------|----------|-----------------------|
|         | Rp1/4                           | 534 302  | VAPB-1/4-F-40-F03     |
|         | Rp3/8                           | 534 303  | VAPB-3/8-F-40-F03     |
|         | Rp1/2                           | 534 304  | VAPB-1/2-F-40-F03     |
|         | Rp3/4                           | 534 305  | VAPB-3/4-F-40-F03     |
|         | Rp1                             | 534 306  | VAPB-1-F-40-F0304     |
|         | Rp1 1/4                         | 534 307  | VAPB-1 1/4-F-40-F0405 |
|         | Rp1 1/2                         | 534 308  | VAPB-1 1/2-F-25-F0405 |
|         | Rp2                             | 534 309  | VAPB-2-F-25-F05       |
|         | Rp2 1/2                         | 534 310  | VAPB-2 1/2-F-25-F07   |

1) Cylindrical barrel with female thread to DIN 2999

# Ball valves VAPB, mechanically actuated

Technical data – Stainless steel design

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- - Connecting thread  
Rp1/4 ... Rp4

- - Flow rate Kv  
16 ... 1,414 m³/h

- Connecting thread to DIN 2999
- Mounting flange to ISO 5211
- PN class to DIN EN 1333
- Blow-out proof shaft assembled from inside
- Centring attachment for simple automation
- O-ring seal for use with a vacuum



| General technical data               |                                 |       |       |       |       |         |         |       |         |        |        |
|--------------------------------------|---------------------------------|-------|-------|-------|-------|---------|---------|-------|---------|--------|--------|
| Connection                           | Rp1/4                           | Rp3/8 | Rp1/2 | Rp3/4 | Rp1   | Rp1 1/4 | Rp1 1/2 | Rp2   | Rp2 1/2 | Rp3    | Rp4    |
| Nominal size                         | DN 8                            | DN 10 | DN 15 | DN 20 | DN 25 | DN 32   | DN 40   | DN 50 | DN 65   | DN 80  | DN 100 |
| Valve function                       | 2/2                             |       |       |       |       |         |         |       |         |        |        |
| Design                               | 2-way ball valve                |       |       |       |       |         |         |       |         |        |        |
| Sealing principle                    | Soft                            |       |       |       |       |         |         |       |         |        |        |
| Actuation type                       | Pneumatic                       |       |       |       |       |         |         |       |         |        |        |
| Switching position display           | Slot direction = flow direction |       |       |       |       |         |         |       |         |        |        |
| Direction of flow                    | Reversible                      |       |       |       |       |         |         |       |         |        |        |
| Type of mounting                     | In-line installation            |       |       |       |       |         |         |       |         |        |        |
| Assembly position                    | Any                             |       |       |       |       |         |         |       |         |        |        |
| Max. tightening torque, tie rod [Nm] | 9.8                             | 9.8   | 19.6  | 19.6  | 19.6  | 29.4    | 29.4    | 29.4  | 45.1    | 45.1   | 45.1   |
| Internal dia. [mm]                   | 10                              | 12    | 16    | 20    | 25    | 32      | 40      | 50    | 63      | 80     | 100    |
| Flow rate Kv [m³/h]                  | 16                              | 21    | 35    | 46    | 72    | 105     | 170     | 275   | 507     | 905    | 1,414  |
| Product weight [g]                   | 200                             | 200   | 700   | 800   | 1,200 | 1,900   | 2,800   | 4,500 | 9,200   | 13,900 | 22,300 |

| Operating and environmental conditions                                                              |                                                                |       |       |       |     |         |         |     |         |     |     |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------|-------|-------|-----|---------|---------|-----|---------|-----|-----|
| Connection                                                                                          | Rp1/4                                                          | Rp3/8 | Rp1/2 | Rp3/4 | Rp1 | Rp1 1/4 | Rp1 1/2 | Rp2 | Rp2 1/2 | Rp3 | Rp4 |
| Operating medium                                                                                    | Compressed air, water, neutral gases, neutral fluids<br>Vacuum |       |       |       |     |         |         |     |         |     |     |
| Nominal pressure of process valve <sup>1)</sup>                                                     | PN 63                                                          |       |       |       |     |         |         |     |         |     |     |
| Temperature of medium <sup>2)</sup> [°C]                                                            | -10 ... +180                                                   |       |       |       |     |         |         |     |         |     |     |
| Corrosion resistance class CRC                                                                      | 3 <sup>3)</sup>                                                |       |       |       |     |         |         |     |         |     |     |
| CE marking<br>(see declaration of conformity)<br>→ <a href="http://www.festo.com">www.festo.com</a> | To EU Pressure Equipment Directive                             |       |       |       |     |         |         |     |         |     |     |

1) PN class to DIN EN 1333

2) As a function of operating pressure → 8

3) Corrosion resistance class 3 according to Festo standard 940 070

Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface

| Materials | Material information       | Material number |
|-----------|----------------------------|-----------------|
| Housing   | High-alloy stainless steel | 1.4408          |
| Ball      | High-alloy stainless steel | 1.4401          |
| Shaft     | High-alloy stainless steel | 1.4401          |
| Seals     | Housing                    | PTFE            |
|           | Shaft                      | FPM             |

| Torque <sup>1)</sup> [Nm] |       |       |       |       |      |         |         |      |         |      |      |
|---------------------------|-------|-------|-------|-------|------|---------|---------|------|---------|------|------|
| Connection, valve         | Rp1/4 | Rp3/8 | Rp1/2 | Rp3/4 | Rp1  | Rp1 1/4 | Rp1 1/2 | Rp2  | Rp2 1/2 | Rp3  | Rp4  |
| Δp = 0 bar                | 5     | 5     | 7     | 9     | 13   | 20      | 28      | 37   | 49      | 54   | 62   |
| Δp = 10 bar               | 5.5   | 5.5   | 7.7   | 9.9   | 14.3 | 22      | 30.8    | 40.7 | 53.9    | 59.4 | 68.2 |
| Δp = pN                   | 7     | 7     | 10    | 13    | 17   | 28      | 43      | 64   | 69      | 78   | 95   |

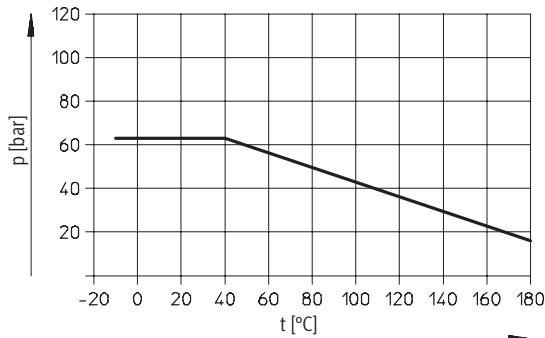
1) Torque required for actuating the ball valve

# Ball valves VAPB, mechanically actuated

Technical data – Stainless steel design

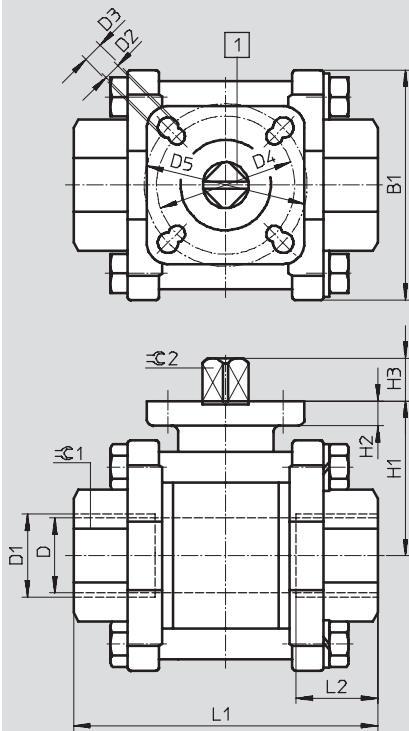
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Permissible operating pressure p as a function of the temperature of the medium t



## Dimensions

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### Note

Switching position display: the slot direction **1** corresponds to the flow direction.

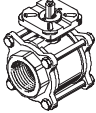
| Connection, valve<br>D1 <sup>1)</sup> | B1  | D<br>Ø<br>±0.15 | D2<br>Ø | D3<br>Ø | D4<br>Ø | D5<br>Ø | H1  | H2 | H3 | L1<br>±2 | L2<br>max. | ≡ 1 | ≡ 2<br>-0.1 |
|---------------------------------------|-----|-----------------|---------|---------|---------|---------|-----|----|----|----------|------------|-----|-------------|
| Rp1/4                                 | 50  | 10              | 5.5     | 5.5     | 36      | 42      | 40  | 9  | 7  | 65       | 14         | 19  | 9           |
| Rp3/8                                 | 50  | 12              | 5.5     | 5.5     | 36      | 42      | 40  | 9  | 7  | 65       | 14         | 24  | 9           |
| Rp1/2                                 | 50  | 15              | 5.5     | 5.5     | 36      | 42      | 40  | 9  | 7  | 75       | 18         | 29  | 9           |
| Rp3/4                                 | 55  | 20              | 5.5     | 5.5     | 36      | 42      | 44  | 9  | 9  | 80       | 16         | 35  | 9           |
| Rp1                                   | 65  | 25              | 5.5     | 6.5     | 42      | 50      | 52  | 10 | 12 | 90       | 18         | 41  | 11          |
| Rp1 1/4                               | 75  | 32              | 5.5     | 6.5     | 42      | 50      | 58  | 10 | 12 | 110      | 21         | 50  | 11          |
| Rp1 1/2                               | 85  | 40              | 6.5     | 9       | 50      | 70      | 68  | 13 | 16 | 120      | 21         | 58  | 14          |
| Rp2                                   | 100 | 50              | 6.5     | 9       | 50      | 70      | 77  | 13 | 16 | 140      | 23         | 73  | 14          |
| Rp2 1/2                               | 170 | 65              | 9       | 11      | 70      | 102     | 98  | 13 | 19 | 185      | 36         | 90  | 17          |
| Rp3                                   | 200 | 80              | 9       | 11      | 70      | 102     | 110 | 13 | 19 | 205      | 40         | 105 | 17          |
| Rp4                                   | 250 | 100             | 11      | —       | 102     | —       | 138 | 20 | 24 | 240      | 40         | 135 | 22          |

1) Cylindrical barrel with female thread to DIN 2999

## Ball valves VAPB, mechanically actuated

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Technical data – Stainless steel design

| Ordering data                                                                     |                                 |          |                          |
|-----------------------------------------------------------------------------------|---------------------------------|----------|--------------------------|
| Version                                                                           | Connection, valve <sup>1)</sup> | Part No. | Type                     |
|  | Rp1/4                           | 542 843  | VAPB-1/4-F-63-F0304-CR   |
|                                                                                   | Rp3/8                           | 542 844  | VAPB-3/8-F-63-F0304-CR   |
|                                                                                   | Rp1/2                           | 534 313  | VAPB-1/2-F-63-F0304-CR   |
|                                                                                   | Rp3/4                           | 534 314  | VAPB-3/4-F-63-F0304-CR   |
|                                                                                   | Rp1                             | 534 315  | VAPB-1-F-63-F0405-CR     |
|                                                                                   | Rp1 1/4                         | 534 316  | VAPB-1 1/4-F-63-F0405-CR |
|                                                                                   | Rp1 1/2                         | 534 317  | VAPB-1 1/2-F-63-F0507-CR |
|                                                                                   | Rp2                             | 534 318  | VAPB-2-F-63-F0507-CR     |
|                                                                                   | Rp2 1/2                         | 534 319  | VAPB-2 1/2-F-63-F0710-CR |
|                                                                                   | Rp3                             | 534 320  | VAPB-3-F-63-F0710-CR     |
|                                                                                   | Rp4                             | 534 321  | VAPB-4-F-63-F10-CR       |

1) Cylindrical barrel with female thread to DIN 2999

# Ball valves VZBA, mechanically actuated

Type codes

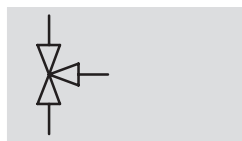
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|                                        |                                          |      |   |     |   |    |   |    |   |   |       |   |   |
|----------------------------------------|------------------------------------------|------|---|-----|---|----|---|----|---|---|-------|---|---|
|                                        |                                          | VZBA | – | R14 | – | 63 | – | 32 | L | – | F0304 | – | R |
| <b>Type</b>                            |                                          |      |   |     |   |    |   |    |   |   |       |   |   |
| VZBA                                   | Ball valve for process automation        |      |   |     |   |    |   |    |   |   |       |   |   |
| <b>Connection to DIN 2999</b>          |                                          |      |   |     |   |    |   |    |   |   |       |   |   |
| R14                                    | Barrel with female thread Rp1/4          |      |   |     |   |    |   |    |   |   |       |   |   |
| R38                                    | Barrel with female thread Rp3/8          |      |   |     |   |    |   |    |   |   |       |   |   |
| R12                                    | Barrel with female thread Rp1/2          |      |   |     |   |    |   |    |   |   |       |   |   |
| R34                                    | Barrel with female thread Rp3/4          |      |   |     |   |    |   |    |   |   |       |   |   |
| R1                                     | Barrel with female thread Rp1            |      |   |     |   |    |   |    |   |   |       |   |   |
| R114                                   | Barrel with female thread Rp1 1/4        |      |   |     |   |    |   |    |   |   |       |   |   |
| R112                                   | Barrel with female thread Rp1 1/2        |      |   |     |   |    |   |    |   |   |       |   |   |
| R2                                     | Barrel with female thread Rp2            |      |   |     |   |    |   |    |   |   |       |   |   |
| <b>Operating pressure</b>              |                                          |      |   |     |   |    |   |    |   |   |       |   |   |
| 63                                     | 63 bar                                   |      |   |     |   |    |   |    |   |   |       |   |   |
| <b>Valve function</b>                  |                                          |      |   |     |   |    |   |    |   |   |       |   |   |
| 32                                     | 3/2-way valve                            |      |   |     |   |    |   |    |   |   |       |   |   |
| <b>Hole in ball</b>                    |                                          |      |   |     |   |    |   |    |   |   |       |   |   |
| L                                      | L-shaped                                 |      |   |     |   |    |   |    |   |   |       |   |   |
| T                                      | T-shaped                                 |      |   |     |   |    |   |    |   |   |       |   |   |
| <b>Flange hole pattern to ISO 5211</b> |                                          |      |   |     |   |    |   |    |   |   |       |   |   |
| F0304                                  | 2 pitch circle diameters of 36 and 42 mm |      |   |     |   |    |   |    |   |   |       |   |   |
| F0405                                  | 2 pitch circle diameters of 42 and 50 mm |      |   |     |   |    |   |    |   |   |       |   |   |
| F0507                                  | 2 pitch circle diameters of 50 and 70 mm |      |   |     |   |    |   |    |   |   |       |   |   |
| <b>Material</b>                        |                                          |      |   |     |   |    |   |    |   |   |       |   |   |
| R                                      | High-alloy stainless steel               |      |   |     |   |    |   |    |   |   |       |   |   |

# Ball valves VZBA, mechanically actuated

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Technical data – Stainless steel design



-  - Connecting thread  
Rp $\frac{1}{4}$  ... Rp2

-  - Flow rate Kv  
4.5 ... 1,000 m<sup>3</sup>/h

- Connecting thread to DIN 2999
- Mounting flange to ISO 5211
- PN class to DIN EN 1333
- Blow-out proof shaft assembled from inside
- Centring attachment for simple automation
- O-ring seal for use with a vacuum



| General technical data     |                                 |                  |                  |                  |       |                   |                   |       |
|----------------------------|---------------------------------|------------------|------------------|------------------|-------|-------------------|-------------------|-------|
| Connection, valve          | Rp $\frac{1}{4}$                | Rp $\frac{3}{8}$ | Rp $\frac{1}{2}$ | Rp $\frac{3}{4}$ | Rp1   | Rp1 $\frac{1}{4}$ | Rp1 $\frac{1}{2}$ | Rp2   |
| Nominal size               | DN 8                            | DN 10            | DN 15            | DN 20            | DN 25 | DN 32             | DN 40             | DN 50 |
| Valve function             | 3/2                             |                  |                  |                  |       |                   |                   |       |
| Design                     | 3-way ball valve                |                  |                  |                  |       |                   |                   |       |
| Sealing principle          | Soft                            |                  |                  |                  |       |                   |                   |       |
| Actuation type             | Mechanical                      |                  |                  |                  |       |                   |                   |       |
| Switching position display | Slot direction = flow direction |                  |                  |                  |       |                   |                   |       |
| Direction of flow          | Reversible                      |                  |                  |                  |       |                   |                   |       |
| Type of mounting           | In-line installation            |                  |                  |                  |       |                   |                   |       |
| Assembly position          | Any                             |                  |                  |                  |       |                   |                   |       |
| Working port 1, 2, 3       | $\frac{1}{4}$                   | $\frac{3}{8}$    | $\frac{1}{2}$    | $\frac{3}{4}$    | 1     | 1 $\frac{1}{4}$   | 1 $\frac{1}{2}$   | 2     |
| Internal dia.              | [mm]                            |                  |                  |                  |       |                   |                   |       |
| Flow rate Kv               | [m <sup>3</sup> /h]             |                  |                  |                  |       |                   |                   |       |
| Type L <sup>1)</sup>       | 4.5                             | 4.5              | 4.7              | 5.1              | 11.8  | 19.6              | 33.2              | 53.7  |
| Type T <sup>2)</sup>       | 8                               | 8                | 8.3              | 8.3              | 22.4  | 36.5              | 62                | 100   |
| Type T <sup>3)</sup>       | 4.5                             | 4.5              | 4.8              | 4.8              | 10.9  | 18                | 30                | 48.8  |
| Product weight             | [g]                             |                  |                  |                  |       |                   |                   |       |
|                            | 700                             | 700              | 700              | 1,000            | 1,600 | 2,800             | 3,800             | 7,400 |

- 1) Ball with L-shaped hole
- 2) Ball with T-shaped hole, straight flow
- 3) Ball with T-shaped hole, flow around corner

| Operating and environmental conditions             |                                                                |                  |                  |                  |     |                   |                   |     |
|----------------------------------------------------|----------------------------------------------------------------|------------------|------------------|------------------|-----|-------------------|-------------------|-----|
| Connection, valve                                  | Rp $\frac{1}{4}$                                               | Rp $\frac{3}{8}$ | Rp $\frac{1}{2}$ | Rp $\frac{3}{4}$ | Rp1 | Rp1 $\frac{1}{4}$ | Rp1 $\frac{1}{2}$ | Rp2 |
| Operating medium                                   | Compressed air, water, neutral gases, neutral fluids<br>Vacuum |                  |                  |                  |     |                   |                   |     |
| Nominal pressure of process valve <sup>1)</sup>    | PN 63                                                          |                  |                  |                  |     |                   |                   |     |
| Temperature of medium <sup>2)</sup>                | [°C]                                                           |                  |                  |                  |     |                   |                   |     |
|                                                    | -10 ... +140                                                   |                  |                  |                  |     |                   |                   |     |
| Corrosion resistance class CRC                     | 3 <sup>3)</sup>                                                |                  |                  |                  |     |                   |                   |     |
| CE marking (see declaration of conformity)         | To EU Pressure Equipment Directive                             |                  |                  |                  |     |                   |                   |     |
| → <a href="http://www.festo.com">www.festo.com</a> |                                                                |                  |                  |                  |     |                   |                   |     |

- 1) PN class to DIN EN 1333
- 2) As a function of operating pressure → 12
- 3) Corrosion resistance class 3 according to Festo standard 940 070  
Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

# Ball valves VZBA, mechanically actuated

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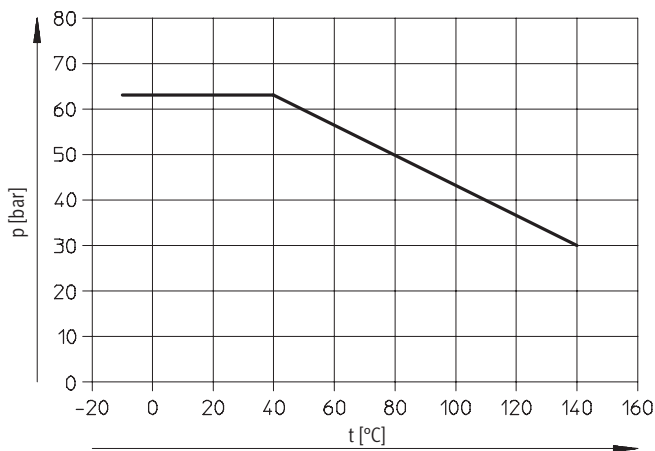
Technical data – Stainless steel design

| Materials |                                                |
|-----------|------------------------------------------------|
| Housing   | High-alloy stainless steel                     |
| Ball      | High-alloy stainless steel                     |
| Shaft     | High-alloy stainless steel                     |
| Seals     | Polytetrafluoroethylene, fibreglass reinforced |

| Torque <sup>1)</sup> at 63 bar |       |       |       |       |     |         |         |     |    |
|--------------------------------|-------|-------|-------|-------|-----|---------|---------|-----|----|
| Connection, valve              | Rp1/4 | Rp3/8 | Rp1/2 | Rp3/4 | Rp1 | Rp1 1/4 | Rp1 1/2 | Rp2 |    |
| $\Delta p = 1 \text{ bar}$     | [Nm]  | 8     | 8     | 8     | 11  | 18      | 26      | 32  | 37 |

1) Torque required for actuating the ball valve

## Permissible operating pressure p as a function of the temperature of the medium t



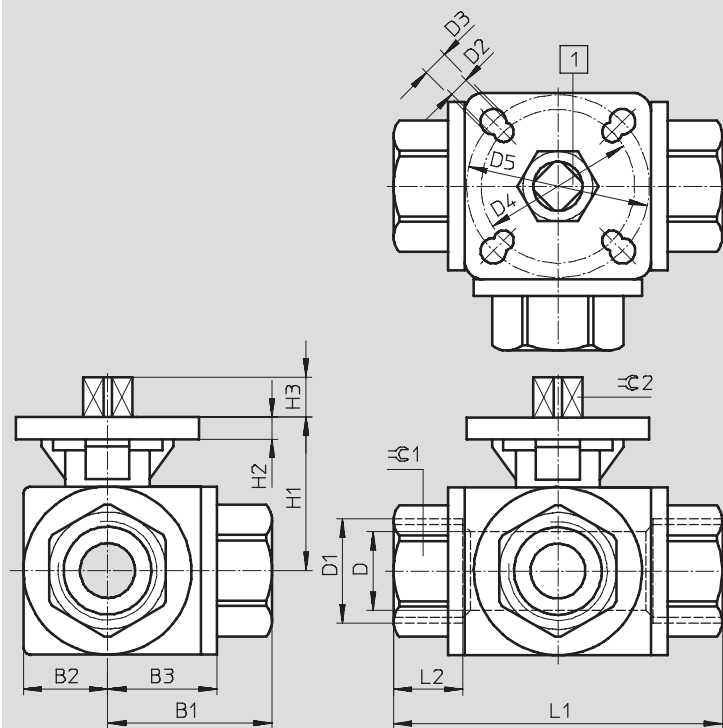
# Ball valves VZBA, mechanically actuated

Technical data – Stainless steel design

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## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

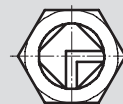


1) Switching position display

T = T-shaped hole



L = L-shaped hole



### Note

Switching position display: the slot direction corresponds to the flow direction.

| Connection, valve<br>D1 <sup>1)</sup> | B1 | B2   | B3   | D<br>Ø | D2<br>Ø | D3<br>Ø | D4<br>Ø | D5<br>Ø | H1 | H2  | H3   | L1  | L2   | ⌀ 1 | ⌀ 2  |
|---------------------------------------|----|------|------|--------|---------|---------|---------|---------|----|-----|------|-----|------|-----|------|
|                                       | ±2 |      |      | ±0.15  |         |         |         |         |    |     |      | ±2  |      |     | -0.1 |
| Rp1/4                                 | 40 | 22.4 | 30   | 11.6   | 5.5     | 5.5     | 36      | 42      | 36 | 6   | 7.4  | 80  | 16   | 24  | 9    |
| Rp3/8                                 | 40 | 22.4 | 30   | 12.5   | 5.5     | 5.5     | 36      | 42      | 36 | 6   | 7.4  | 80  | 16   | 24  | 9    |
| Rp1/2                                 | 40 | 22   | 31   | 12.5   | 5.5     | 5.5     | 36      | 42      | 36 | 6   | 8.4  | 80  | 17.4 | 27  | 9    |
| Rp3/4                                 | 44 | 23   | 34.7 | 15     | 5.5     | 6.5     | 42      | 50      | 42 | 6.2 | 12   | 88  | 20   | 34  | 11   |
| Rp1                                   | 51 | 32   | 40   | 20     | 5.5     | 6.5     | 42      | 50      | 47 | 6.3 | 12   | 100 | 20.5 | 41  | 11   |
| Rp1 1/4                               | 62 | 36   | 47.2 | 25     | 5.5     | 6.5     | 42      | 50      | 53 | 6.7 | 11   | 123 | 24   | 50  | 11   |
| Rp1 1/2                               | 71 | 43   | 53   | 32     | 5.5     | 6.5     | 42      | 50      | 59 | 7   | 10.8 | 142 | 26.6 | 58  | 11   |
| Rp2                                   | 86 | 55   | 63.5 | 40     | 6.5     | 8.5     | 50      | 70      | 66 | 6.2 | 15.8 | 171 | 27.6 | 70  | 14   |

1) Cylindrical barrel with female thread to DIN 2999

## Ordering data

| Version | Connection, valve <sup>1)</sup> | L-shaped ball valve |                          | T-shaped ball valve |                          |
|---------|---------------------------------|---------------------|--------------------------|---------------------|--------------------------|
|         |                                 | Part No.            | Type                     | Part No.            | Type                     |
|         | Rp1/4                           | 542 005             | VZBA-R14-63-32L-F0304-R  | 542 006             | VZBA-R14-63-32T-F0304-R  |
|         | Rp3/8                           | 542 007             | VZBA-R38-63-32L-F0304-R  | 542 008             | VZBA-R38-63-32T-F0304-R  |
|         | Rp1/2                           | 542 009             | VZBA-R12-63-32L-F0304-R  | 542 010             | VZBA-R12-63-32T-F0304-R  |
|         | Rp3/4                           | 542 011             | VZBA-R34-63-32L-F0405-R  | 542 012             | VZBA-R34-63-32T-F0405-R  |
|         | Rp1                             | 542 013             | VZBA-R1-63-32L-F0405-R   | 542 014             | VZBA-R1-63-32T-F0405-R   |
|         | Rp1 1/4                         | 542 015             | VZBA-R114-63-32L-F0405-R | 542 016             | VZBA-R114-63-32T-F0405-R |
|         | Rp1 1/2                         | 542 017             | VZBA-R112-63-32L-F0405-R | 542 018             | VZBA-R112-63-32T-F0405-R |
|         | Rp2                             | 542 019             | VZBA-R2-63-32L-F0507-R   | 542 020             | VZBA-R2-63-32T-F0507-R   |

1) Cylindrical barrel with female thread to DIN 2999

# Hand lever for ball valves

Accessory

**FESTO**

## Hand lever VAOH

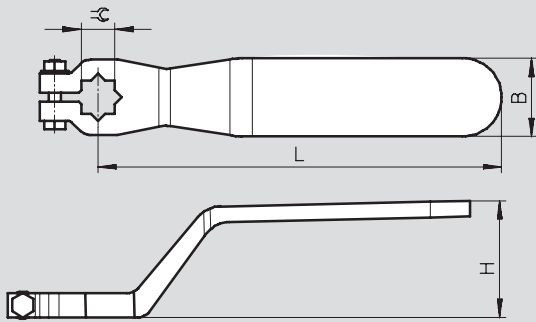
Note on materials:

- High-alloy stainless steel
- Free of copper and PTFE
- Contains paint wetting impairment substances



## Dimensions and ordering data

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



| For connection  | ±0,5 | L<br>±10 | H<br>±5 | B<br>±5 | Weight<br>[g] | Part No. | Type       |
|-----------------|------|----------|---------|---------|---------------|----------|------------|
| Rp1/4 ... Rp3/4 | 9    | 120      | 36      | 21      | 100           | 542 702  | VAOH-9-H9  |
| Rp1 ... Rp1 1/4 | 11   | 140      | 40      | 26      | 200           | 542 703  | VAOH-11-H9 |
| Rp1 1/2 ... Rp2 | 14   | 180      | 46      | 31      | 300           | 542 704  | VAOH-14-H9 |
| Rp2 1/2 ... Rp3 | 17   | 240      | 55      | 36      | 450           | 542 705  | VAOH-17-H9 |
| Rp4             | 22   | 280      | 70      | 36      | 750           | 542 706  | VAOH-22-H9 |

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