

## One-way flow control valve, in-line installation GR

**FESTO**



## Characteristics

### At a glance

One-way flow control valve for in-line installation.

### Diagrams

[Link](#) [online](#)



The diagrams shown in this document are also available online. These can be used to display precise values.

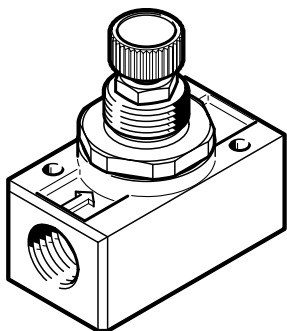
### Pneumatic connection

Variants:

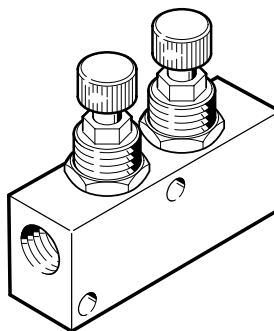
- Male thread (metal housing)
- Plug connection (plastic housing)

### Number of one-way flow control valves

[ ] 1 valve



[X2] 2 valves



Two one-way flow control valves are connected to each other in a housing. This allows the flow and return speed to be set separately for single- or double-acting compact cylinders, for example.

## Type code

| 001        | Series                     |  |
|------------|----------------------------|--|
| <b>GR</b>  | One-way flow control valve |  |
| <b>GRA</b> | One-way flow control valve |  |

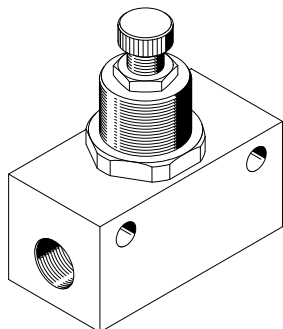
| 002         | Pneumatic connection   |  |
|-------------|------------------------|--|
| <b>M3</b>   | Male thread M3         |  |
| <b>M5</b>   | Male thread M5         |  |
| <b>1/8</b>  | Male thread G1/8       |  |
| <b>1/4</b>  | Male thread G1/4       |  |
| <b>3/8</b>  | Male thread G3/8       |  |
| <b>1/2</b>  | Male thread G1/2       |  |
| <b>3/4</b>  | Male thread G3/4       |  |
| <b>QS-3</b> | Push-in connector 3 mm |  |
| <b>QS-4</b> | Push-in connector 4 mm |  |
| <b>QS-6</b> | Push-in connector 6 mm |  |
| <b>QS-8</b> | Push-in connector 8 mm |  |

| 003       | Number of one-way flow control valves |  |
|-----------|---------------------------------------|--|
|           | 1 valve                               |  |
| <b>X2</b> | 2 valves                              |  |

| 004      | Generation |  |
|----------|------------|--|
|          | None       |  |
| <b>B</b> | Series B   |  |

# Datasheet

## Technical data – Male thread

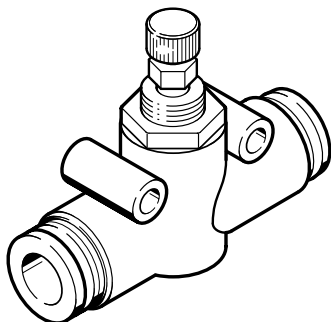


|                                                         |                                                                                            |                                              |                   |                                              |                                               |                                                     |                       |                                                  |                  |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------|-------------------|----------------------------------------------|-----------------------------------------------|-----------------------------------------------------|-----------------------|--------------------------------------------------|------------------|
| Pneumatic connection, port 2                            | M3                                                                                         | M5                                           | G1/8              | G1/4                                         | G3/4                                          | Female thread<br>G1/4                               | Female thread<br>G3/8 | Female thread<br>G1/2                            |                  |
| Pneumatic connection, port 1                            | M3                                                                                         | M5                                           | G1/8              | G1/4                                         | G3/4                                          | Female thread<br>G1/4                               | Female thread<br>G3/8 | Female thread<br>G1/2                            |                  |
| Nominal size                                            | –                                                                                          | 2 mm                                         | 3 mm              | –                                            |                                               |                                                     |                       |                                                  |                  |
| Valve function                                          | One-way flow control function                                                              |                                              |                   |                                              |                                               |                                                     |                       |                                                  |                  |
| Mounting position                                       | optional                                                                                   |                                              |                   |                                              |                                               |                                                     |                       |                                                  |                  |
| Adjustment component                                    | Knurled screw                                                                              |                                              |                   |                                              |                                               |                                                     |                       |                                                  |                  |
| Type of mounting                                        | Either:, Front panel mounting, With through-hole                                           |                                              |                   | In-line installa-<br>tion                    | Front panel<br>mounting, With<br>through-hole | Either:, Front panel mounting, With<br>through-hole |                       | With through-<br>hole                            |                  |
| Standard nominal flow rate in<br>flow control direction | 29.5 l/min                                                                                 | 95 ... 115 l/min                             | 205 ... 210 l/min | 370 l/min                                    | 3,300 l/min                                   | 420 l/min                                           | 1,010 l/min           | 1,620 l/min                                      |                  |
| Standard nominal flow rate in<br>blocked direction      | 26 ... 27.5 l/min                                                                          | 75 ... 137 l/min                             | 180 ... 275 l/min | 150 l/min                                    | 4,800 l/min                                   | 780 l/min                                           | 1,150 l/min           | 2,760 l/min                                      |                  |
| Operating pressure                                      | 0.3 ... 8 bar                                                                              | 0.5 ... 10 bar                               |                   |                                              | 0.3 ... 15 bar                                | 0.1 ... 10 bar                                      |                       |                                                  |                  |
| Ambient temperature                                     | -10 ... 60°C                                                                               | -20 ... 60°C                                 |                   | -20 ... 75°C                                 | -10 ... 60°C                                  | -20 ... 75°C                                        |                       |                                                  |                  |
| Media temperature                                       | -10 ... 60°C                                                                               | -20 ... 60°C                                 |                   | -20 ... 75°C                                 | -10 ... 60°C                                  | -20 ... 75°C                                        |                       |                                                  |                  |
| Operating medium                                        | Compressed air<br>to ISO 8573-<br>1:2010 [6:4:4]                                           | Compressed air to ISO 8573-1:2010<br>[7:4:4] |                   | Compressed air to ISO 8573-1:2010<br>[7:-:-] |                                               | Compressed air to ISO 8573-1:2010<br>[7:4:4]        |                       | Compressed air<br>to ISO 8573-<br>1:2010 [7:-:-] |                  |
| Note on operating and pilot<br>medium                   | Lubricated operation possible (in which case lubricated operation will always be required) |                                              |                   |                                              |                                               |                                                     |                       |                                                  |                  |
| ATEX declaration <sup>1)</sup>                          | For zone 1, 2, 21, 22, The information in the certificate must be observed!                |                                              |                   |                                              |                                               |                                                     |                       |                                                  |                  |
| Material housing                                        | Wrought aluminium alloy                                                                    |                                              |                   |                                              |                                               | Die-cast zinc                                       |                       |                                                  |                  |
| Material seals                                          | NBR                                                                                        |                                              |                   |                                              | –                                             | NBR                                                 | –                     |                                                  |                  |
| Material sleeve                                         | –                                                                                          | POM                                          |                   | –                                            |                                               |                                                     |                       |                                                  |                  |
| Material adjusting screw                                | Brass                                                                                      | High-alloy steel                             |                   | Steel, Galvanised                            | –                                             |                                                     | Brass                 |                                                  |                  |
| Material nut                                            | –                                                                                          | Wrought aluminium alloy                      |                   |                                              | –                                             |                                                     |                       |                                                  | Galvanised steel |
| Note on materials                                       | RoHS-compliant                                                                             |                                              |                   |                                              |                                               |                                                     |                       |                                                  |                  |
| LABS (PWIS) conformity                                  | VDMA24364-B1/B2-L                                                                          |                                              |                   |                                              |                                               |                                                     |                       |                                                  |                  |

1) More information [www.festo.com/catalogue/gr](http://www.festo.com/catalogue/gr) → Support/Downloads.

## Datasheet

## Technical data – Push-in connector QS

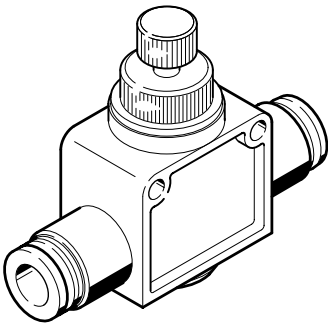


|                                                      |                                                                                            |           |           |           |
|------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------|-----------|-----------|
| Pneumatic connection, port 2                         | QS-3                                                                                       | QS-4      | QS-6      | QS-8      |
| Pneumatic connection, port 1                         | QS-3                                                                                       | QS-4      | QS-6      | QS-8      |
| Valve function                                       | One-way flow control function                                                              |           |           |           |
| Mounting position                                    | optional                                                                                   |           |           |           |
| Adjustment component                                 | Knurled screw                                                                              |           |           |           |
| Type of mounting                                     | Either:, Front panel mounting, With through-hole, With accessories                         |           |           |           |
| Standard nominal flow rate in flow control direction | 85 l/min                                                                                   | 110 l/min | 245 l/min | 265 l/min |
| Standard nominal flow rate in blocked direction      | 120 l/min                                                                                  | 165 l/min | 430 l/min | 500 l/min |
| Operating pressure                                   | 0.2 ... 10 bar                                                                             |           |           |           |
| Ambient temperature                                  | -10 ... 60°C                                                                               |           |           |           |
| Media temperature                                    | -10 ... 60°C                                                                               |           |           |           |
| Operating medium                                     | Compressed air to ISO 8573-1:2010 [7:4:4]                                                  |           |           |           |
| Note on operating and pilot medium                   | Lubricated operation possible (in which case lubricated operation will always be required) |           |           |           |
| ATEX declaration <sup>1)</sup>                       | For zone 1, 2, 21, 22, The information in the certificate must be observed!                |           |           |           |
| Material housing                                     | PA-reinforced                                                                              |           |           |           |
| Material seals                                       | NBR                                                                                        |           |           |           |
| Material adjusting screw                             | High-alloy steel                                                                           |           |           |           |
| Note on materials                                    | RoHS-compliant                                                                             |           |           |           |
| LABS (PWIS) conformity                               | VDMA24364-B1/B2-L                                                                          |           |           |           |

1) More information [www.festo.com/catalogue/gr](http://www.festo.com/catalogue/gr) → Support/Downloads.

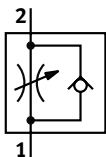
Datasheet

Technical data – Push-in connector QB (NPT – not available on all markets)

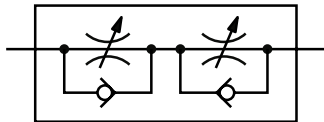


|                                                                               |                                                                                            |                       |                       |                       |                       |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Pneumatic connection, port 2                                                  | QB-5/32                                                                                    | QB-1/4                | QB-5/16               | QB-3/8                | QB-1/2                |
| Pneumatic connection, port 1                                                  | QB-5/32                                                                                    | QB-1/4                | QB-5/16               | QB-3/8                | QB-1/2                |
| Valve function                                                                | One-way flow control function                                                              |                       |                       |                       |                       |
| Type of actuation                                                             | Manual                                                                                     |                       |                       |                       |                       |
| Mounting position                                                             | optional                                                                                   |                       |                       |                       |                       |
| Adjustment component                                                          | Slotted head screw                                                                         |                       |                       |                       |                       |
| Type of mounting                                                              | Either:, In-line installation, With through-hole                                           |                       |                       |                       |                       |
| Standard nominal flow rate in flow control direction                          | 7.63 cfm                                                                                   | 21.1 cfm              | 35.91 cfm             | 51.18 cfm             | 62.85 cfm             |
| Standard nominal flow rate in blocked direction                               | 2.693 ... 7.632 cfm                                                                        | 22.446 ... 24.69 cfm  | 25.588 ... 36.362 cfm | 36.362 ... 52.523 cfm | 48.483 ... 57.012 cfm |
| Standard flow rate in flow control direction 0.6->0 MPa (6->0 bar, 87->0 psi) | 13.5 cfm                                                                                   | 35 cfm                | 60.6 cfm              | 85.3 cfm              | 104.2 cfm             |
| Standard flow rate in non-return direction 0.6->0 MPa (6->0 bar, 87->0 psi)   | 10.774 ... 14.365 cfm                                                                      | 47.585 ... 48.034 cfm | 61.95 ... 62.399 cfm  | 92.028 ... 97.864 cfm | 74.52 ... 90.681 cfm  |
| Operating pressure                                                            | -13.793 ... 116.001 psi                                                                    |                       |                       |                       |                       |
| Ambient temperature                                                           | 0 ... 60°C                                                                                 |                       |                       |                       |                       |
| Media temperature                                                             | 32 ... 140°F                                                                               |                       |                       |                       |                       |
| Operating medium                                                              | Compressed air to ISO 8573-1:2010 [7:4:4]                                                  |                       |                       |                       |                       |
| Note on operating and pilot medium                                            | Lubricated operation possible (in which case lubricated operation will always be required) |                       |                       |                       |                       |
| Material housing                                                              | PBT-reinforced                                                                             |                       |                       |                       |                       |
| Material seals                                                                | NBR                                                                                        |                       |                       |                       |                       |
| Material adjusting screw                                                      | Brass, Nickel-plated                                                                       |                       |                       |                       |                       |
| Note on materials                                                             | RoHS-compliant                                                                             |                       |                       |                       |                       |
| LABS (PWIS) conformity                                                        | VDMA24364 zone III                                                                         |                       |                       |                       |                       |

Function one-way flow control valve GR/GRA

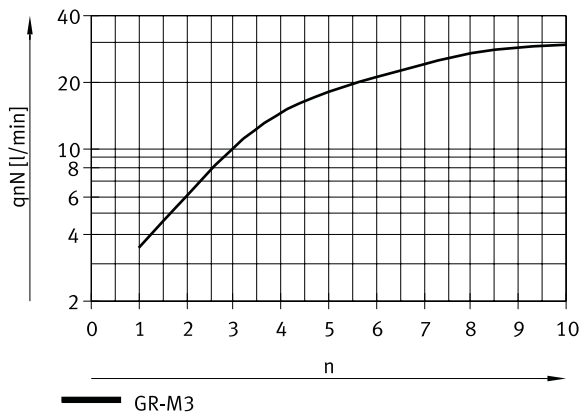
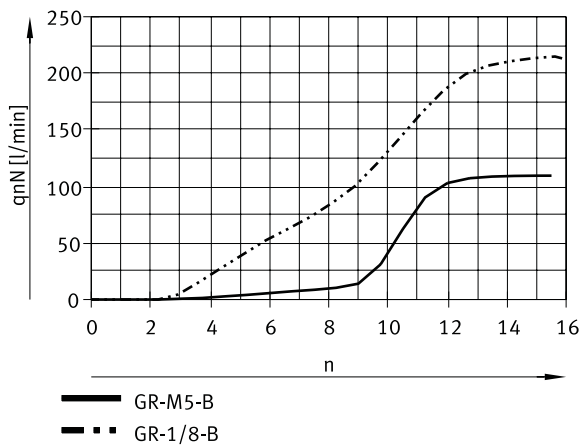
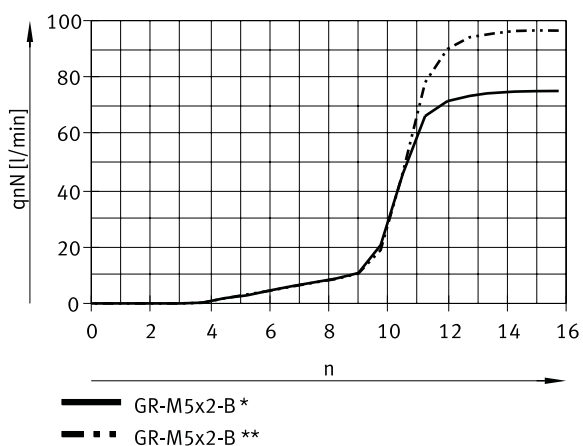


Function one-way flow control valve GR-...X2



Two one-way flow control valves are combined in one housing.  
This allows the advance and return speeds to be set separately for single- or double-acting compact cylinders, for example.

## Datasheet

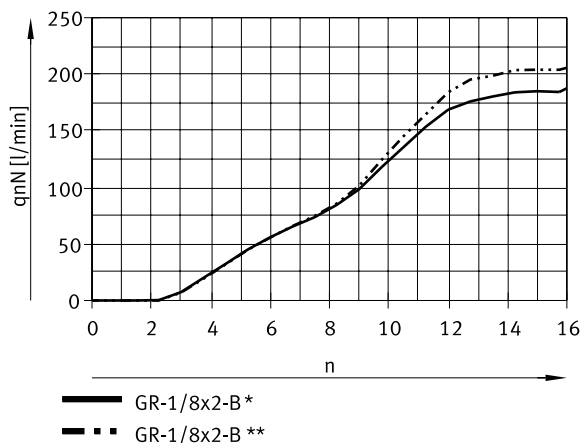
Standard nominal flow rate  $q_N$  at 6 → 5 bar as a function of spindle rotations  $n$  (GR-M3)Standard nominal flow rate  $q_N$  at 6 → 5 bar as a function of spindle rotations  $n$  (GR-M5-B; GR-1/8-B)Standard nominal flow rate  $q_N$  at 6 → 5 bar as a function of spindle rotations  $n$  (GR-M5X2-B)

\* adjusting screw closed

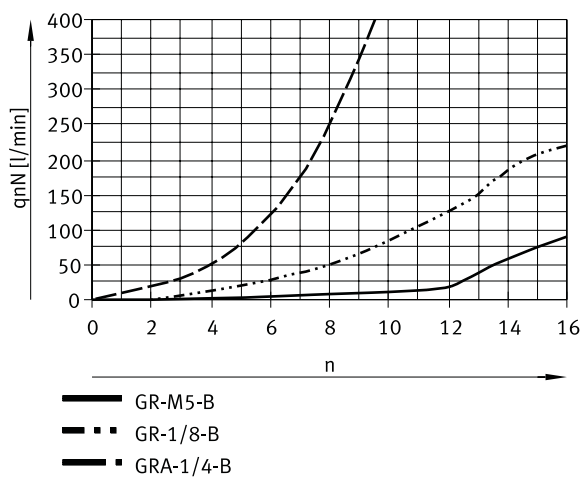
\*\* adjusting screw open

## Datasheet

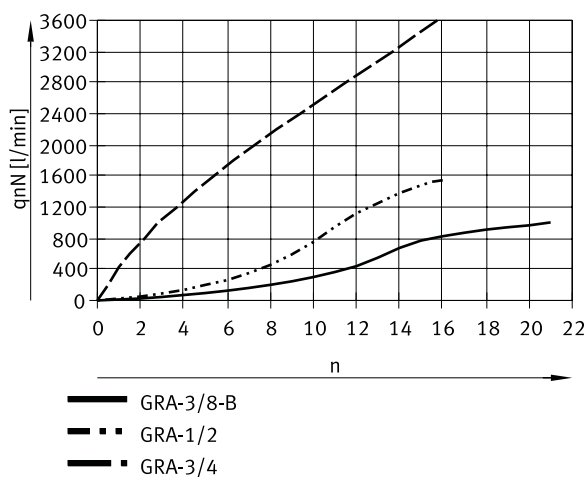
Standard nominal flow rate  $q_{nN}$  at 6 → 5 bar as a function of spindle rotations  $n$  (GR-1/8X2-B)



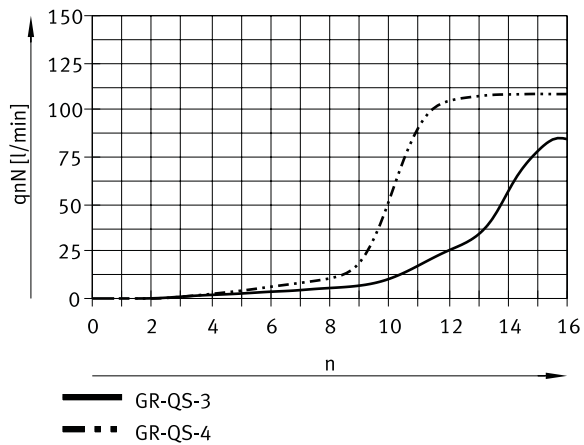
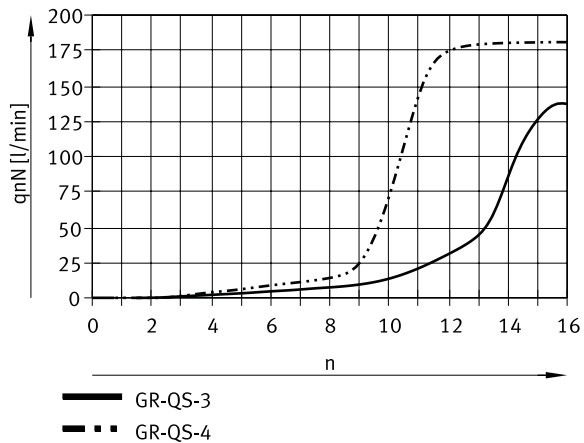
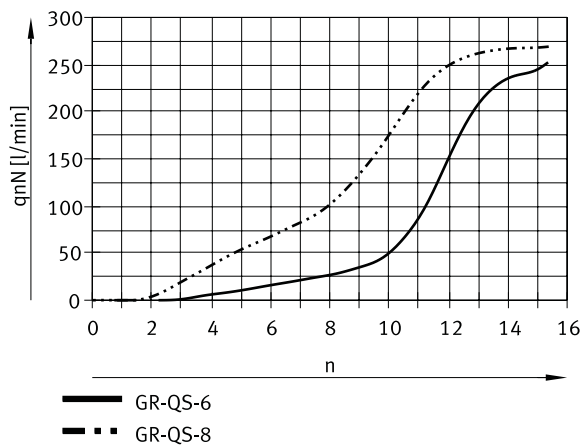
Standard nominal flow rate  $q_{nN}$  at 6 → 5 bar as a function of spindle rotations  $n$  (GRA-1/4-B; GR-1/8-B; GR-M5-B)



Standard nominal flow rate  $q_{nN}$  at 6 → 5 bar as a function of spindle rotations  $n$  (GR-3/8-B; GR-1/2; GR-3/4)

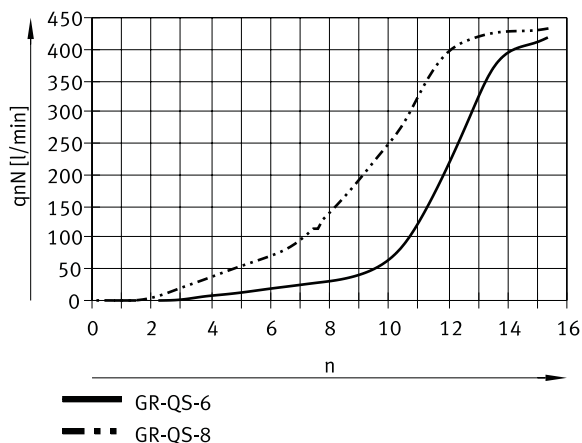


## Datasheet

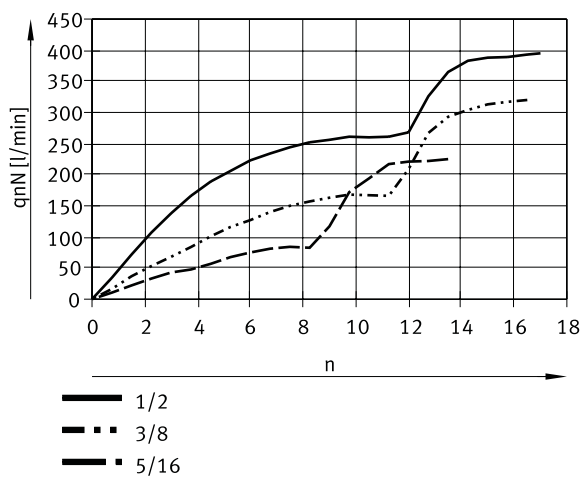
Standard nominal flow rate  $q_{nN}$  at 6 → 5 bar as a function of spindle rotations  $n$  (GR-QS-3; GR-QS-4)Standard flow rate  $q_n$  at 6 → 0 bar as a function of spindle rotations  $n$  (GR-QS-3; GR-QS-4)Standard nominal flow rate  $q_{nN}$  at 6 → 5 bar as a function of spindle rotations  $n$  (GR-QS-6; GR-QS-8)

## Datasheet

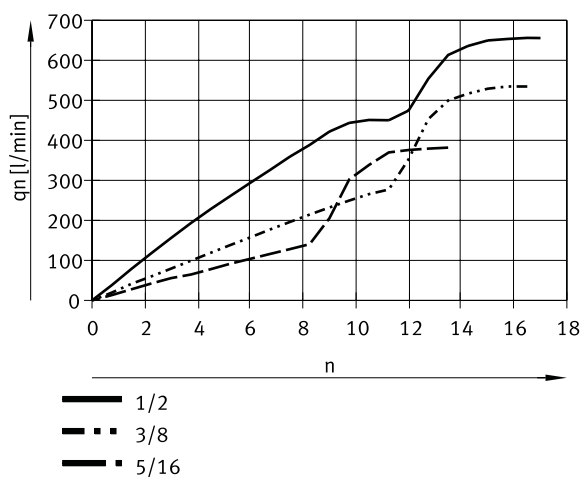
Standard flow rate  $q_N$  at 6 → 0 bar as a function of spindle rotations  $n$  (GR-QS-6; GR-QS-8)



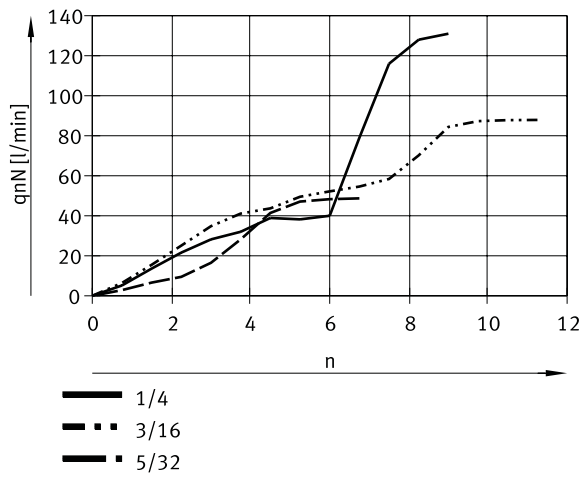
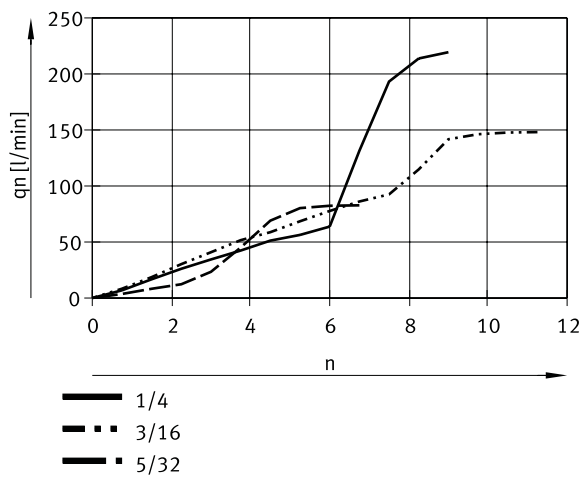
Standard nominal flow rate  $q_N$  at 6 → 5 bar as a function of spindle rotations  $n$  (GR-QB-1/2-U, GR-QB-3/8-U, GR-QB-5/16-U)



Standard flow rate  $q_N$  at 6 → 0 bar as a function of spindle rotations  $n$  (GR-QB-1/2-U, GR-QB-3/8-U, GR-QB-5/16-U)

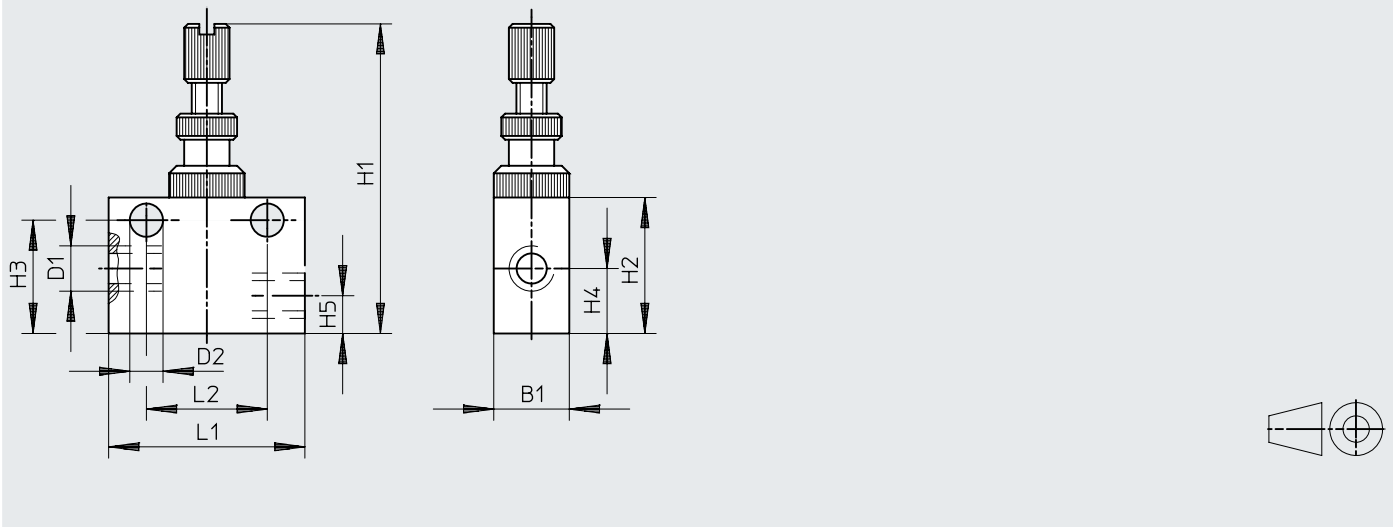


## Datasheet

Standard nominal flow rate  $q_{nN}$  at  $6 \rightarrow 5$  bar as a function of spindle rotations  $n$  (GR-QB-1/4-U, GR-QB-3/16-U, GR-QB-5/32-U)Standard flow rate  $q_n$  at  $6 \rightarrow 0$  bar as a function of spindle rotations  $n$  (GR-QB-1/4-U, GR-QB-3/16-U, GR-QB-5/32-U)

Dimensions

Dimensions – GR-M3 Download CAD data [www.festo.com](http://www.festo.com)

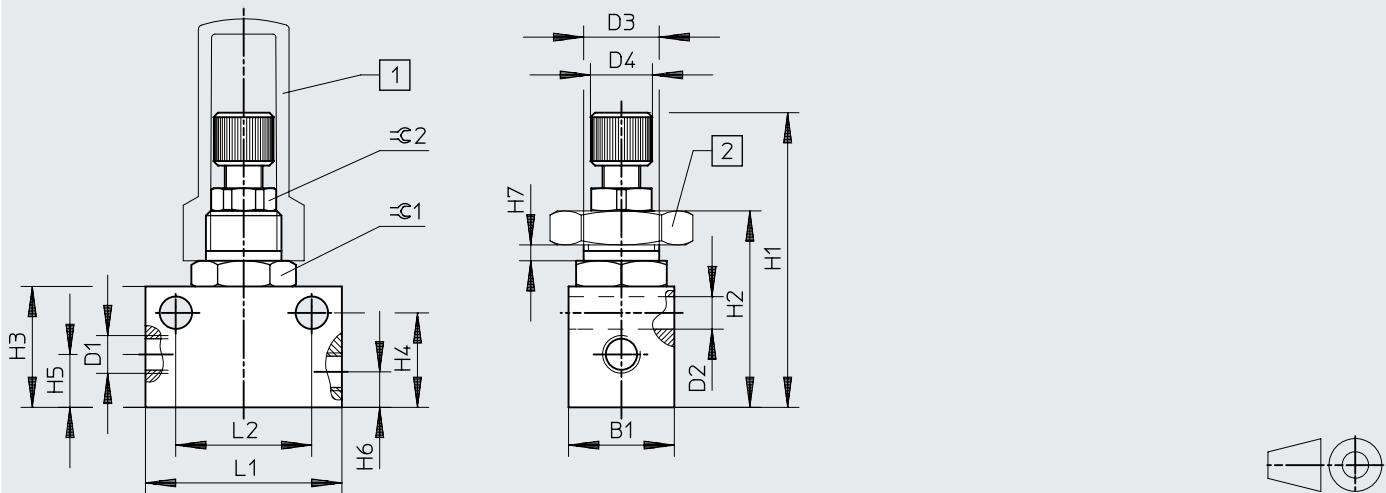


|       | B1 | D1 | D2<br>Ø | H1   |      | H2 | H3  | H4  | H5  | L1 | L2  |
|-------|----|----|---------|------|------|----|-----|-----|-----|----|-----|
|       |    |    |         | min. | max. |    |     |     |     |    |     |
| GR-M3 | 6  | M3 | 2,2     | 18   | 20   | 9  | 7,5 | 4,3 | 2,5 | 13 | 8,5 |

Dimensions

Dimensions – GR-M5-B, GR-1/8-B

Download CAD data [www.festo.com](http://www.festo.com)

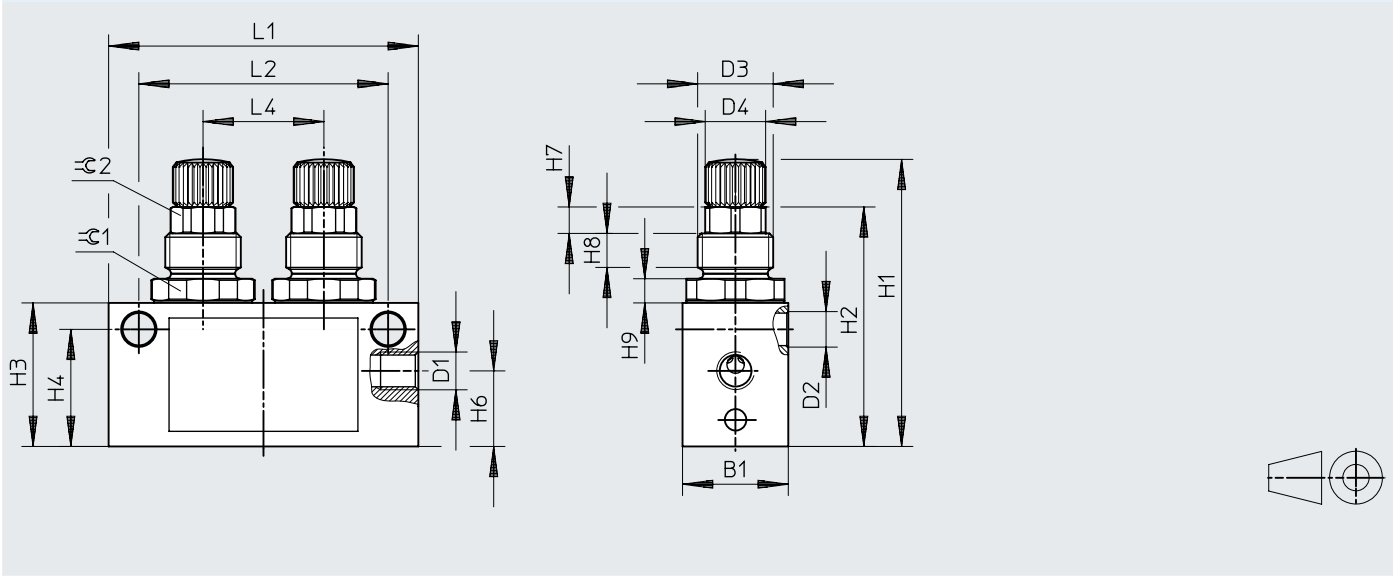


- [1] Cover cap GRK
- [2] Hex nut GRM

|          | D1   | B1 | D2<br>ø | D3    | D4 | H1   |      | H2   | H3 | H4   | H5  | H6  | H7<br>max. | L1 | L2<br>±0,1 | ≙ 1 | ≙ 2 |
|----------|------|----|---------|-------|----|------|------|------|----|------|-----|-----|------------|----|------------|-----|-----|
|          |      |    |         |       |    | min. | max. |      |    |      |     |     |            |    |            |     |     |
| GR-M5-B  | M5   | 14 | 4,3     | M10x1 | 8  | 35   | 41   | 25,2 | 16 | 12,5 | 7   | 4,7 | 2,5        | 26 | 18         | 13  | 8   |
| GR-1/8-B | G1/8 | 16 | 4,3     | M12x1 | 8  | 40,6 | 46,5 | 30,8 | 22 | 17,5 | 9,2 | 9   | 3,5        | 32 | 24         | 14  | 8   |

Dimensions

Dimensions – GR-M5X2-B Download CAD data [www.festo.com](http://www.festo.com)



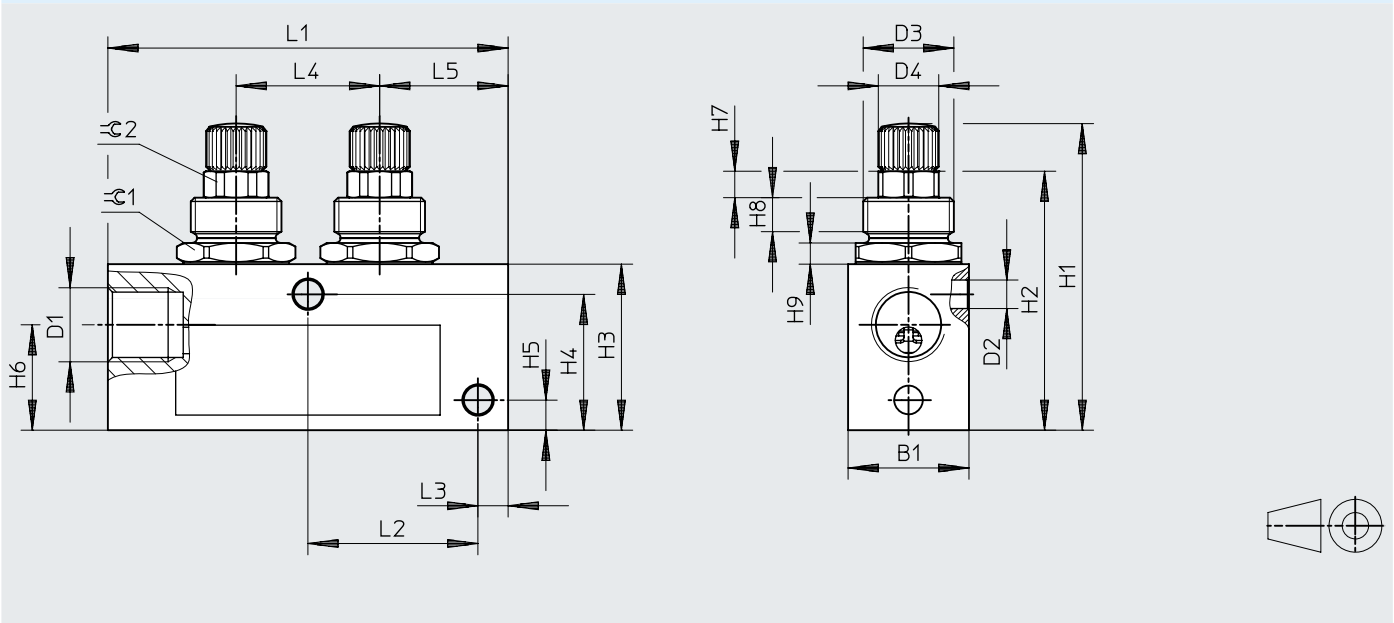
|           | D1 | B1 | D2<br>Ø             | D3    | D4 | H1   |      | H2   | H3 | H4   |
|-----------|----|----|---------------------|-------|----|------|------|------|----|------|
|           |    |    |                     |       |    | min. | max. |      |    |      |
| GR-M5X2-B | M5 | 14 | 4,7 <sub>+0,1</sub> | M10x1 | 8  | 38   | 43,5 | 31,7 | 19 | 15,5 |

|           | H6 | H7  | H8  | H9  | L1                 | L2                 | L4                 | ≈C 1 | ≈C 2 |
|-----------|----|-----|-----|-----|--------------------|--------------------|--------------------|------|------|
| GR-M5X2-B | 10 | 3,5 | 4,5 | 3,2 | 41 <sub>+0,5</sub> | 33 <sub>+0,2</sub> | 16 <sub>+0,2</sub> | 13   | 8    |

Dimensions

Dimensions – GR-1/8X2-B

Download CAD data [www.festo.com](http://www.festo.com)



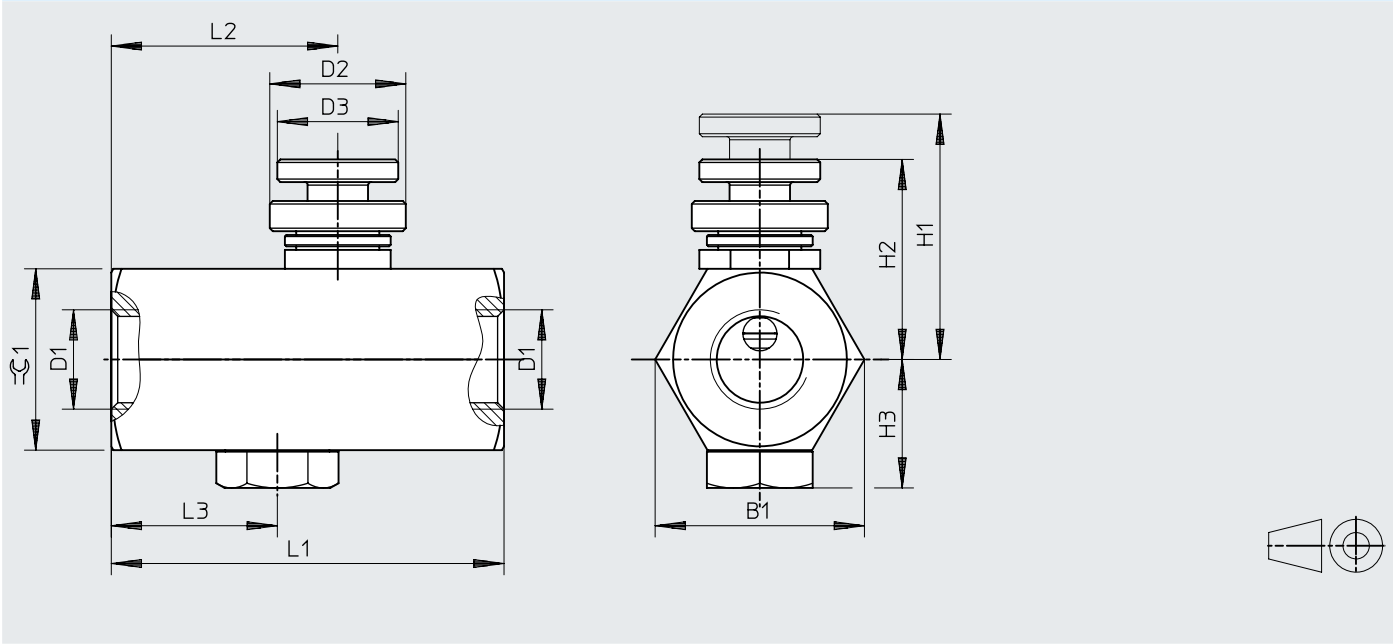
|            | D1   | B1 | D2<br>ø             | D3    | D4 | H1   |      | H2   | H3 | H4 | H5 |
|------------|------|----|---------------------|-------|----|------|------|------|----|----|----|
|            |      |    |                     |       |    | min. | max. |      |    |    |    |
| GR-1/8X2-B | G1/8 | 16 | 3,8 <sub>+0,1</sub> | M12x1 | 8  | 40,6 | 46,2 | 34,3 | 22 | 18 | 4  |

|            | H6 | H7  | H8  | H9  | L1                 | L2                    | L3 | L4                  | L5 | ≈G 1 | ≈G 2 |
|------------|----|-----|-----|-----|--------------------|-----------------------|----|---------------------|----|------|------|
| GR-1/8X2-B | 14 | 3,5 | 4,5 | 2,8 | 53 <sub>+0,5</sub> | 22,5 <sub>±0,15</sub> | 4  | 19 <sub>±0,15</sub> | 17 | 14   | 8    |

Dimensions

Dimensions – GR-1/4 Download CAD data [www.festo.com](http://www.festo.com)

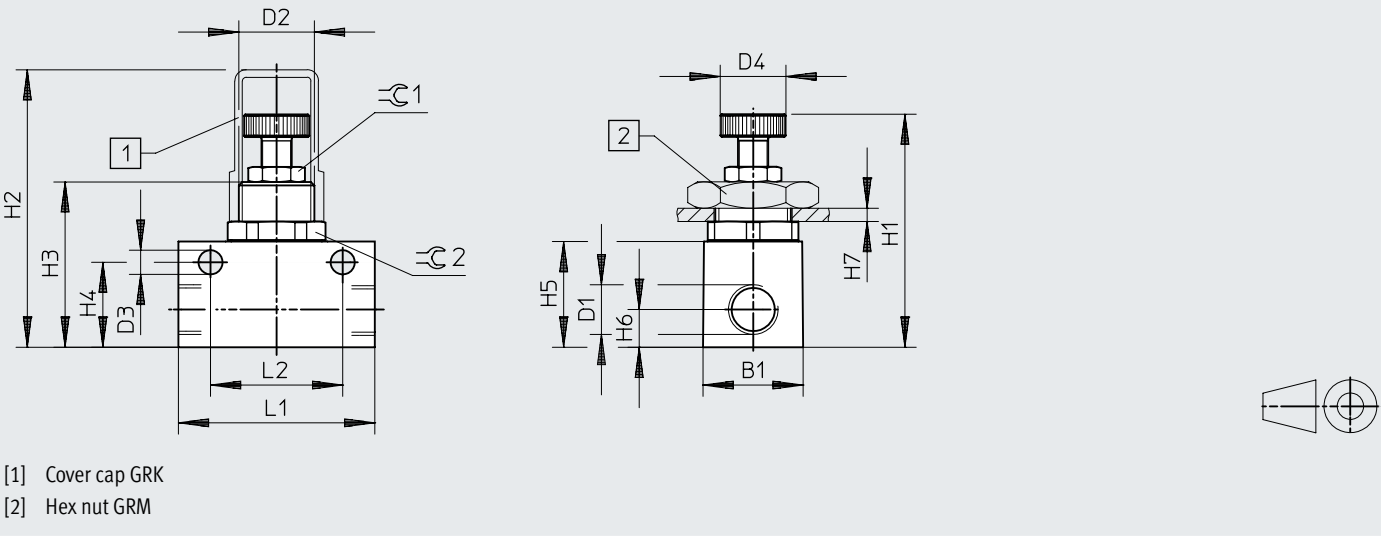


|        | D1   | B1 | D2<br>ø | D3<br>ø | H1   | H2   | H3 | L1 | L2 | L3 | ≈ 1 |
|--------|------|----|---------|---------|------|------|----|----|----|----|-----|
| GR-1/4 | G1/4 | 28 | 18      | 16      | 32,5 | 26,5 | 17 | 52 | 30 | 22 | 24  |

Dimensions

Dimensions – GRA-1/4-B

Download CAD data [www.festo.com](http://www.festo.com)

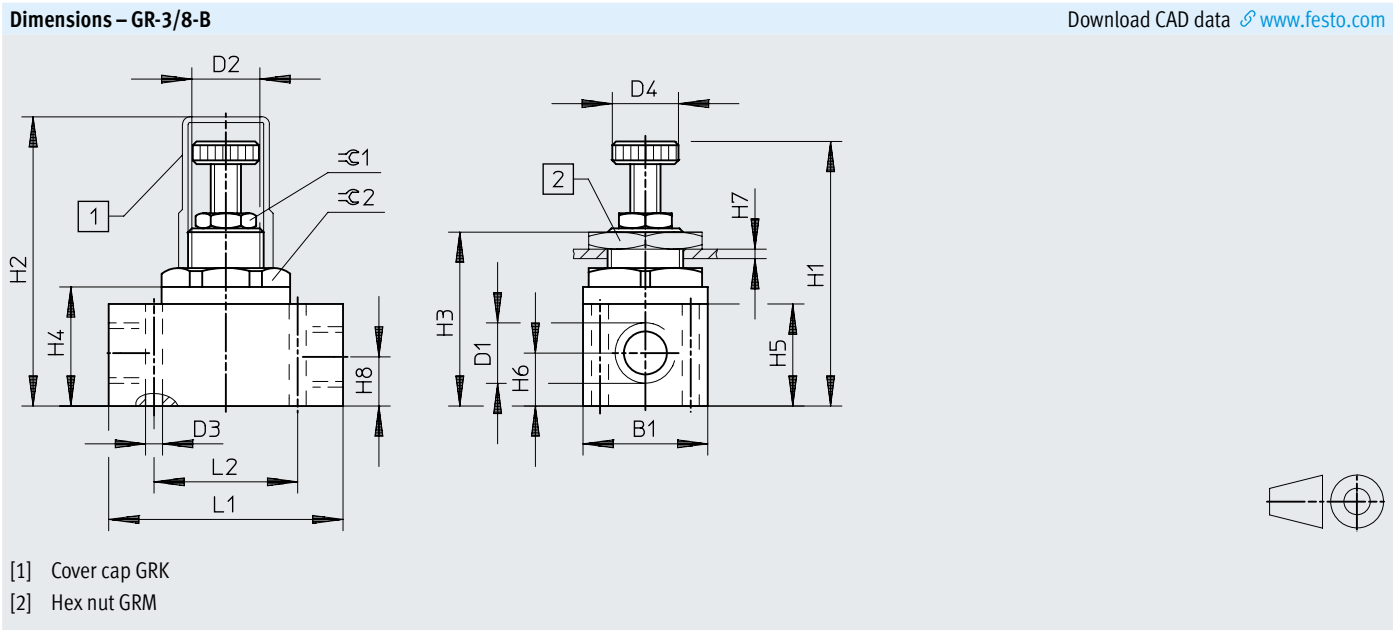


|           | D1   | B1   | D2      | D3<br>Ø | D4<br>Ø | H1   |      | H2   |
|-----------|------|------|---------|---------|---------|------|------|------|
|           |      |      |         |         |         | min. | max. |      |
| GRA-1/4-B | G1/4 | 26,5 | M20x1,5 | 6,4     | 17,4    | 56   | 62   | 73,5 |

|           | H3 | H4   | H5 | H6 | H7<br>max. | L1 | L2      | ⌀ 1 | ⌀ 2 |
|-----------|----|------|----|----|------------|----|---------|-----|-----|
| GRA-1/4-B | 44 | 22,5 | 28 | 10 | 3,5        | 52 | 35 ±0,1 | 13  | 24  |

Dimensions



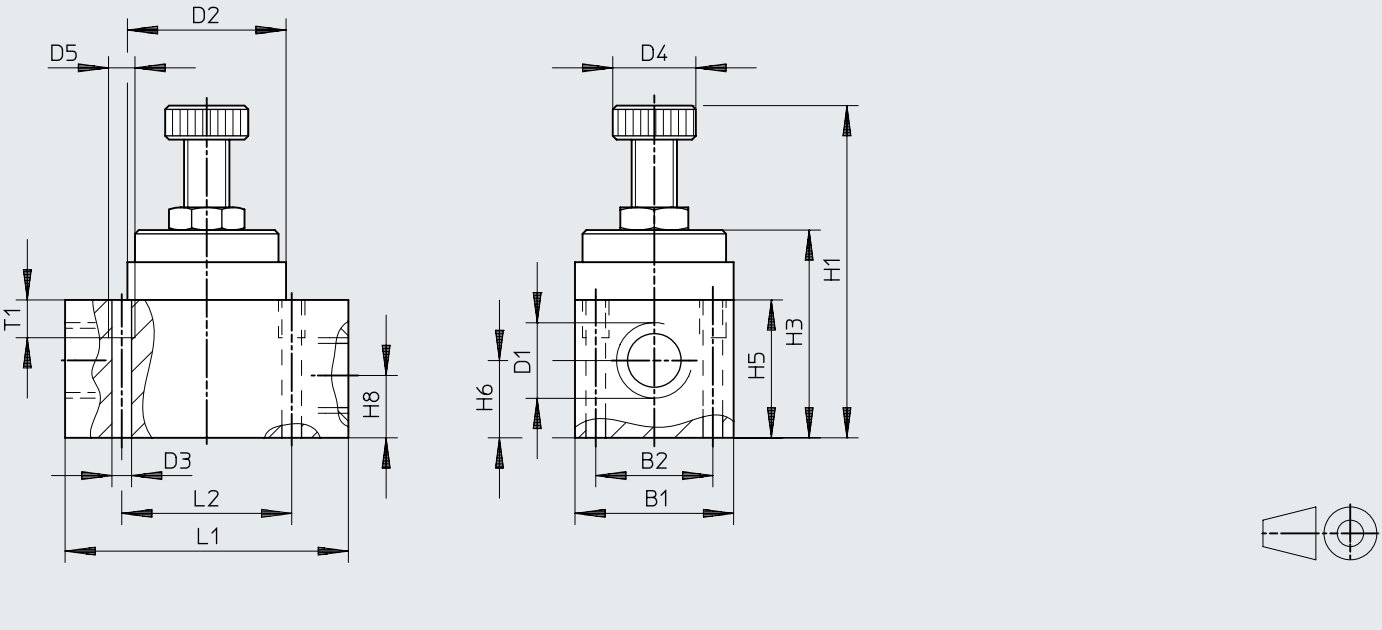
|          | D1   | B1 | D2      | D3<br>ø | D4<br>ø | H1   |      | H2   |
|----------|------|----|---------|---------|---------|------|------|------|
|          |      |    |         |         |         | min. | max. |      |
| GR-3/8-B | G3/8 | 33 | M20x1,5 | 4,5     | 17,5    | 62,5 | 74   | 76,5 |

|          | H3 | H4   | H5 | H6 | H7<br>max. | H8 | L1 | L2 | ≈ 1 | ≈ 2 |
|----------|----|------|----|----|------------|----|----|----|-----|-----|
| GR-3/8-B | 46 | 31,5 | 27 | 14 | 3,5        | 13 | 62 | 38 | 13  | 30  |

Dimensions

Dimensions – GR-1/2

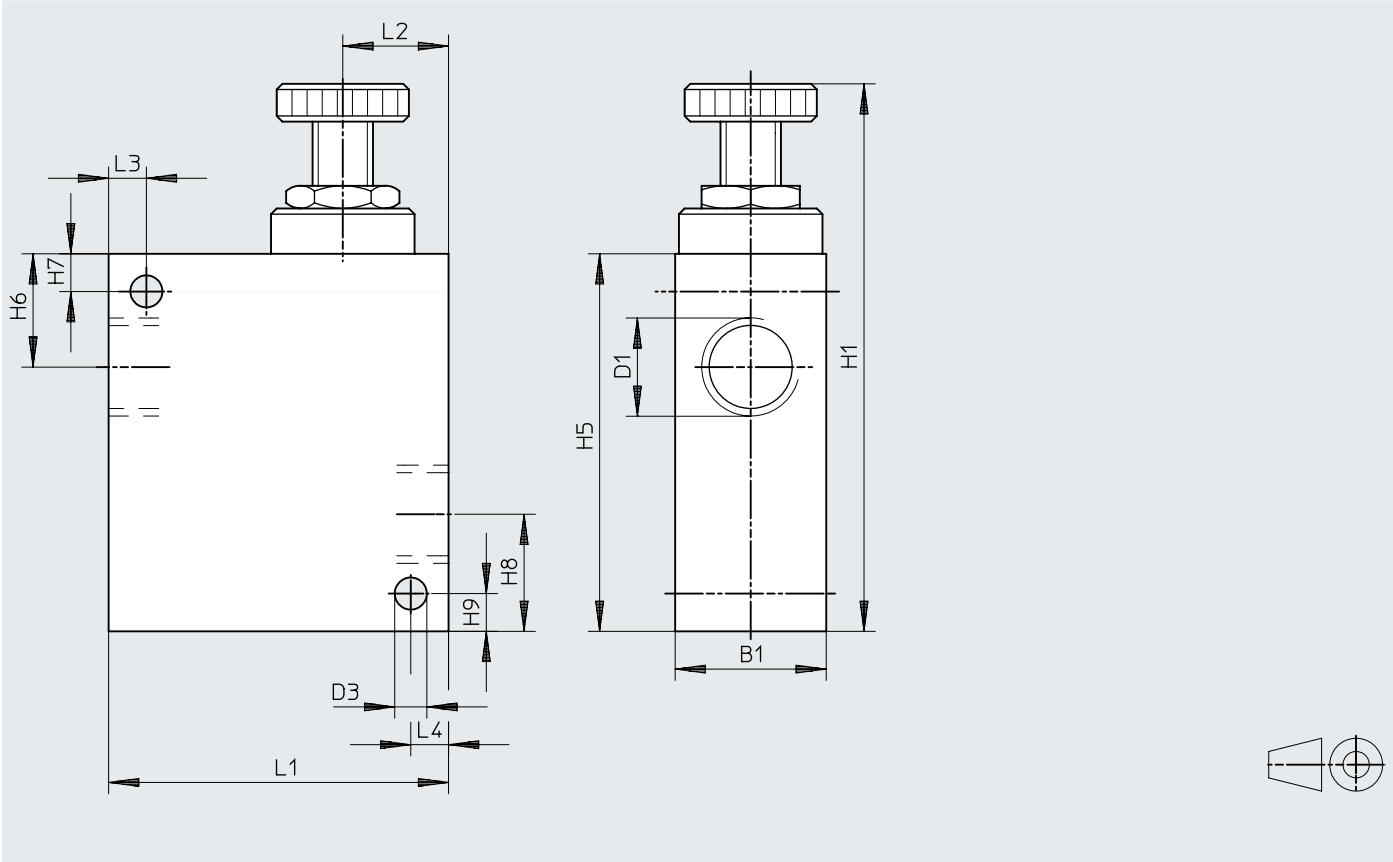
Download CAD data [www.festo.com](http://www.festo.com)



|        | B1 | B2 | D1   | D2<br>ø | D3<br>ø | D4<br>ø | D5 | H1 | H3 | H5   | H6   | H8   | L1 | L2 | T1 |
|--------|----|----|------|---------|---------|---------|----|----|----|------|------|------|----|----|----|
| GR-1/2 | 42 | 31 | G1/2 | 42      | 2       | 22      | M6 | 88 | 55 | 36,5 | 20,5 | 16,5 | 75 | 45 | 10 |

Dimensions

Dimensions – GR-3/4 Download CAD data [www.festo.com](http://www.festo.com)

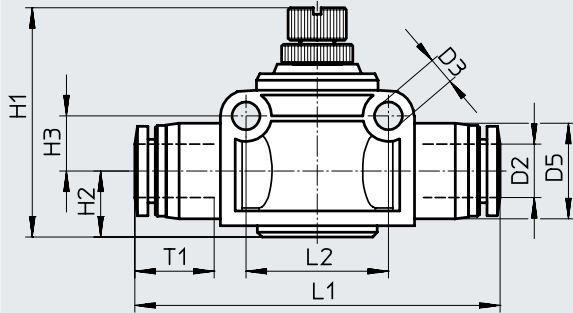


|        | B1 | D1   | D3<br>ø | H1  | H5  | H6 | H7 | H8 | H9 | L1 | L2 | L3 | L4 |
|--------|----|------|---------|-----|-----|----|----|----|----|----|----|----|----|
| GR-3/4 | 40 | G3/4 | 8,5     | 145 | 100 | 30 | 10 | 30 | 10 | 90 | 28 | 10 | 10 |

## Dimensions

Dimensions – GR-QB (NPT – not available on all markets)

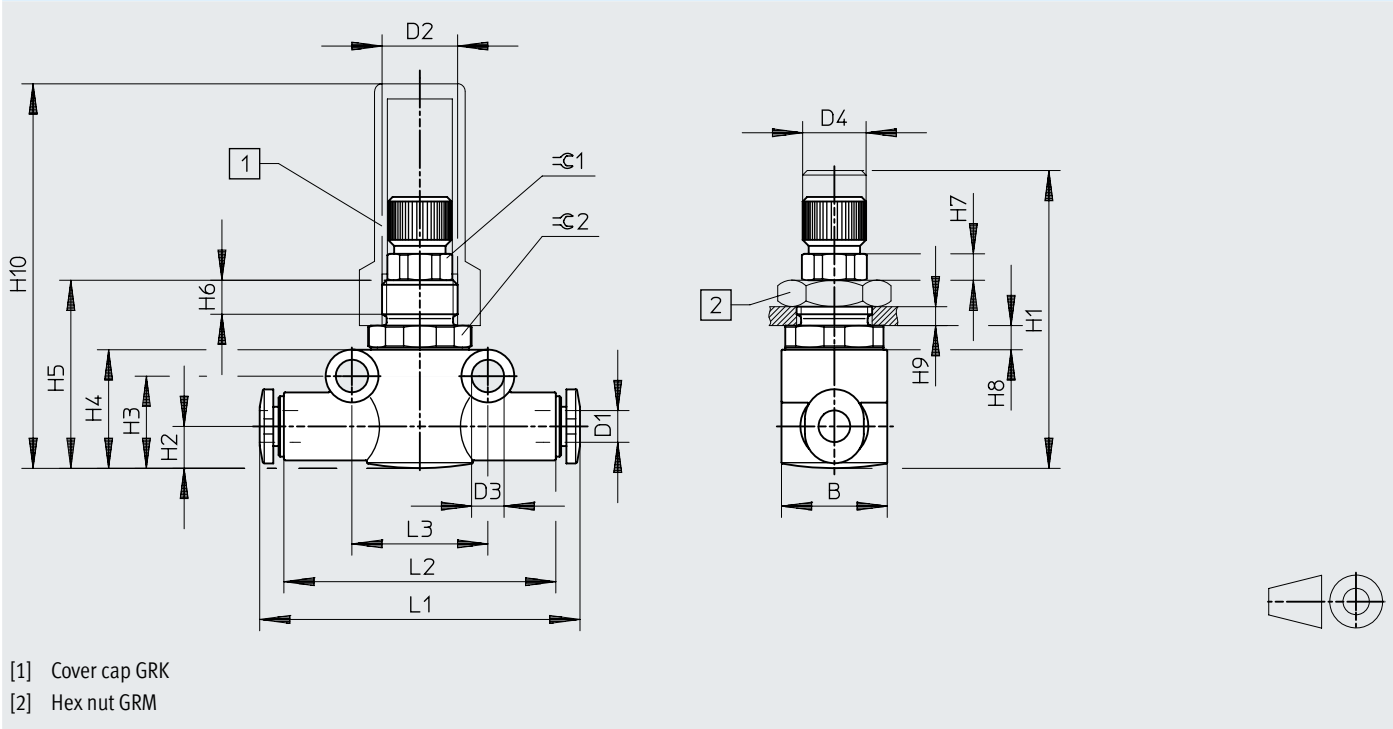
Download CAD data [www.festo.com](http://www.festo.com)



|              | D2   | D3<br>Ø | D5<br>Ø | H1   |      | H2   | H3   | L1   | L2   | T1   |
|--------------|------|---------|---------|------|------|------|------|------|------|------|
|              |      |         |         | Min. | Max. |      |      |      |      |      |
| GR-QB-5/32-U | 5/32 | 3,2     | 10,5    | 26,4 | 28,9 | 7,6  | 5,6  | 44,8 | 15,4 | 14,9 |
| GR-QB-1/4-U  | 1/4  | 4,3     | 13,1    | 33,5 | 38,9 | 9,4  | 8,0  | 50,1 | 20,4 | 16,8 |
| GR-QB-5/16-U | 5/16 | 4,4     | 14,8    | 35,5 | 41,5 | 10,2 | 8,5  | 56,4 | 22,0 | 18,7 |
| GR-QB-3/8-U  | 3/8  | 4,3     | 17,5    | 40,7 | 48,6 | 11,4 | 10,3 | 61,4 | 28,1 | 20,1 |
| GR-QB-1/2-U  | 1/2  | 4,4     | 20,5    | 45,5 | 53,4 | 14,0 | 12,1 | 70,7 | 32,0 | 22,9 |

Dimensions

Dimensions – Push-in connector QS, polymer, knurled screw Download CAD data [www.festo.com](http://www.festo.com)



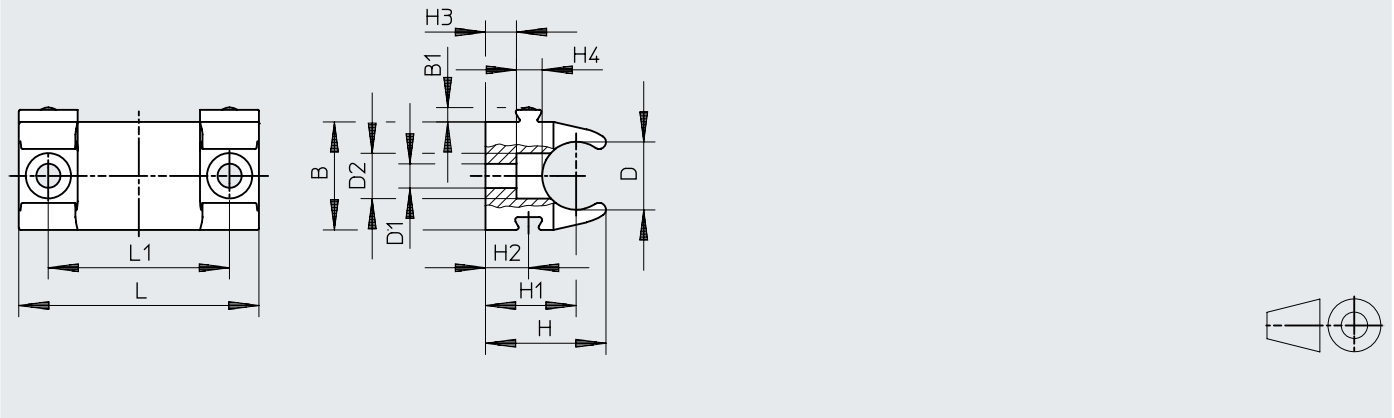
|         | D1 | B  | D2    | D3<br>Ø  | D4<br>Ø  | H1   |      | H2   | H3   | H4   |
|---------|----|----|-------|----------|----------|------|------|------|------|------|
|         |    |    |       |          |          | min. | max. |      |      |      |
| GR-QS-3 | 3  | 14 | M10x1 | 4,3 ±0,1 | 7,9 -0,3 | 35   | 41,5 | 5,55 | 12,2 | 15,7 |
| GR-QS-4 | 4  | 14 | M10x1 | 4,3 ±0,1 | 7,9 -0,3 | 35   | 41,5 | 5,55 | 12,2 | 15,7 |
| GR-QS-6 | 6  | 16 | M12x1 | 4,3 ±0,1 | 7,9 -0,3 | 40   | 46   | 8,4  | 17,3 | 21,3 |
| GR-QS-8 | 8  | 16 | M12x1 | 4,3 ±0,1 | 7,9 -0,3 | 40   | 46   | 8,4  | 17,3 | 21,3 |

|         | H5   | H6  | H7  | H8  | H9<br>max. | H10  | L1   | L2 | L3 | ≙ 1 | ≙ 2 |
|---------|------|-----|-----|-----|------------|------|------|----|----|-----|-----|
| GR-QS-3 | 24,9 | 4,5 | 3,5 | 3,2 | 2,5        | 50,9 | 41,8 | 36 | 18 | 8   | 13  |
| GR-QS-4 | 24,9 |     |     | 3,2 | 2,5        | 50,9 | 42,4 | 36 | 18 |     | 13  |
| GR-QS-6 | 30,1 |     |     | 2,8 | 3,5        | 46,1 | 51,6 | 43 | 24 |     | 14  |
| GR-QS-8 | 30,1 |     |     | 2,8 | 3,5        | 46,1 | 53,4 | 43 | 24 |     | 14  |

## Dimensions

### Dimensions – Retaining bracket GR H

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|             | B    | B1  | D<br>ø | D1<br>ø | D2<br>ø | H    | H1 | H2  | H3  | H4  | L    | L1 |
|-------------|------|-----|--------|---------|---------|------|----|-----|-----|-----|------|----|
| GR-H-QS-3-4 | 14,3 | 1,9 | 9      | 3,2     | 6       | 16   | 12 | 5,7 | 4,1 | 3,4 | 31,8 | 24 |
| GR-H-QS-6-8 | 19,8 | 1,9 | 14,5   | 3,2     | 6       | 19,2 | 13 | 5,7 | 2,3 | 3,4 | 31,8 | 24 |

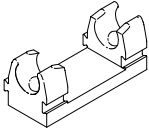
# Ordering data

| Ordering data – Male thread                                                      |                              |                                                      |                                                 |                |          |            |
|----------------------------------------------------------------------------------|------------------------------|------------------------------------------------------|-------------------------------------------------|----------------|----------|------------|
|                                                                                  | Pneumatic connection, port 1 | Standard nominal flow rate in flow control direction | Standard nominal flow rate in blocked direction | Product weight | Part no. | Type       |
|  | M3                           | 29.5 l/min                                           | 26 ... 27.5 l/min                               | 2.5 g          | 15899    | GR-M3      |
|                                                                                  | M5                           | 95 l/min                                             | 75 l/min                                        | 37 g           | 152611   | GR-M5X2-B  |
|                                                                                  |                              | 115 l/min                                            | 130 ... 137 l/min                               | 19 g           | 151213   | GR-M5-B    |
|                                                                                  | G1/8                         | 205 l/min                                            | 190 l/min                                       | 54 g           | 152612   | GR-1/8X2-B |
|                                                                                  |                              | 210 l/min                                            | 180 ... 275 l/min                               | 31 g           | 151215   | GR-1/8-B   |
|                                                                                  | G1/4                         | 370 l/min                                            | 150 l/min                                       | 80 g           | 2101     | GR-1/4     |
|                                                                                  | G3/4                         | 3,300 l/min                                          | 4,800 l/min                                     | 938 g          | 2103     | GR-3/4     |
|                                                                                  | Female thread G1/4           | 420 l/min                                            | 780 l/min                                       | 180 g          | 6509     | GRA-1/4-B  |
|                                                                                  | Female thread G3/8           | 1,010 l/min                                          | 1,150 l/min                                     | 225 g          | 6308     | GR-3/8-B   |
|                                                                                  | Female thread G1/2           | 1,620 l/min                                          | 2,760 l/min                                     | 517 g          | 3720     | GR-1/2     |

| Ordering data – Push-in connector QS                                              |                              |                                                      |                                                 |                |          |         |
|-----------------------------------------------------------------------------------|------------------------------|------------------------------------------------------|-------------------------------------------------|----------------|----------|---------|
|                                                                                   | Pneumatic connection, port 1 | Standard nominal flow rate in flow control direction | Standard nominal flow rate in blocked direction | Product weight | Part no. | Type    |
|  | QS-3                         | 85 l/min                                             | 120 l/min                                       | 12 g           | 193965   | GR-QS-3 |
|                                                                                   | QS-4                         | 110 l/min                                            | 165 l/min                                       |                | ★ 193967 | GR-QS-4 |
|                                                                                   | QS-6                         | 245 l/min                                            | 430 l/min                                       | 22 g           | ★ 193969 | GR-QS-6 |
|                                                                                   | QS-8                         | 265 l/min                                            | 500 l/min                                       | 23 g           | ★ 193970 | GR-QS-8 |

| Ordering data - Push-in connector QB (NPT – not available on all markets)          |                              |                                                      |                                                 |                |          |              |
|------------------------------------------------------------------------------------|------------------------------|------------------------------------------------------|-------------------------------------------------|----------------|----------|--------------|
|                                                                                    | Pneumatic connection, port 1 | Standard nominal flow rate in flow control direction | Standard nominal flow rate in blocked direction | Product weight | Part no. | Type         |
|  | QB-5/32                      | 7.63 cfm                                             | 2.693 ... 7.632 cfm                             | 11.34 oz       | 534680   | GR-QB-5/32-U |
|                                                                                    | QB-1/4                       | 21.1 cfm                                             | 22.446 ... 24.690 cfm                           | 28.35 oz       | ★ 534682 | GR-QB-1/4-U  |
|                                                                                    | QB-5/16                      | 35.91 cfm                                            | 25.588 ... 36.362 cfm                           | 42.525 oz      | 534683   | GR-QB-5/16-U |
|                                                                                    | QB-3/8                       | 51.18 cfm                                            | 36.362 ... 52.523 cfm                           | 76.545 oz      | ★ 534684 | GR-QB-3/8-U  |
|                                                                                    | QB-1/2                       | 62.85 cfm                                            | 48.483 ... 57.012 cfm                           | 119.07 oz      | ★ 534685 | GR-QB-1/2-U  |

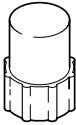
## Accessories

| Retaining bracket GR H                                                            |                 |          |             |
|-----------------------------------------------------------------------------------|-----------------|----------|-------------|
|                                                                                   | Short type code | Part no. | Type        |
|  | GR              | 195496   | GR-H-QS-6-8 |
|                                                                                   |                 | 195495   | GR-H-QS-3-4 |

| Hex nut GRM                                                                       |                 |          |         |
|-----------------------------------------------------------------------------------|-----------------|----------|---------|
|                                                                                   | Short type code | Part no. | Type    |
|  | GRM             | 6444     | GRM-M5  |
|                                                                                   |                 | 204596   | GRM-3/8 |
|                                                                                   |                 | 2107     | GRM-1/8 |

| Cover cap GRK                                                                      |                 |          |         |
|------------------------------------------------------------------------------------|-----------------|----------|---------|
|                                                                                    | Short type code | Part no. | Type    |
|  | GRK             | 2105     | GRK-1/8 |