

GFH2/GFH3

2- and 3-way DIN-standard flanged valve



Control valves for use in heating, cooling and ventilation systems. They are intended to be used together with Regin's RVAN actuators. The valves have DIN-standard lengths.

- Size DN15-150
- Kvs value 2,5...315
- No leakage (DN15-100)
- Pressure rating PN16
- Media temperature 0...+150°C (-10°C with stem heater)
- Face-to-face dimensions as per DIN

Function

2-way valve

The valve is open when the stem is in its lowest position and closed when the stem is in its upmost position.

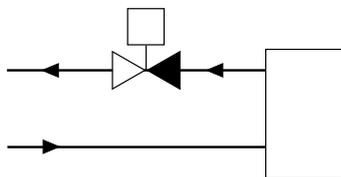


Fig. 1 2-way valve

3-way valve

The 3-way valve is closed between port A and port AB (the ports opposite to one another) when the stem is in its highest position. In this position, the valve is also open between the bottom port B and the common supply port AB. When the stem is in its lowest position, the 3-way valve is

completely open between port A and port AB and consequently closed between the bottom port B and the common port AB.

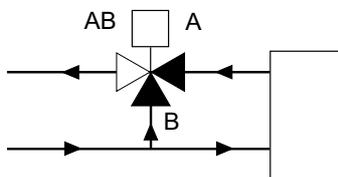


Fig. 2 3-way valve

Installation

The 2-way valve should be mounted with port A on the inlet and port AB on the return (flow direction A in, AB out) to ensure that the plug closes tightly and to prevent any noise when closing.

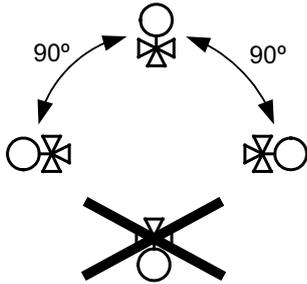
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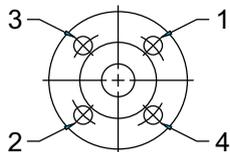
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The 3-way valve is of a mixing type and must therefore be mounted in the mixing point.

- Before installation of the control valve, ensure that the pipe is clean. Make sure that pipe scale, metal chips, welding slag and other foreign materials are removed.
- For maximum efficiency and minimum wear, install the valve in a vertical position with the stem pointing upward. If the valve is mounted with the actuator on the side, more wear is caused to the valve stuffing box, more wear is caused to the valve stuffing box. The valve should never be mounted at an angle of more than 90°.



- Install the valve according to the fluid direction arrow shown on the valve.
- Make sure there is ample space above the valve to facilitate easy removal of the valve actuator.
- Adjust the connection between the valve and the counter flange to minimise the tension between them.
- Tighten the bolts crosswise, as shown in the picture below. Tighten one flange at a time. After conducting a test run, the bolts should be tightened crosswise once more.



- Fit a strainer/filter upstream of the valve to prolong the equipment's life span.
- A water quality according to VDI 2035 is recommended.

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GFH2/GFH3



Technical data

| | |
|-----------------------------|--|
| Application | Heating systems, cooling systems, ventilation systems |
| Pressure rating | PN16 |
| Connection | Flanged according to EN 1092-2 |
| Flow characteristics | A - AB = equal percentage, B - AB = linear |
| Max. leakage | DN15-100, 0% of Kvs; DN125-150, 0,05% of Kvs |
| Media | Hot water, cold water, glycol-mixed water (max. 50 % glycol) |
| Media temperature | 0-150°C* * Down to -10 with stem heater * Above 130°C valves should only be mounted in the horizontal position |
| Rangeability | 100:1 (DN20-150), > 50:1 (DN15) |

Material

| | |
|--------------------|--------------------------|
| Body | Cast iron EN-JL1040 |
| Plug | Brass CW614N |
| Seat | Cast iron EN-JL1040 |
| Stem | Stainless steel 1.4122 |
| Packing box | Brass CW614N |
| Bonnet | Brass CW614N |
| O-rings | EPDM |
| Packing | Aramid reinforced rubber |

Models, 2-way valves

| Article | Kvs | Nominal diameter |
|-------------|------|------------------|
| GFH215-2.5 | 2.5 | DN15 |
| GFH215-4.0 | 4.0 | DN15 |
| GFH220-5.0 | 5.0 | DN20 |
| GFH220-6.3 | 6.3 | DN20 |
| GFH225-8.0 | 8.0 | DN25 |
| GFH225-10 | 10 | DN25 |
| GFH232-12.5 | 12.5 | DN32 |
| GFH232-16 | 16 | DN32 |
| GFH240-20 | 20 | DN40 |
| GFH240-25 | 25 | DN40 |
| GFH250-31.5 | 31.5 | DN50 |
| GFH250-40 | 40 | DN50 |
| GFH265-50 | 50 | DN65 |
| GFH265-63 | 63 | DN65 |
| GFH280-80 | 80 | DN80 |
| GFH280-100 | 100 | DN80 |
| GFH2100-125 | 125 | DN100 |
| GFH2100-160 | 160 | DN100 |
| GFH2125-250 | 250 | DN125 |
| GFH2150-315 | 315 | DN150 |

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GFH2/GFH3



Combination options (2-way valves and actuators) and differential pressure

| Type | ΔP_s (RVAN5...) | ΔP_{max} (RVAN5...) | ΔP_s (RVAN10...) | ΔP_{max} (RVAN10...) | ΔP_s (RVAN18...) | ΔP_{max} (RVAN18...) | ΔP_s (RVAN25...) | ΔP_{max} (RVAN25...) |
|---------|----------------------------|--------------------------------|-----------------------------|---------------------------------|-----------------------------|---------------------------------|-----------------------------|---------------------------------|
| GFH215 | 1600 kPa | 400 kPa | 1600 kPa | 400 kPa | N/A | N/A | N/A | N/A |
| GFH220 | 900 kPa | 400 kPa | 1600 kPa | 400 kPa | N/A | N/A | N/A | N/A |
| GFH225 | 550 kPa | 400 kPa | 1500 kPa | 400 kPa | N/A | N/A | N/A | N/A |
| GFH232 | 300 kPa | 300 kPa | 900 kPa | 350 kPa | N/A | N/A | N/A | N/A |
| GFH240 | 150 kPa | 150 kPa | 550 kPa | 300 kPa | N/A | N/A | N/A | N/A |
| GFH250 | 100 kPa | 100 kPa | 350 kPa | 350 kPa | N/A | N/A | N/A | N/A |
| GFH265 | N/A | N/A | N/A | N/A | 350 kPa | 350 kPa | 600 kPa | 400 kPa |
| GFH280 | N/A | N/A | N/A | N/A | 300 kPa | 300 kPa | 350 kPa | 350 kPa |
| GFH2100 | N/A | N/A | N/A | N/A | 200 kPa | 200 kPa | 250 kPa | 200 kPa |
| GFH2125 | N/A | N/A | N/A | N/A | 100 kPa | 100 kPa | 160 kPa | 120 kPa |
| GFH2150 | N/A | N/A | N/A | N/A | 80 kPa | 80 kPa | 120 kPa | 100 kPa |

ΔP_s constitutes the max. permitted differential pressure at which the valve actuator can safely close against the pressure.

ΔP_{max} constitutes the max. permitted differential pressure over the flow path of the valve for the entire actuating range of the actuator (i.e. open valve).

Models, 3-way valves

| Article | Kvs | Nominal diameter |
|-------------|------|------------------|
| GFH315-2.5 | 2.5 | DN15 |
| GFH315-4.0 | 4.0 | DN15 |
| GFH320-5.0 | 5.0 | DN20 |
| GFH320-6.3 | 6.3 | DN20 |
| GFH325-8.0 | 8.0 | DN25 |
| GFH325-10 | 10 | DN25 |
| GFH332-12.5 | 12.5 | DN32 |
| GFH332-16 | 16 | DN32 |
| GFH340-20 | 20 | DN40 |
| GFH340-25 | 25 | DN40 |
| GFH350-31.5 | 31.5 | DN50 |
| GFH350-40 | 40 | DN50 |
| GFH365-50 | 50 | DN65 |
| GFH365-63 | 63 | DN65 |
| GFH380-80 | 80 | DN80 |
| GFH380-100 | 100 | DN80 |
| GFH3100-125 | 125 | DN100 |
| GFH3100-160 | 160 | DN100 |
| GFH3125-250 | 250 | DN125 |
| GFH3150-315 | 315 | DN150 |

Combination options (3-way valves and actuators) and differential pressure

| Type | ΔP_s (RVAN5...) | ΔP_{max} (RVAN5...) | ΔP_s (RVAN10...) | ΔP_{max} (RVAN10...) | ΔP_s (RVAN18...) | ΔP_{max} (RVAN18...) | ΔP_s (RVAN25...) | ΔP_{max} (RVAN25...) |
|--------|----------------------------|--------------------------------|-----------------------------|---------------------------------|-----------------------------|---------------------------------|-----------------------------|---------------------------------|
| GFH315 | 1600 kPa | 400 kPa | 1600 kPa | 400 kPa | N/A | N/A | N/A | N/A |
| GFH320 | 900 kPa | 400 kPa | 1600 kPa | 400 kPa | N/A | N/A | N/A | N/A |

| Type | ΔP_s (RVAN5...) | ΔP_{max} (RVAN5...) | ΔP_s (RVAN10...) | ΔP_{max} (RVAN10...) | ΔP_s (RVAN18...) | ΔP_{max} (RVAN18...) | ΔP_s (RVAN25...) | ΔP_{max} (RVAN25...) |
|---------|----------------------------|--------------------------------|-----------------------------|---------------------------------|-----------------------------|---------------------------------|-----------------------------|---------------------------------|
| GFH325 | 550 kPa | 400 kPa | 1500 kPa | 400 kPa | N/A | N/A | N/A | N/A |
| GFH332 | 300 kPa | 300 kPa | 900 kPa | 350 kPa | N/A | N/A | N/A | N/A |
| GFH340 | 150 kPa | 150 kPa | 550 kPa | 300 kPa | N/A | N/A | N/A | N/A |
| GFH350 | 100 kPa | 100 kPa | 350 kPa | 350 kPa | N/A | N/A | N/A | N/A |
| GFH365 | N/A | N/A | N/A | N/A | 350 kPa | 350 kPa | 600 kPa | 400 kPa |
| GFH380 | N/A | N/A | N/A | N/A | 300 kPa | 300 kPa | 350 kPa | 350 kPa |
| GFH3100 | N/A | N/A | N/A | N/A | 200 kPa | 200 kPa | 250 kPa | 200 kPa |
| GFH3125 | N/A | N/A | N/A | N/A | 100 kPa | 100 kPa | 160 kPa | 120 kPa |
| GFH3150 | N/A | N/A | N/A | N/A | 80 kPa | 80 kPa | 120 kPa | 100 kPa |

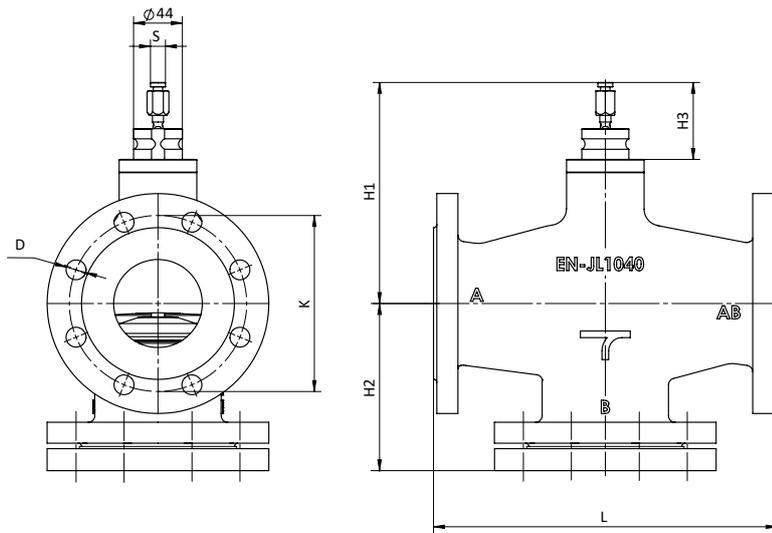
ΔP_s constitutes the max. permitted differential pressure at which the valve actuator can safely close against the pressure.

ΔP_{max} constitutes the max. permitted differential pressure over the flow path of the valve for the entire actuating range of the actuator (i.e. open valve).

Accessories

| Article | Description |
|------------|---|
| STEMHEATER | Valve stem heater, 24V AC, 50W for RVAN |

Dimensions, 2-way valve



| Type | DN | L | H1 | H2 | H3 ¹ | Stroke | ϕD | ϕK | ϕS |
|---------|-----|-----|-----|-----|-----------------|--------|----------|----------|----------|
| GFH215 | 15 | 130 | 124 | 89 | 70 | 14 | 14(x4) | 65 | 10 |
| GFH220 | 20 | 150 | 129 | 96 | 70 | 14 | 14(x4) | 75 | 10 |
| GFH225 | 25 | 160 | 134 | 101 | 70 | 14 | 14(x4) | 85 | 10 |
| GFH232 | 32 | 180 | 137 | 123 | 70 | 14 | 18(x4) | 100 | 10 |
| GFH240 | 40 | 200 | 140 | 128 | 70 | 14 | 18(x4) | 110 | 10 |
| GFH250 | 50 | 230 | 140 | 130 | 70 | 14 | 18(x4) | 125 | 10 |
| GFH265 | 65 | 290 | 189 | 150 | 70 | 30 | 18(x4) | 145 | 13,5 |
| GFH280 | 80 | 310 | 201 | 162 | 70 | 30 | 18(x8) | 160 | 13,5 |
| GFH2100 | 100 | 350 | 208 | 182 | 70 | 30 | 18(x8) | 180 | 13,5 |
| GFH2125 | 125 | 400 | 297 | 194 | 70 | 50 | 18(x8) | 210 | 13,5 |
| GFH2150 | 150 | 480 | 297 | 207 | 70 | 50 | 22(x8) | 240 | 13,5 |

[mm], unless otherwise specified

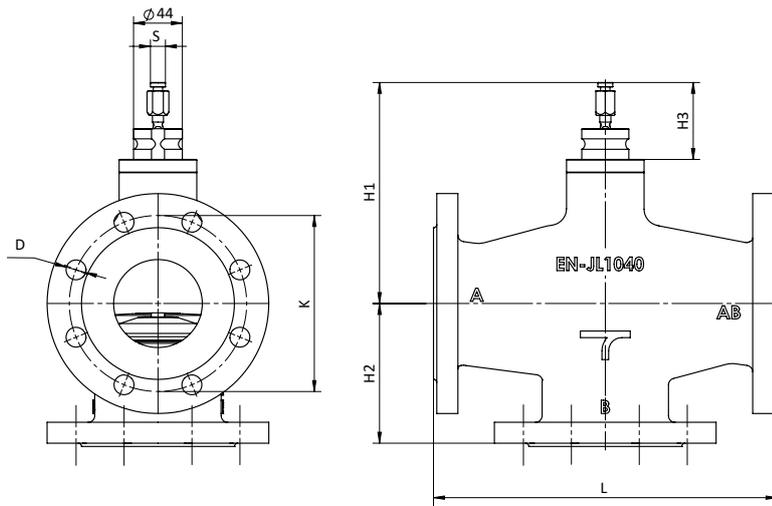
1. When stem in the pushed-in position

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Dimensions, 3-way valve



| Type | DN | L | H1 | H2 | H3 ² | Stroke | øD | øK | øS |
|---------|-----|-----|-----|-----|-----------------|--------|--------|-----|------|
| GFH315 | 15 | 130 | 124 | 65 | 70 | 14 | 14(x4) | 65 | 10 |
| GFH320 | 20 | 150 | 129 | 70 | 70 | 14 | 14(x4) | 75 | 10 |
| GFH325 | 25 | 160 | 134 | 75 | 70 | 14 | 14(x4) | 85 | 10 |
| GFH332 | 32 | 180 | 137 | 95 | 70 | 14 | 18(x4) | 100 | 10 |
| GFH340 | 40 | 200 | 140 | 100 | 70 | 14 | 18(x4) | 110 | 10 |
| GFH350 | 50 | 230 | 140 | 100 | 70 | 14 | 18(x4) | 125 | 10 |
| GFH365 | 65 | 290 | 189 | 120 | 70 | 30 | 18(x4) | 145 | 13,5 |
| GFH380 | 80 | 310 | 201 | 130 | 70 | 30 | 18(x8) | 160 | 13,5 |
| GFH3100 | 100 | 350 | 208 | 150 | 70 | 30 | 18(x8) | 180 | 13,5 |
| GFH3125 | 125 | 400 | 297 | 160 | 70 | 50 | 18(x8) | 210 | 13,5 |
| GFH3150 | 150 | 480 | 297 | 170 | 70 | 50 | 22(x8) | 240 | 13,5 |

[mm], unless otherwise specified

2. When stem in the pushed-in position

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Pressure drop curves

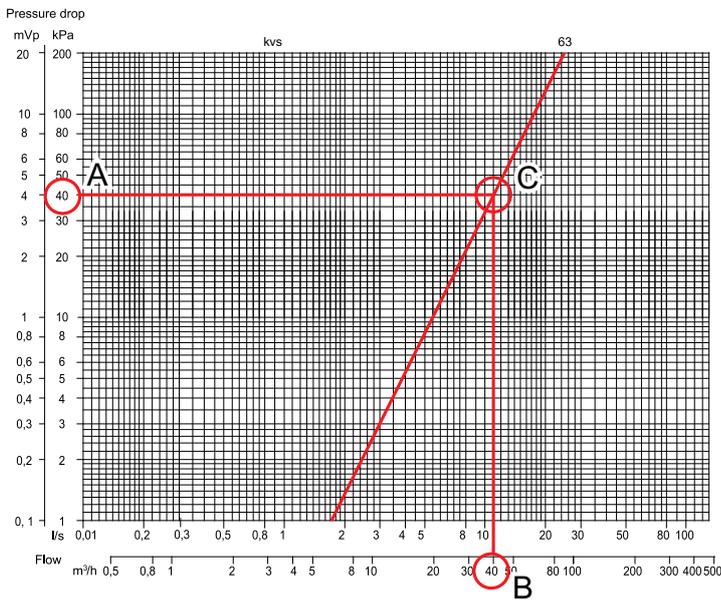
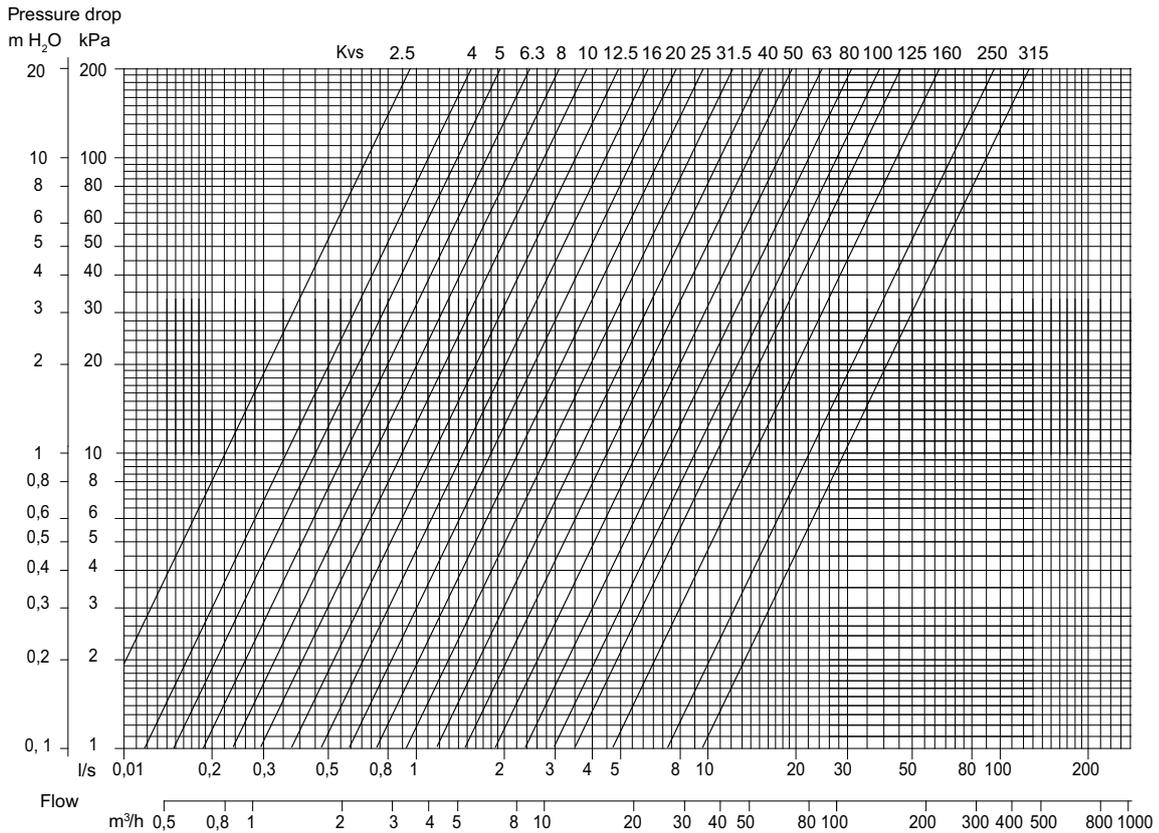


Fig. 3 Example, pressure drop curves: If the pressure drop is 40 kPa (A) and the flow is 40 m³/h (B), a valve with the kv value 63 (C) is preferably selected. See the markings in the picture above.

Documentation

All documentation can be downloaded from www.regincontrols.com.

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