



V2050

Varia

High-flow valves for thermostatic and actuator control applications

APPLICATION

The V2050 valves are typically installed at the supply of radiators, fan coil units or other heat exchangers to control the flow of the heating or cooling medium in connection with a thermostatic radiator head or with a thermoelectric or motorized actuator.

Due to high-flow rates, the V2050 valves are suitable for controlling the flow through large radiators, fan coils, heat exchangers, or in 1-pipe systems.

The valve insert can be replaced while the system is running and without draining using the service tool (see 'Accessories').

V2050 valves type are suitable for the following Honeywell Home actuators

- Thermostatic radiator heads with M30 x 1.5 connection
- MT4 and M5410 2-point actuators
- M6410 and M7410 modulating actuators
- Honeywell Home HR90/HR92, Hometronic HR80 and Roomtronic HR40 actuators

SPECIAL FEATURES

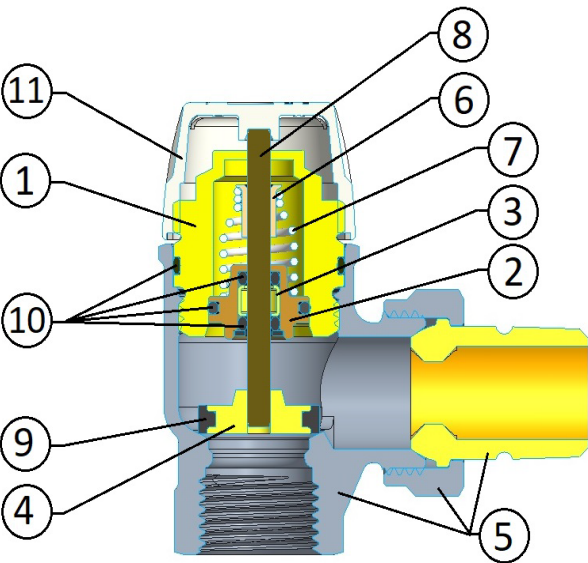
- For heating and cooling systems with high water flow rates
- Quiet operation
- Standard M30 x 1.5 thermostat connection
- Standard dimensions DN15 and DN20 per EN215 D-series, plus DN25 straight version
- DN15 and DN20 straight versions with external threads
- 4.0 mm stroke for modulating actuators
- Double o-ring sealing with grease chamber for extended actuator cycling life
- Valve opening spring is not in the water
- Valve insert can be replaced while system is operating and without draining the system
- Nickel-plated valve bodies
- With white protection cap
- Nominal pressure rating PN16



TECHNICAL DATA

| | |
|--|--|
| Media | |
| Medium: | Water or water-glycol mixture, quality to VDI 2035 |
| pH-value: | 8 - 9.5 |
| Connections/Sizes | |
| Body-head connection: | M30 x 1.5 |
| Sizes: | DN15, DN20, DN25 |
| Operating temperatures | |
| Max. operating temperature: | 120 °C |
| Min. operating temperature medium: | -10 °C non-freezing |
| Pressure values | |
| Max. operating pressure: | PN16, 16 bar (1600 kPa) |
| Max. differential pressure: | 1.0 bar (100 kPa) |
| Differential pressure recommended for quiet operation: | ≤ 0.2 bar (20 kPa) |
| Flow rates | |
| Nominal flow at 10 kPa (EN 215): | 350 kg/h ± 10 % |
| Specifications | |
| Closing dimension: | 11.5 mm |
| Stroke: | 4.0 mm |
| Identification | |
| White protection cap | |

CONSTRUCTION

| Overview | Components | Materials |
|---|-------------------------------------|-----------------|
|  | 1 Insert cartridge | Brass |
| | 2 Bushing | |
| | 3 Grease chamber* | |
| | 4 Plunger | |
| | 5 Valve body, tailpiece, nut | |
| | 6 Retaining rivet | Copper |
| | 7 Return spring | Spring steel |
| | 8 Spindle | Stainless steel |
| | 9 Plunger seal | EPDM 70 |
| | 10 O-rings | |
| | 11 Protection cap | PP GF10 |

Note: * Filled with Klüber Unisilikon L 641 grease based on silicon oil and PTFE

METHOD OF OPERATION

The V2050 Varia valve is controlled by a radiator thermostat or by a linear actuator. The thermostat or actuator acts on the axis of the valve to close it or open it. Thus, the amount of heating or cooling medium through the valve can be accurately controlled to provide just the flow needed to maintain the desired temperature in the room.

V2050 Varia valves are designed to have a good control with stroke up to 2 to 3 mm (depending in body pattern), providing for a proportional regulation in high-flow applications.

V2050 Varia valves are suitable for thermostatic radiator applications with 1K, 2K or 3K p-band design, as well as for applications where the valve is controlled by an actuator.

V2050 Varia valves feature a double o-ring sealed grease chamber filled with Klüber Unisilikon L 641 to ensure durability and lasting performance characteristics under long actuator cycling lives.

TRANSPORTATION AND STORAGE

Keep parts in their original packaging and unpack them shortly before use.

The following parameters apply during transportation and storage:

| Parameter | Value |
|---------------------------------|--------------------------|
| Environment: | clean, dry and dust free |
| Min. ambient temperature: | 0 °C |
| Max. ambient temperature: | 50 °C |
| Max. ambient relative humidity: | 75 % * |

*non condensing

INSTALLATION GUIDELINES

- V2050 Varia valves should be installed such that the heating medium flows in the direction indicated by the arrow on the body.
- When used to control radiators, it is recommended to install the V2440 series “Veramax” high-flow return valves at the other end of the heat exchanger. The Veramax allows for shut-off of the heat exchanger as well as for limiting the maximum flow through the heat exchanger to balance the overall system. Static balancing has been shown to result in up to 5 % of energy savings.
- In larger systems with static balancing, it is recommended to install V5032 pipeline balancing valves at the return of each branch or riser.
- In large systems, an improved hydraulic balancing can be achieved with the V5001P Kombi-Auto differential pressure control valves installed on each heating branch or riser. Dynamic balancing compensates for varying temperature settings and heat load conditions, and has been shown to result in up to 10 % of energy savings.

Installation Example

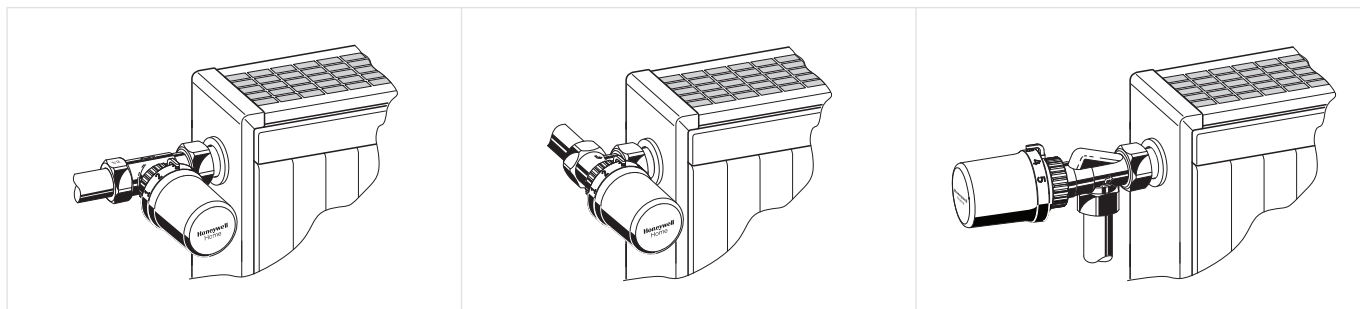


Fig. 1. Straight

Fig. 2. Angled

Fig. 3. Axial

Setup requirements

- To avoid stone deposit and corrosion the composition of the medium should conform with VDI-Guideline 2035
- All additives and lubricants used for heating medium treatment have to be suitable for EPDM seals to avoid their disintegration. Use of mineral oils should be avoided
- For industrial and long-distance energy systems please refer to applicable codes VdTÜV and 1466/AGFW FW 510
- Heavy polluted existing heating systems must be flushed thoroughly before replacing thermostatic valves
- The heating system must be fully deaerated
- Any complaints or costs resulting from non-compliance with above rules will not be accepted by Resideo or its subsidiaries manufacturing the Honeywell Home products

Recommended actuators

- All Honeywell Home thermostatic radiator heads with M30 x 1.5 connection fit the V2050 Varia valves.
- Honeywell Home HR90, HR91 and HR92 electronic TRV heads are suitable for the V2050 Varia valves.
- Honeywell Home MT4 thermoelectric actuators, and the M5410 fast motoric 2-point actuators can be used for on/off control of the V2050 Varia valves.
- The M6410 and M7410 modulating actuators are recommended.

TECHNICAL CHARACTERISTICS

Tab. 1 k_v -values [m^3/h , Δp bar] (OS = Order Specification)

| OS-No. | 1K (0.22 mm) | 2K (0.44 mm) | 3K (0.66 mm) | 1.0 mm | 2.0 mm | 3.0 mm | k_{vs} (4 mm) |
|-------------|--------------|--------------|--------------|--------|--------|--------|-----------------|
| V2050DH015A | 0.53 | 1.10 | 1.60 | 2.40 | 3.60 | 4.0 | 4.0 |
| V2059DH015A | 0.53 | 1.10 | 1.60 | 2.20 | 3.00 | 3.4 | 3.5 |
| V2050EH015A | 0.53 | 1.10 | 1.70 | 2.60 | 4.65 | 5.5 | 6.0 |
| V2050AH015A | 0.53 | 1.10 | 1.60 | 2.20 | 3.00 | 3.4 | 3.5 |
| V2050DH020A | 0.53 | 1.10 | 1.70 | 2.60 | 4.25 | 4.8 | 5.0 |
| V2059DH020A | 0.53 | 1.10 | 1.70 | 2.60 | 4.25 | 4.8 | 5.0 |
| V2050EH020A | 0.53 | 1.10 | 1.70 | 2.60 | 4.80 | 6.1 | 7.0 |
| V2050AH020A | 0.53 | 1.10 | 1.60 | 2.20 | 3.30 | 3.7 | 4.0 |
| V2050DH025A | 0.53 | 1.10 | 1.80 | 2.80 | 5.10 | 5.8 | 6.0 |

DIMENSIONS AND ORDERING INFORMATION

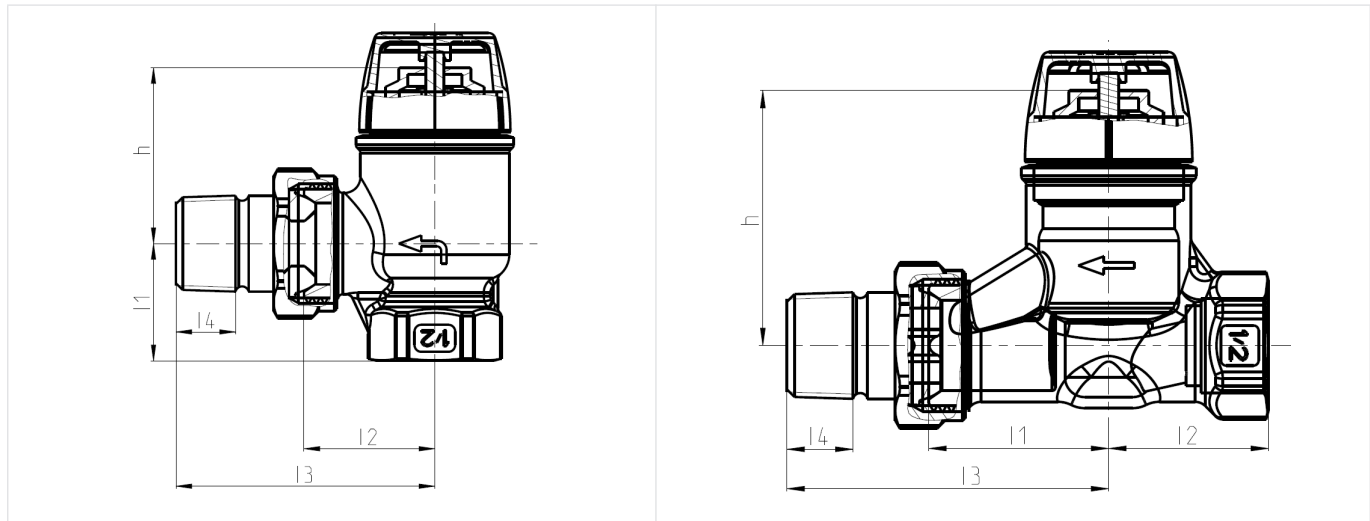


Fig. 1. Angled V2050E

Fig. 2. Straight V2050D

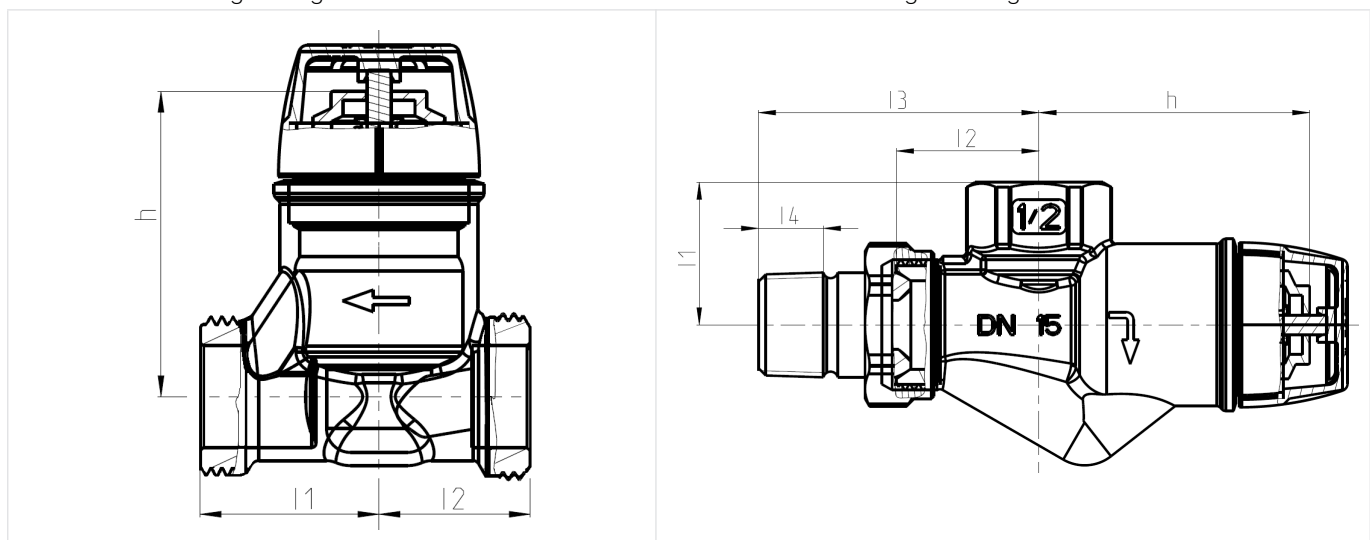


Fig. 3. Straight with external threads and flat sealing V2059D

Fig. 4. Axial V2050A




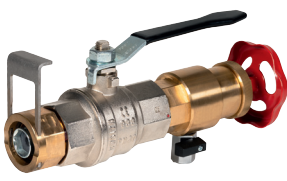
Tab. 2 Dimensions and OS-Nos (OS=Ordering System)

| Body type | DN | Pipe connection | Radiator connection | h | l1 | l2 | l3 | l4 | OS-No. |
|--|----|-----------------|---------------------|----|----|----|----|------|-------------|
| Angle (Fig. 1) | 15 | Rp 1/2" | 1/2" tailpiece | 39 | 26 | 29 | 57 | 13.2 | V2050EH015A |
| | 20 | Rp 3/4" | 3/4" tailpiece | 40 | 29 | 34 | 65 | 14.5 | V2050EH020A |
| Straight (Fig. 2) | 15 | Rp 1/2" | 1/2" tailpiece | 51 | 36 | 32 | 64 | 13.2 | V2050DH015A |
| | 20 | Rp 3/4" | 3/4" tailpiece | 49 | 38 | 37 | 70 | 14.5 | V2050DH020A |
| | 25 | Rp 1" | 1" tailpiece | 49 | 37 | 39 | 70 | 16.8 | V2050DH025A |
| Straight with flat sealing (Fig. 3) | 15 | G 3/4" | G 3/4" | 51 | 30 | 25 | - | - | V2059DH015A |
| | 20 | G 3/4" | G 3/4" | 49 | 37 | 37 | - | - | V2059DH020A |
| Axial (Fig. 4) | 20 | Rp 1/2" | 1/2" tailpiece | 55 | 29 | 29 | 57 | 13.2 | V2050AH015A |
| | 25 | Rp 3/4" | 3/4" tailpiece | 59 | 29 | 34 | 66 | 14.5 | V2050AH020A |

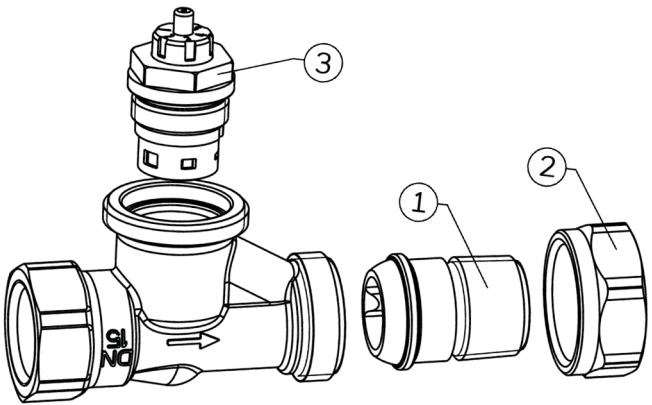
Note: All dimensions in mm unless stated otherwise.

ACCESSORIES

| | Description | Dimension | Part No. | | |
|---|---|---|---|------------|-------------|
|  | FIG3/8CS Compression fitting for COPPER and STEEL pipe Consisting of compression nut and compression ring. For valves with internal thread. Note: Support inserts have to be used for copper or soft steel pipe with 1.0 mm wall thickness. Max. operating temperature 120 °C, max. operating pressure 10 bar. | 1/2", DN15 | FIG1/2CS10 | | |
| | | 1/2", DN15 | FIG1/2CS12 | | |
| | | 1/2", DN15 | FIG1/2CS14 | | |
| | | 1/2", DN15 | FIG1/2CS15 | | |
| | | 1/2", DN15 | FIG1/2CS15-10 | | |
| | | 1/2", DN15 | FIG1/2CS16 | | |
| | | 3/4", DN18 | FIG3/4CS18 | | |
| | | 3/4", DN22 | FIG3/4CS22 | | |
| | |  | FIG3/8CSS Compression fitting for COPPER and STEEL pipe Consisting of compression nut and compression ring and support insert. For valves with internal thread. Note: Support inserts have to be used for copper or soft steel pipe with 1.0 mm wall thickness. Max. operating temperature 120 °C, max. operating pressure 10 bar. | 1/2", DN15 | FIG1/2CSS12 |
| 1/2", DN15 | FIG1/2CSS14 | | | | |
| 1/2", DN15 | FIG1/2CSS15 | | | | |
| 1/2", DN15 | FIG1/2CSS16 | | | | |
| 1/2", DN15 | FIG1/2CSS18 | | | | |
| 3/4", DN20 | FIG3/4CSS18 | | | | |
|  | FIG1/2M Compression fitting for MULTILAYER pipe. Consisting of compression nut, compression ring and support insert. For valves with internal thread. Note: Max. operating temperature 90°C, max. operating pressure 10 bar | | | 1/2", DN15 | FIG1/2M16X2 |
| | | | | | |
|  | VA6290 Reduction piece | 1" pipe > 1/2" valve | VA6290A260 | | |
| | | 1 1/4" pipe > 1/2" valve | VA6290A280 | | |
| | | 1" pipe > 3/4" valve | VA6290A285 | | |
| | | 1 1/4" pipe > 3/4" valve | VA6290A305 | | |
|  | VA5201A Tailpiece with thread up to collar | for valves DN15 (1/2") | VA5201A015 | | |
| | | for valves DN20 (3/4") | VA5201A020 | | |
| | | for valves DN25 (1") | VA5201A025 | | |
|  | VA5204Bxxx Extended radiator tailpiece, nickel-plated, to be shortened as required | 1/2" x 76 mm (for DN15) thread approx. 65 mm | VA5204B015 | | |
| | | 3/4" x 70 mm (for DN20) thread approx. 60 mm | VA5204B020 | | |

| | | | |
|---|----------------|--|--------------------------|
|  | H100 | Manual handwheel | |
| | | Single pack Pack of 10 pcs | H100/U H100-1/2A |
|  | VA5090 | Sealing ring for pressure cap | |
| | | for valves DN15 (1/2") for valves DN20 (3/4") | VA5090A015 VA5090A020 |
|  | VA2202A | Pressure cap – for shutting off valves on radiator outlet | |
| | | for valves DN15 (1/2") for valves DN20 (3/4") | VA2202A015 VA2202A020 |
|  | VA8200A | Service tool for replacing valve insert without draining system | |
| | | For V2100 Kombi TRV and V2050 Varia | VA8200A003 |

SPARE PARTS

| Overview | Description | Dimension | Part No. |
|--|--|---|------------|
|  | 1 Metal-to-metal sealing radiator tailpiece | | |
| | | 1/2", DN15 | VA5200B015 |
| | | 3/4", DN20 | VA5200B020 |
| | 2 Coupling nut | | |
| | | DN15, nut with G 3/4" internal thread | VA5000B015 |
| | | DN20, nut with G 1" internal thread | VA5000B020 |
| | 3 Replacement valve insert | | |
| | Varia type (H-type) | | VS1200HA01 |

For more information

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Subject to change

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