

Radiator Valves VT15, VTL15

Essential TRV

Thermostatic Radiator Valve and Lockshield

Application

Thermostatic radiator valves (TRVs) control and limit the flow of heating medium to the radiator to maintain comfort in each room and save energy.

The thermostatic head continuously senses the room temperature and adjusts the flow through the radiator, ensuring there is just the right amount of hot water needed to maintain the set temperature.

Research carried out on behalf of TACMA, the Controls Association within BEAMA, shows that, in a typical UK house, heating system energy consumption can be reduced by up to 40% through the installation of TRVs in addition to a Room Thermostat.

In addition, the VT15/VTL15 Essential TRVs are equipped with a device for simple and straightforward balancing of the heating system by limiting the maximum capacity of the valve. The Heating & Hot water Industry Council recommends balancing to achieve improved comfort and additional energy savings.



011

Approvals

- Approved to EN215 and listed for Keymark

Special Features

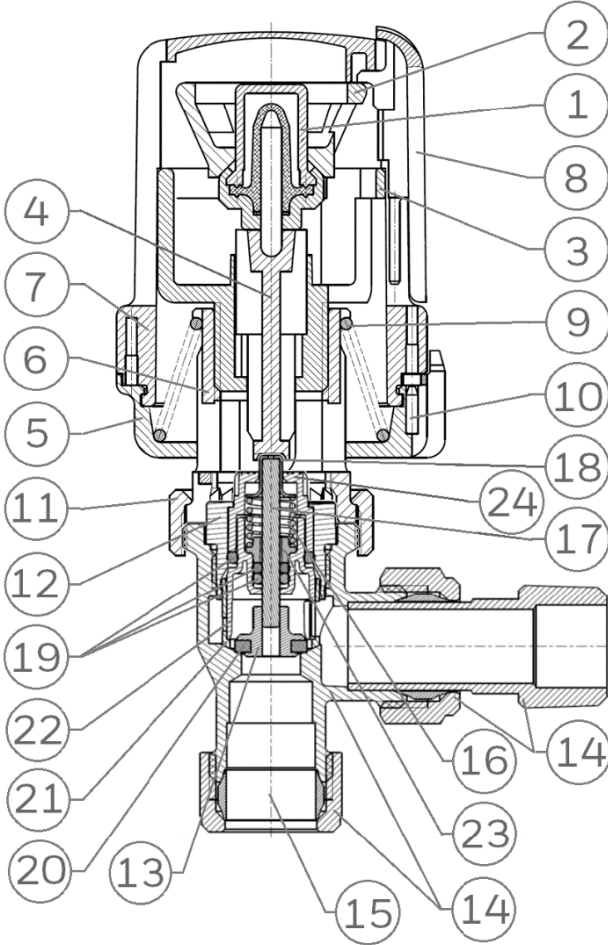
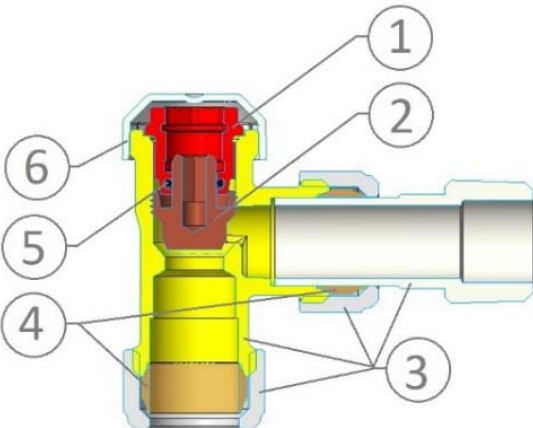
- Modern matt silver nickel plated valve bodies
- Bidirectional flow design
- The TRV head may be mounted vertically or horizontally by swapping the tailpiece and pipe fittings.
- Quiet operation, including in reversed flow direction
- Double O-Ring seal for maintenance-free operation
- Nominal flow up to 160 kg/h
- Strong restoring spring, which is not immersed in water, ensuring durability of the valve
- Standard dimensions per EN215 GB-series in straight and angled patterns with 15 mm, 10 mm or 8 mm compression connections
- Standard dimensions according to EN215 Series GB
- Matching drain-off tailpiece available as accessory
- Temperature range limiting facility
- 6 mm play on radiator tailpiece to allow for variation in radiator distance from the valve
- Standard M30 x 1.5 thermostat connection per EN215, compatible with a wide range of Honeywell Home TRV heads offering alternative finishes, remote sensor and vandal-resistant versions, as well as with the Evohome electronic TRV heads
- The valve insert can be replaced while the system is operating and without draining using the service tool (see 'Accessories')

Product Specification Sheet ENOH-2041GE23 R1125

Technical Data

Media	
Standard medium:	Water with max. 50 % glycol according to VDI 2035
pH-value:	8 - 9.5
Connections/Sizes	
Body-head connection:	M30 x 1.5
Sizes:	1/2" radiator connection 15 mm, 10 mm, 8 mm copper
Temperature set-point range	
Settings 0- * - 5	1 - 26 °C
Ambient temperature	
Max. operating ambient temperature:	40°C (including when head is set to zero)
Heating medium temperatures	
Max. operating temperature:	120 °C
Min. operating temperature:	-10 °C non-freezing
Pressure values	
Max. operating pressure:	PN10, 10 bar (1000 k Pa)
Max. differential pressure:	0.6 bar (60 kPa)
Flow rates	
Nominal flow range:	20 - 160 l/h
Max. nominal flow at 10 kPa (EN 215):	160 l/h ± 10 %
Specifications	
Closing dimension:	11.5 mm
Factory setting:	position 6

Construction

Thermostatic valve and head		Components	Materials
		Thermostatic Head	
		1 Thermal expansion element	brass cartridge, EPDM membrane, stainless steel pin, wax filled
		2 Sensor holder	PA6 GF30
		3 Threaded bushing	
		4 Setting pin	
		5 Base ring with pointer	PA6 GF30, white RAL 9016
		6 Socket	
		7 Housing	ABS, white RAL9016
		8 Presetting tool/memory clip	
		9 Overstroke protection spring	Spring steel
		10 Range locking pins (2x)	Stainless steel
		11 Coupling nut	Brass, nickel plated
		Thermostatic Valve Body	
		12 Insert cartridge	Brass
		13 Plunger	
		14 Valve body, tailpiece, nut	Brass, nickel plated
		15 Compression olives	
		16 Return spring	Spring steel
		17 Spindle	
		18 Spindle cap	EPDM 70
		19 O-Rings	
		20 Plunger seal	PPS GF40
		21 Orifice casing	
		22 Setting screen	PBT GF30
		23 Retaining bushing	
		24 Setting dial	
		Not depicted components:	
		Protection cap	PP GF10
Lockshield		Components	Materials
		1 Insert cartridge	Brass
		2 Plunger for throttling and outlet pipe isolation	
		3 Valve body, tailpiece, nut	Brass, nickel plated
		4 Compression olives	
		5 O-Rings	EPDM 70
		6 Protection cap	PP, white RAL9016

Method of Operation

Thermostatic Radiator Valves (TRVs) provide local control of room temperatures to maintain comfort and save energy. TRVs sense the air temperature around them and control the flow of water through the radiator to which they are fitted, to maintain and limit the temperature within the room.

VT15/VTL15 Valencia Traditional heads feature a concealed range limiting functionality. Using memory clip snapped onto the handle, the range locking pins can be slid out to limit the temperature setting range of the thermostatic head. The same memory clip is needed push the pin back and undo the range limit.

Honeywell Home TRVs feature also a balancing option. Balancing ensures that all radiators get enough flow to reach the desired temperature, provides for increased efficiency by keeping the boiler in condensing mode throughout the heating cycle and prevents the boiler from switching on and off frequently.

Research carried out on behalf of TACMA, the Controls Association within BEAMA, shows that, in a typical UK house, heating system energy consumption can be reduced by up to 40% through the installation of TRVs in addition to a Room Thermostat or Programmable Room Thermostat and that installation costs could be recovered within a year. These tests also showed that by providing local temperature control in every room, TRVs can significantly improve comfort for householders by providing better heat distribution around a dwelling, not achieved without TRVs.

Research by IGT Dresden shows that by carrying out static balancing of the radiators, additional energy saving of 5 kWh per m² per annum can be achieved on top of the savings brought by TRVs alone.

The thermostatic valve is supplied with a protection cap which can be used to positively shut off the valve.

The lockshield can be throttled and shut off using a standard 4mm Allen key.

The VT15 valve body has a removable insert that can be removed and replaced without the need to drain the system. This requires the use of the VA8200A001 insert replacement tool.

Transportation and Storage

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

The following parameters apply during transportation and storage:

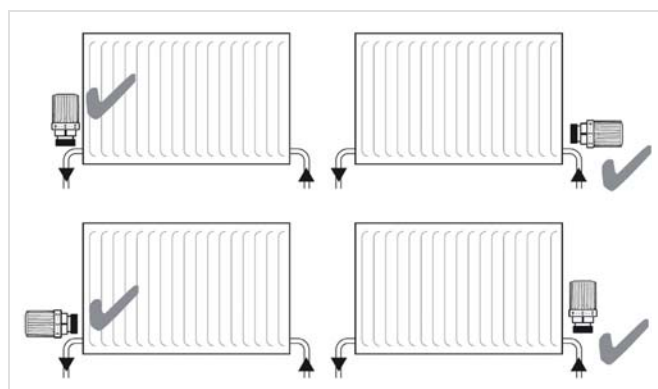
Parameter	Value
Environment:	clean, dry and dust free
Min. ambient temperature:	0 °C
Max. ambient temperature:	50 °C
Max. ambient relative humidity:	75 % *

*non condensing

Installation Guidelines

- VT15/VTL15 Essential TRVs are designed and rigorously tested for noise-free operation in both flow directions. The TRV can be installed both on the supply and on the return of the radiator
- Angled valves can be flipped to have the TRV head pointing upwards or sideways in the axis of the radiator
- Straight valves can be rotated to have the TRV head pointing upwards or forward
- The radiator tailpiece has 6 mm play to allow for variation in radiator distance from the valve
- Do not cover the thermostatic head with a curtain or place furniture in front of it

Installation Example



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.
- Heavily polluted existing heating systems must be flushed thoroughly before installation of the 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.

Technical Characteristics

Thermostatic Head T9002W0GB

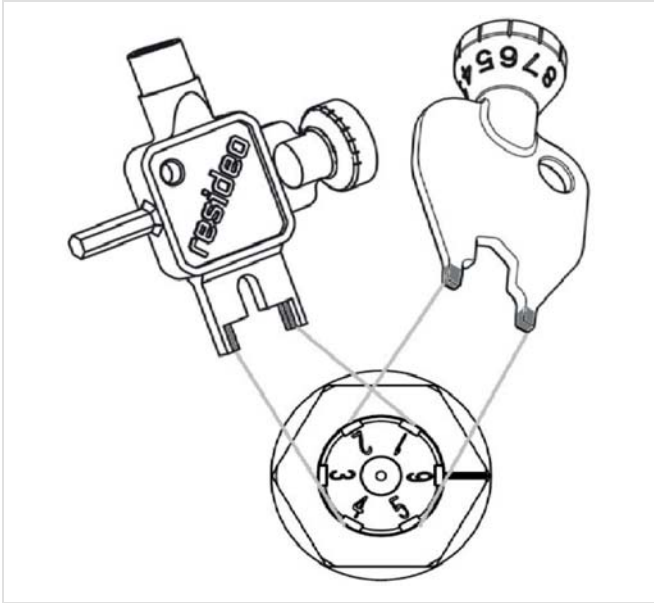
EN215 Parameter	Value
Hysteresis:	1.0 K
Influence of differential pressure:	0.4 K
Influence of heating medium:	0.4 K
Response time:	33 min
Control accuracy:	0.6 K

TRV Head Settings

closed	6 °C	10 °C	15 °C	20 °C	23 °C	26 °C
0	✱	1	2	3	4	5

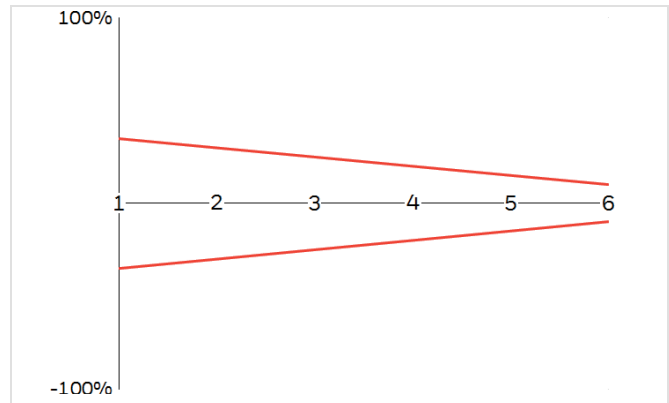
Note: Values approximate. Heating can freeze when radiator thermostats are set to position '0'. Zero-position is also thermostatically controlled – when temperature falls, the TRV may open.

Balancing



- The flow rates can be adjusted to one of the 6 settings (20 to 160 l/h in terms of nominal flow)
- If the required maximum flow does not match exactly the setting value, use the closest higher setting
- The setting is changed using a special setting key
 - Slide the forked part of the setting key into two opposite grooves in the setting dial of the valve
 - Turn the setting key until the desired setting value is against the reference mark on the brass cartridge of the insert
 - The setting dial can be rotated in any direction
 - Do not use intermediate settings
- The default factory setting is position 7.5

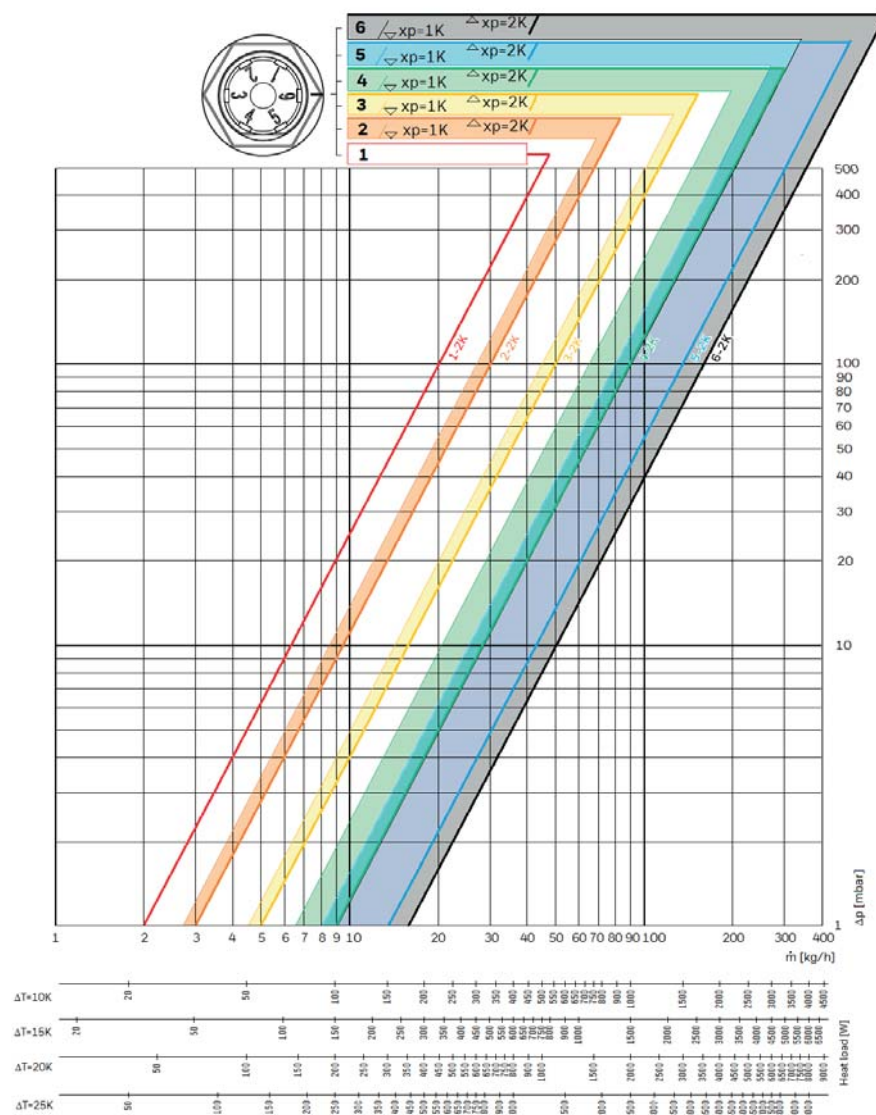
Flow tolerances



Design example

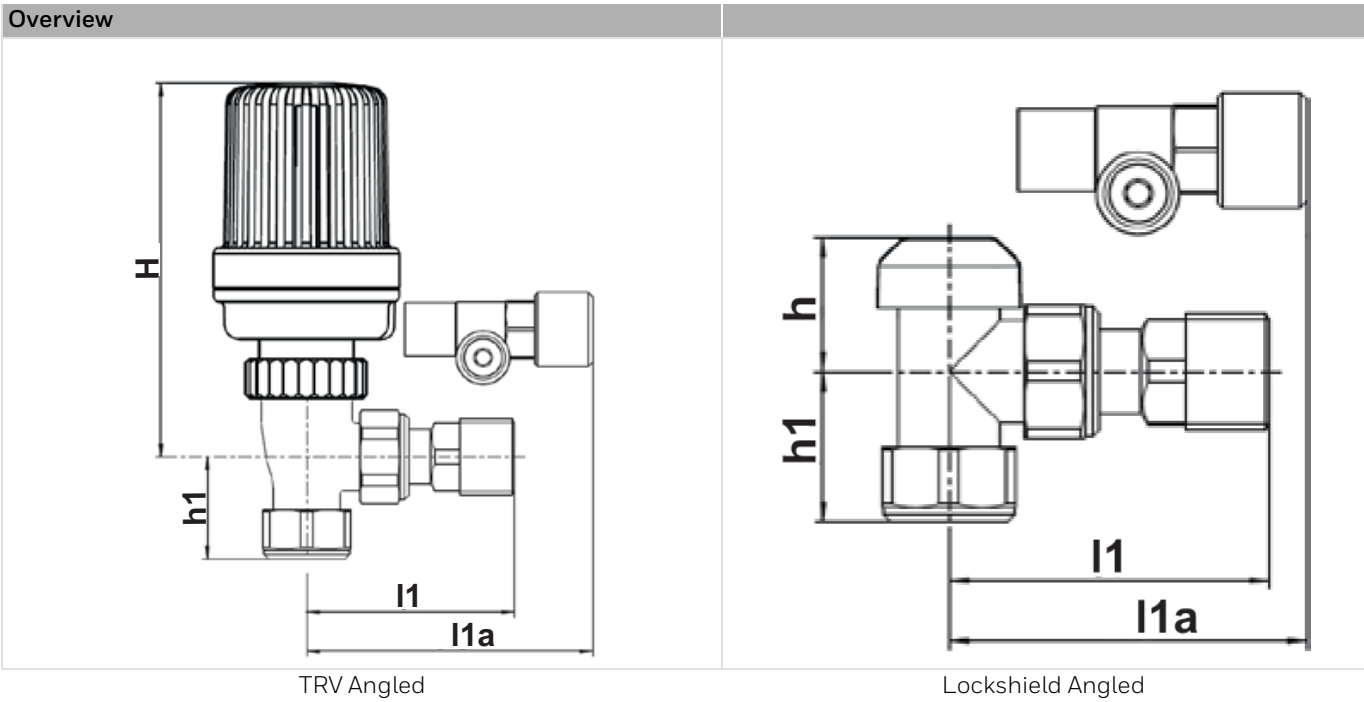
- Heat load: $Q=1000\text{ W}$
- Supply vs. return temperature difference: $\Delta T=15\text{ K}$
- Calculated mass flow: $\dot{m} = Q / (c \times \Delta T) = 1000 / (1.163 \times 15) = 57\text{ l/h}$
- Control within: 2K p-band
- Available differential pressure: $\Delta p = 100\text{ mbar (10 kPa)}$
- Valve setting from the chart below (use next higher setting): 4

Flow Rate



Presetting	1	2	3	4	5	6
kv-value, 1K p-band	0.063	0.085	0.14	0.21	0.25	0.28
kv-value, 2K p-band	0.063	0.095	0.16	0.28	0.43	0.51
kvs	0.063	0.104	0.18	0.34	0.52	0.70

Dimensions



Pattern	Body type	Pipe connection	l1	l1a	h1	H	h	Item No.
Angled	TRV only	15 mm copper	50,5	69	32	141	-	VT15EG
		10 mm copper	50,5	69	32	141	-	VT15BG
		8 mm copper	50,5	69	32	141	-	VT15AG
	TRV and Lockshield	15 mm copper	50,5	69	32	141	-	VTL15-15A
	Valve body only	15 mm copper	50,5	69	32	141	-	V15-15A*
	Lockshield only	15 mm copper	50,5	69	32	-	26	L15-15A/U

Note: All dimensions in mm unless stated otherwise.

Note: * The V15-15A thermostatic valve body only is not orderable separately.

Ordering Information

The following tables contain all the information you need to make an order of an item of your choice.

Accessories

	Description	Dimension	Item No.
	VA15-DO Drain-of tailpiece Drain-off tailpiece with appearance matching to the VT15 TRV and VTL15 lockshields.		
	Bulk pack of 15 pcs	1/2"	VA15-DO/B
	T9002 White TRV upgrade head May be used to upgrade compatible manual valves to convert them to a TRV or to replace an old thermostatic head..		
	Fits Honeywell Home VT15 valves; VHL120, VT117, VTL120 valves since 2015; as well as some competitor valves	M30x1.5	T9002W0GB

	VA8200A	Service tool to replace valve insert Can be used to replace the insert without draining down the heating system		
		For all Honeywell Home TRV valves since 2015 and for all VT15 TRV		VA8200A001
	VS1200	Replacement valve insert		
		SX type, with integrated balancing option		VS1200SX01
	TA6900A	Theft - protection ring		
		white (RAL9016)		TA6900A001
	VS3300	Spare lockshield cap		
		White, multipack of 20 pcs		VS3300L120/B
	VA8201	Presetting key		
		Metallic presetting key with chrome plating for: - VT15/VTL15 Essential TRV - Valencia TRV - Kombi-TRV dynamic balancing valves		VA8201PI04