

## Data Sheet

# RAS-B<sup>2</sup> Dynamic TRV

### Application



Danfoss RAS-B<sup>2</sup> radiator valve is a pressure independent radiator valve, designed for use in 2-pipe heating systems.

RAS-B<sup>2</sup> dynamic valves are fitted with a flow limiting device for presetting of the maximum water flow. The valves are available with maximum water flow of 10 - 135 l/h.

RAS-B<sup>2</sup> has a built-in pressure regulator, which keeps the differential pressure over the valve at a constant level of 0.1 bar, maintaining the set flow.

Dynamic valves are supplied with a protective cap, which can be used for manual regulation during the construction phase.

The protective cap must not be used as manual shut off device. A special manual shut off device (code no. 013G5002) should be used.

To be able to distinguish between other valve bodies of the Danfoss RA series the RAS-B<sup>2</sup> protective cap and presetting ring are green.

RAS-B<sup>2</sup> valve bodies are manufactured from brass with a nickel plating. The gland seal pressure pin is chromium steel and works in a lifetime lubricated O-ring. The complete gland seal assembly can be replaced without draining down the system.

Should water treatment be used it is essential that the manufacturer's dosing instructions are strictly observed. Formulations containing mineral oil should be avoided.

In order to avoid deposition and corrosion the composition of the hot water must be in accordance with the VDI 2035.

### Ordering

RAS-B <sup>2</sup> Pack Contents:			
	Comprising	Copper Pipe Fitting Diameter	Code Number
	RAS-C <sup>2</sup> , RA-DV	15mm	<b>013G7660</b>
	RAS-C <sup>2</sup> , RA-DV	10mm	<b>013G7661</b>
	RAS-C <sup>2</sup> , RA-DV, RLV-D	15mm	<b>013G7662</b>
	RAS-C <sup>2</sup> , RA-DV, RLV-D	10mm	<b>013G7663</b>
	RAS-C <sup>2</sup> , RA-DV, RLV-D, with 10mm push-fit fitting, drain off	10mm	<b>013G7664</b>
	RAS-C <sup>2</sup> , RA-DV, RLV-D, with 15mm push-fit fitting, drain off	15mm	<b>013G7665</b>

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### Accessories

Accessories	Code no.
Gland seal, 10 pcs.	013G0290
Δp tool for pump optimization	013G7861
Valve insert with Regulator 5 pieces	013G7831
RAS-C <sup>2</sup> Sensor only	013G6040
Elbow with 10mm push fit	013G6270
Elbow with 15mm push fit	013G6275
Drain-off tailpiece	003L0105

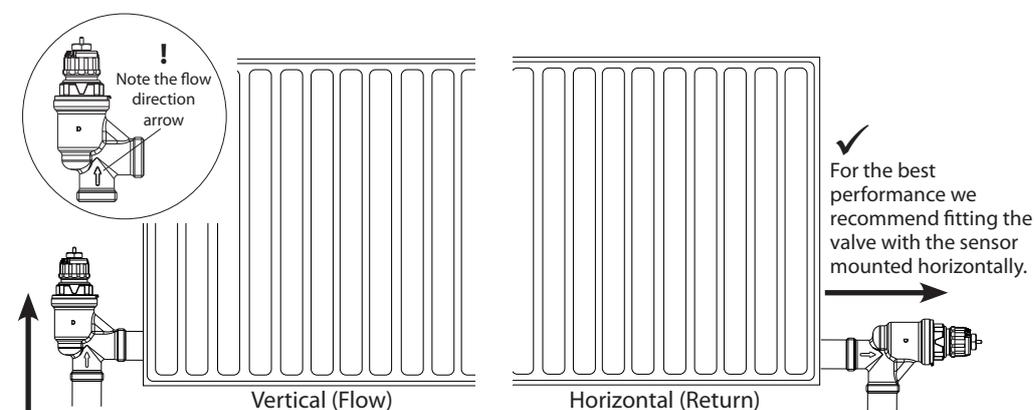
### Quality



Danfoss RAS-B<sup>2</sup> Dynamic TRV is certified according to the European standard EN 215.

Danfoss radiator thermostats are manufactured in factories, assessed and certified by BVC (Bureau Veritas Certification) against ISO 9001 and ISO 14001. against ISO 9001 and ISO 14001.

### Principles



The Danfoss RAS-B<sup>2</sup> radiator valve can be fitted either vertically or horizontally.

NOTE: If you are not installing a Danfoss lockshield valve (supplied in sets code, 013G7662 & 013G7663) ensure that the lockshield is fully open. No balancing on the lockshield/ return pipe.

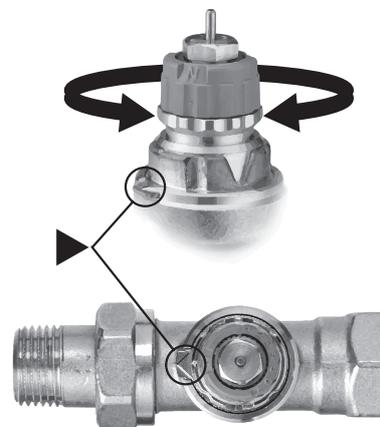
### Presetting

The presetting values of RAS-B<sup>2</sup> valves can be adjusted easily and accurately without the use of tools (default setting = N).

Presetting can be selected in steps from 1 to 7:

- Remove protective cap / thermostatic sensor.
- Find reference mark (▶).
- Turn setting ring until the aquired presetting aligns with the reference mark.

At setting N the valve is fully open. This setting can be used as a flushing position, if the system has to be flushed out because of dirt problems. When the thermostatic sensor has been installed, the presetting is protected against unintended regulation.

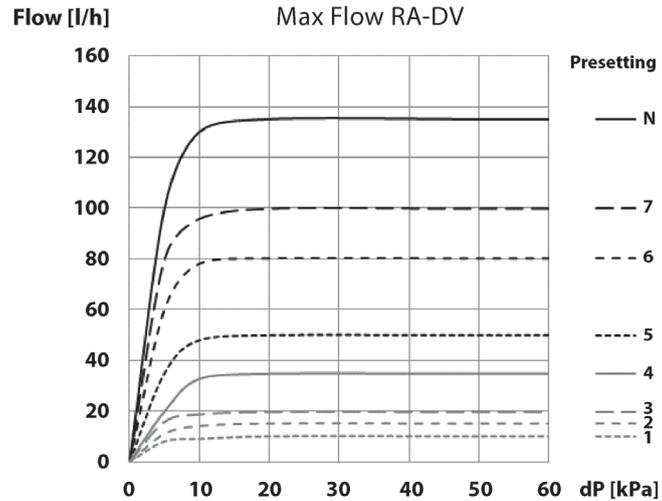


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## Capacities

## RA-DV max. flow



## Sizing example

Required heat	700 W
Cooling across radiator	20 °C
Flow through radiator	$Q = \frac{700}{20 \times 1.16} = 30 \text{ l/h}$
Min. pressure for constant flow	0.1 bar
Valve setting*	4

\*Alternatively the setting can be read directly in the table "Technical Data".

## Technical Data

Max. working pressure <sup>1)</sup>	10 bar							
Max. differential pressure	0.6 bar							
Min. differential pressure	0.1 bar							
Test pressure	16 bar							
Max. working temperature	95° C							
Min. working temperature	2° C							
Presetting	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>N</b>
• Max <sup>3)</sup>	10 l/h	15 l/h	20 l/h	35 l/h	50 l/h	80 l/h	100 l/h	135 l/h
• with RAS-C <sup>2</sup>	8 l/h	12 l/h	16 l/h	25 l/h	40 l/h	65 l/h	85 l/h	110 l/h

<sup>1)</sup> Working pressure = static + differential pressure. The maximum differential pressure specified is the maximum pressure at which the valves give satisfactory regulation.

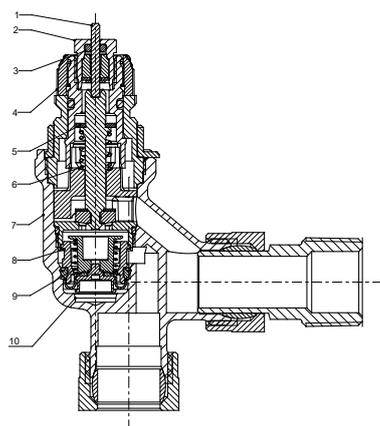
<sup>2)</sup> At setting N the value is stated according to EN 215, at XP = 2K i.e. the valve is closed at 2° C higher room temperature. At lower settings the XP value is reduced to 0.5K of the setting value 1. All values are max. flow at 0.1 bar.

<sup>3)</sup> The value states the max. flow at maximum lift, i.e. at fully open valve at 0.1 bar.

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### Design



1. Pressure pin
2. Gland seal
3. O-ring
4. Setting dial
5. Seal
6. Regulation spring
7. Valve body
8. Regulator
9. Spring
10. Impulse connection

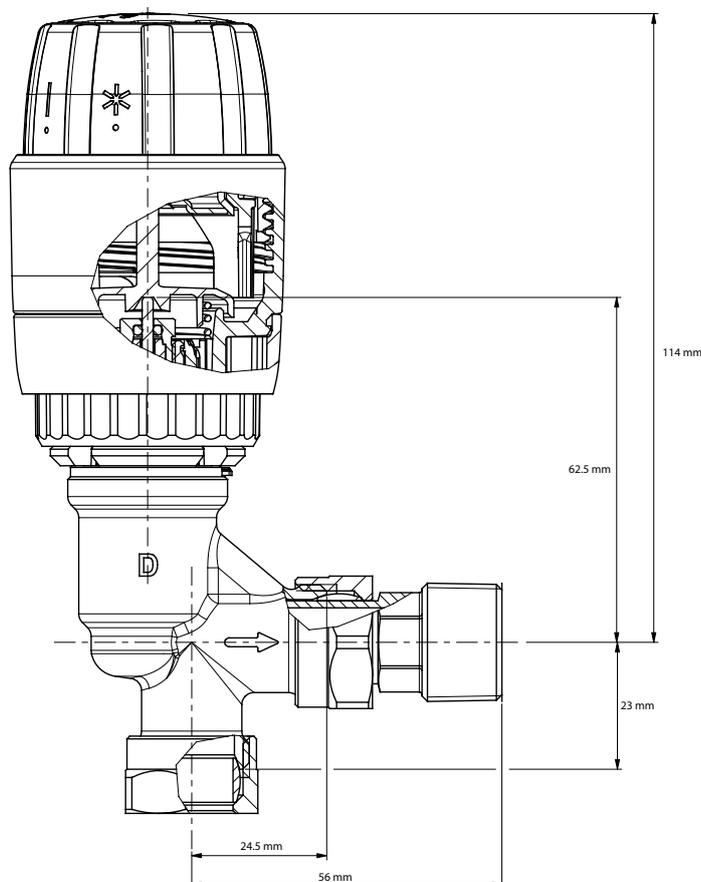
The thermostatic radiator valve consist of a sensor and the valve body RA-DV.

The gland seal of the valve can be changed in operation, i.e. with water and pressure on the system. Counter hold with star spanner number 17 and loosen the gland seal with spanner number 10.

### Materials in contact with water

Valve body and other metal parts	Brass
Valve body surface	Nickle plated
Flow-limiter	PPS
O-ring	EPDM
Valve cone	NBR
Pressure pin and spring	Chrome steel
Regulator	Brass/PPS/EPDM

### Dimensions



### Danfoss A/S

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