

## Data Sheet

# Valve Set for Hydro Cable

## Valve Body RA-IN/HC-RE & Lockshield Valve RLV-S/HC-RE

## Application

**RA-IN/HC-RE radiator valve**

All RA-IN/HC-RE valve bodies can be used together with all types of thermostatic elements with Danfoss RA connection in two-pipe heating systems.

RA-IN/HC-RE valves are fitted with a  $k_v$  limiting device for presetting of max. water flow within a range of 0.052 to 0.84 m<sup>3</sup>/h.

The valve bodies 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 a 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 RA 2000 series the RA-IN/HC-RE protective cap is white.

RA-IN/HC-RE has a connection for PEX 12 x 1.1 mm and 16 x 1.5 mm hydro cable, both axial and radial compression fittings are available. RA-IN/HC-RE are also available with 1/2" connection.

Valve bodies are manufactured from brass with nickel plating. The pressure pin of the gland seal is of chromium steel and works in a lifetime lubricated O-ring. The complete gland assembly can be replaced without draining down the system.

Should water treatment be used it is essential that dosing instructions of the manufacturer are strictly observed. It is recommended that formulations containing mineral oil are avoided.

**RLV-S/HC lockshield valve**

RLV-S/HC-RE is intended for mounting on the outlet of the radiator.

Using RLV-S/HC-RE each radiator can be shut off individually to allow trouble-free maintenance or repair without affecting other radiators in the system.

RLV-S/HC-RE is available in angle version with a connection for PEX 12 x 1.1 mm and 16 x 1.5 mm hydro cable, both axial and radial compression fittings are available.

RLV-S/HC-RE is also available with 1/2" connection.

Default setting is fully open valve.  
Dimensions correspond to DIN 3842-1.

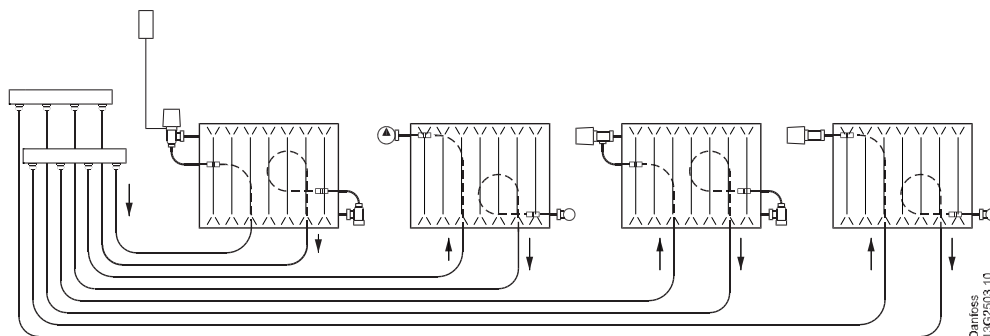
In order to avoid deposition and corrosion the composition of the hot water must be in accordance with the VDI 2035 guideline (Verein Deutscher Ingenieure).

Approved to EN 215



Danfoss RA-IN valves are manufactured to the highest standards, and are approved to the European Standard EN 215.

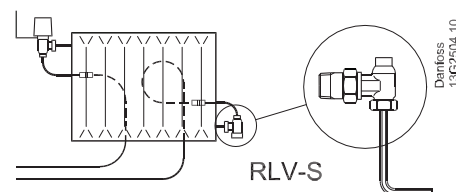
## Principles



### Closing and Opening RLV-S/HC-RE

Use an 8 mm Allen key to close the RLV-S/HC-RE by turning it clockwise.

Open the RLV-S/HC-RE by turning the Allen key anti-clockwise. With 4 turns the valve will be fully open.



## Technical Data and Ordering

RA-IN/HC-RE & RLV-S/HC-RE	Design			Presetting						Max. working pressure <sup>3)</sup>	Max. differen- tial pressure	Test pressure	Max. working temperature	Code no.
				k <sub>V</sub> -value <sup>1)</sup>					k <sub>VS</sub> <sup>2)</sup>					
				1	2	3	4	N	N					
RA-IN A/RLV-S	Angle	Axial 12mm	75mm	0.052	0.095	0.23	0.33	0.49	0.84	10 bar	0.6 bar	16 bar	120 °C	013G2320
RA-IN A/RLV-S	Angle	Axial 16mm	75mm											013G2321
RA-IN UK/RLV-S	Horizontal Angle	Axial 12mm	75mm											013G2322
RA-IN UK/RLV-S	Horizontal Angle	Axial 16mm	75mm											013G2323
RA-IN A/RLV-S	Angle	Radial 12mm	75mm											013G2324
RA-IN A/RLV-S	Angle	Radial 16mm	75mm											013G2325
RA-IN UK/RLV-S	Horizontal Angle	Radial 12mm	75mm											013G2326
RA-IN UK/RLV-S	Horizontal Angle	Radial 16mm	75mm											013G2327
RA-IN A/RLV-S	Angle	Axial 12mm	45mm											013G2330
RA-IN A/RLV-S	Angle	Axial 16mm	45mm											013G2331
RA-IN A/RLV-S	Angle	Radial 12mm	45mm											013G2332
RA-IN A/RLV-S	Angle	Radial 16mm	45mm											013G2333

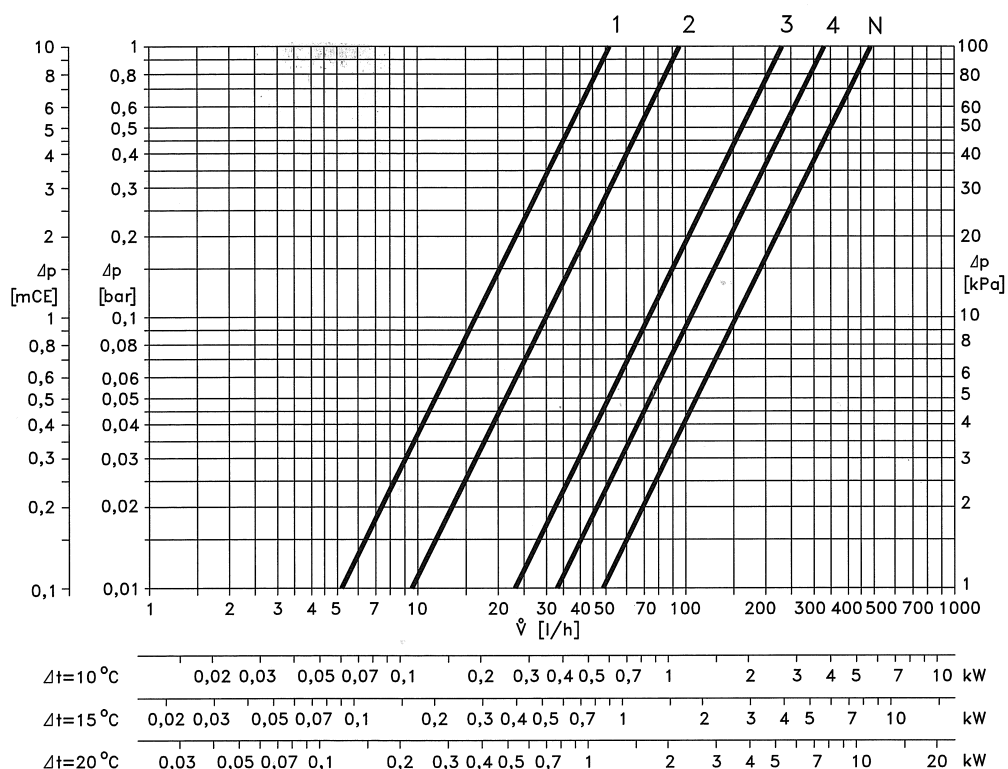
<sup>1)</sup> The k<sub>V</sub>-value indicates the water flow (Q) in m<sup>3</sup>/h at a pressure drop (Δp) across the valve of 1 bar;  $k_V = Q: \sqrt{\Delta p}$ . The k<sub>V</sub>-value is stated according to EN 215, at XP = 2K, i.e. the valve is closed at 2°C higher room temperature. At lower settings the XP value is reduced to 0.5K. The k<sub>V5</sub>-value states the flow Q at a maximum lift, i.e. at fully open valve.

<sup>2)</sup> K<sub>V5</sub>-value for RLV-S/HC: 1.26 m<sup>3</sup>/h

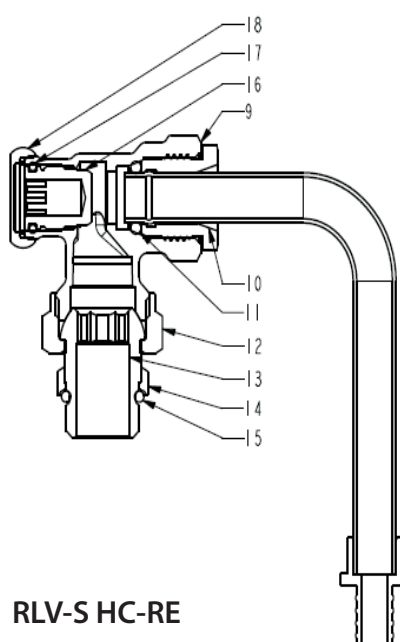
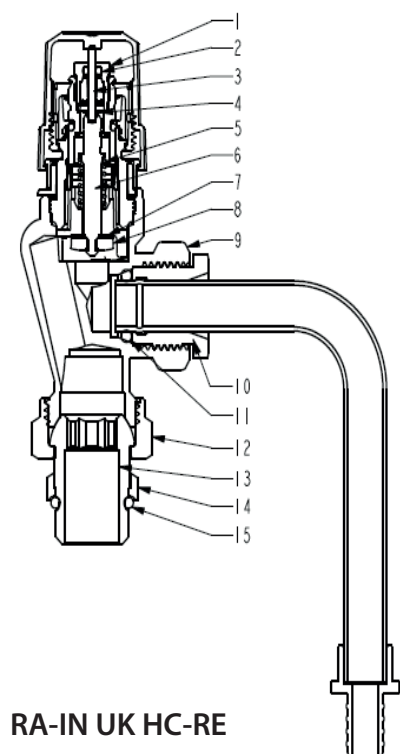
<sup>3)</sup> Working pressure = static + differential pressure. The maximum differential pressure specified is the maximum pressure at which the valves give satisfactory regulation. As with any device which imposes a pressure drop in the system, noise may occur under certain flow/pressure conditions. To ensure quiet operation, maximum pressure drop should not exceed 30 to 35 kPa. The differential pressure can be reduced by the use of the Danfoss differential pressure regulators.

## Capacities

### RA-IN/ HC-RE



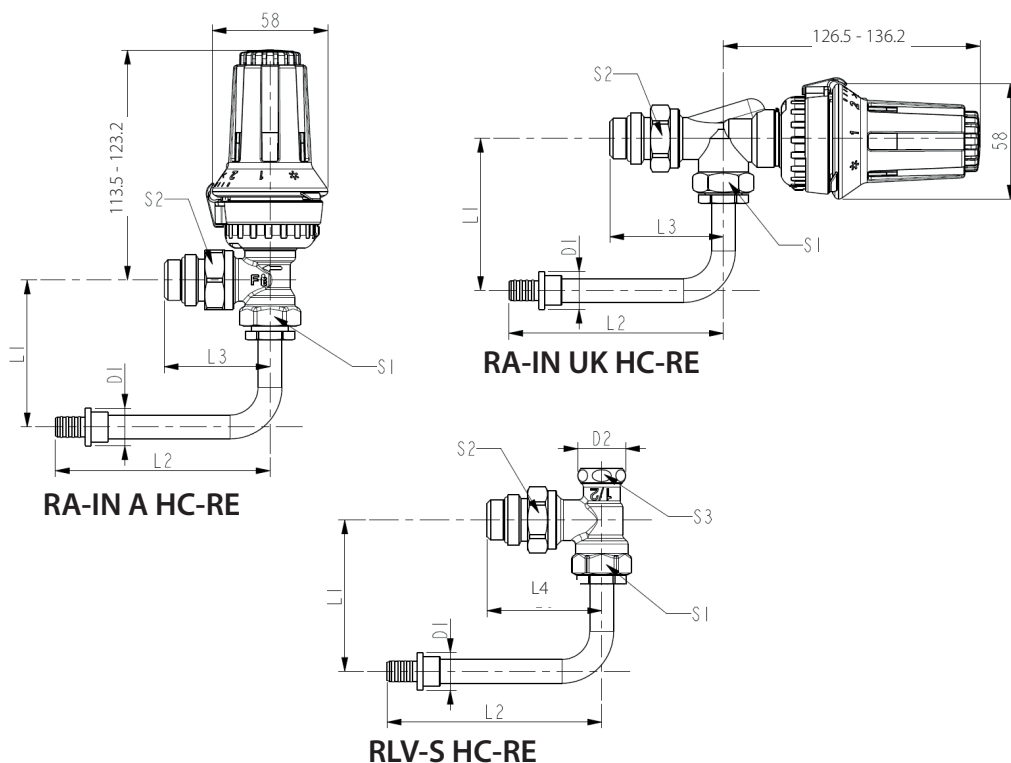
## Construction



No.	Description	Material
1	Gland Seal	Brass EPDM PBS bronze
2	O-ring	EPDM
3	Pressure Pin	Stainless Steel
4	Seal	EPDM
5	Spring	Stainless Steel
6	Spindle	PPS
7	Support Washer	Bronze
8	Valve Plate	NBR
9	Valve House	Brass
10	Nut	Brass
11	O-ring	EPDM
12	Nut	Brass
13	Nipple	Brass
14	Support Ring	Brass
15	O-ring	EPDM
16	Spindle	Brass
17	O-ring	EPDM
18	Cover Cap	Brass

Dimensions

RAW5014 Sensor



Code no.	L1 (+/-1)	L2 (+/-1)	L3 (+/-1)	L4 (+/-1)	Hex dim.			D2	D2	Adaptor type	Pipe dim
					S1	S2	S3				
013G2320	75	110	57	54	30	27	22	24	19	Axial	12
013G2321											16
013G2322											12
013G2323											16
013G2324									15	Radial	12
013G2325											16
013G2326											12
013G2327	45	110	57	54	30	27	22	24	19	Axial	12
013G2330											16
013G2331									15	Radial	12
013G2332											16
013G2333											12

**Danfoss A/S**

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