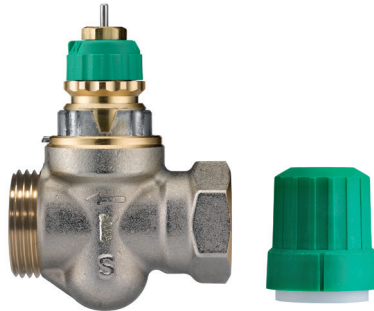


## Data Sheet

# Dynamic Valve™ Type RA-DV PURE

## Pressure Independent Radiator Valve

### Application



*RA-DV PURE straight version*



*RA-DV PURE angle version*

RA-DV PURE valve bodies are manufactured from ecobrass with a nickel plating.

RA-DV PURE is a series of pressure independent radiator valves, designed for use in 2-pipe heating systems together with all types of thermostatic sensors with Danfoss RA coupling.

RA-DV PURE 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.

RA-DV PURE has a built-in pressure regulator, which keeps the differential pressure at a constant level of 0.1 bar, thus maintaining the set flow.

RA-DV PURE is 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 RA-DV protective cap and presetting ring are green.

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.

### Quality



RA-DV PURE Dynamic Valves™ with sensors RAW, RAE and RAS-C are certified according to the European standard EN 215.

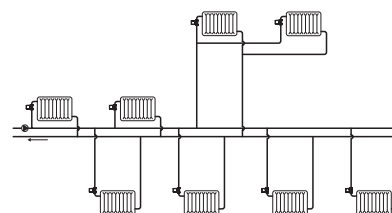
All Danfoss radiator thermostats are manufactured in factories, assessed and certified by BVC (Bureau Veritas Certification) against ISO 9001 and ISO 14001.

## Data Sheet

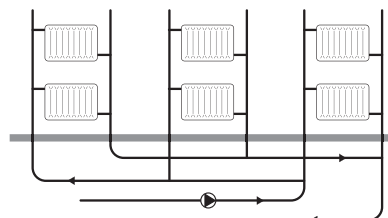
## Dynamic Valve™ Type RA-DV PURE

### Principles

Application example 1



Application example 2



### Ordering

Valve Type	Size	Connection		Design	Code no.
		Inlet	Outlet		
RA-DV PURE	DN10	Rp 3/8	R 3/8	Angle	015G0271
RA-DV PURE	DN10	Rp 3/8	R 3/8	Straight	015G0272
RA-DV PURE	DN15	Rp 1/2	R 1/2	Angle	015G0273
RA-DV PURE	DN15	Rp 1/2	R 1/2	Straight	015G0274
RA-DV PURE	DN20	Rp 3/4	R 3/4	Angle	015G0275
RA-DV PURE	DN20	Rp 3/4	R 3/4	Straight	015G0276

Accessories	Code no.
RA-DV PURE Gland seal, 10 pcs.	015G0290
RA-DV PURE Valve insert with Regulator 5 pieces	015G0899
Δp tool for pump optimization	013G7861
PFM100 measuring instrument	003L8260

Compression fittings*			
R 3/8 & R 1/2 external thread.	Tube dimension mm.	valve type	Code no.
For steel and copper tubing, 10 pcs.	10	DN10	013G4100
	12	DN10	013G4102
	10	DN15	013G4110
	12	DN15	013G4112
	14	DN15	013G4114
	15	DN15	013G4115
	16	DN15	013G4116
For Alupex tubing, 10 pcs.	14 x 2 mm	DN15	013G4174
	16 x 2 mm	DN15	013G4176
Pex tubing, 10 pcs.	12 x 1.1 mm	DN15	013G4143
	14 x 2 mm	DN15	013G4144
	15 x 2.5 mm	DN15	013G4147

\* For more information on Danfoss compression fittings, please refer to the compression fittings data sheet.

## Data Sheet

## Dynamic Valve™ Type RA-DV PURE

## 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 RA 2000 sensor <sup>2)</sup>	9 l/h	14 l/h	18 l/h	30 l/h	45 l/h	70 l/h	90 l/h	130 l/h
• with RAW, RAE or RAS-C sensor <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.

## Presetting

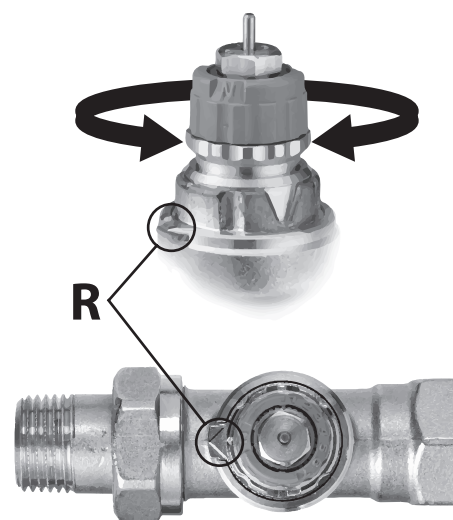
The presetting values of RA-DV valves can be adjusted easily and accurately without the use of tools (default setting = N).

Presetting can be selected in steps from 1 to 7:

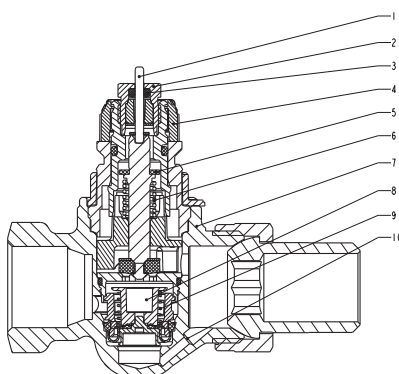
- Remove protective cap / thermostatic sensor.
- Find reference mark (R).
- Turn setting ring until the aquired presetting aligns with the reference mark.

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.



## 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. Sensor and valve body are ordered separately.

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.

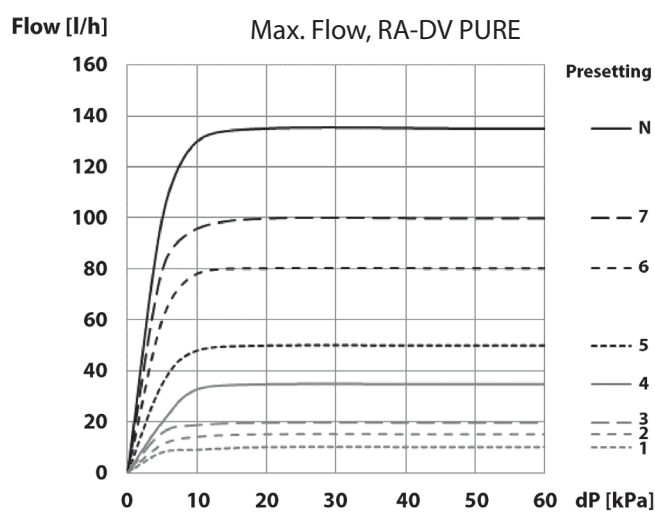
## Materials in contact with water

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

## Data Sheet

## Dynamic Valve™ Type RA-DV PURE

## Capacities



## Sizing example

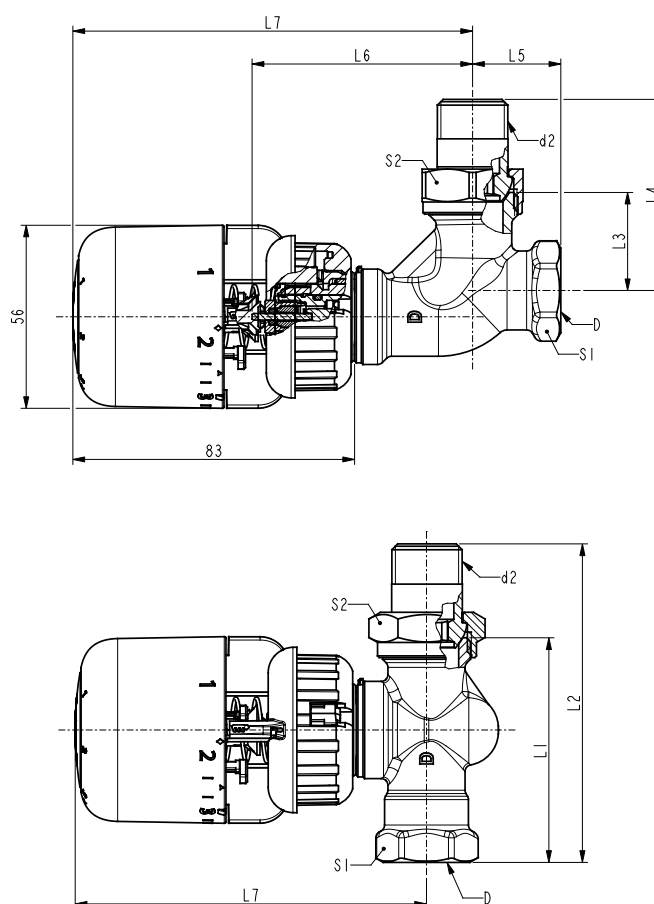
Required heat	700 W
Cooling across radiator	20 °C
Flow through radiator	$Q = \frac{700}{20 \times 1.16} = 30 \text{ l/h}$
Min. pressure for constant flow	0.1 bar
Valve setting*	4

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

## Data Sheet

## Dynamic Valve™ Type RA-DV PURE

## Dimensions



RA-DV PURE Angle &amp; Straight valve +/- RA Danfoss Areo® sensor

Type	Code Number	ISO 7-1			L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	L <sub>7</sub>	Arc. flats	
		DN	D	d <sub>2</sub>								S <sub>1</sub>	S <sub>2</sub>
RA-DV PURE angle	015G0271	10	RP 3/8	R 3/8	-	-	24	-	20	64	116	22	26
RA-DV PURE straight	015G0272	10	RP 3/8	R 3/8	50	-	-	-	-	-	104	22	26
RA-DV PURE angle	015G0273	15	RP 1/2	R 1/2	-	-	26	-	24	66	118	27	30
RA-DV PURE straight	015G0274	15	RP 1/2	R 1/2	58	-	-	-	-	-	104	27	30
RA-DV PURE angle	015G0275	20	RP 3/4	R 3/4	-	-	31	-	28	66	118	32	38
RA-DV PURE straight	015G0276	20	RP 3/4	R 3/4	68	-	-	-	-	-	104	32	38

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