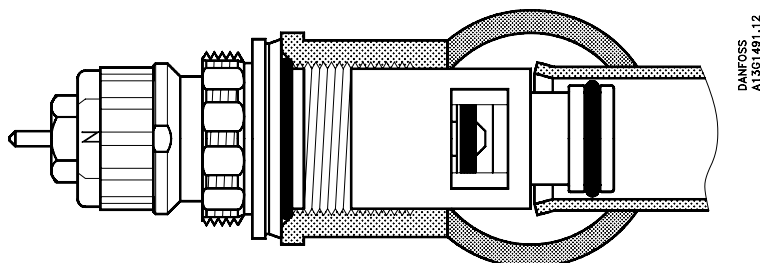


## Data Sheet

# Integrated preset valve type RA-N 013G8370, for normal flow

## Application



DANFOSS  
A13G1491.12

The integrated valve type RA-N (013G8370) with built-in presetting is designed for incorporation into valve radiators and convectors from different radiator and convector manufacturers. The integrated valves can be used in single and two pipe installations with circulating pump.

The integrated valves have a reinforced stuffing box to avoid damage on the valve at low temperatures. To avoid calcification and corrosion, it is important for the composition of the circulating water to comply with the VDI 2035 guidelines. All thermostatic sensors in the RA series can be combined with RA-N 013G8370.

## Ordering and Technical Data

Type	Connection	Presetting									Code no.	
		k <sub>v</sub> -value <sup>1)</sup>										k <sub>vS</sub>
		1	2	3	4	5	6	7	N	N		
RA-N	G½A	0.14	0.21	0.26	0.32	0.46	0.59	0.73	0.87	1.05	013G8370	

### Technical Data

Max. water temperature ..... 120°C      Test pressure ..... 16 bar  
 Rec. differential pressure.....0.05-0.2 bar      Working pressure ..... 10 bar  
 Tech. differential pressure <sup>2)</sup> .....0.6 bar

<sup>1)</sup> k<sub>v</sub>-values indicate the flow volume (Q) in m³/h at a pressure loss (Δp) across the valve of 1 bar.  $k_v = Q : \sqrt{\Delta p}$ . At setting N, the k<sub>v</sub>-value in accordance with EN 215 can be stated as X<sub>p</sub> = 2 K. At lower preset values, X<sub>p</sub> will be reduced until approximately X<sub>p</sub> 0.5 at presetting 1. The table shows the average measured values for integrated valves with radiator. The k<sub>vs</sub>-values indicate the valve capacity, when the valve is fully open. When using a liquid filled radiator thermostat e.g. RAW, RAS-D or remote setting element type RA 5060 X<sub>p</sub> will be increased by factor 1.6 (at setting "N", ref. EN 215).

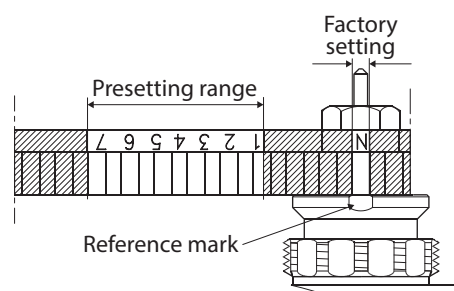
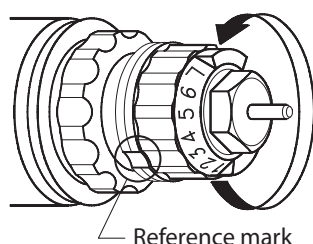
<sup>2)</sup> The technical differential pressure indicates the upper limit for a proper valve function. In most two-pipe systems the recommended differential pressure is sufficient. In order to achieve a noiseless function we recommend in smaller systems to apply automatic bypass valves or automatic balancing valves. If pump differential pressure exceeds the recommended max. valve differential pressure it is recommended that an automatic balancing valve type ASV-P/PV is added to the system.

## Accessories and Spare Parts

Product	Code no.
Gland seal, 10 pcs. <sup>1)</sup>	<b>013L0669</b>
Green protection cap	<b>013G8469</b>

<sup>1)</sup> The gland seal of the valve can be replaced under pressure, i.e. while the installation is in operation.

## Presetting



The presetting values of the integrated valves can be adjusted easily and accurately without the use of tools (factory setting: 'N'):

- Remove the protective cap or the thermostatic sensor.
- Find the reference mark.
- Turn the setting ring until the desired presetting aligns with the reference mark.

The presetting is controlled directly without the use of equipment. After installation in the radiator, the reference mark of the valves will not always be positioned in the same place. Presetting can be selected infinitely variably within and between the setting numbers 1 to 7.

At setting 'N' the valve is fully open. Setting in the shaded areas of the drawing should be avoided. In a one-pipe installation, the setting 'N' must be used.

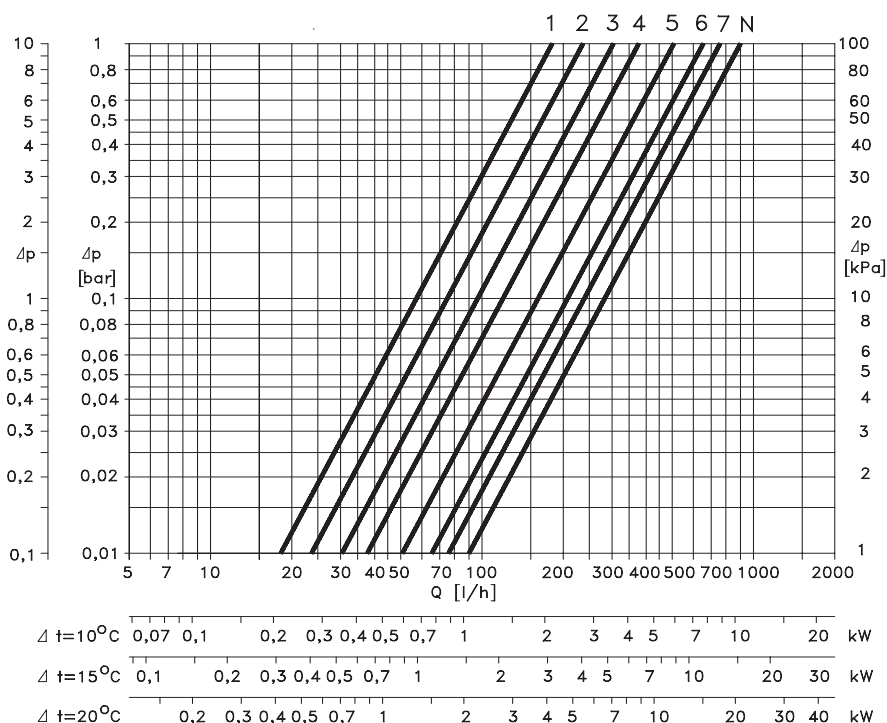
Setting 'N' can be used as a flushing position if the system has to be flushed out because of dirt problems.

When the radiator thermostat has been installed, the presetting is protected against unintended regulation.

For Danfoss elements RA 2000 and RAW, a theft protection device is available; this also provides added security against unwanted adjustment of the preset values.

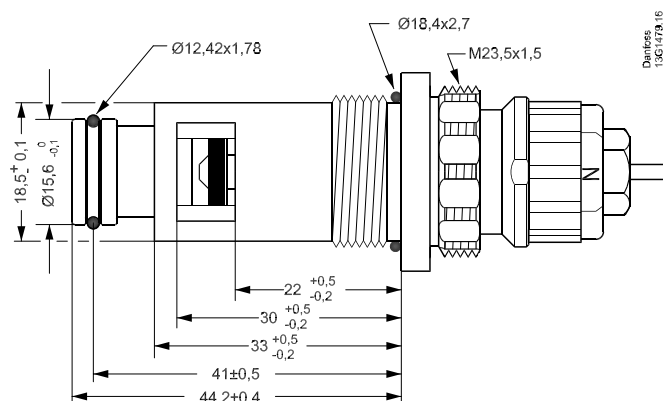
## Capacities

### Capacities without radiator and fittings



Capacities at  $X_p = 2K$  with Danfoss radiator thermostats RA-N are measured without radiator and connection fittings.

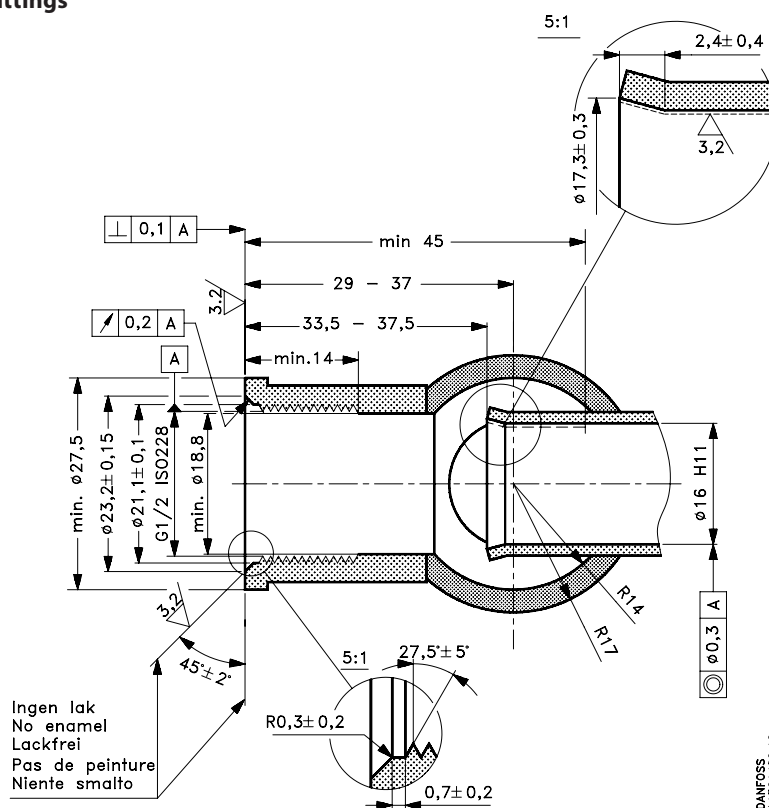
## Design and Dimensions



## Materials

Valve body	Ms 58 Brass
Valve seat	PPS
Throttle nozzle	PPS
Setting dial	Plastic
O-ring	NBR/EPDM
Valve spindle	PPS
Valve cone	NBR
Pressure pin and valve spring	Chrome steel

## Standard Fittings



The dimensions stated may vary according to different radiator manufacturers (013M5058 E0002 001 047 97.03.25)

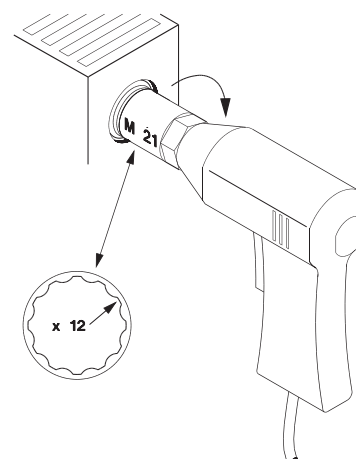
## Mounting Instructions

### Installation of an integrated valve at radiator manufacturer's plant

An integrated valve can only be fitted once in a radiator (because of the load on the deformation zone).

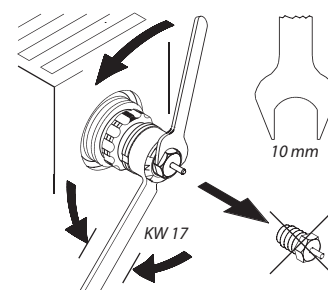
- Fit the integrated valve in the radiator using a 12-edge spanner, KW 21.
- Tighten using a torque of 30-35 Nm.
- If required, continue turning until one of the cap thread beads points upwards (only clockwise).

Tolerance for adjustment:  $\pm 5^\circ$ .



### Replacement of the gland seal

While the system is in operation, the gland seal can be replaced by means of a spanner, KW 10. Hold the setting ring using a 12-edge ring-spanner, KW 17.



Press the pressure pin firmly.

