Data sheet

Fixed capacity valves type RA-FN (series F)

027

Certfied according to EN 215

RA-FN straight

RA-FN angle

RA-FN horizontal angle

Application

The RA-FN valve bodies are used in two-pipe heating systems.

The valves 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 seal. The complete gland assembly can be replaced without draining down the system.

The valves are supplied with a grey 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. 013G3300) should be used.

Compression fittings for 15 mm, 10 mm or 8 mm copper tube are available for RA-FN with 3/8" and 1/2" connections.

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).
It is recommended that formulations containing mineral oil are avoided.

All RA-FN valve bodies can be used together with all types of thermostatic elements in the Danfoss RA2000 series.

Code nos. and technical data

Valve bodies for two-pipe systems type RA-FN (series F)

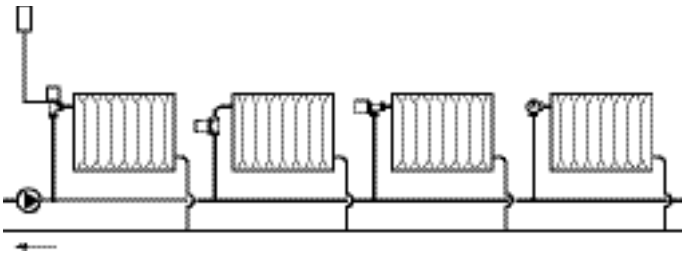
Type	Design	Connections		k_v-value [1] (m^3/h at 1 bar pressure drop) P-band = K					Max. working temp.	Code no.
		Inlet	Outlet	0.5K	1.0K	1.5K	2.0K	k_{vs}		
RA-FN 10	angle	Rp 3/8	R 3/8	0.17	0.34	0.47	0.56	0.65	120 °C	**013G0001**
RA-FN 10	straight	Rp 3/8	R 3/8	0.17	0.34	0.47	0.56	0.65	120 °C	**013G0002**
RA-FN 10	horizontal	Rp 3/8	R 3/8	0.17	0.34	0.47	0.56	0.65	120 °C	**013G0141**
RA-FN 15	angle	Rp 1/2	R 1/2	0.22	0.43	0.57	0.73	0.90	120 °C	**013G0003**
RA-FN 15	straight	Rp 1/2	R 1/2	0.22	0.43	0.57	0.73	0.90	120 °C	**013G0004**
RA-FN 15	horizontal	Rp 1/2	R 1/2	0.22	0.43	0.57	0.73	0.90	120 °C	**013G0143**
RA-FN 20	angle	Rp 3/4	R 3/4	0.30	0.58	0.83	1.04	1.40	120 °C	**013G0005**
RA-FN 20	straight	Rp 3/4	R 3/4	0.30	0.58	0.83	1.04	1.40	120 °C	**013G0006**
RA-FN 20	horizontal	Rp 3/4	R 3/4	0.25	0.50	0.67	0.80	1.00	120 °C	**013G0145**
RA-FN 25	angle	Rp 1	R 1	0.30	0.58	0.83	1.04	1.40	120 °C	**013G0027**
RA-FN 25	straight	Rp 1	R 1	0.30	0.58	0.83	1.04	1.40	120 °C	**013G0028**

Max. working pressure[2]: 10 bar. Max. differential pressure: 0.6 bar. Test pressure: 16 bar.

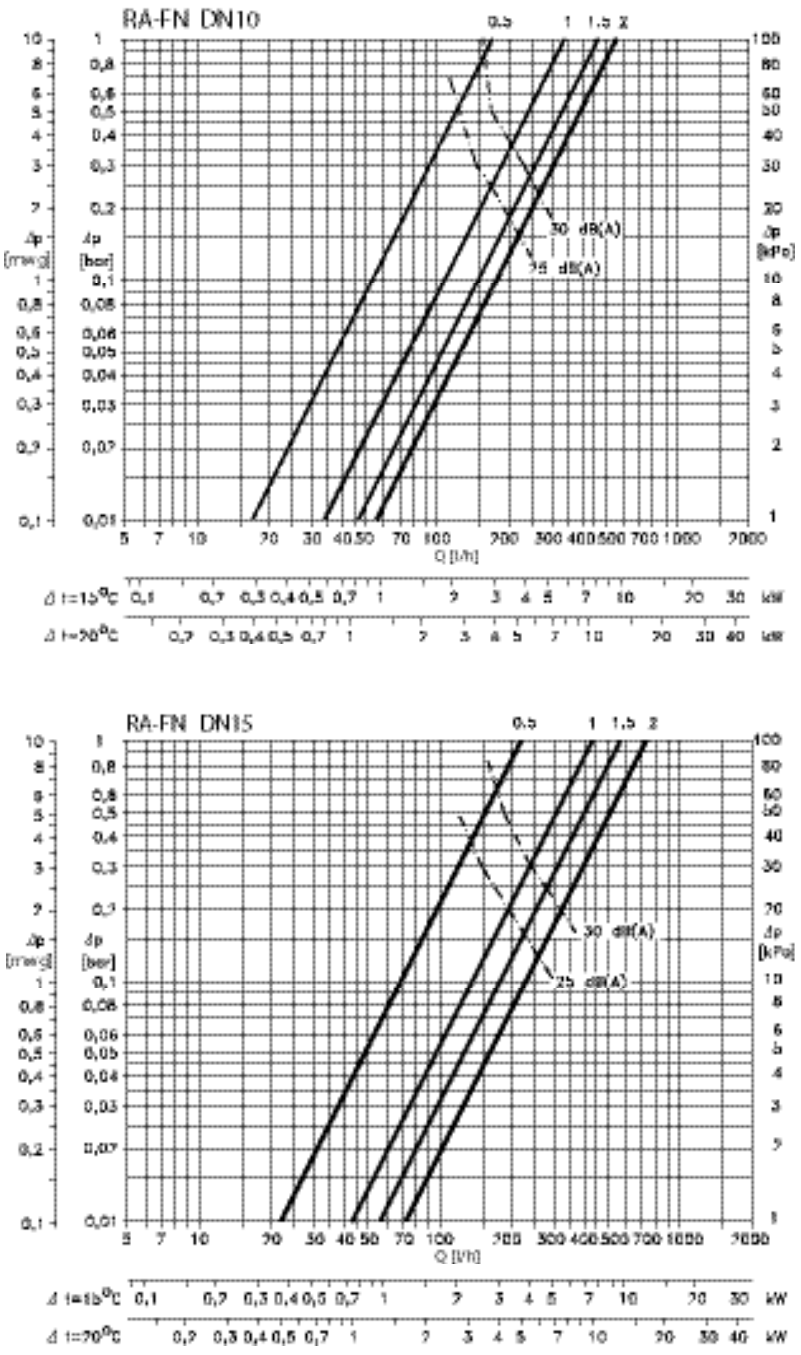
1) The k_v-value indicates the water flow (Q) in m^3/h at a pressure drop (Δp) across the valve of 1 bar; $k_v = Q: \sqrt{\Delta p}$. The k_v-value is stated according to EN 215, at Xp = 2K i.e. the valve is closed at 2°C higher room temperature. At lower settings the Xp value is reduced to 0.5K. The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

2) 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 types AVD, AVDL, AVDS, IVD or ASV-P.

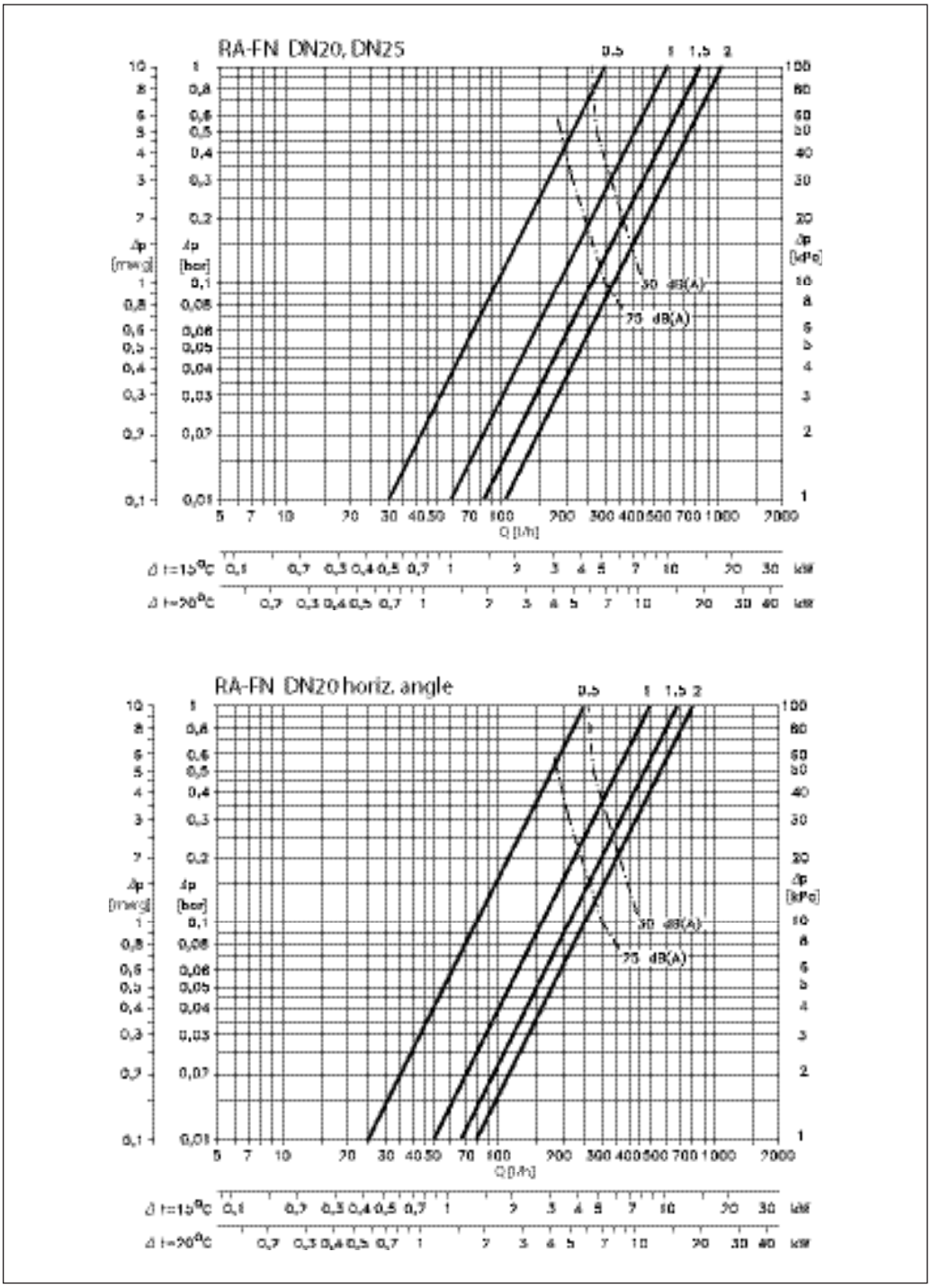
System



Capacities



Capacities



Note:
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 30-35 kPa (3-3.5 mwg).

Construction

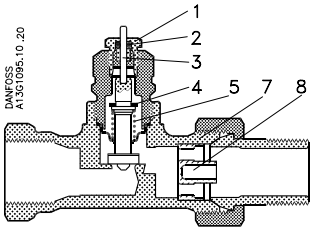
A radiator thermostat consist of a thermostatic element of the RA 2000 series and a RA-FN valve.

The element and the valve body are ordered separately.

Materials in contact with water

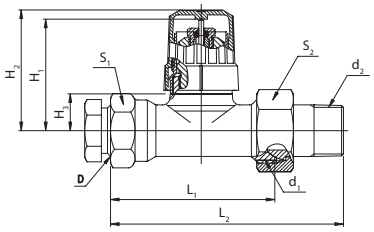
Valve body and other metal parts	Ms 58, brass
O-ring	EPDM
Valve cone	NBR
Pressure pin and valve spring	Chrome/Steel
Nozzle	PP

1. *Gland seal*
2. *O-Ring*
3. *Pressure pin*
4. *Seal*
5. *Regulation spring*
7. *Valve body*
8. *k_v-nozzle*

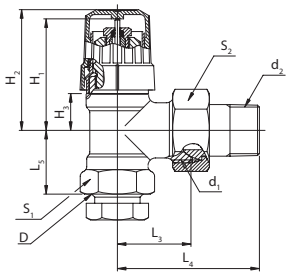


The RA-FN valves are nickle-plated on the outside.

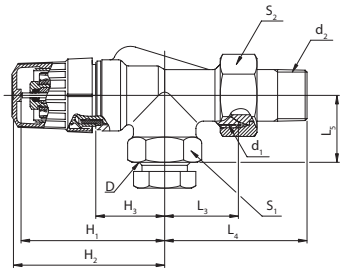
Dimensions



RA-FN straight valve



RA-FN angle valve



RA-FN horizontal angle valve

Series F	ISO 7-1			L_1	L_2	L_3	L_4	L_5	H_1	H_2	H_3	Arc. flats	
	D	d_1	d_2									S_1	S_2
RA-FN 10	G 3/8	G 5/8 A	R 3/8	50	75	24	49	20	47	50	15	22	27
RA-FN 10 horiz.	G 3/8	G 5/8 A	R 3/8	-	-	26	51	22	61	64	29	22	27
RA-FN 15	G 1/2	G 3/4 A	R 1/2	55	82	26	53	23	47	50	15	27	30
RA-FN 15 horiz.	G 1/2	G 3/4 A	R 1/2	-	-	29	57	27	62	65	30	27	30
RA-FN 20	G 3/4	G 1/1 A	R 3/4	65	98	30	63	26	47	50	15	32	37
RA-FN 20 horiz.	G 3/4	G 1/1 A	R 3/4	-	-	34	66	30	63	66	31	32	37
RA-FN 25	G 1/1	G 1/1 A	R 1/1	90	125	40	75	34	47	50	15	41	46