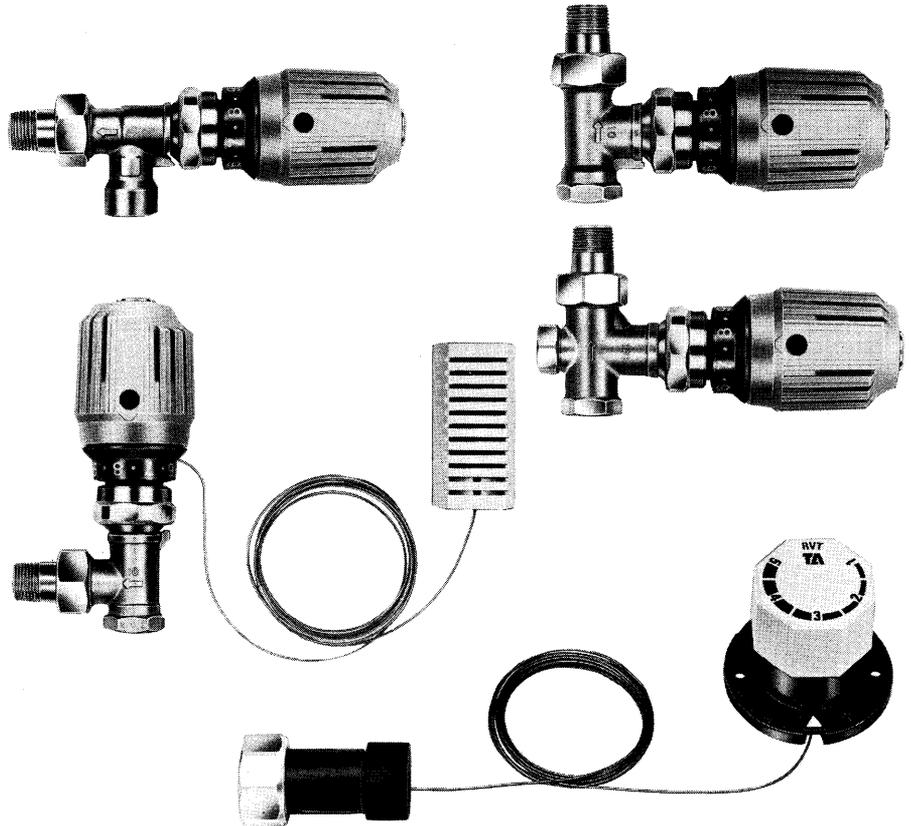


- The RVT thermostatically controlled radiator valve is intended for use with 2-pipe pump-circulated hot water systems and is very effective in keeping the room temperature at a constant value and in saving energy.
- The sensing element, which is in the upper part of the handwheel contains an expansion medium consisting of wax, RVT 50 B and 50 C, or fluid RVT 60 B and 90 B. The thermostat acts on the valve cone which regulates the water flow and thereby the heat given off by the radiator. All parts between valve body and sensing element are made of heatinsulating material and are well ventilated to prevent heat from the valve affecting the sensing element.
- The valve can be completely shut with a thermostat RVT 50 C no matter how low the room temperature is.
- The other thermostats, RVT 50 B, RVT 60 B and RVT 90 B, have approx 6 and 8°C respectively as the lowest presetting temperature.
- With these thermostats the valve will open when the room temperature goes down to the lowest presetting temperature and they are thus an anti-freeze security for the plant.
- The desired temperature is set with the handwheel, the scale of which is marked. The temperature range can be limited to a maximum or minimum. The thermostat can also be locked at the desired temperature to prevent unauthorised adjustment.
- RVT is also available with pre-adjustable valve body. Pre-adjustment is used to give each valve the correct water quantity. Pre-adjustment permits a more uniform temperature to be obtained in the whole installation. The pre-setting value is calculated by reading off from a graph and regulated by a separate adjustment using an Allen key.
- On delivery the valve is provided with a plastic protecting cap by means of which the valve can be controlled by hand until the thermostat is fitted. If there is to be a long period of hand control before fitting of the thermostat unit, handwheel 50 399—001 is recommended.
- All types of RVT valves can be connected to smooth tubes by means of the KOMBI compression coupling.
- The RVT has a valve body of die cast AMETAL<sup>®</sup> or brass with bonnet of brass and spindle of stainless steel. Spindle sealing is by means of an O-ring which can be replaced if necessary without having to drain off the system.



Type	TA.No
Valve body, straight (RVT 58)	75 321
Valve body, straight, with pre-setting (RVT 58-F)	50 371
Valve body, angled (RVT 57)	75 323
Valve body, reverse angle for horizontal head (RVT 59)	75 324
Valve body, reverse angle for horizontal head with pre-setting (RVT-59F)	50 374
Thermostat unit, fixed sensor (RVT 50 B)	50 341-2
Thermostat unit, fixed sensor with full isolation (RVT 50 C)	50 341-3
Thermostat unit, remote sensor (RVT 60 B)	50 342
Thermostat unit, remote head (RVT 90 B)	50 346
Protection cap	50 349
Handwheel (No 55)	50 399
Straight union	50 701
Bent union	50 702
Adjusting kit	50 369

## TECHNICAL DESCRIPTION

**Application:** Heating installations, 2 pipe systems with pumped circulation.

**Nominal range of temperature:** See the following pages.

**Max. pressure:** 1,0 MPa = 10 bar 140 psi.

### Max. differential pressure:

When the valve is closed, the pressure difference between the inlet and outlet of the valve strives for opening the valve. The maximum allowed pressure difference for the valve not to open against a closed thermostat is:

Size 10            40 mWG ≈ 400 kPa = 4 bar  
                          (56 lbf/in<sup>2</sup>)  
Size 15 and 20    20 mWG ≈ 200 kPa = 2 bar  
                          (28 lbf/in<sup>2</sup>)

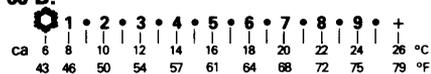
For valves with reversed flow the pressure difference between the inlet and outlet of the valve strives for closing the valve. The maximum

allowed pressure difference not affecting the control capacity of the thermostat is:  
10 mWG ≈ 100 kPa = 1 bar (14 lbf/in<sup>2</sup>) (for all dimensions).

The maximum recommended pressure in order to avoid noises = 5 mWG ≈ 50 kPa = 0,5 bar (7 lbf/in<sup>2</sup>) (for all valves and dimensions).

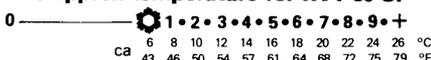
**Max working temperature:** + 120°C. (The thermostat head may not be subjected to a higher temperature than +50°C (122°F) or lower than -20°C (-4°F).

### The approx temperature for RVT 50 B and 60 B:

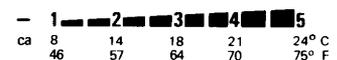


(the scale on the thermostat unit for max limitation ends: 7 MAX)

### The approx temperature for RVT 50 C:



### The approx temperature for RVT 90 B:



**Surface treatment:** Nickel-plated, for valves and fittings.

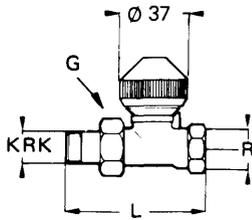
**Length of capillary tube:** 2 m, 5 m or 8 m. Applicable for thermostats with separate sensing element.

**Marking:** The thermostatic head is marked with the control mark of the Swedish Board of Urban Planning and the French control mark Norm de France on the handwheel. It is also marked with date, production year as well as week eg 8234 (ie 1982 w 34). The valve body has cast: flow direction arrow and punched: date of production year and week.

# VALVE BODIES

## 75 321 Straight

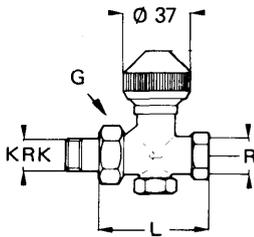
(RVT-58)



TA.No	Size	L	H*	R/KRK	Thread G
75 321-110	10	75	115	3/8	M22 × 1,5
-115	15	88	116	1/2	M26 × 1,5
-120	20	102	117	3/4	M34 × 1,5
<b>Straight excl. radiator union of AMETAL® throughout for tap water</b>					
75 311-510	10	50	115	3/8	M22 × 1,5
-515	15	58	116	1/2	M26 × 1,5
<b>H* The dimensions apply to a valve with a thermostat section fitted from the top to the centre pipe connection</b>					

## 50 371 Straight with pre-setting

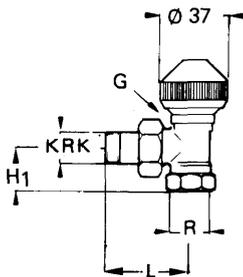
(RVT 58-F)



TA.No	Size	L	H*	R/KRK	Thread G
50 371-110	10	75	121	3/8	M22 × 1,5
-115	15	88	121	1/2	M26 × 1,5
<b>H* The dimensions apply to a valve with a thermostat section fitted from the top to the centre pipe connection</b>					

## 75 323 Angle

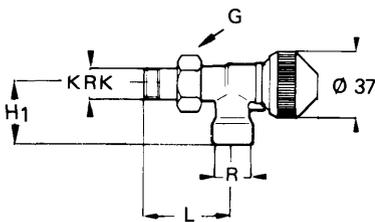
(RVT 57)



TA.No	Size	L	H*	H1	R/KRK	Thread G
75 323-110	10	49	115	20	3/8	M22 × 1,5
-115	15	56	116	24	1/2	M26 × 1,5
-120	20	67	117	28	3/4	M34 × 1,5
<b>H* The dimensions apply to a valve with a thermostat section fitted from the top to the centre pipe connection</b>						

## 75 324 Reverse angle for horizontal head

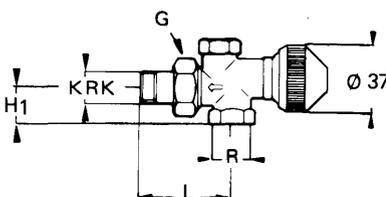
(RVT 59)



TA.No	Size	L	H*	H1	R/KRK	Thread G
75 324-110	10	47	113	34	3/8	M22 × 1,5
-115	15	56	117	24	1/2	M26 × 1,5
-120	20	65	120	28	3/4	M34 × 1,5
<b>H* The dimensions apply to a valve with a thermostat section fitted from the top to the centre pipe connection</b>						

## 50 374 Reverse angle for horizontal head with pre-setting

(RVT 59-F)



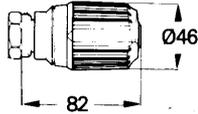
TA.No	Size	L	H*	H1	R/KRK	Thread G
50 374-110	10	49	120	20	3/8	M22 × 1,5
-115	15	56	127	24	1/2	M26 × 1,5
<b>H* The dimensions apply to a valve with a thermostat section fitted from the top to the centre pipe connection</b>						

R = Cylindrical pipe thread (BSP Female)  
 KRK = Short tapered pipe thread (BSP Male)

# THERMOSTAT UNITS

## 50 341 Fixed sensor

(RVT 50 B)  
(RVT 50 C)

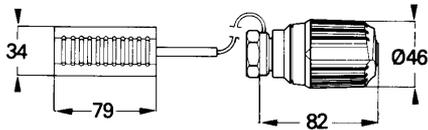


TA.No	Temp.range
<b>RVT 50 B</b> 50 341-201	6-26°C
-220*	6-20°C
-221*	6-21°C
-222*	6-22°C
<b>RVT 50 C</b> 50 341-301	0-26°C, + full isolation

**Colour: Beige**

## 50 342 Remote sensor

(RVT 60 B)

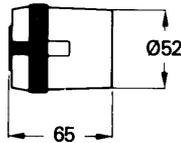


TA.No	Temp.range	Length for capillary tube
50 342-201	6-26°C	2 m
-220*	6-20°C	2 m
-221*	6-21°C	2 m
-222*	6-22°C	2 m
-251	6-26°C	5 m
-281	6-26°C	8 m

**Colour: Beige**

## 50 349 Protection cap

for RVT 50 B, RVT 50 C  
and RVT 60 B

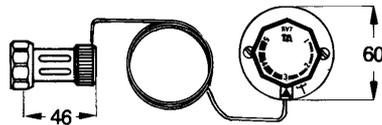


TA.No	Type
50 349-001	Standard
50 349-002	With locking device
50 349-009	Disassembly tool

**Colour: Beige**

## 50 346 Remote head

(RVT 90B)



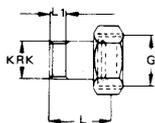
TA.No	Temp.range	Length for capillary tube
50 346-201	8-24°C	2 m
-251	8-24°C	5 m
-281	8-24°C	8 m

**Colour: Beige**

\*) Thermostat units with max. limitation to other temperatures can be supplied to special order.

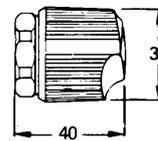
# ACCESSORIES

## 50 701 Straight union



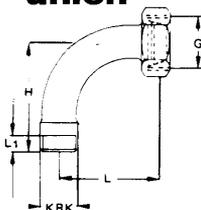
TA.no	Conn. DN	L	L1	KRK	Thread G
50 701-110	10	25	8	3/8	M22 x 1,5
-115	15	30	10	1/2	M26 x 1,5
-120	20	34	11	3/4	M34 x 1,5
<b>For tap water</b>					
50 701-510	10	25	8	3/8	M22 x 1,5
-515	15	30	10	1/2	M26 x 1,5

## 50 399 Handwheel



TA.no
50 399-001

## 50 702 Bent union



TA.no	Conn. DN	L	L1	H	KRK	Thread G
50 702-110	10	44	8	48	3/8	M11 x 1,5
-115	15	46	10	56	1/2	M26 x 1,5
-120	20	51	11	65	3/4	M34 x 1,5

## 50 369 Adjusting kit (Allen key and presetting card)

TA.no
50 369-001

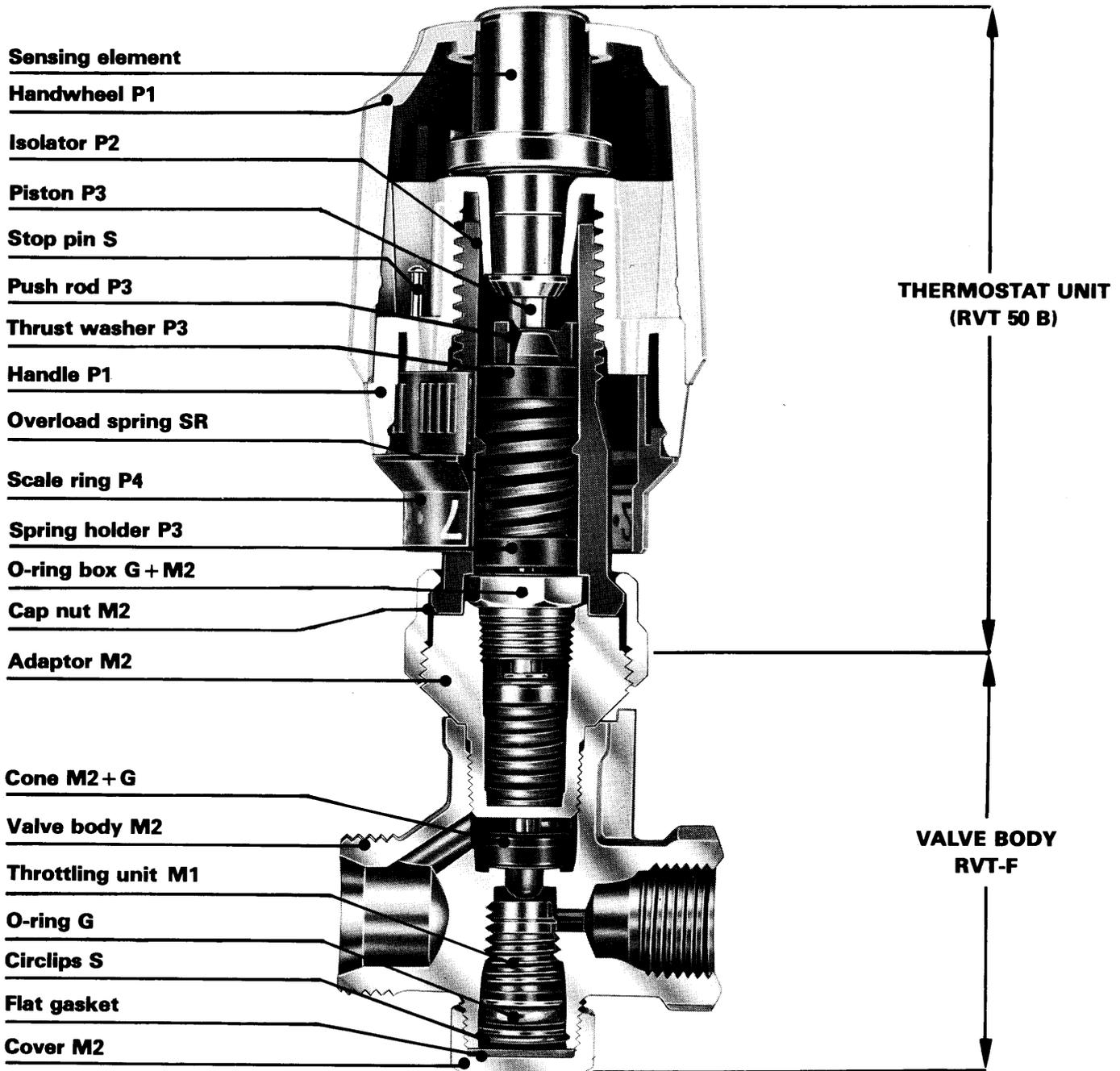
KRK = Short tapered pipe thread (BSP Male)

All valves can be connected to smooth tubes by means of KOMBI compression couplings

Conn. R	Pipe mm	8	10	12	15	16	18	22
10 (3/8)	53 235-103		53 235-104	53 235-107				
15 (1/2)	-108		-109	-111	53 235-113	53 235-114		
20 (3/4)					-117	-119	53 235-121	53 235-123

KOMBI is to be ordered separately. KOMBI couplings can be found under section 4.

# SERVICE SHEETS



## MATERIAL:

- P1 = Plastic, ABS**
- P2 = Plastic, glassfibre reinforced, PA**
- P3 = Plastic, glassfibre reinforced, modified PPO**
- P4 = Plastic, CAB**
- G = Rubber, EPDM**
- S = Steel**
- SR = Steel, stainless**
- M1 = AMETAL®**
- M2 = Brass**

# PRESSURE-DROP GRAPH

## RVT

The pressure drop in an **RVT** thermostatically controlled valve without pre-setting is determined by the  $K_v$ -values shown in the table here.

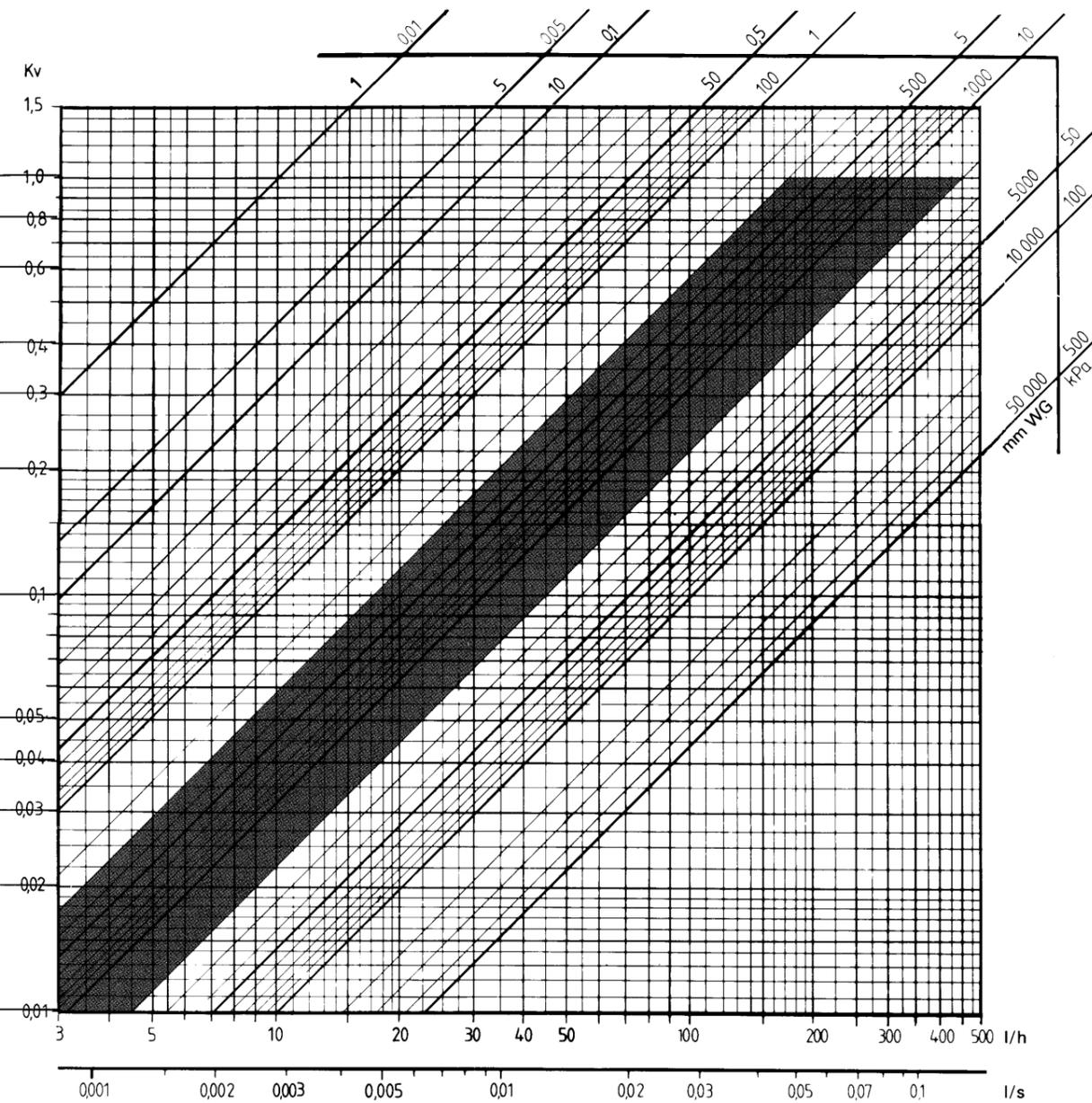
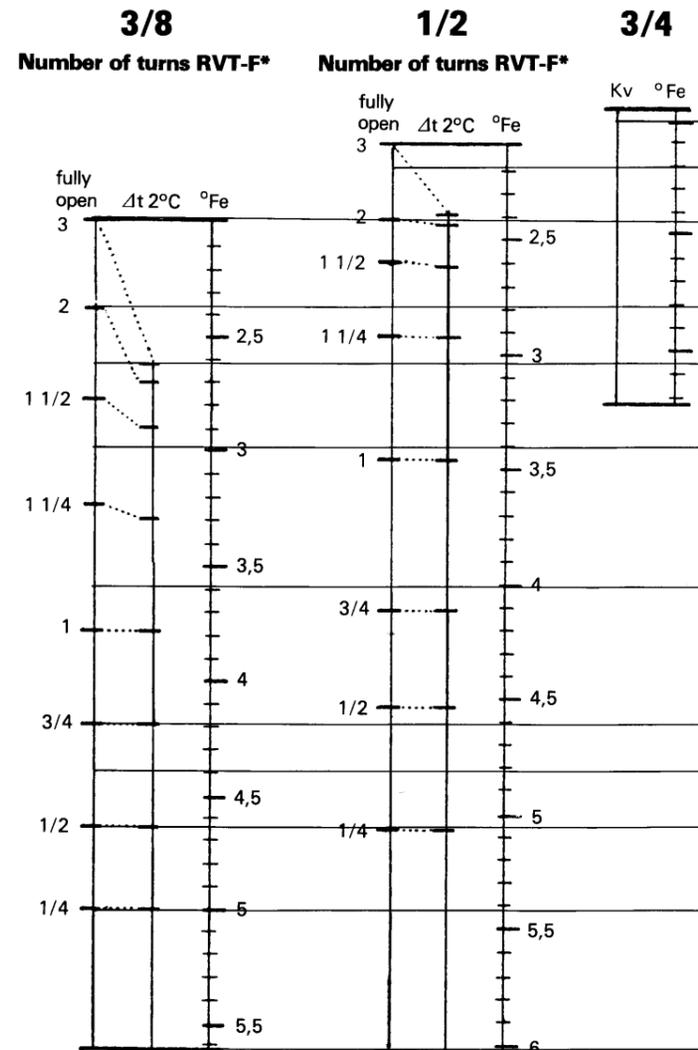
### $K_v$ -value at different open P-bands

K <sub>v</sub> -value RVT and RVT-F			
Size	3/8	1/2	3/4
Δt 1°C	0,15	0,3	0,4
Δt 2°C	0,3	0,6	0,7
Δt 3°C	0,4	0,8	0,9

Nominal flow is obtained at Δt 2°

### $K_v$ -value when valve is fully open and presetting fully open

Size	3/8	1/2	3/4
RVT-F	0,6	0,9	—
RVT	0,65	0,9	1,05



## RVT-F

The RVT-F thermostatically controlled valve can be pre-set and consists of two functional parts, the thermostatically controlled valve section and the pre-setting section — which act in series with each other.

From the graph you can see the pressure drop at different presettings of the pre-setting section, with thermostat fully open and at nominal lift Δt 2°C respectively.

**Example:** Available pressure:  
1100 mmWG (11 kPa)  
Desired flow: 30 litres/hour  
Size 3/8

From the graph you can see that the valve cone shall be opened 1,0 turn from closed position ( $K_v = 0,09$  °Fe = 3,7).

### This valve will operate in the following way:

From the closed position to the desired flow of 30 litres/hour, the flow is regulated by the thermostat. If the thermostatically controlled valve opens further, flow is limited by the pre-setting of the valve. If the valve was not fitted with pre-setting, the maximum flow could be about 220 litres/hour.

**\*) The number of turns of the RVT-F indicates how many turns the adjusting Allen key must be given from the closed position.**

°Fe = 10 log. for the coefficient ξ d  
K<sub>v</sub> = Valve coefficient (m<sup>3</sup>/h at 1 bar)

Recommended value of capacity