

installation and operation | Einbau und Bedienung | installatie en bediening
instalace a použití | установка и эксплуатация



| Technical features | Symbol | Values |
|----------------------------|--------|--------------------|
| Medium | | water/water+glycol |
| Max. glycol | % | 30% |
| Dimensions | DN | 15-20 |
| Max. static pressure | PN | 10 bar |
| Max. differential pressure | dP | 0,8 bar |
| Max. temperature | t max | 110 °C |

| Part | Material |
|---------------------------|-------------------------|
| Body valves | Brass EN12165-CW 617N-M |
| Rubber components to seal | EPDM peroxide |
| Steel components | INOX AISI302 |
| Plastic components | ABS |
| Other brass components | Brass EN12164-CW 617N-M |

All technical characteristics are provided according the European standard

EN215 "Thermostatic radiator valves. Requirements and test methods"

Threads are according EN-ISO 228/1

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Attention: Do not use the thermostatic head for shut off the valve. In case of disassembling take off the head and use the plastic protection cap or handle to shut off the valve completely.

Achtung: Verwenden Sie den Thermostatkopf nicht zum Absperren des Ventils. Nehmen Sie bei der Demontage den TH-Kopf ab und schließen Sie das Ventil mit der Kunststoffschutzkappe oder Griff vollständig ab.

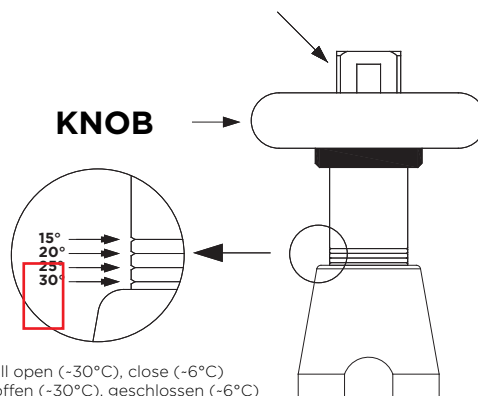
Let op: Gebruik de thermostaatkop niet om de kran af te sluiten. Bij demontage de kop eraf halen en de kunststof beschermkap of hendel gebruiken om de kran volledig af te sluiten.

Pozor: K uzavření ventilu nepoužijte termostatickou hlavici. V případě demontáže sundejte hlavici a pomocí plastového ochranného víčka nebo rukojeti úplně uzavřete ventil.

Внимание: не используйте термостатическую головку для перекрытия клапана. В случае разборки снимите головку и используйте пластмассовый защитный колпачок или ручку, чтобы полностью закрыть клапан.

SENSOR

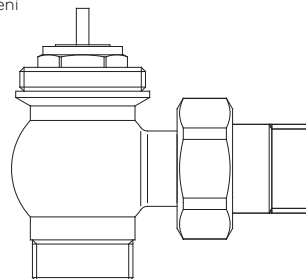
do not cover | nicht Abdecken
niet bedekken | nezakrývat | Не накрывать



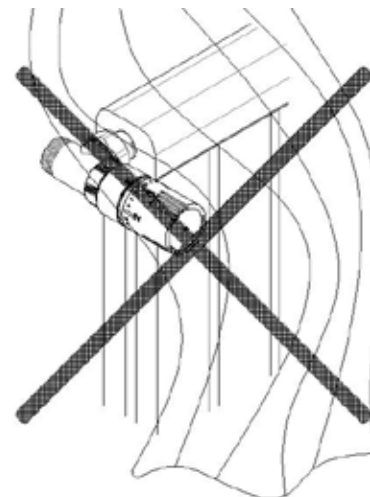
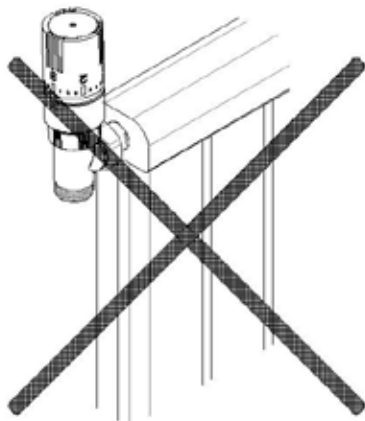
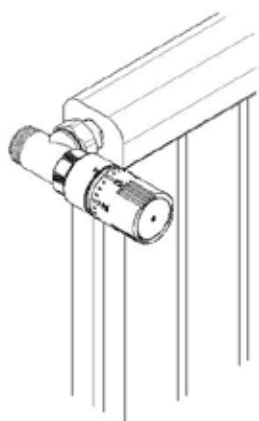
full open (-30°C), close (-6°C)
ganz offen (-30°C), geschlossen (-6°C)
volledig open (-30°C), gesloten (-6°C)
zcela otevřeno (-30°C), zavřeno (-6°C)
пол. открыто (-30°C), закрыто (-6°C)

SPRING

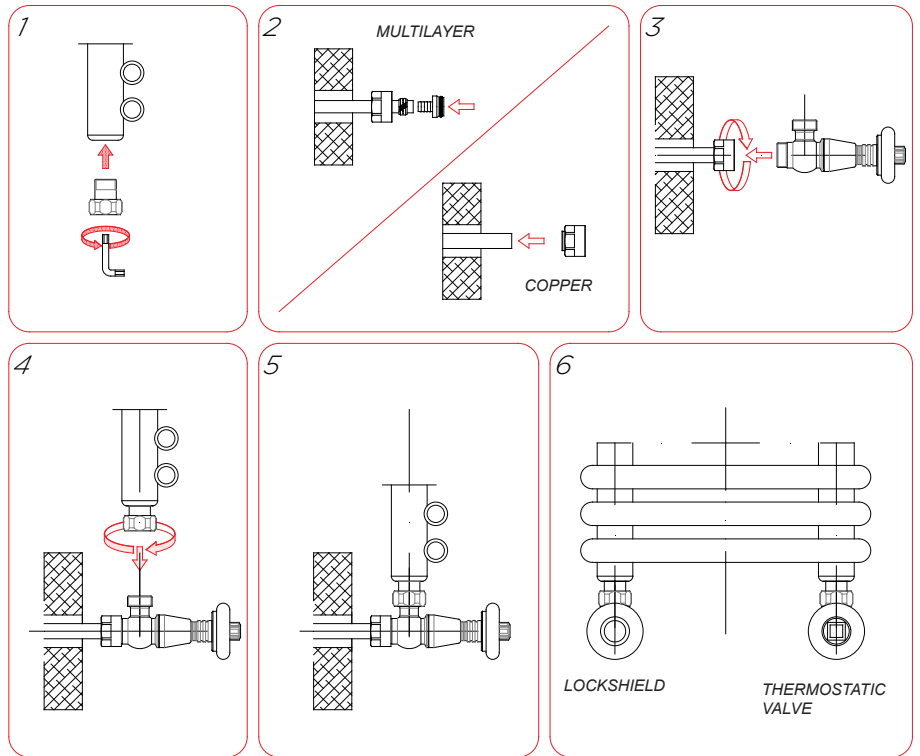
attention to the right direction | die Richtung beachten
let op de goede richting | pozor na správné uložení
обратите внимание на правильное направление



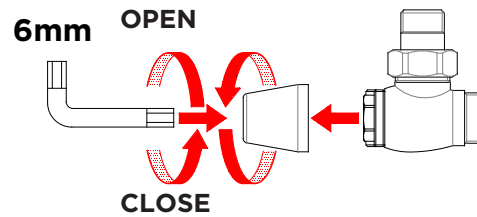
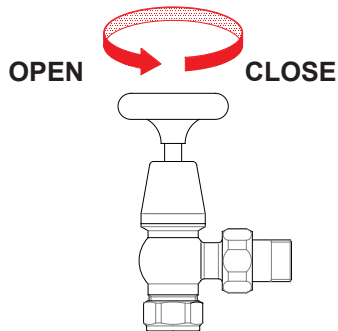
ΔP_{max} 1.5 bar normal
0.8 bar reverse



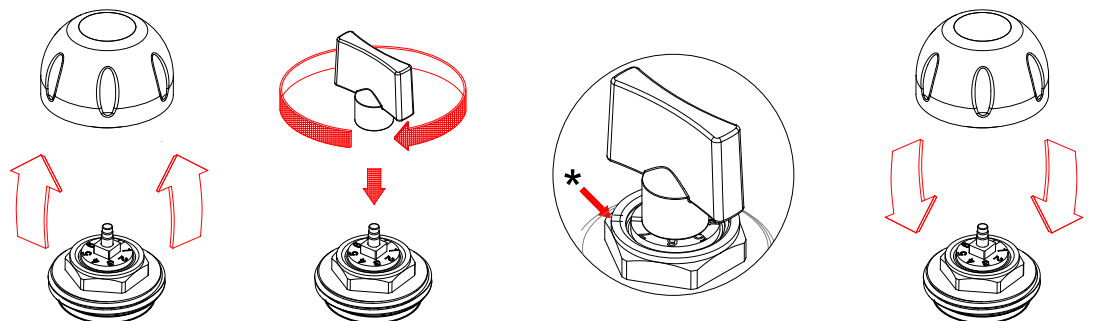
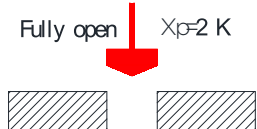
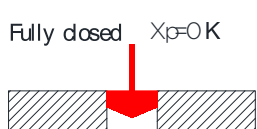
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Manual set-up



Thermostatic preset set-up



Determination of valve pressure loss:

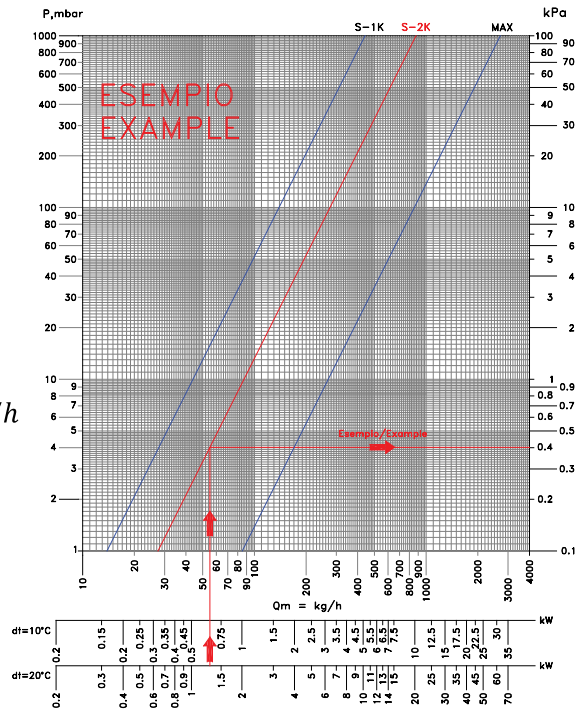
| Given data | |
|---------------------------|-----------|
| Type of valve | DN15 1/2" |
| Heat flow of radiator | 1280 W |
| Temperature difference | 20 °C |
| Desired proportional band | 2K |

To calculate the mass flow through the radiator using following relation:

$$Q_m = \frac{Q}{c * \Delta t} = \frac{1280}{1,163 * 20} = 55 \text{ kg/h}$$

Alternatively, it is possible to use the graduated scale of the selected valve diagram that provides the flow rate according to the design dT.

It is possible to determine the head losses value for the proportional band chosen as shown in the example alongside where it is equal to 0.4 kPa.



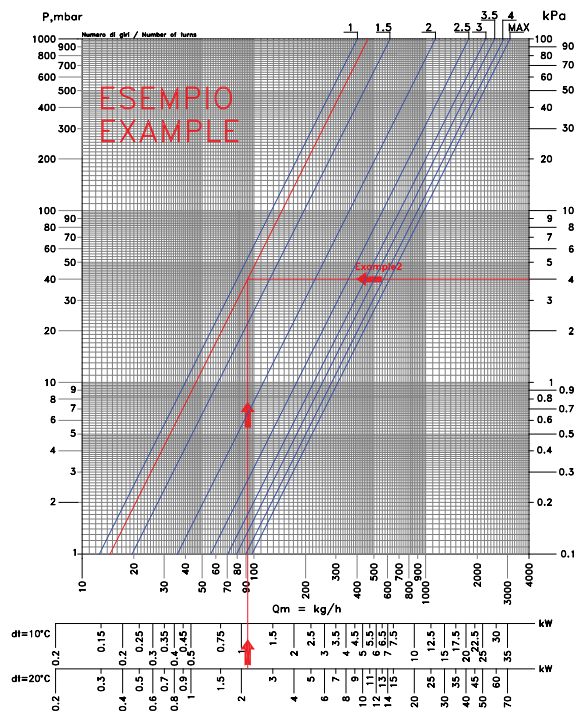
Determination of number of turns for the lockshield valve:

| Given data | |
|---|-----------|
| Type of valve | DN15 1/2" |
| Heat flow of radiator | 2150 W |
| Temperature difference | 20 °C |
| Differential pressure across the radiator | 4 kPa |

To calculate the mass flow through the radiator using following relation:

$$Q_m = \frac{Q}{c * \Delta t} = \frac{2150}{1,163 * 20} = 92 \text{ kg/h}$$

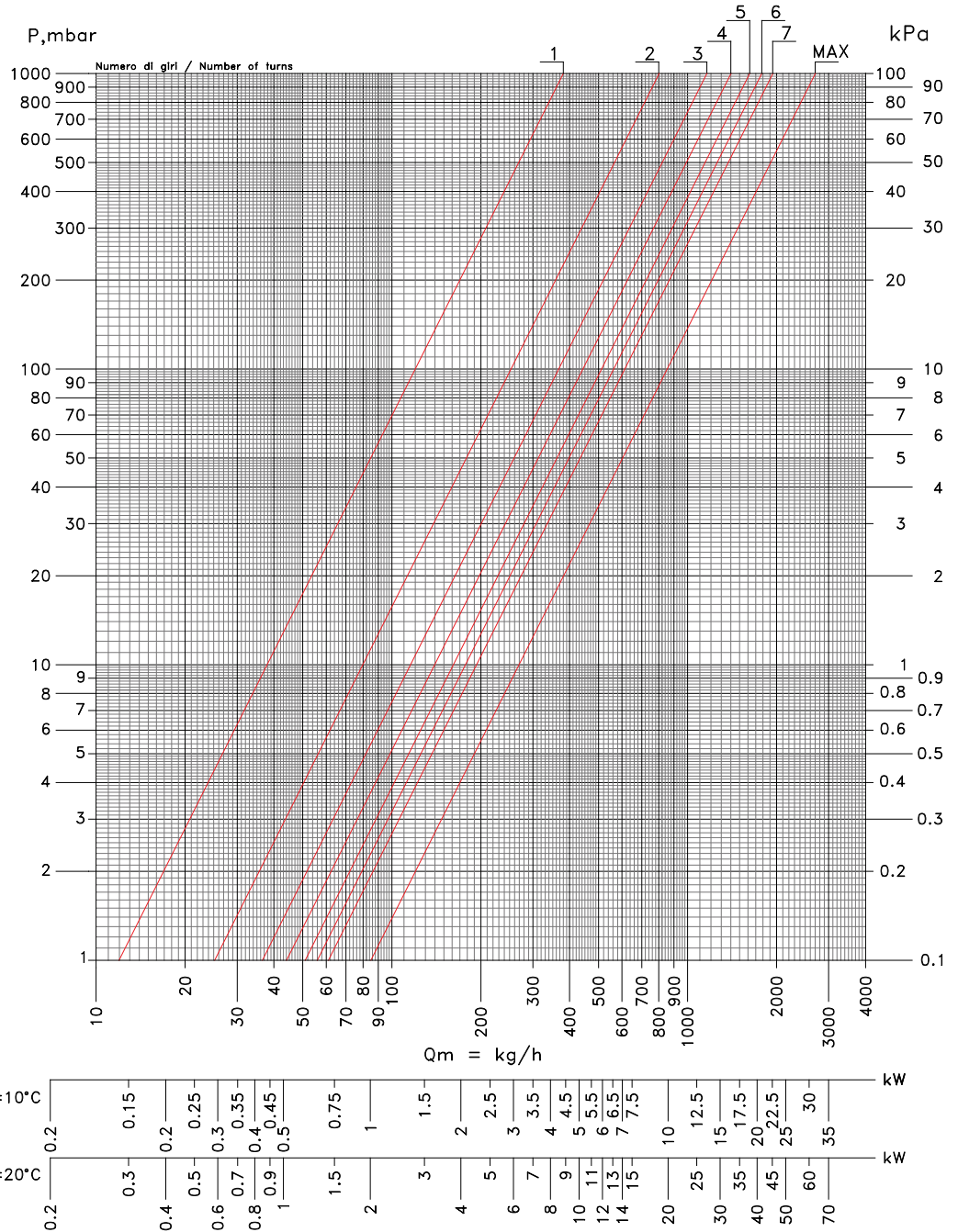
Alternatively, it is possible to use the graduated scale of the selected valve diagram that provides the flow rate according to the design dT. It is possible to determine the required pre-setting as shown in the example alongside where it is equal to 1.1.



angeled valve thermostatic | Ventil mit thermostat eck | kran haaks met thermostaat
úhlový ventil s termostatem | угловой вентиль с термостатом

VLWWTD
DN15 1/2"

| Pre-setting | Kv |
|---|-------------------|
| N | m ³ /h |
|  | 1 0.38 |
|  | 2 0.80 |
|  | 3 1.16 |
|  | 4 1.40 |
|  | 5 1.62 |
|  | 6 1.78 |
|  | 7 1.94 |
| Kvs | 2.70 |



Note: To avoid excessive noisiness in the circuit, avoid using thermostatic valves with Δp values of more than 0,2 - 0,25 bar [20-25 kPa].

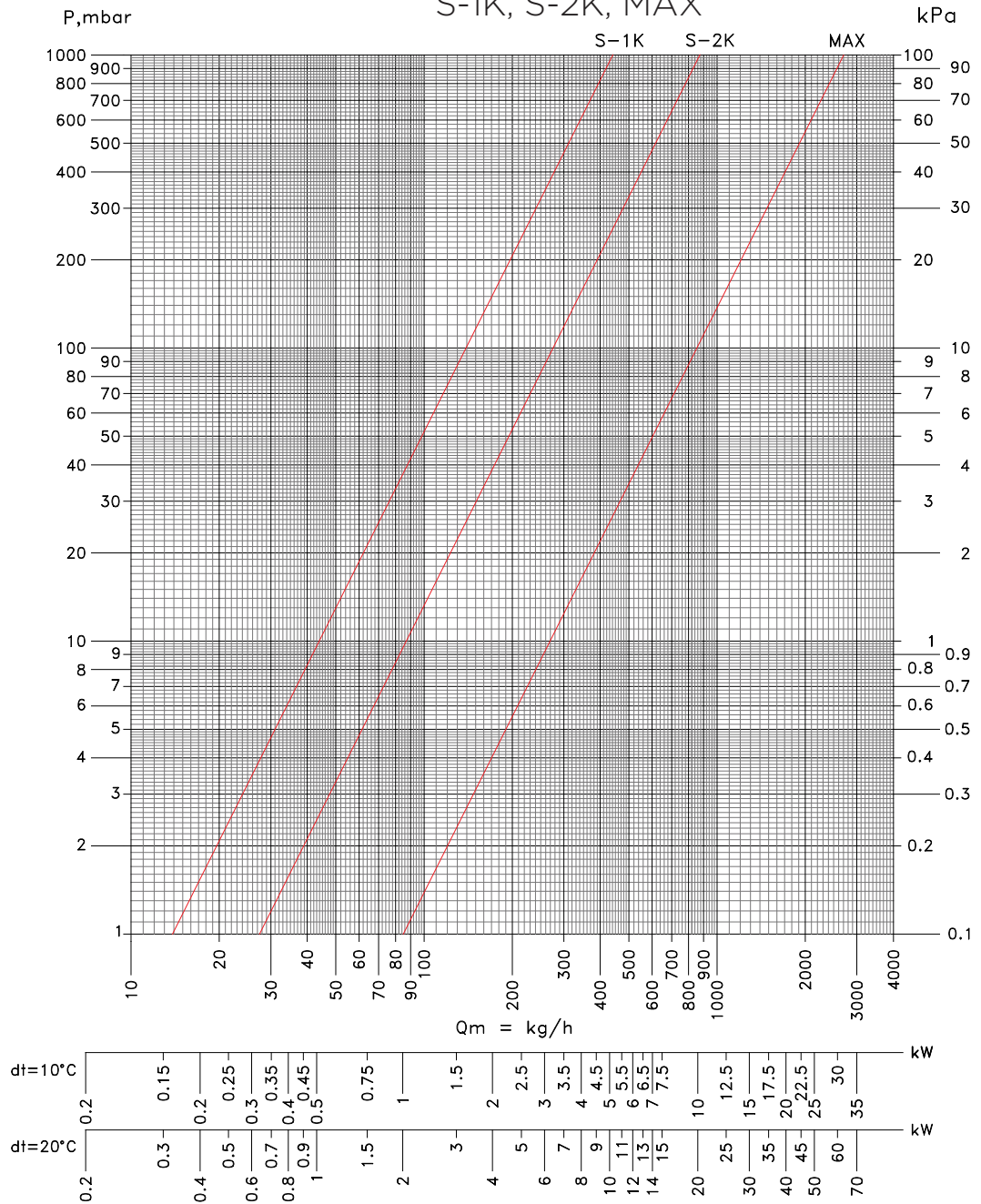
angeled valve thermostatic | Ventil mit thermostat eck | kran haaks met thermostaat
úhlový ventil s termostatem | угловой вентиль с термостатом

VLWWTD
DN15 1/2"

| Technical data | | |
|-----------------------|-------------|--------|
| | 1K | 0.44 |
| Kv | 2K | 0.87 |
| | Kvs | 2.70 |
| Q_{mN} | kg/h | 275.58 |

Preset set to 3

S-1K, S-2K, MAX



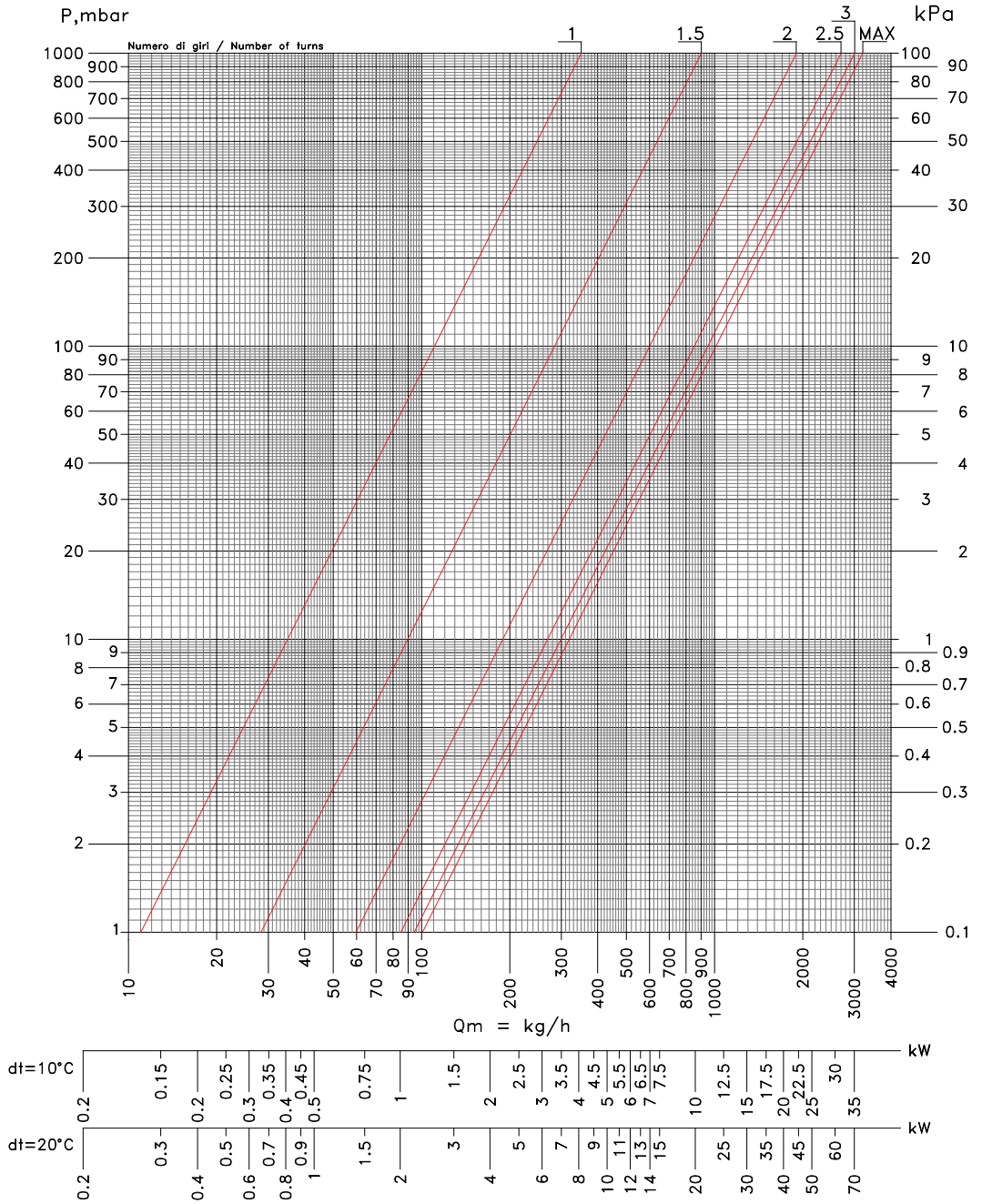
Note: To avoid excessive noisiness in the circuit, avoid using thermostatic valves with Δp values of more than 0,2 - 0,25 bar [20-25 kPa].

anged valve non-thermostatic | Ventil ohne Thermostat eck | kran haaks zonder thermostaat
úhlový ventil bez termostatu | угловой вентиль без термостата

(N) form fully closed position | (N) von voll geschlossen | (N) vanuit volledig gesloten positie
(N) od zcela uzavřené pozice | (N) из полностью закрытого положения

VLWWOD
DN15 1/2"

| Number of turns | Kv |
|-----------------|-------------------|
| N | m ³ /h |
| 1 | 0.35 |
| 1.5 | 0.90 |
| 2 | 1.90 |
| 2.5 | 2.70 |
| 3 | 3.00 |
| Kvs | 3.20 |



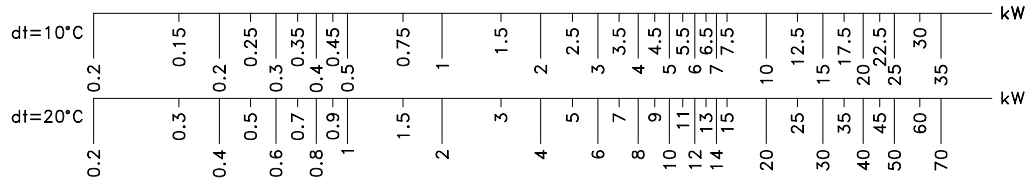
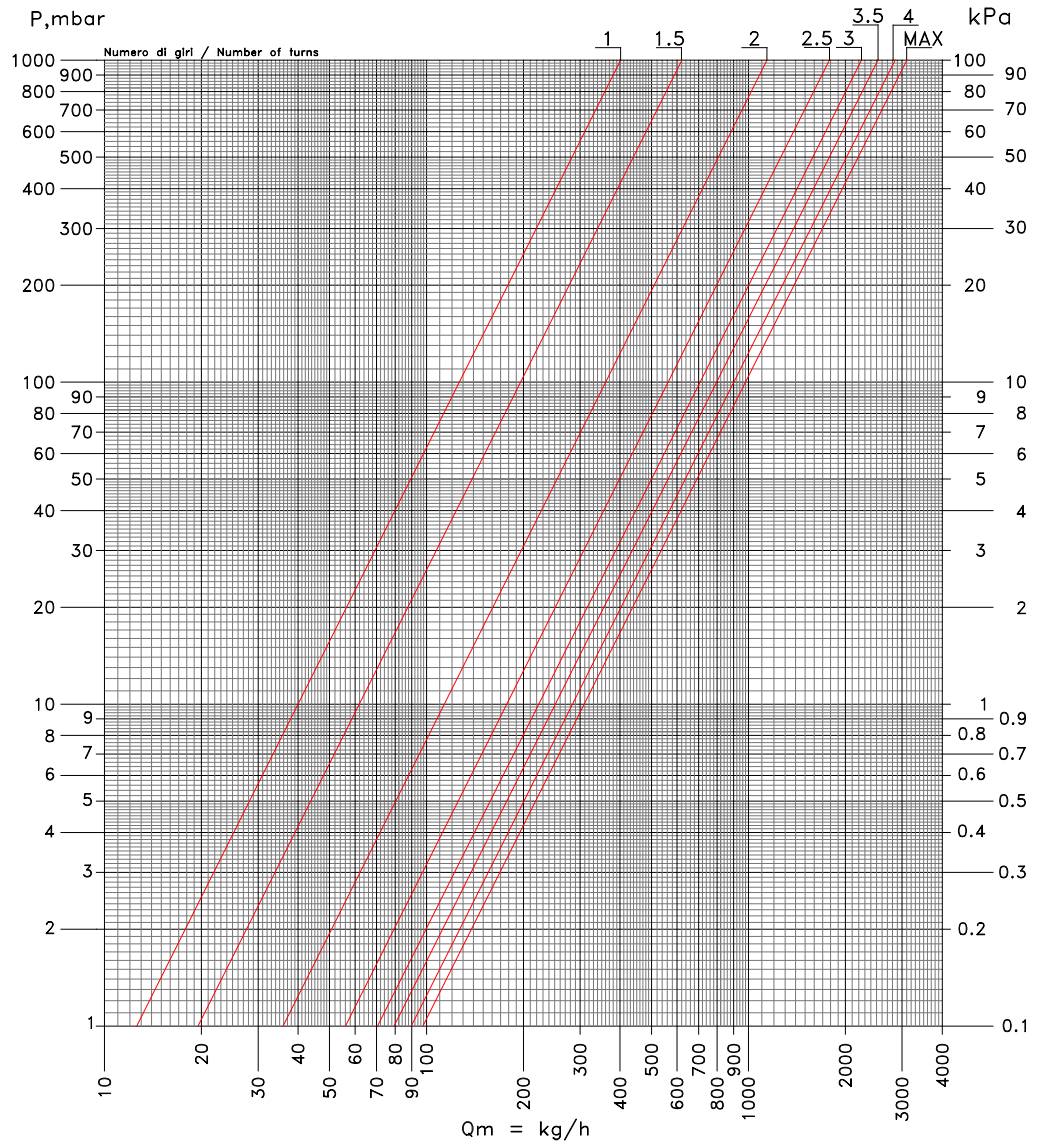
anged lockshield | Rücklaufverschraubung eck | lockshield haaks
úhlová zpátečka | обратный клапан угловый

(N) form fully closed position | (N) von voll geschlossen | (N) vanuit volledig gesloten positie
(N) od zcela uzavřené pozice | (N) из полностью закрытого положения

VLWWD
DN15 1/2"

BRASS DELIENORE / LOCKSHIELD
SQUADRA / ANGLED DN15 1/2"

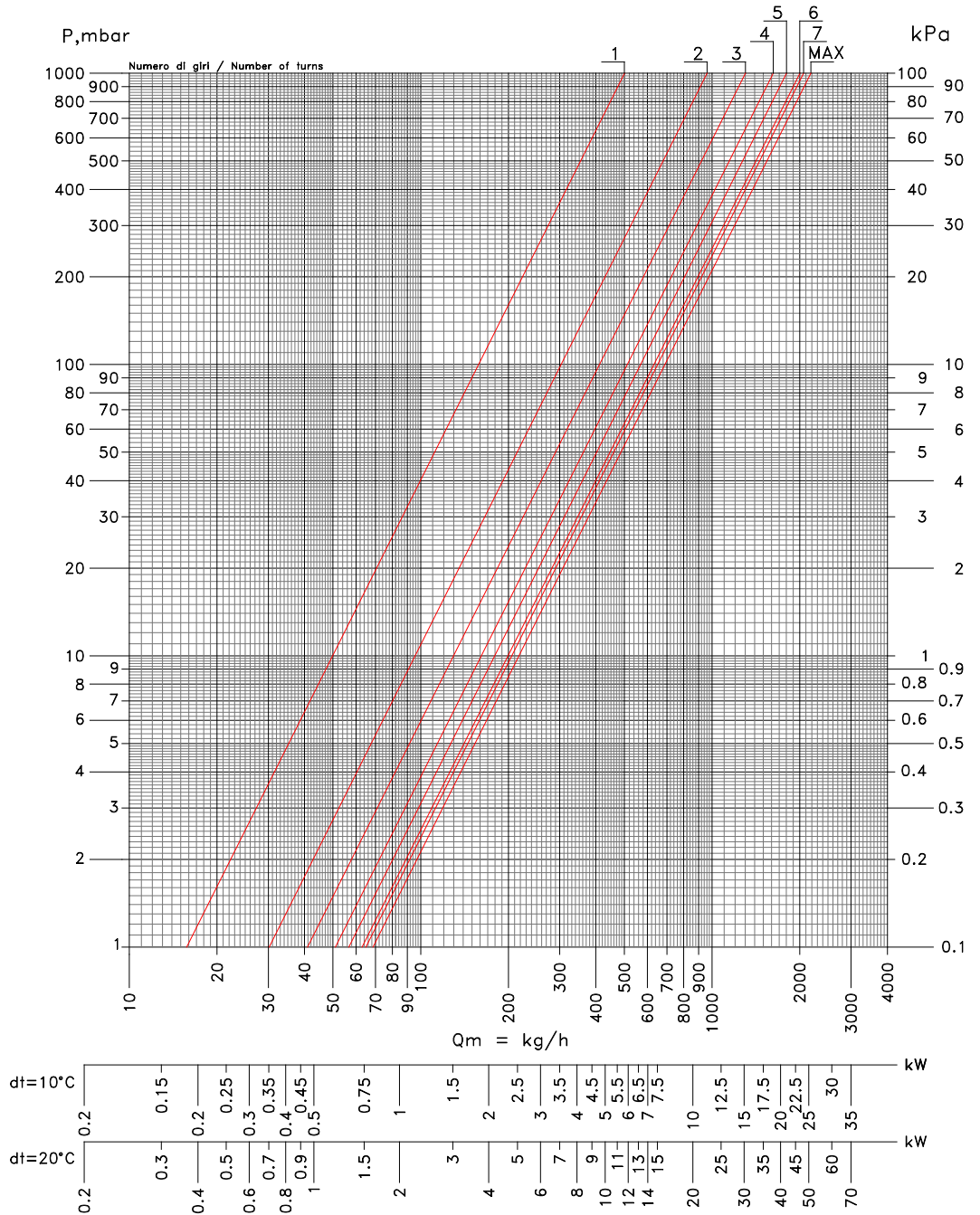
| Number of turns | Kv |
|-----------------|-------------------|
| N | m ³ /h |
| 1 | 0.40 |
| 1.5 | 0.62 |
| 2 | 1.14 |
| 2.5 | 1.78 |
| 3 | 2.24 |
| 3.5 | 2.52 |
| 4 | 2.85 |
| Kvs | 3.10 |



straight valve thermostatic | Ventil mit Thermostat durchgang | kran recht met thermostaat
přímý ventil s termostatem | прямой клапан с термостатом

VLWWTC
DN15 1/2"

| Pre-setting | Kv |
|---|-------------------|
| N | m ³ /h |
|  | 0.50 |
|  | 0.96 |
|  | 1.30 |
|  | 1.62 |
|  | 1.80 |
|  | 2.00 |
|  | 2.06 |
| Kvs | 2.18 |



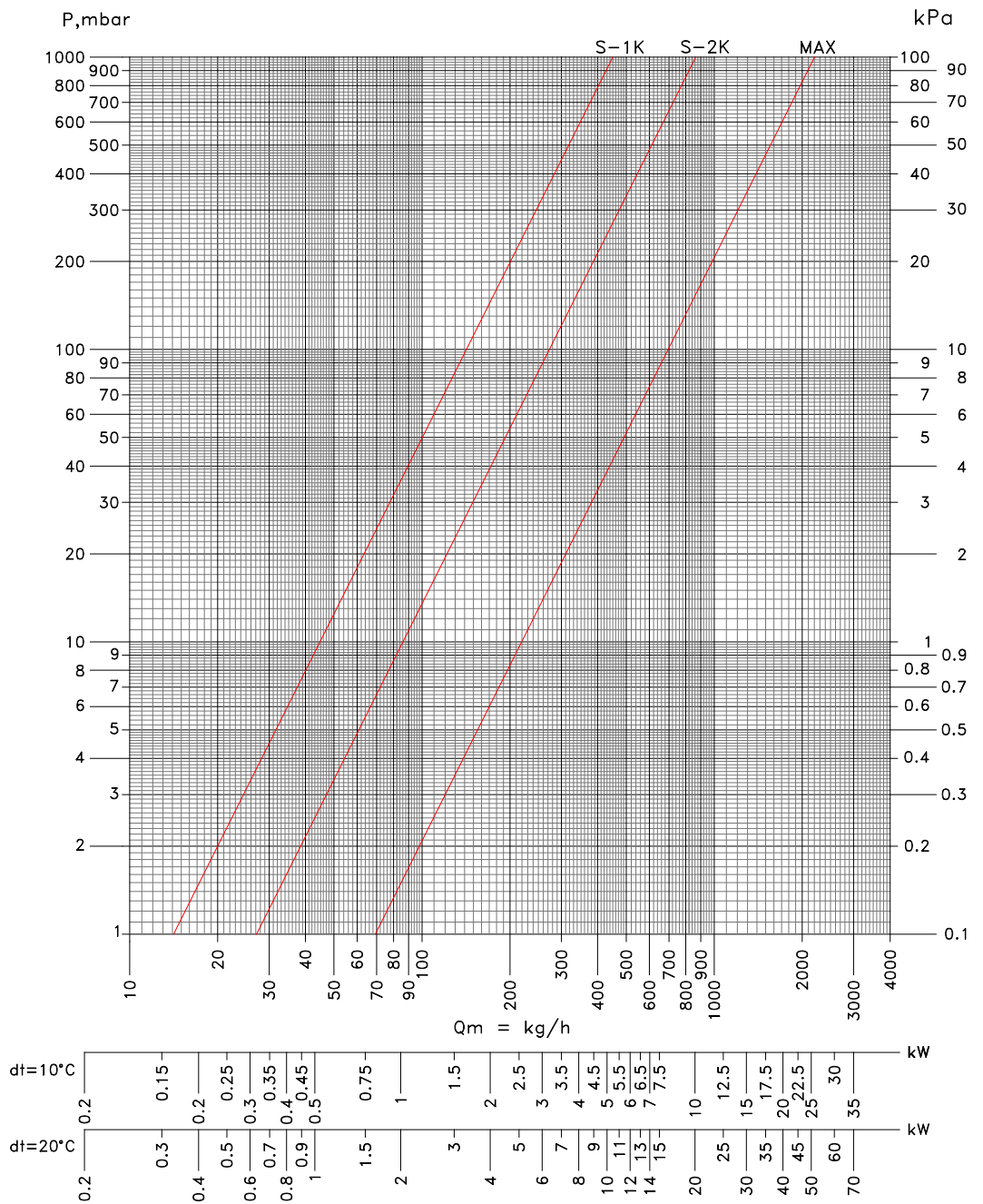
Note: To avoid excessive noisiness in the circuit, avoid using thermostatic valves with Δp values of more than 0,2 - 0,25 bar [20-25 kPa].

straight valve thermostatic | Ventil mit Thermostat durchgang | kran recht met thermostaat
přímý ventil s termostatem termostatu | прямой клапан с термостатом

VLWWTC
DN15 1/2"

Preset set to 3
S-1K, S-2K, MAX

| Technical data | | |
|-----------------|------|--------|
| Kv | 1K | 0.45 |
| | 2K | 0.86 |
| q _{mN} | Kvs | 2.20 |
| | kg/h | 272.63 |



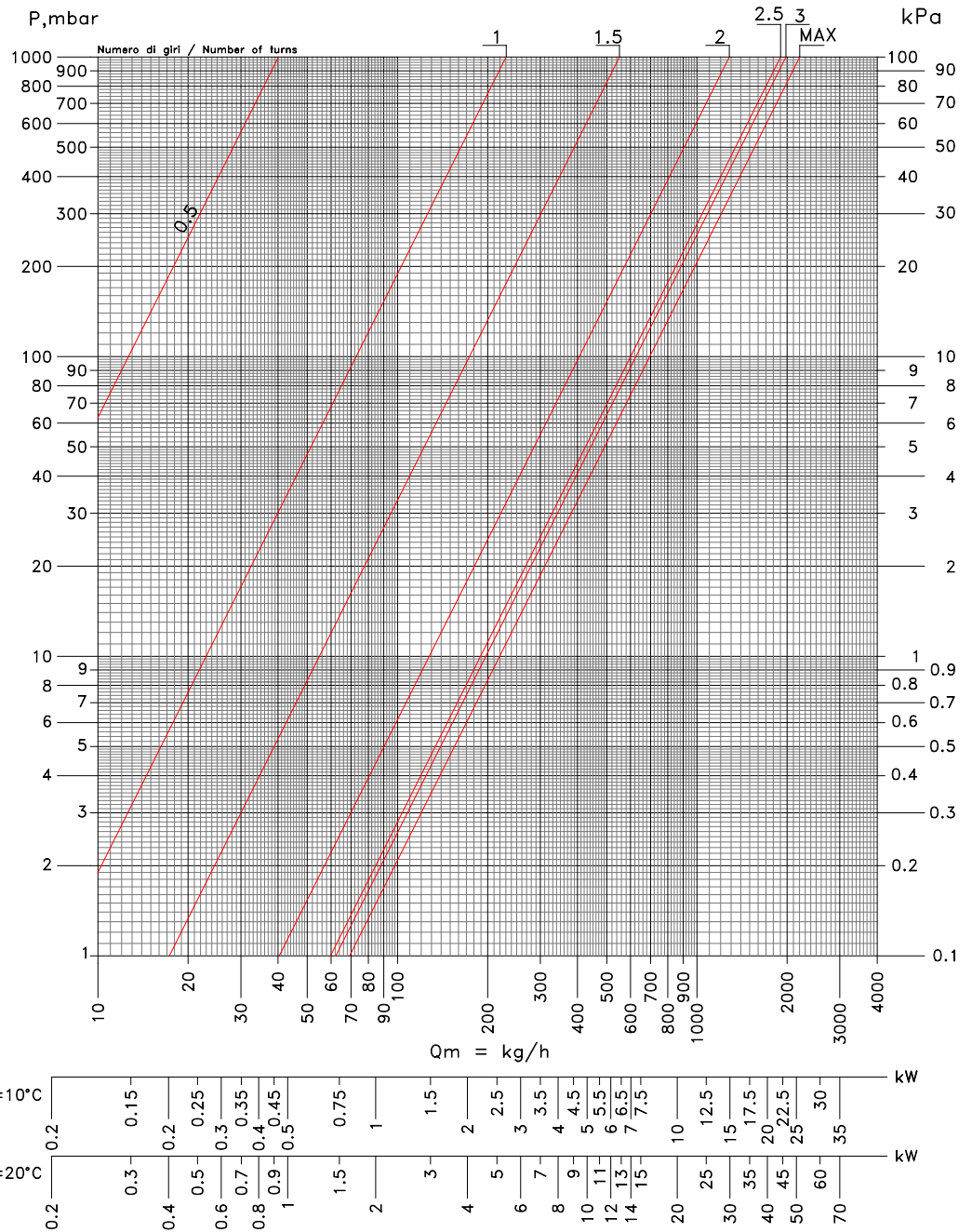
Note: To avoid excessive noisiness in the circuit, avoid using thermostatic valves with Δp values of more than 0,2 - 0,25 bar [20-25 kPa].

straight valve non-thermostatic | Ventil ohne Thermostat durchgang | kran recht zonder thermostaat
přímý ventil bez termostatu | прямой клапан без термостата

(N) form fully closed position | (N) von voll geschlossen | (N) vanuit volledig gesloten positie
(N) od zcela uzavřené pozice | (N) из полностью закрытого положения

VLWWOC
DN15 1/2"

| Number of turns | Kv |
|-----------------|-------------------|
| N | m ³ /h |
| 0.5 | 0.02 |
| 1 | 0.23 |
| 1.5 | 0.55 |
| 2 | 1.28 |
| 2.5 | 1.90 |
| 3 | 1.98 |
| Kvs | 2.20 |



straight lockshield | Rücklaufverschraubung durchgang | lockshield recht
přímá zpátečka | прямой запорный клапан

(N) form fully closed position | (N) von voll geschlossen | (N) vanuit volledig gesloten positie
(N) od zcela uzavřené pozice | (N) из полностью закрытого положения

VLWWC
DN15 1/2"

| Number of turns | Kv |
|-----------------|-------------------|
| N | m ³ /h |
| 1 | 0.32 |
| 1.5 | 0.73 |
| 2 | 1.15 |
| 2.5 | 1.62 |
| 3 | 1.80 |
| 3.5 | 2.05 |
| 4 | 2.18 |
| Kvs | 2.30 |

