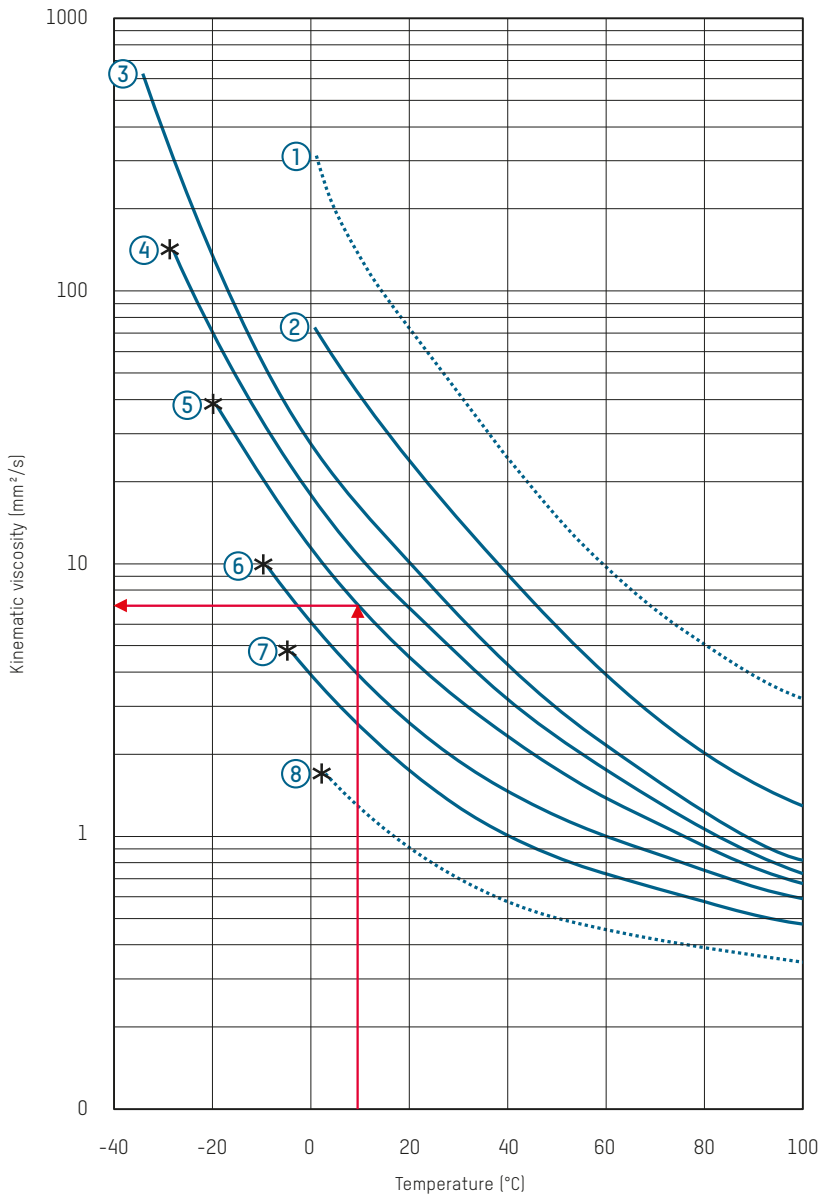


GLYCOL CORRECTION CURVES

For use of anti-frost and anti-corrosion agents with TacoSetter balancing valves

KINEMATIC VISCOSITY OF ANTIFROGEN L

Figure 1 - Water mixtures of different concentrations



| Curve no. | Concentration |
|-----------|-------------------------|
| 1 | 100% v/v = Antifrogen L |
| 2 | 80% v/v |
| 3 | 57% v/v |
| 4 | 47% v/v |
| 5 | 38% v/v |
| 6 | 25% v/v |
| 7 | 16% v/v |
| 8 | Water |

* = Frostproofness

INSTRUCTIONS FOR USE OF THE CORRECTION CURVES

Anti-icers and corrosion inhibitors are inhibitors based on propylene glycol which are mixed with water. This prevents undesirable reactions such as corrosion or the freezing of hydraulic systems.

These mixtures give rise to other physical material values than those occurring in the case of pure water. These material values depend on the one hand on the mixture ratio in %, and on the other on the temperature of the mixture.

The mixture ratio depends on the desired properties, for example frostproofness.

FLOW

As a result of the changed material values, the flow indicated on the TacoSetter varies. The reason for this is the higher viscosity and density of the water mixture compared with pure water.

The **kinematic viscosity** of the water mixture is the critical factor in determining the correction value. This value is derived from diagrams and product documentation published by the manufacturers of inhibitors. The diagram set out in Fig. 1, which was provided by Messrs. Clariant, is the basis for the specimen calculation with Antifrogen L.

Fig. 1 Source: Clariant GmbH, Divisions Chemicals, D-65840 Sulzbach

GLYCOL CORRECTION CURVES

CORRECTION CURVES

A separate diagram with nine correction curves exists for TacoSetter up to DN25 and its flow ranges.

These correction curves cover a kinematic viscosity range from 1 mm²/s to 53 mm²/s.

These curves are assigned to the kinematic viscosity read from Figure 1 in the adjacent table.

| KINEMATIC VISCOSITY OF THE CORRECTION CURVES | |
|--|-------------------------|
| Correction curve no. | Kinematic viscosity |
| 1 | 53,0 mm ² /s |
| 2 | 30,0 mm ² /s |
| 3 | 17,0 mm ² /s |
| 4 | 6,7 mm ² /s |
| 5 | 4,7 mm ² /s |
| 6 | 3,5 mm ² /s |
| 7 | 2,2 mm ² /s |
| 8 | 1,7 mm ² /s |
| 9 | 1,0 mm ² /s |

SPECIMEN CALCULATION

Given

- Antifrogen L concentration: 38%
-> Figure 1: Curve 5
- Mix temperature: 10 °C
- Indicated flow: 3,5 l/min

Sought

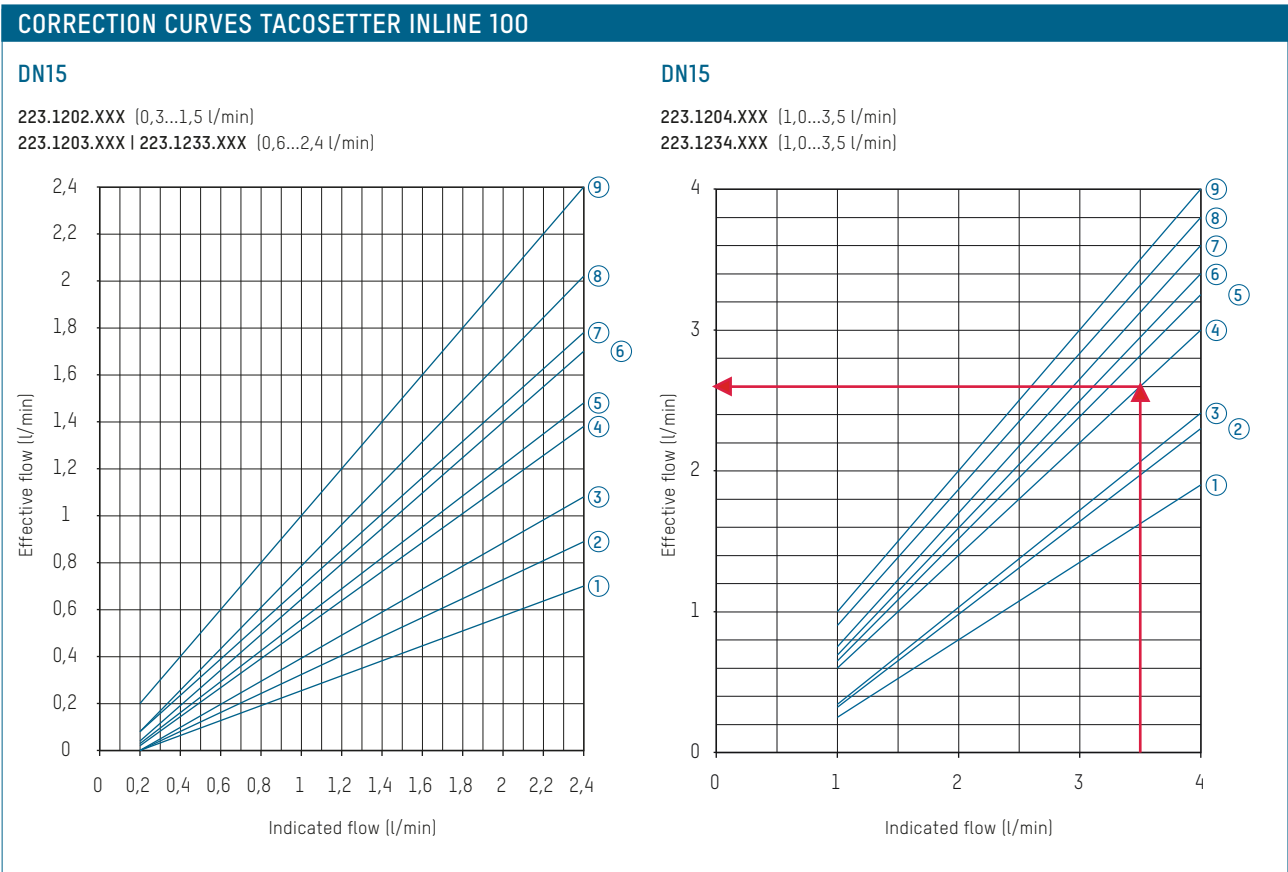
- Effective flow in l/min when using a TacoSetter Inline 100 (Art.: 223.1204.000)

Solution

- On the basis of the manufacturer's diagram Fig 1, a kinematic viscosity of **7 mm²/s** is arrived at
- According to table Fig. 2, **6.7 mm²/s** indicates **correction curve No. 4**
- An **effective flow of 2.6 l/min** can be determined from the indicated 3.5 l/min, using the diagram for this TacoSetter Inline 100 and **curve No. 4**

Conclusion

- Given an Antifrogen L concentration of 38% and a mix temperature of 10 °C, the effective flow diverges from the indicated flow by -26%.

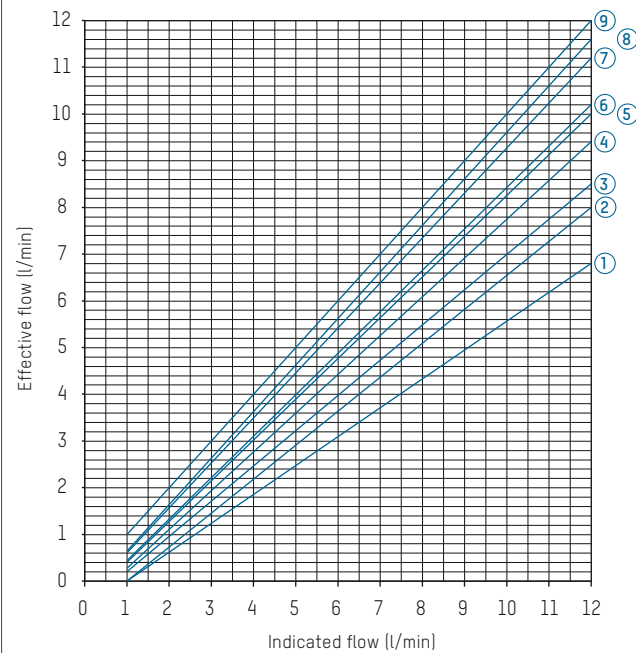


GLYCOL CORRECTION CURVES

CORRECTION CURVES TACOSSETTER INLINE 100

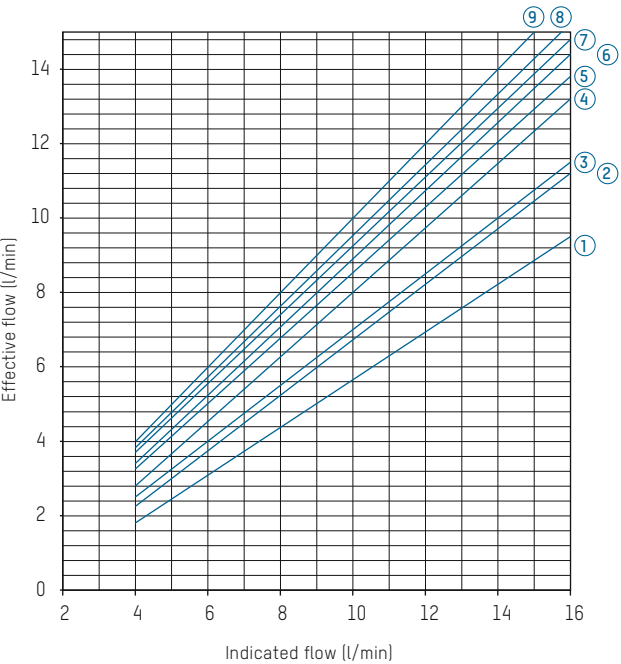
DN15

223.1238.XXX | 223.1208.XXX [2...8 l/min]
223.1239.XXX | 223.1209.XXX [3...12 l/min]



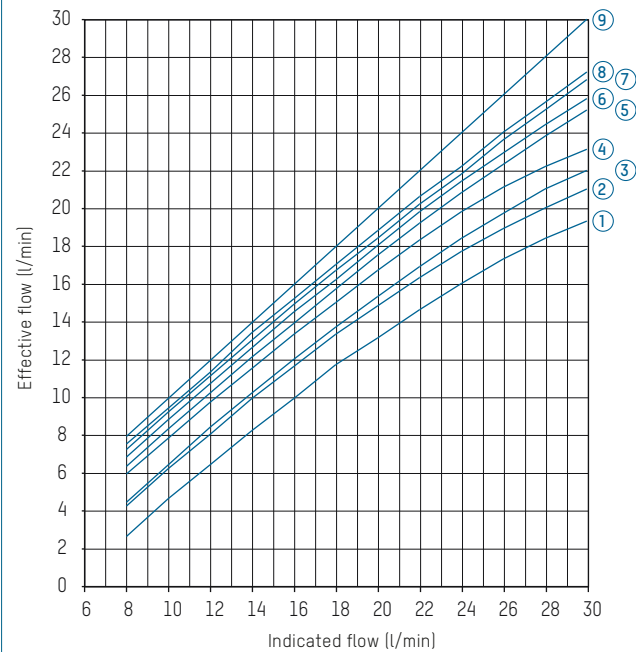
DN20

223.1300.XXX [4...15 l/min]



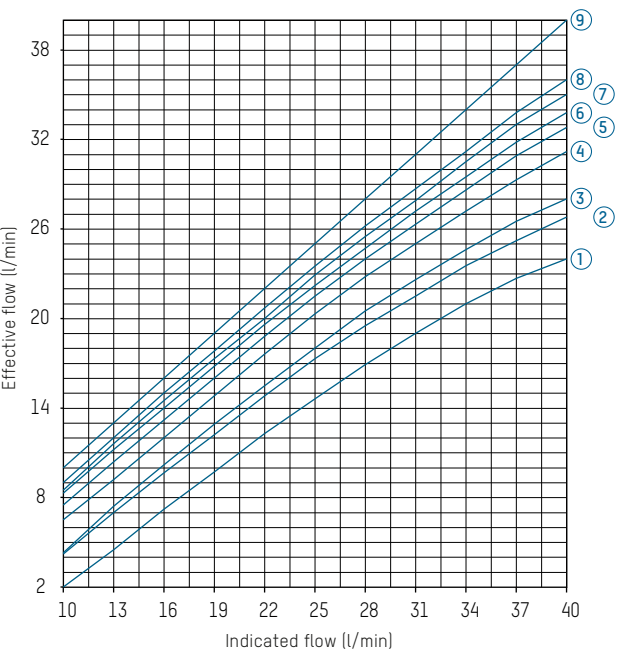
DN20

223.1302.XXX [8...30 l/min]



DN20

223.1305.XXX [10...40 l/min]

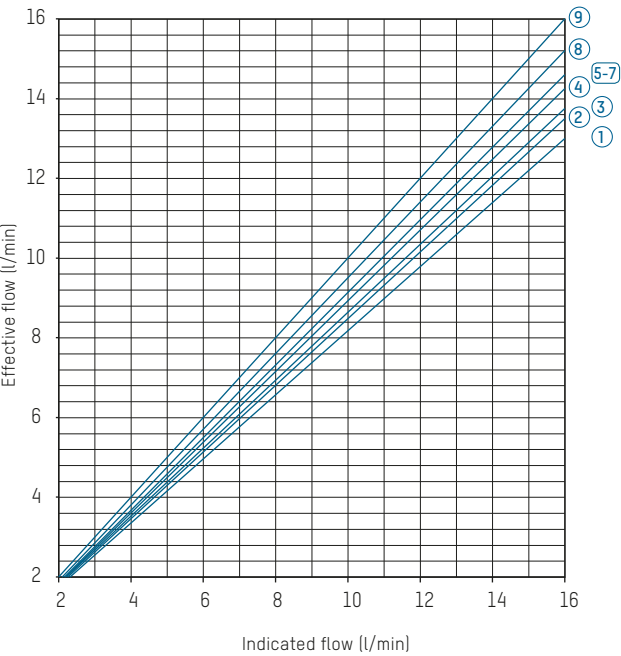


GLYCOL CORRECTION CURVES

CORRECTION CURVES TACOSSETTER BYPASS 100 | TACOSSETTER BYPASS SOLAR 130 | TACOSSETTER BYPASS SOLAR 185

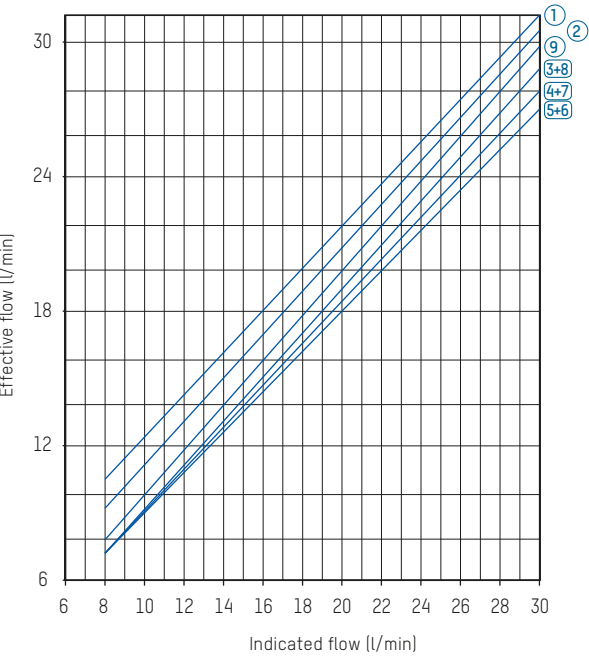
DN15/DN20

223.2262.XXX | 223.2361.XXX | 223.2272.XXX [2...8 l/min]
223.2360.XXX | 223.2370.XXX [4...15 l/min]
223.2380.XXX | 223.2382.XXX [2...12 l/min]



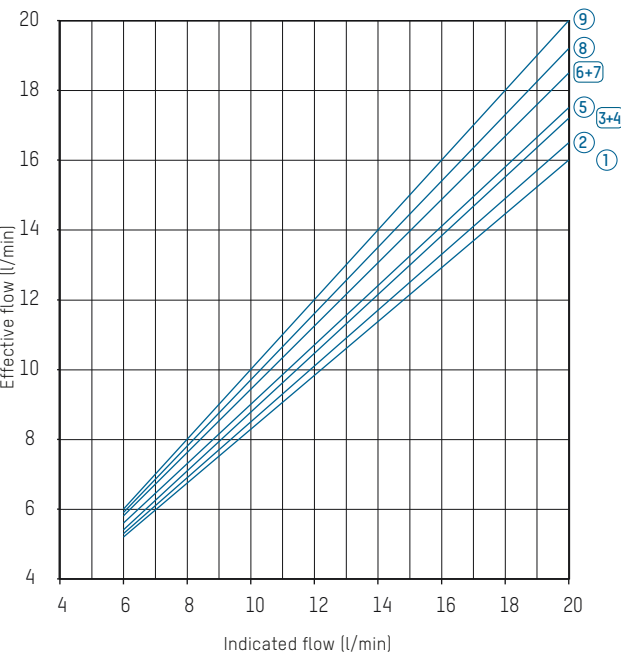
DN20

223.2362.XXX | 223.2372.XXX [8...30 l/min]
223.2381.XXX | 223.2383.XXX [8...20 l/min]



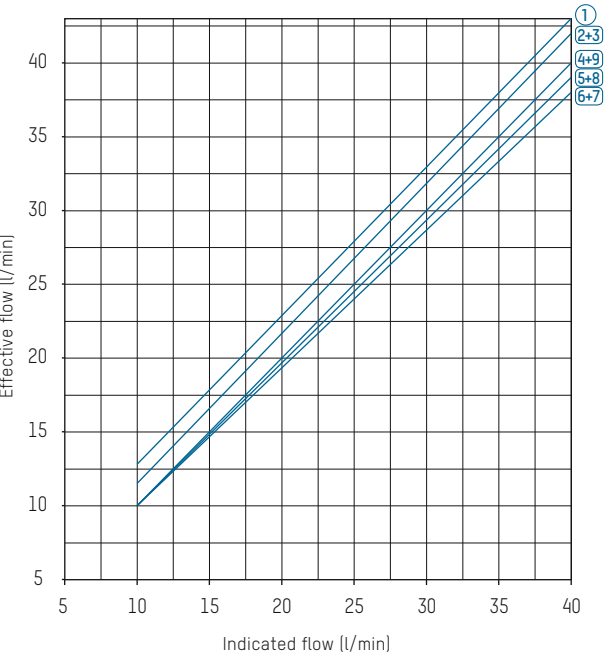
DN25

223.2460.XXX | 223.2470.XXX [6...20 l/min]



DN25

223.2461.XXX | 223.2471.XXX | 223.2480.XXX [10...40 l/min]
223.2482.XXX [10...40 l/min]



GLYCOL CORRECTION CURVES

CORRECTION CURVES TACOSSETTER HYLINE

