PIPENET® – Leading The Way In Fluid Flow Analysis

Frequently asked questions

Degeneration Factor in Pump Curves

If you are using a quadratic curve to model your simple pump, that curve will, in general, only apply to the specified working range of the pump. The performance of the pump outside this range depends on the motor characteristics and the effect of other factors. Degeneration factors can be used to specify the behaviour of the curve below and/or above the specified working range in PIPENET.

The degeneration factor, is an integer in the range 0 to 10. When the degeneration exponent is zero (i.e., no degeneration), the equation becomes tangential to the normal quadratic curve.

Below the minimum flow rate :

The larger the value of n, the flatter of the pump curve is below the minimum flowrate.

The following graphs show the degeneration factor of 0 and 10.

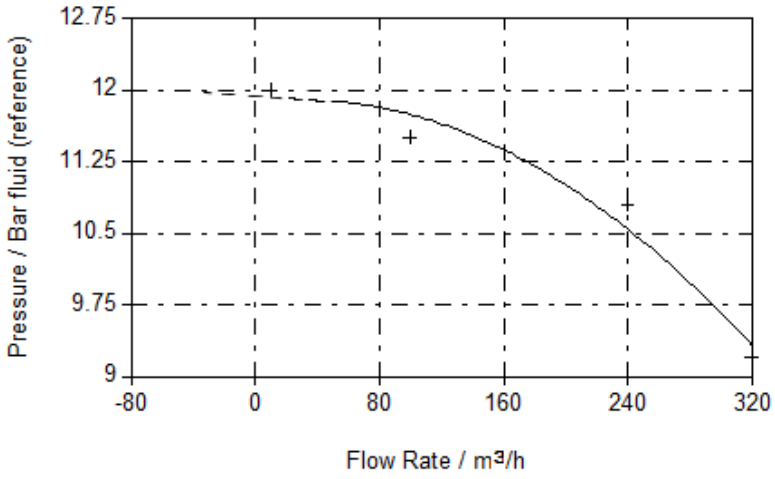
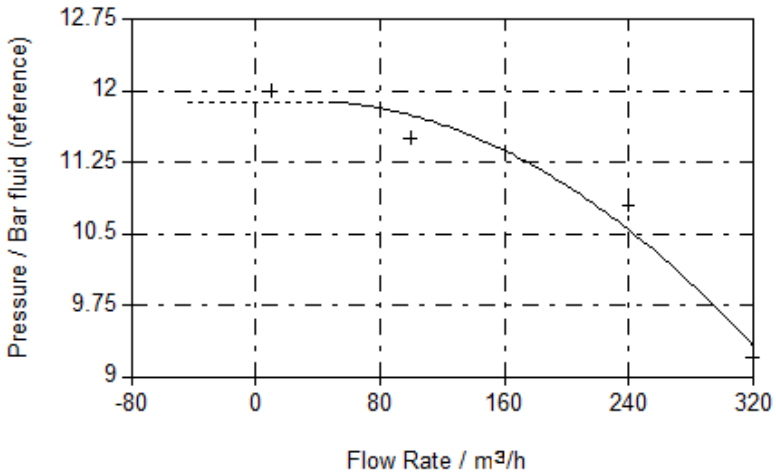


Figure 1 Above -Degeneration factor = 0.

Figure 2Below - Degeneration factor = 10.

The maximum flow rate:

The larger the degeneration factor, the quicker the pump curve degenerates, i.e. pump head drops largely with flowrate increase.
The following graphs show the degeneration factor of 0, 5 and 10.



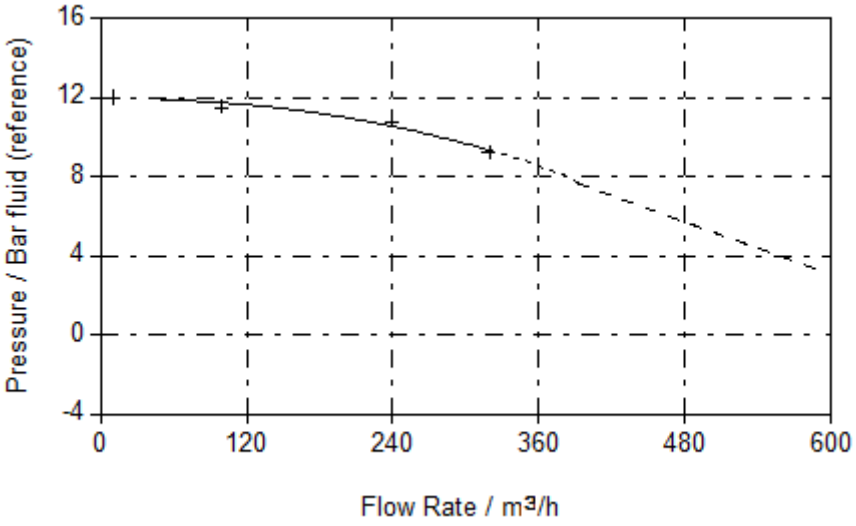


Figure 3 Degeneration factor = 0.

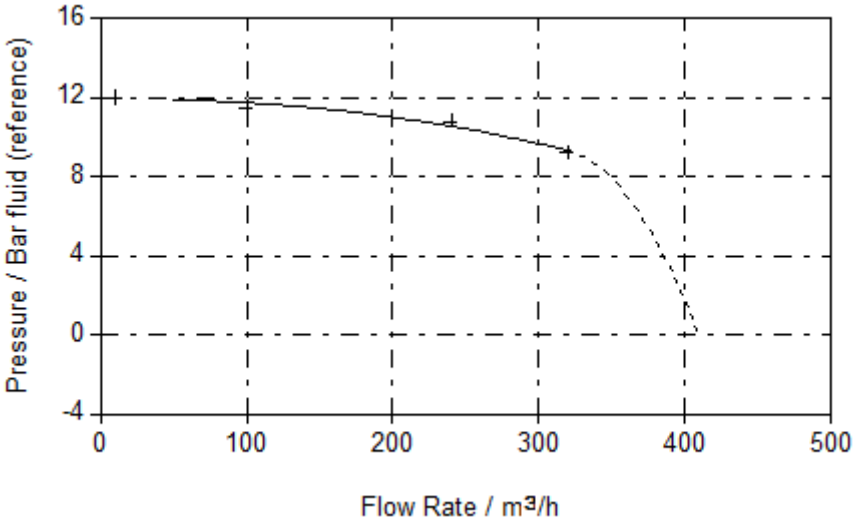


Figure 4 Degeneration factor = 5.

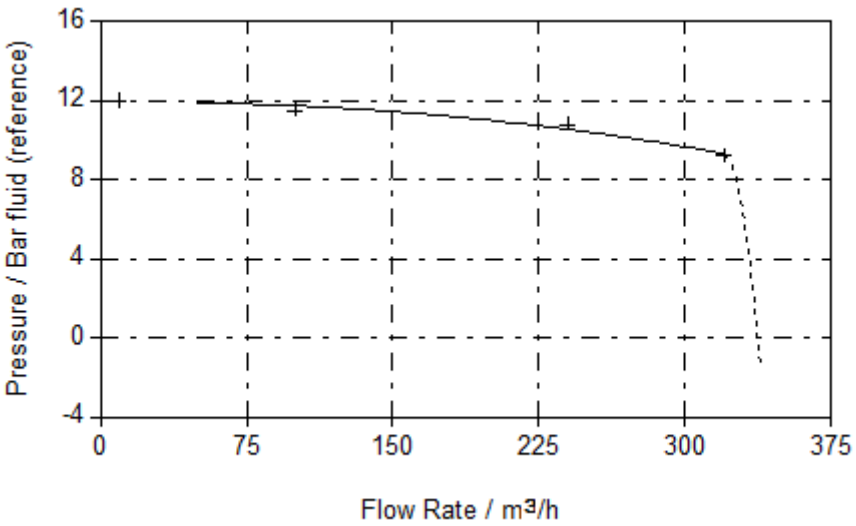


Figure 5 Degeneration factor = 10.