FLOW CHART FOR GASES

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How to calculate (example):

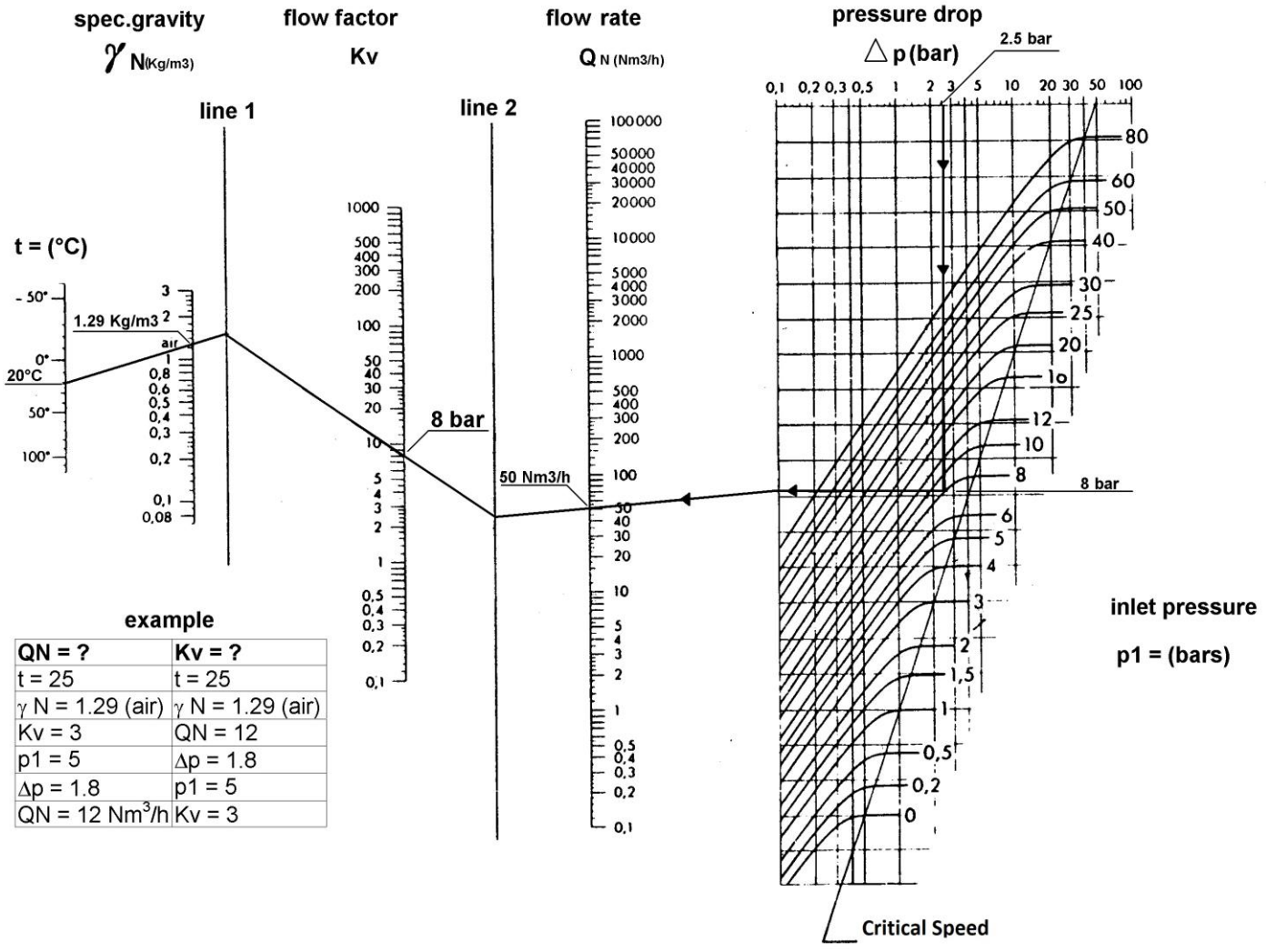
How to calculate the flow coefficient (Kv) of a solenoid valve to obtain an air flow at **20°C** of **50 Nm³/h** with **7 bar** pressure (i.e. **8 Bar** relative pressure), a pressure drop (Δp) of 2.5 bar, and a specific gravity of **1.29**.

-Draw a vertical straight line from the value **2.5** on the Δp axis down to the pressure curve (p1) of **8 Bar**. Then horizontally transfer this break point to the vertical line of **Δp= 0.1**.

-Draw a straight line from this new break point up to the point **50** on the flow rate axis and prolong it up to the **mark line n°2**.

-Draw a straight line intersecting the values **20** and **1.29** on the axis of temperature and specific gravity. Prolong this line up to the **mark line n°1.**

-Draw a straight line between the break points of **mark lines n°1 and 2**. This line intersects the Kv axis and gives you the value you were looking for which is: **8 L/min**



example

QN = ?	Kv = ?
t = 25	t = 25
γ N = 1.29 (air)	γ N = 1.29 (air)
Kv = 3	QN = 12
p1 = 5	Δp = 1.8
Δp = 1.8	p1 = 5
QN = 12 Nm³/h	Kv = 3

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FLOW CHART FOR LIQUIDS

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How to calculate

Example n°1

How to calculate the flow coefficient (Kv) of a solenoid valve to obtain a water flow of **100 L/min** with **5 Bar** pressure drop.
Specific gravity of water=**1kg/dm^3**

-Draw a straight line intersecting the values **5** and **100** on the axis of pressure drop and flow rate.
-Prolong this line up to the mark line.
-Draw a straight-line intersecting value **1** on the axis of specific gravity up to the break point of the first straight line with the mark line.
-This line intersects the Kv axis and gives you the value you were looking for: **45 L/min**

Example n°2

How to calculate the flow coefficient (Kv) of a solenoid valve to obtain a water flow of **20 L/min** with **4 Bar** pressure drop.
Specific gravity of water = **1kg/dm^3**

-Draw a straight line intersecting the values **1** and **20** on the axis of specific gravity and Kv.

-Prolong this line up to the mark line.

-Draw a straight line intersecting the value **4** on the axis of pressure drop and the break point of the first straight line with the mark line.

-This line intersects the axis of flow rate and gives you the value you were looking for: **40 L/min**