# Things you may or may not know about BERMAD

## Part 2

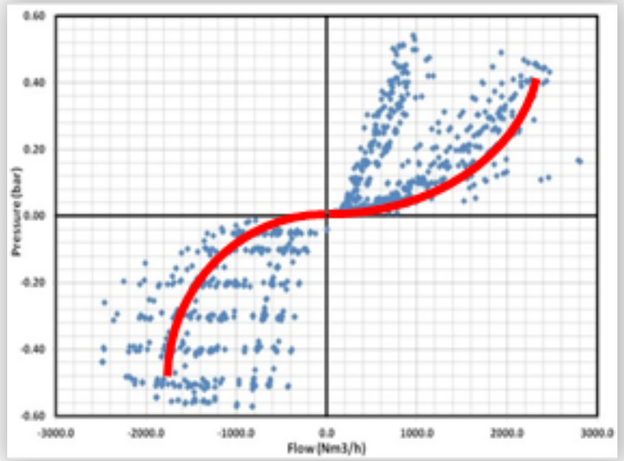
# 1 Did you know that

while most pipelines are designed to handle up to 1.5 times the pipeline pressure rating, **most of them collapse** at a pressure of between -0.1 to -0.5 bar?

## BERMAD air valves can solve this challenge by helping to prevent negative pressure along the pipeline.

In order to select the most suitable air valve for a pipeline system, designers should take into account the air flow performance chart of a specific air valve looking at the value of intake air flow in vacuum conditions.

The following graph is based on real tested results. Please note that the behavior of the airflow in positive pressure is different from the behavior of the airflow in negative pressure.




Air flow performance chart
of IR-C-70-3"

**Most pipeline failures result from negative surges and not positive surges.**

**Pipeline collapse (not a canal)**

# 2 Did you know that

BERMAD has a unique Air Test Bench that is capable of measuring in and out actual air flows from air valves?

## Today science is still looking for accurate ways to calculate flow of water & air mixture

which is why empiric results testing of the air intake and discharge of air valves is significant.

To this end, professors from recognized European universities use the BERMAD Air Test Bench to conduct comparative performance testing of leading manufacturer's air valves. The results, which show BERMAD valve superior performance,  are then published in academic articles.

BERMAD Air Test Bench

# 3 Did you know that

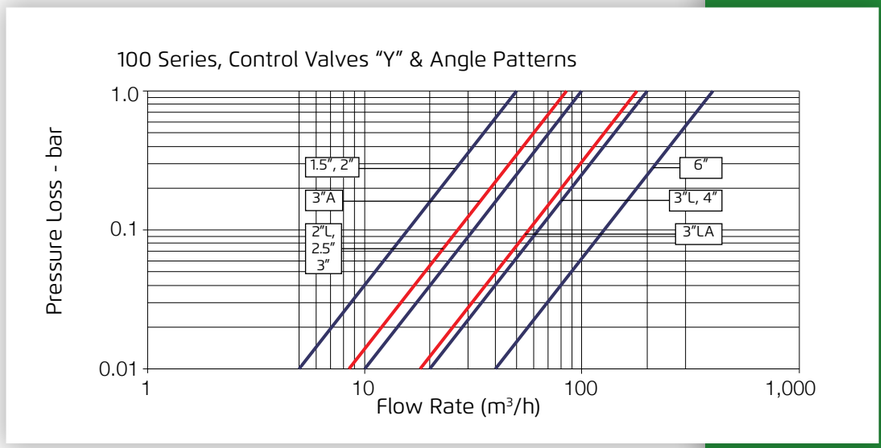
the Valve Kv is a flow coefficient that gives you data about the valve efficiency?

**This empiric coefficient indicates the flow through the valve at a constant head loss of 1 bar.**

| Sizes DN | 40 | 50 | 50L | 65 | 80 | 80 | 80 | 80 | 80 | 80 | 80L | 80L | 100 | 150 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pattern | Y | Y | Y | Y | Y | A | T | TT | D | DD | Y | A | Y | Y |
| | | | | | | | One side | Two sides | One side | Two sides | | | | |
| KV | 50 | 50 | 100 | 100 | 100 | 85 | 95 | 130 | 90 | 200 | 200 | 190 | 200 | 400 |

Kv table for 100 Series  at Delta P of 1 bar

The published KV is measured per each diameter for each valve series listed in the BERMAD catalog, as illustrated in the image below.




It is possible to calculate the actual valve head loss ("Delta P") at a given flow rate when you know the valve Kv according to the following equation:

$$\Delta p = \left(\frac{Q}{Kv}\right)^2$$

# 4 Did you know that

a SHARP 3-way mini-pilot can handle 4 functions?

- Pressure sustaining
- Pressure reducing
- Flow control
- Hydraulic relay

# 5 Did you know that

the SHARP 3-way mini-pilot is also known as the "baboon" because of its red bottom?

SHARP 3-way mini-pilot

# 6 Did you know that

BERMAD has a simple, versatile and low-maintenance pilot that acts as a flow-limiting pilot?

## The paddle-type flow control pilot is composed of a body and a flow sensor.

The pilot can be either 2-way or 3-way control depending on the system conditions.

BERMAD recommends calibrating a flow-limiting valve to about 10-15% above the nominal flow.

Flow-limiting and pressure-reducing hydrometer

**Paddle-type flow control pilot**

# About BERMAD

BERMAD is a leading, privately-owned global company that designs, develops and manufactures tailor-made water & flow management solutions that include state-of-the-art hydraulic control valves, air valves and advanced metering solutions.

Founded in 1965, BERMAD has spent over 50 years interacting with the world's major end users, and accumulating knowledge and experience in multiple markets and industries.

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## Part 1