CONSTANT FLOW – REGARDLESS OF PRESSURE

# Constant Flow Valves

SYSTEM MARIC

www.bertfelt.com

Bertfelt
Brilliant solutions for the Industry

# Maric System
# Constant Flow Valves

Constant flow valves are reliable, self-regulating and self-cleaning valves that provide a pre-set constant flow for fluids regardless of pressure. Maric System constant flow valves are used to rationalise and improve your product or process and reduce your flow-related costs. The valves are suitable for use in a large number of industrial sectors, such as waterworks, manufacturing and food industries, process and chemical industries. Applications include dosage and mixing systems, cooling systems, pumps, mechanical seals, sprinkler and watering systems, humidification equipment, etc. Solutions from 0.15 L/min to almost 13 500 L/min.

## A mechanical solution to achieve constant flow

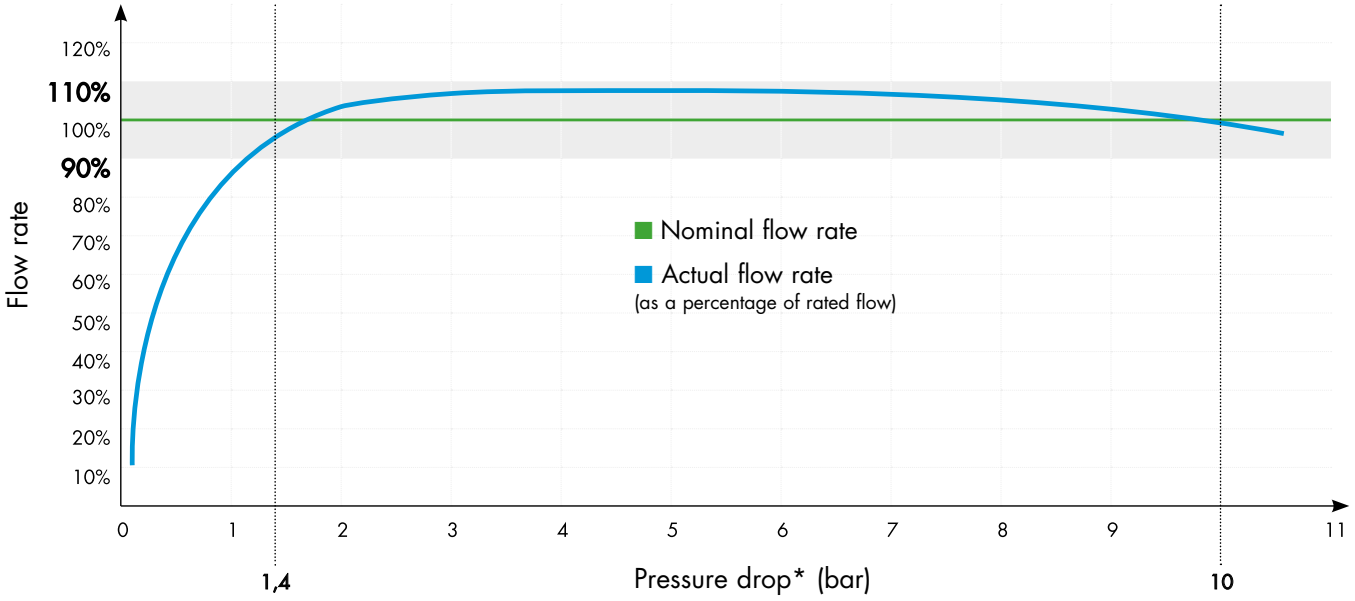
### This is how it works

In the middle of the valve body, there is a conical seat. In this conical seat, a very precisely shaped rubber gasket (o-ring) is fitted. As the pressure increases, the o-ring is pressed downwards in the conical seat in such a way that the opening of the rubber gasket is reduced, thus reducing the orifice diameter. When the pressure decreases, the rubber gasket flexes back, thus enlarging the orifice diameter to original size. This ensures a constant flow as shown in the chart below.

LOW PRESSURE
Rubber gasket is relaxed and orifice has the largest diameter.

HIGH PRESSURE
As the pressure increases the rubber gasket is pressed downwards and the orifices diameter becomes smaller, in such a way, that the flow rate remains constant.

## Performance graph for standard valves with control rubber type, Precision




**Pressure drop is the difference between inlet and outlet pressure across the valve.*

## Following nominal flow rates are available as standard, with type Precision control rubbers:

**Available nominal flow rates L/min.**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.15 | 0.2 | 0.25 | 0.3 | 0.35 | 0.4 | 0.45 | 0.5 | 0.55 | 0.63 | 0.7 | 0.8 |
| 0.9 | 1 | 1.1 | 1.2 | 1.3 | 1.5 | 1.6 | 1.8 | 2 | 2.3 | 2.5 | 2.8 |
| 3.2 | 3.5 | 4 | 4.5 | 5 | 5.5 | 6.3 | 7 | 8 | **9** | | |
| 10 | 11 | 12 | 13 | 15 | 16 | 18 | 20 | **23** | | | |
| 25 | 28 | 32 | 36 | 41 | 45 | 49 | 54 | **59** | | | |
| 66 | 73 | 82 | 91 | 102 | **114** | | | | | | |
| 125 | 138 | 150 | 162 | 180 | 199 | 216 | **233** | | ➤ up to 13500 L/min | | |

# **How to specify** your Constant Flow Valve

***For specifics, please consult the Catalogue that can be ordered at www.bertfelt.com***

## 1 Decide which flow rate your application requires

Choose from the "nominal flow rates table" on previous page.

## 2 Verify type of control rubber for your application:

| Rubber Type | Abbreviation | Rubber Material | Pressure drop | Flow accuracy | Max Temp |
|---|---|---|---|---|---|
| **Precision (standard)** | **P** | **Nitrile** | **1.4 – 10 bar** | **+/-10%** | **60°C** |
| Low Pressure* | LP | Nitrile | 0.45 – 5 bar | +/-20% | 60°C |
| High Pressure (1) | HP1 | Nitrile | 1.4 – 15 bar | +/-20% | 60°C |
| High Pressure (2) | HP2 | Nitrile | 1.7 – 20 bar | +/-20% | 60°C |
| EPDM | E | EPDM | 1.4 – 15 bar | +/-20% | 100°C |
| EPDM High Pressure 2 | E2 | EPDM | 1.7 – 20 bar | +/-20% | 100°C |
| Viton | V | Viton | 1.4 – 10 bar | +/-20% | 200°C |

**) Limited selection of flow rates, starting as standard at 5,5 L/min. Please consult your local sales representative for specifics.*

## 3 Choose valve body material

Standard is Brass, (Gunmetal), U-PVC, Stainless Steel. Other materials upon request.

## 4 Choose connection type and DN size (Threaded Valves, Wafers or Inserts)

Note: Consider max flow rate per DN size.

### WAFERS:

Wafers are normally used to accommodate larger flow rates. Wafers are designed to be mounted between pipe flanges. Please specify DN and pressure class PN when ordering. As standard wafers are manufactured according to ISO 7005 PN10. Other standards as ANSI are optional.




| Connection (DN) | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Max. flow L/min | 114 | 233 | 233 | 233 | 342 | 456 | 699 | 1279 | 2320 | 4427 | 6058 | 8854 |

### INSERTS:

Inserts are the smallest product in our range. They are fitted in your application's existing pipe work, for example between/in threaded fittings. The smallest standard diameter is 12,45 mm. The insert can be made with a small flange and be equipped with an o-ring for better sealing. Please discuss a custom made solution with your local sales office.



### THREADED VALVES:

| Valve body size: | Max flow: |
|---|---|
| **DN6** ( ⅛" ) | 9 L/min |
| **DN8** ( ¼" ) | 9 L/min |
| **DN10** ( ⅜" ) | 9 L/min |
| **DN15** ( ½" ) | 23 L/min |
| **DN20** ( ¾" ) | 59 L/min |
| **DN25** ( 1" ) | 114 L/min |
| **DN32** (1¼") | 233 L/min |
| **DN40** (1½") | 233 L/min |
| **DN50** ( 2" ) | 342 L/min |

Connections are available in sizes from DN6 up to DN50. Standard is female/female (FF). Please verify in the "nominal flow rates table" on previous page that your flow rate fits in the choosen valve body size. If you cannot find what you are looking for among our standard valves, please contact your local sales representative for a customized solution.


FF

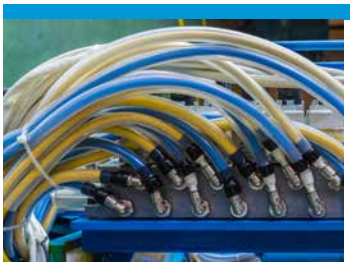

MF

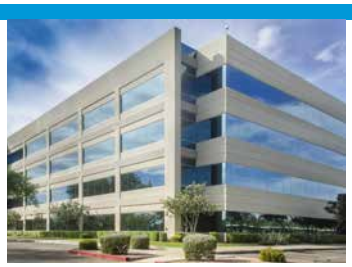

FM


MM

Standard threading is ISO 228 (BSP). NPT is also available.

# **Benefits** and using



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## INDUSTRIAL

- Dosing equipment – controlled mixing of ingredients.
- Mechanical seals - indicating minimized but correct flow.
- Vacuum Pumps – for controlling flow of crucial sealing/service liquid to liquid ring vacuum pumps.
- Fire Fighting; proportioners – correct ratio dosing of foaming agent in high flow applications.
- Dust Suppression – sprinkler control on mobile water tankers.
- Cooling equipment – correct flow of cooling water to machinery. Often with solenoid valves.
- Safety Showers & Eyewash Equipment – controlled flow ensures consistent and safe operation.


## WATER TREATMENT & FILTRATION EQUIPMENT

- Back-wash flow rate control – for preventing media loss.
- Optimized flow rate control through delicate filters.
- Control trickle flow to water quality analysing equipment.
- UV-sterilisation – controlled speed = controlled bacteria kill.

## WATER AUTHORITIES

- Flow limiting – extending water meter life, enabling economical distribution to rural connections.
- Flow control instead of water meters and to force water restrictions.

## IRRIGATION & FARMING

- Sprinkler flow control – over-spraying mists wastes water.
- Fitted to each outlet ensures uniform output at different elevations.
- Animal farms – correct and limited flow to all animal stalls.

## PROJECT MARKET – hotels, restaurants, condominiums, event areas.

- Drinking Fountains – controlled stream prevents frustration at the drinking fountain.
- Washing & dish washing machines In condominiums – making sure that all users get a correct but limited flow.
- Wash basins – controlled and limited flow rates.
- Water Heaters – keeping flow below a pre set maximum ensures gas & electric instantaneous heaters can heat to a sufficiently hot & advertised temperature.


## MINING

- Gland water flow control to gland-packing/stuffing box and mechanical seals of centrifugal and slurry pumps.

## CENTRIFUGAL PUMP PROTECTION

- For keeping a pump on its curve and preventing cavitation damage.
- For use on high draw-down bores for preventing up-thrust damage and for preventing over-pumping beyond bores capacity & drawing in of air or sand – leading to unstable conditions.
- Protection from overloading of electric motors, control of cooling water to liquid ring vacuum pumps.
- Gland-water & mechanical seal – seal water flow control.



## **About** Bertfelt Teknik

**Founded 1990, Bertfelt Teknik is an European manufacturer of Constant Flow Valves, system Maric.**

From the head office In Sweden, valves are marketed and distributed to OEM-manufacturers on mainland Europe. Bertfelt has implemented a quality and environmental management system according to ISO 9001 & 14001.

Bertfelt Teknik can supply Constant Flow Valves complying with EC1935/2004, EC2023/2006 as well as the French certificate of sanitary conformity (ACS).

Please ask your local sales representative for more information.

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