



# **Kämmer® SmallFlow™**

*Low and Micro Flow Valves*



*Experience In Motion*



## ***Kämmer SmallFlow Valves***

For Flowserve a low flow valve is a valve with a  $C_v$  value range between 0.012 and 4.7. Flowserve also manufactures Micro Flow valves designed to offer lower  $C_v$  than 0.012 and down to 0.000063. In the Flowserve control valve portfolio a wide range of valves are designed to offer both ranges. These products are widely used for applications in laboratories and industrial research departments as well as industrial processes



requiring high degrees of low flow control accuracy. Flowserve Kämmer's long-standing experience in manufacturing low flow and micro flow trims with a reproducible flow characteristic makes these valves one of the top performing low flow control valves in the market.





## Applications

Flowserve Kämmer's **SmallFlow** Control Valves can be used in almost all low flow and micro flow applications. **SmallFlow** valves are used in laboratories and in small scale production plants but also to satisfy the demand for accurate injection of fluids into process systems.

Examples of this are dye addition for paper and textiles, fuel oil burners, pilot plant skids, additive injection in refineries, desuperheater spray injection and almost all applications in R&D - flow, temperature and pressure control.



With the cryogenic extension the **SmallFlow - 385000** is suitable for liquid nitrogen services down to  $-196\text{ }^{\circ}\text{C}$  ( $-321\text{ }^{\circ}\text{F}$ ).





## Kämmer SmallFlow Valves Series 385000

**SmallFlow - 385000** Series is the ½" version of Flowserve's low flow valve product offering. End Connection sizes of up to 1" or DN 25 are possible. The unique cast body design allows for pressure ranges of up to CL 600 / PN 160 with a maximum  $C_v$  of 4.7. Flow analysis and an optimized flow path provides the largest  $C_v$  value for a ½" linear control valve. Various options for material and bonnet configuration make this valve acceptable for almost all kinds of low flow applications. Forged body design for pressure classes CL 900 / PN 250 and higher. Barstock version of **SmallFlow - 385000** for all special requirements and materials.

### Features

- Compact ½" design
- Casted body up to CL600 / PN 160
- Perfect control valve for any low flow applications
- Reproducible micro  $C_v$  trims down to  $6.3 \cdot 10^{-5}$  and up to 4.7
- Plug head guided
- Flanged bonnet and clamped seat

### Specifications

Material	Carbon Steel	WCB / 1.0619 A105 / 1.0460
	Stainless Steel	CF3M / 1.4408 316L / 1.4404
	Special materials	
Sizes	½" to 1" / DN 15 to DN 25	
Pressure Classes	CL 150 to CL 2500 / PN 40 to PN 400	
End Connections	Flanged, screwed ends, weld ends, specials	
$C_v$ Range	0.000063 to 4.7	





## Options

- Angle valve design
- Various bonnet options for high and low temperatures
- Bellows seal
- ISO 15848-1 fugitive emission packing
- Wide range of body materials possible



Bellows Seal option for fugitive emission requirements up to PN 250. Hydroformed bellows with up to 3 walls offers highest protection and maximum working lifetime. Test port connections provide bellows seal monitoring possibilities.





## Kämmer SmallFlow Valves Series 080000

The **SmallFlow - 080000** Series is a compact and lightweight ¼" micro flow valve. Made from barstock material, a wide variety of steel and high alloys can be used to manufacture this valve type. Normally the end connections are ¼" threads but in requested cases high pressure connections or weld ends can be provided. Common with the **SmallFlow - 385000** Series, the minimum  $C_v$  value is 0.000063. The **SmallFlow - 080000** is a trusted veteran with many years of proven operation it represents a market standard for micro flow valves.

### Features

- Compact ¼" barstock design
- Perfect control valve for laboratory applications
- Reproducible micro  $C_v$  trims down to  $6.3 * 10^{-5}$
- Plug head guided
- Compact and lightweight actuator

### Specifications

Material	Stainless Steel 1.4571 Special materials
Sizes	¼" / DN 6
Pressure Classes	CL 2500 / PN 400
End Connections	Screwed ends, weld ends, specials
$C_v$ Range	0.000063 to 0.29

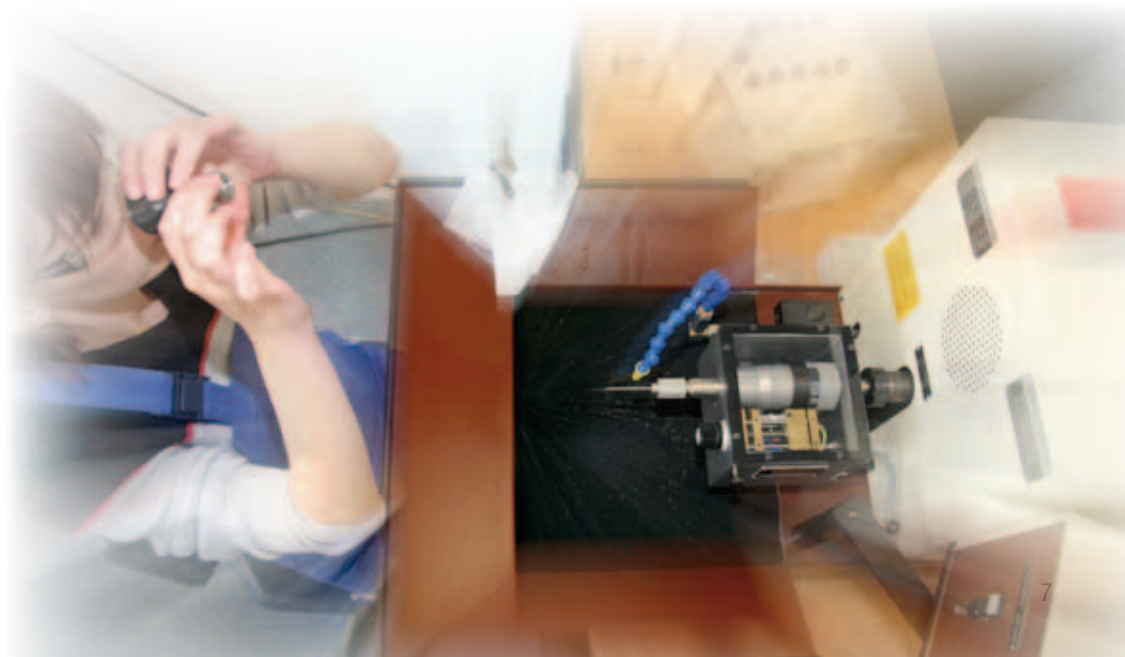




## Options

- Angle valve design
- Various bonnet options for high and low temperatures
- Bellows seal
- Almost all body materials possible

Angle valve options, bellows seal or normalizing fins bonnets make the **SmallFlow - 080000** an universal micro flow valve for ¼" body sizes . Reproducible trims manufactured with the latest production technology guarantee the most precise control for pilot plant and R&D requirements.





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