



## Motorized control valve GEMÜ C53 iComLine

### Areas of application

Control valve for ultra-pure applications in the semiconductor industry:

- Lithography
- Chemical-mechanical polishing (CMP)
- Etching processes
- Analysis

### Features

- High-resolution linear actuator with stepper motor
- Diaphragm globe valve based on the iComLine series
- Tried-and-tested plug diaphragm design
- All media wetted parts are made of PFA or PTFE
- One million qualified control switching cycles
- Cleanroom manufacturing (HP version) complies with SEMI F57
- Optical feedback on operating state via LED
- Can be integrated into manifolds and M-block valves
- Suitable for ultra-pure, corrosive media

## Description

The GEMÜ C53 iComLine 2/2-way diaphragm globe valve was developed for precise and demanding control applications in semiconductor production. The sealing concept of the valve is based on the tried-and-tested GEMÜ PD design, with actuator and medium separated by a regulating cone made of resistant PTFE.

As the regulating cone contour, actuator stroke and connection size can be customized to meet customers' requirements, the GEMÜ C53 iComLine satisfies virtually all control and flow requirements of the high-tech semiconductor industry. Thanks to the combination of the precise stepper motor with ultra-pure body materials, the valve is particularly suitable for lithography, CMP and etching processes, as well as applications in the analysis field of any semiconductor production.

## Technical specifications

- **Media temperature:**  
-10 to 150 °C
- **Ambient temperature:**  
0 to 40 °C
- **Operating pressure:**  
0 to 6 bar
- **Nominal sizes:**  
1/4" | 3/8" | 1/2" | 3/4"
- **Control range:**  
0.53–20.8 l/min\* [0,03–1,45 US gal/min]
- **Body configurations:**  
2/2-way body | Multi-port valve block
- **Connection types:**  
Flare | PrimeLock® | Super 300 Type Pillar®
- **Body materials:**  
PFA | PTFE
- **Seal material:**  
PTFE
- **Analogue inputs:**  
Current signal 4–20 mA | Voltage signal 0–10 V
- **Supply voltage:**  
24 V DC
- **Actuating speed:**  
Max. 2 mm/s
- **Protection class:**  
IP 65

\* Control range dependent on PD used and connection size. All of the values were determined using the valve with water and a pressure loss of 1 bar.

Data dependent on the respective configuration – see datasheet or Product Selection Tool.

### Motorized actuator

- Adjustable valve stroke (adaptation possible at the factory)
- Can be integrated in customized multi-port valve blocks

### Valve body

- Common connection sizes and types available
- Ultra-pure fluoroplastics for use in semiconductor production

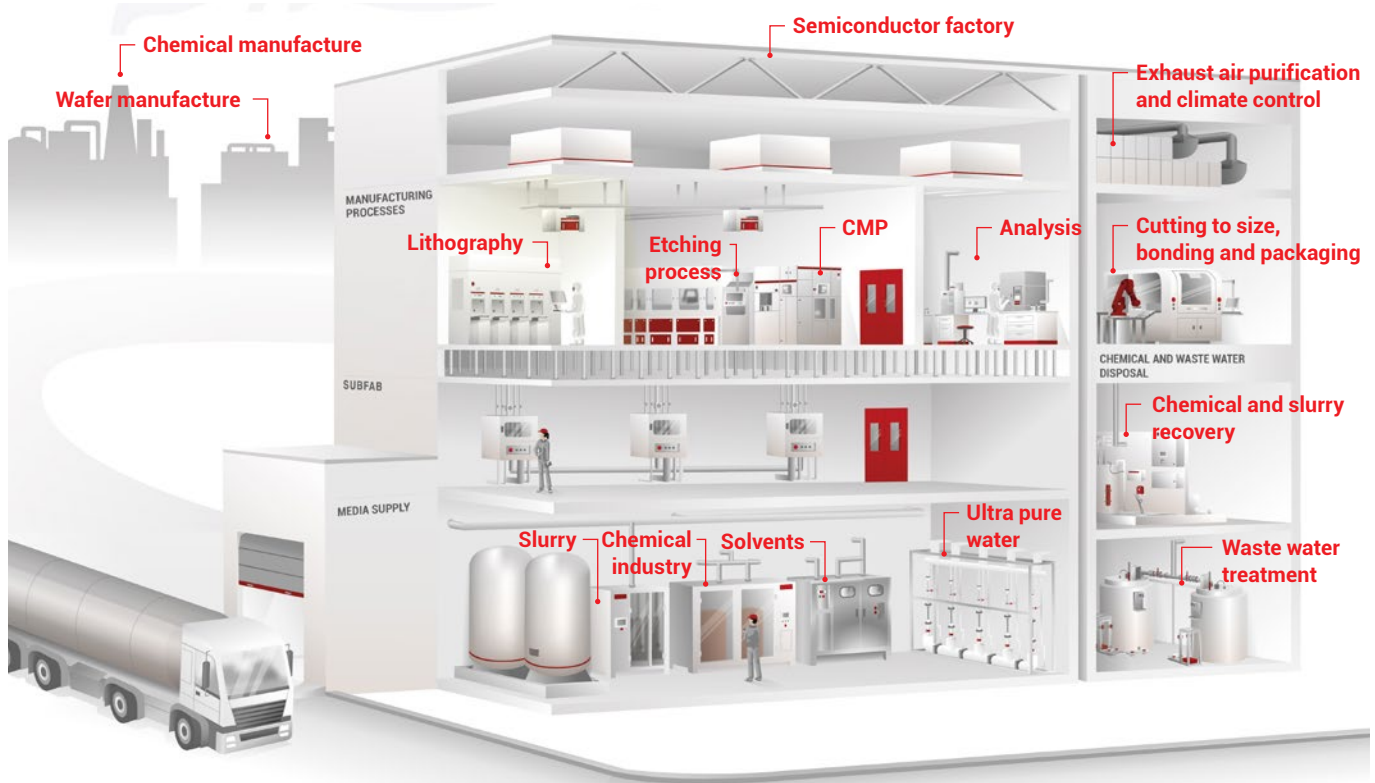


### PD (plug diaphragm)

- Tried-and-tested seal system
- Regulating cone for equal-percentage and linear automatic control system available
- Customized regulating cone design possible

# Ideal for control applications in the semiconductor industry

## Solutions for customized applications



### GEMÜ PC50 iComLine M-block

- Compact design
- Block material: PTFE for ultra-pure applications
- Regulating cone for complex mixing applications
- Example for temperature control: GEMÜ PC50 iComLine M-block with motorized actuators, integrated check valves and temperature sensor



### 2/2-way valve with customized regulating cones

- Kv value simulation possible with customized regulating cones
- Control range 0.53–20.8 l/min [0,03–1,45 US gal/min]



### Optical feedback via LED

- Indicates the operating state of the valve
- Efficient visual representation of process monitoring
- Simple initialization with visualization of process via LED

