



## FOUP cleaning – cleaning technology for microchip manufacturing

### Process description

A FOUP (front opening unified pod) is a special container in the semiconductor industry for safely transporting silicon wafers between the individual process steps in the cleanroom, such as lithography, CMP, etching and analytics.

A robot arm is used to remove the wafers for processing. The FOUPs are then transported via ceiling conveyors to the next process tool. (Dust) particles may form and deposit on the wafers due to the frequent transport operations and different process steps.

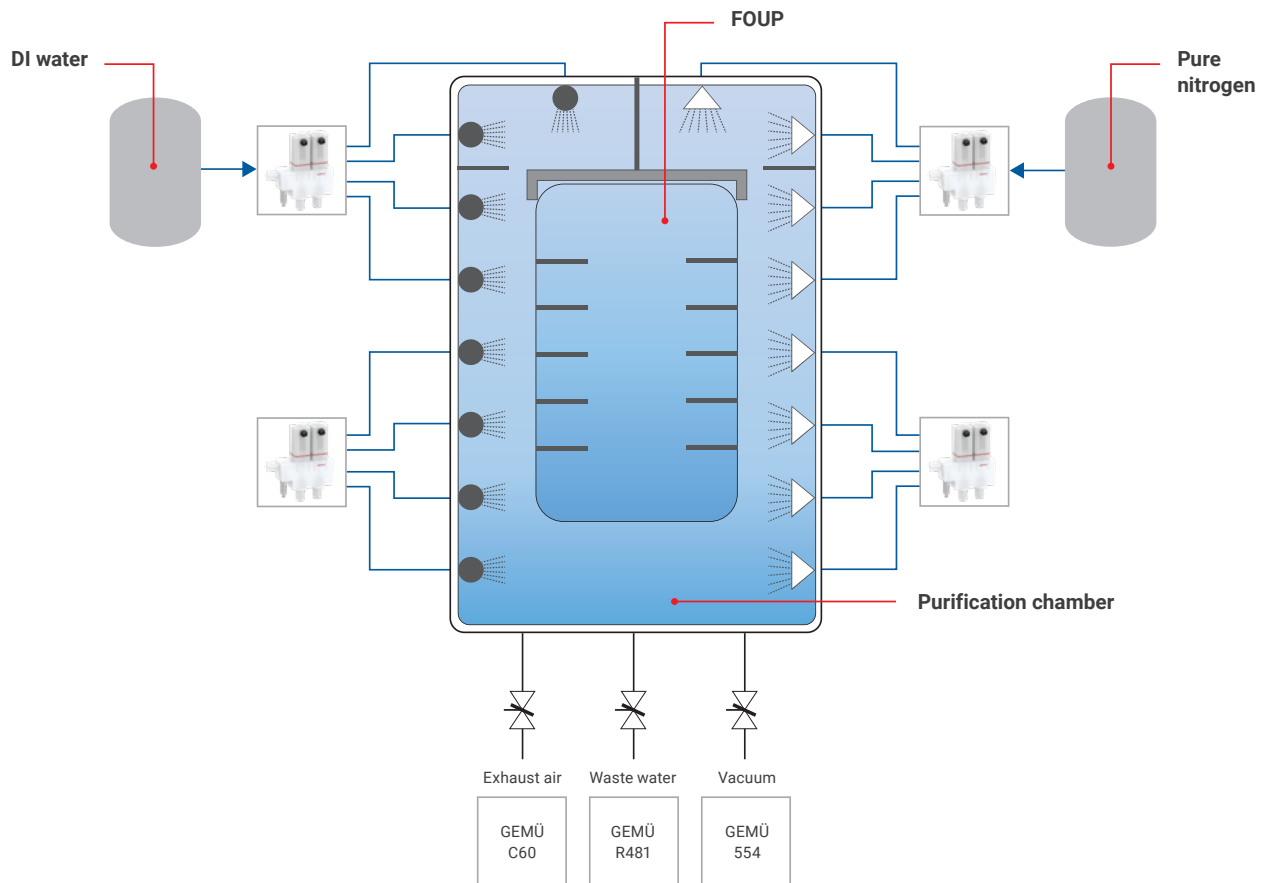
Regular cleaning of the FOUPs is therefore essential. It is particularly important to efficiently remove particles and airborne molecular contamination (AMC).

### The task

Requirements for components used in the application:


- Handling of media in various aggregate states (gases and DI water)
- All components in the medium feed must be produced from ultra-pure fluoroplastics
- Reliable mixing of the cleaning media used (different temperatures and aggregate states, etc.) through continuous checking of the operating parameters
- Compact component design due to use in space-critical environments

## Diagrammatic process visualization




## Suitable GEMÜ products

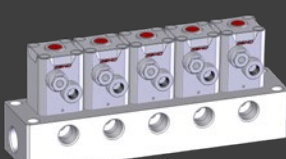
**GEMÜ PC50 iComLine M-block**




**Motorized diaphragm globe valve \***




**Pneumatically operated diaphragm globe valve \***



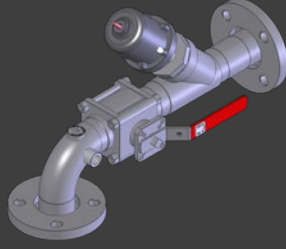
**iComLine distribution block**



**GEMÜ R481 butterfly valve**



**GEMÜ C60 CleanStar pneumatically operated diaphragm valve**



**GEMÜ 554 stainless steel globe valve**

**Advantages at a glance**

- Customized engineering  
Tailor-made solutions in close collaboration with customers
- Fully-integrated system solutions (valve functions, fittings, sensor system, check valves, tank/housing walls, etc.)
- Compact design
- Materials are media-specific, matched to requirements and cost-effective
- Quicker installation time, few connection points
- Cleanroom manufacturing, SEMI F57

\* The GEMÜ PC50 iComLine distribution blocks are specifically designed for temperature mixing applications (see application: Efficient temperature mixing)