

# Expertise in the clean room

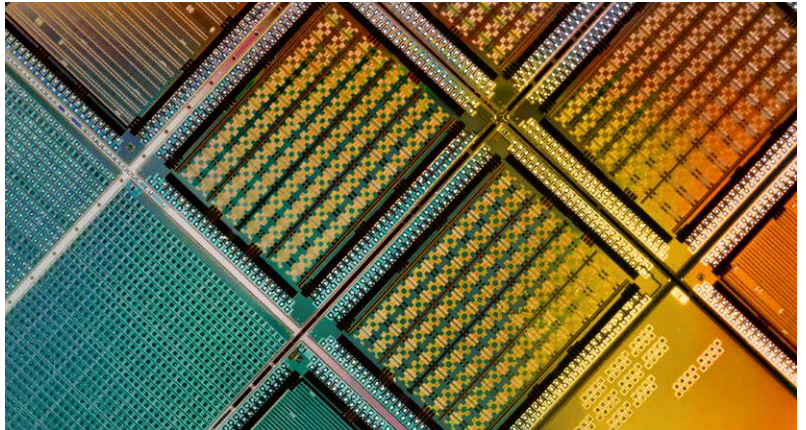
High-purity butterfly valves –  
For high-quality and reliable production

# Butterfly valves for high-purity applications

## Semiconductor

Semiconductors are made from silicon wafers, which are extremely sensitive to dust, particles, and other contaminants, so they should be washed with ultrapure water.

Valves have contaminations such as silicone, grease, oil and wax, that if not eliminated will enter the ultrapure water stream and sit on the silicon wafer surface, which can lead to defects in the finished product, such as short circuits or open circuits.



## Pharmaceutical industry

High-purity is critical to ensuring the quality, safety, efficacy, and regulatory compliance of pharmaceutical products. InterApp valves ensure production of medicines or raw materials that are pure and free from impurities and guarantee the quality and safety of the final product.



## Oxygen application

Contaminations such as grease or oil-based lubricant can get easily ignite when they come into contact with high pressure oxygen either by particle impact or adiabatic compression. For oxygen application, InterApp performs additional cleanliness test with UV-lamp.



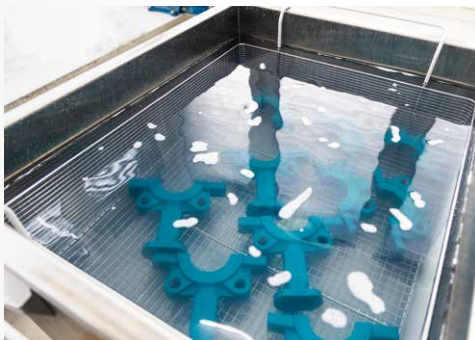
## Production of InterApp butterfly valves in the clean room

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As a manufacturer of industrial valves with many years of experience and a clean room US federal standard 209E class 10,000 and ISO class 7, we produce high-purity butterfly valves up to DN400 at our Swiss site. Production takes place under clearly defined conditions and involves several steps.

### 1. Cleaning in an ultrasonic bath

Valve components are washed with alkaline ultrasonic cleaner at 50 °C for 5 minutes. Stubborn fats and oils contaminations are removed.



### 2. Cleaning in the washing machine

Valve components are washed with ultrapure water < 0.5 µS/cm and an alkaline cleaning agent at 90 °C for 3 minutes. Components are then dried, using clean compressed air.



### 3. Assembly of valves

Assembly work is carried out in the clean room without using any oil or grease.



### 4. Tightness test of valves

Test is done in the clean room, using ultrapure water and clean air.



### 5. Actuator mounting

Handlever is cleaned like the valve components, other actuator types are cleaned with the cleaner & degreaser Loctite SF7070. All actuators are mounted in the clean room.



### 6. Packaging

Packaging work is carried out in the clean room. First, one PE bag is closed around the valve neck and then, the complete valve is vacuum sealed in another PE bag.



The clean room is cleaned regularly, the air flow is strictly controlled and workers wear special work clothes and latex gloves throughout the production process.

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