



GEMÜ PC50 iComLine – maximum flexibility thanks to its modular design

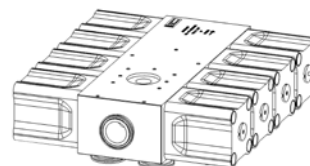
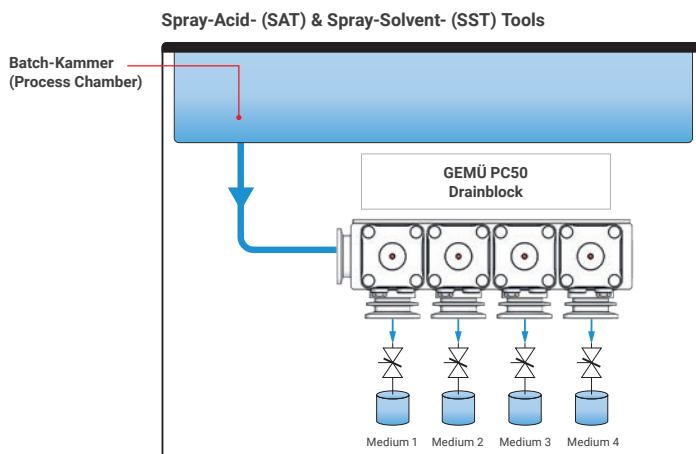
Modular design for cost-effective and safe configuration of process tools

Process description

GEMÜ particularly stands out in the field of process tools in semiconductor production thanks to customized GEMÜ PC50 iComLine valve block solutions. Simple multiple distribution blocks are primarily used in drain applications. They usually have a similar structure but vary in the number of actuators, connection sizes and outlets. To enable flexible and, in particular, cost-effective work for different requirements, GEMÜ offers various options for configuring valve blocks of the GEMÜ PC50 iComLine series using the modular design.

Function & requirements

GEMÜ PC50 iComLine valve block solutions with the modular design are used in etching processes, among other applications. These involve removing layers of material from a silicon disk in a number of consecutive processes to create the required structure for the wafer. In spray acid (SAT) and spray solvent (SST) tools, the valve blocks are situated underneath the etching chambers and reliably transport the chemicals used to be disposed of. A different number of chemicals are used depending on the operator. Plant manufacturers therefore use modular valve blocks so that they can flexibly define the number of outlets, while also keeping the plant cost-effective.



Technical data

- 8 actuators (7x NC; 1x NO)
- Customized clamp port fittings
- High flow rate with low media pressures


Use of the modular design in drain blocks

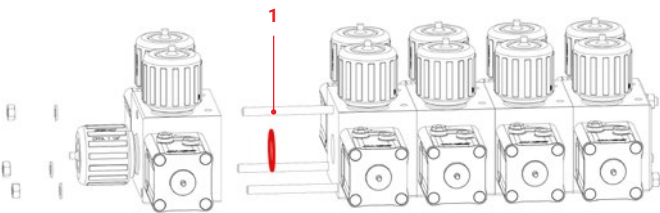
The diagram below illustrates one option for a modular valve block structure. In this example, a flexible number of valve blocks can be chosen between the start and end blocks. The valve blocks are then joined together by threaded rods and sealed using O-rings.

A variable number of valve blocks can be chosen, allowing the number of valves and spigots to be adapted to the plant. When sealing elements are used in conjunction with threaded rods, this means that the modular valve blocks can be joined together. The threaded rods are pushed through the blocks and tightened together by screwing on nuts.

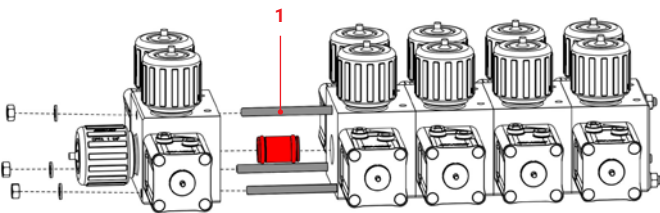
To reliably ensure the seal between the block components, customers can choose from a range of sealing elements depending on pressure, temperature and medium. These seal the connections in the axial direction with almost zero deadleg. GEMÜ offers O-rings made from various different materials, double nipples with two radially sealing O-rings and self-sealing connections without O-rings for this purpose.

To meet the high requirements for purity and process reliability, GEMÜ assembles and tests the set-up valve blocks in a cleanroom.

Feature		Customer benefit	
 <p>Block 1 Mandatory start block, fixed number</p> <p>Blocks 2 and 3 A flexible number of intermediate blocks can be chosen</p> <p>Block 4 Mandatory end block, fixed number</p>		Choice of different connection types and sizes	Flexible choice of materials for blocks and sealing elements
		Rod length depends on the number of blocks required	Various actuator sizes available
		Cost saving because intermediate blocks can be reused	Cost saving thanks to reduced development costs



Connecting the modules using an axial O-ring seal (1).
Installation position: Valve outlet facing downwards



Connecting the modules using a double nipple (1) and two radially sealing O-rings. Installation position: Valve outlet facing downwards