Plastic Multi-Port Valve Blocks

Lightweight – Space-saving – Multipurpose

GEMÜ® VALVES, MEASUREMENT AND CONTROL SYSTEMS

Innovative technology

GEMÜ is a leading world-wide manufacturer of high quality valves, measurement and control systems. Our owner Fritz Müller's invention of the first plastic solenoid valve world-wide for the electroplating industry was the foundation stone for GEMÜ in Ingelfingen in 1964. Since then the company developed internationally with a large number of production and sales companies. Since its foundation, plastic valves and flow-meters and the processing of plastic materials have been one of GEMÜ's core competencies.

Headquarters in Ingelfingen-Criesbach (D)

GEMÜ provides engineered control solutions for a large number of process and engineering plant, such as:

- Industrial plant and machine construction
- Automobile industry
- Water / waste water treatment
- Chemical industry
- Steel works
- Mining and metal extraction
- Power stations
- Petrochemical industry
- Paper industry
- Pharmaceutical and biotechnological industries
- Foodstuff and beverage industries
- Microelectronics and semiconductor industries

Plastics competence centre in Rotkreuz (CH)

State-of-the-art factory equipment and machinery plus a motivated team ensure the best service through our world-wide network of distributors and stockholding subsidiaries. We are constantly making investments in order to optimise our existing products and to develop new products. Thus we can provide technical solutions for individual applications.

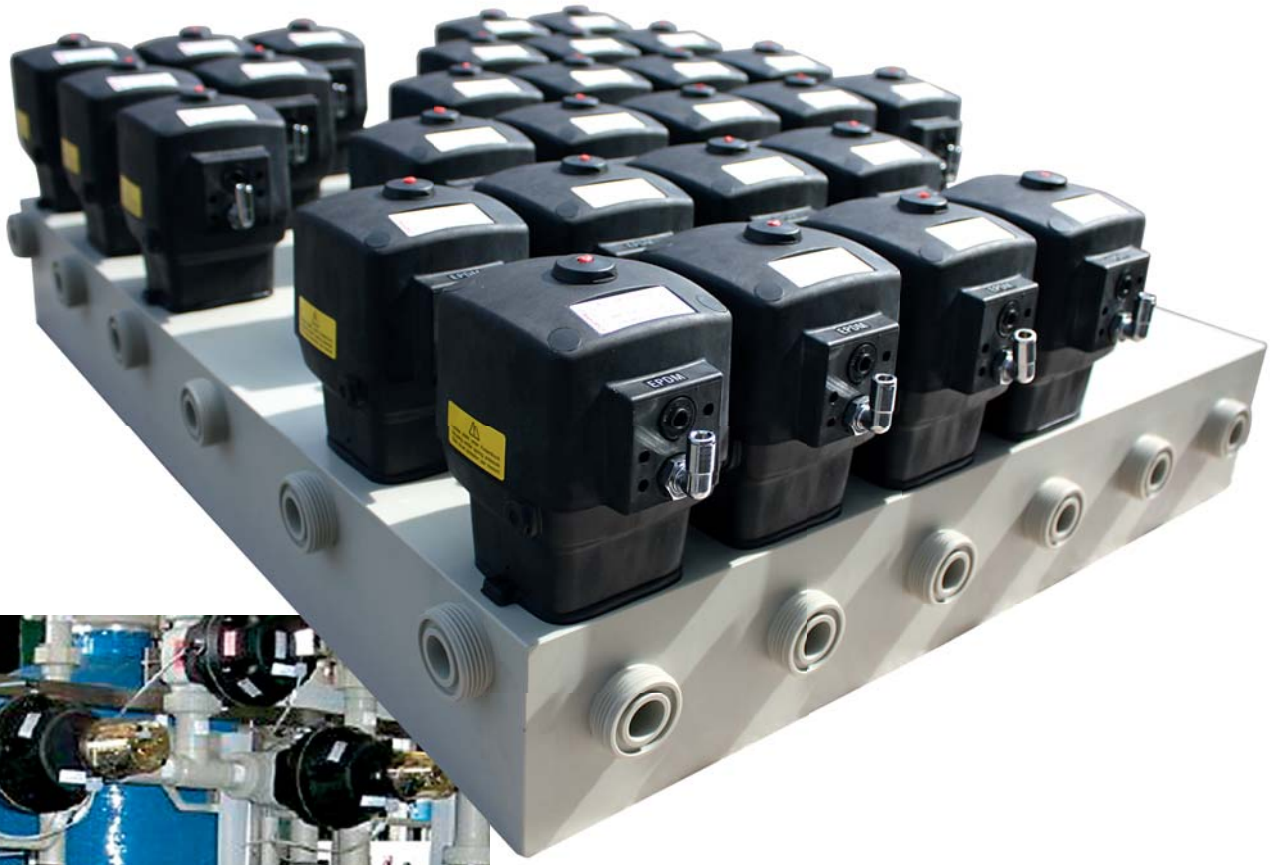
GEMÜ - your valve and instrumentation partner.

Production of plastic multi-port valve blocks in Rotkreuz (CH)

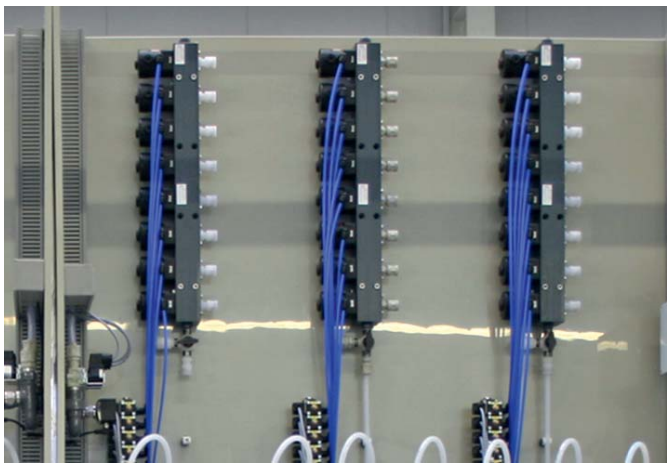
Multi-port valves save space and mounting time

Lightweight, taking up less space, quick to fit and multipurpose – these requirements are becoming increasingly important for system components. Complex control of liquids and gases are generally carried out by means of numerous individual valves. These are connected to one another by similar numbers of fittings and piping. But this takes up a lot of space and assembly is time-consuming because of the much higher number of individual parts. Also, every assembly point and pipe connection is a potential leak, which increases the safety risk.

Compact plastic multi-port valve blocks are the ideal components here, as they can perform various functions while saving space. Our experience with producing thousands of versions within the pharmaceutical industry is now being transferred to plastic multi-port valve blocks for other industrial sectors. Today we are the market leader world-wide for multi-port valve blocks for the pharmaceutical industry. We also offer multi-port valve solutions made of the most varied plastic materials for wet processes in the semiconductor industry and solar cell production as well as for controlling cleaning media and chemicals.



Classical design



Distribution of chemicals – compact skid with multi-port valve blocks

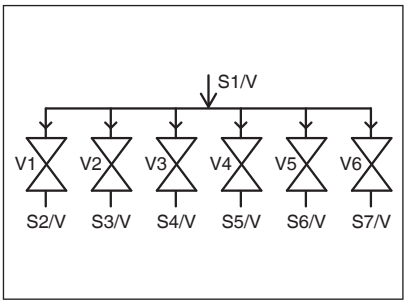
Intelligent compact system components

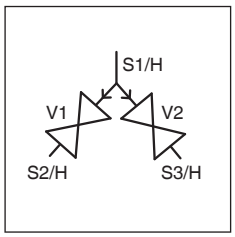
Multi-port valves or multi-port valve blocks unite a variety of functions in the smallest of spaces thanks to their individual design, such as:

- mixing
- dividing
- diverting
- draining
- feeding

They can also fulfil safety functions, double shut-off (double block and bleed), cross connections and control functions. These individual functions serve very specific purposes in individual situations, such as the taking of samples, the distribution of chemicals, the connection of cleaning media (CIP) and ensuring a minimum flow rate. There are also numerous more complex functions in connection with process automation, for example the integration of pressure or temperature sensors. Intelligently designed, multi-port valve blocks can be developed into compact system components with a high degree of functionality.

6-way manifold





2-way manifold

Advantages of multi-port valves

Advantages of multi-port valves:

- Individual, customised layouts and very flexible design
- Very compact
- Fewer fittings, welds or solvent cemented joints
  → fewer potential leakage points
- Lower assembly and installation costs
- Low hold-up volume, smaller wetted area
- Operators and diaphragms/seals from the proven GEMÜ modular system
- Produced from a single block of material (standard materials PVC-U, PP, PP natural, PVDF and PEEK); further materials on request
- Standard connections: threaded sockets, solvent cement spigots, butt weld spigots, union ends and flanges

Block valve unit in production plant (Singulus Stangl Solar) for CIS cells

3-way block with motorized actuators and threaded/solvent cement sockets

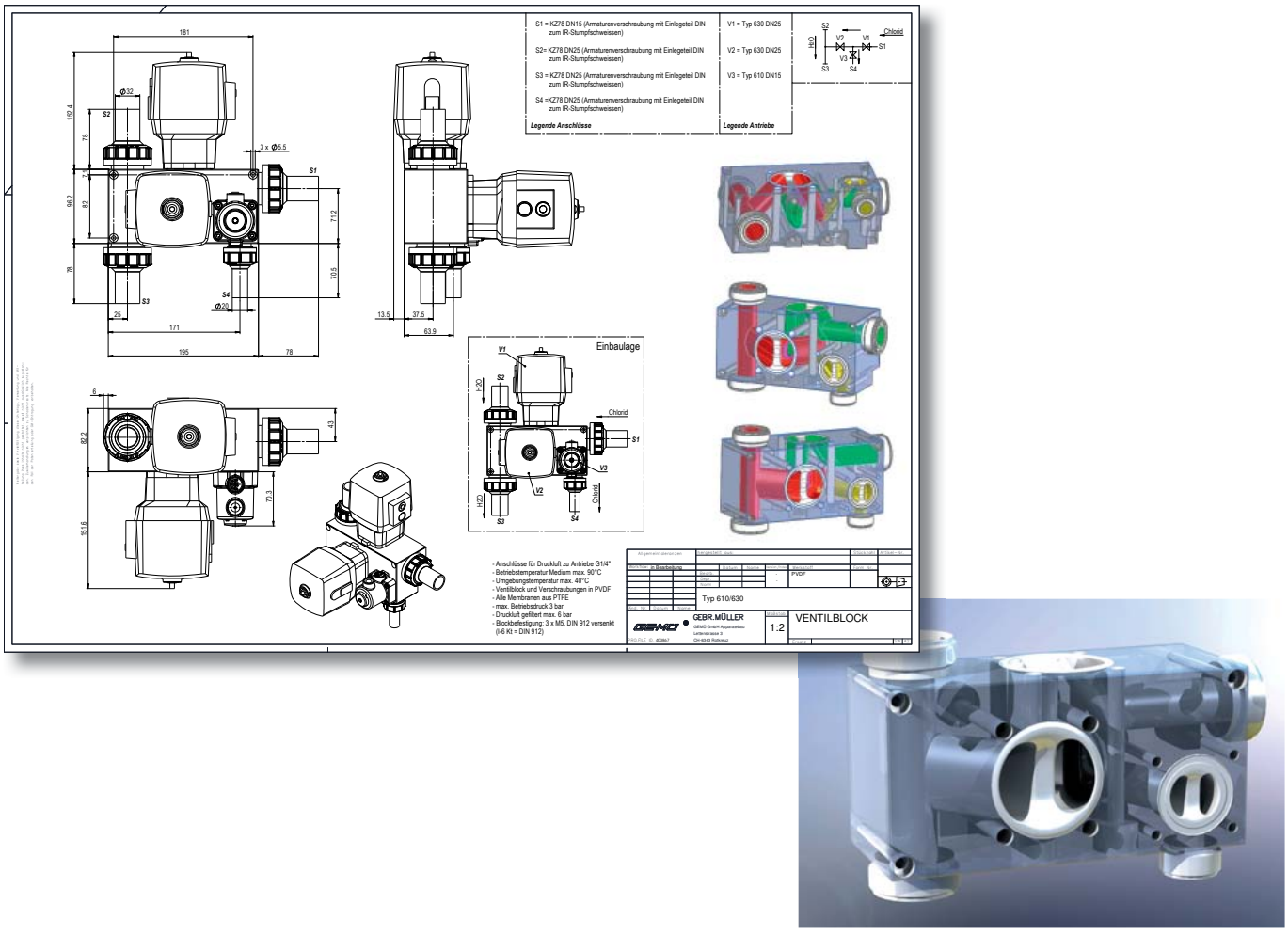
Engineering capability

Solutions are developed together with the customer

GEMÜ supports its customers at the planning phase with ideas and initial drafts. The drafts are laid out for design purposes in the 3D CAD system, agreed in close cooperation with the customer and finally processed in a state of the art efficient machining centre. Every day, our Design Centre turns out new customised block designs.Whatever you envisage or we work out together with you becomes reality at GEMÜ.

Time and cost optimized

The bodies of plastic multi-port valves are made as standard of PVC-U, PP, PP natural, PVDF, PEEK and PTFE but designs are also possible using other materials. Multi-port valve blocks are generally produced by machining from a solid block of plastic material. In the case of larger quantities, GEMÜ develops individual solutions together with the customer based on an injection moulding process. This leads to substantially lower unit costs. Of course we also develop and manufacture the moulding tools for this ourselves. We therefore have control over the whole process, which is fast, flexible and in line with our high quality requirements.

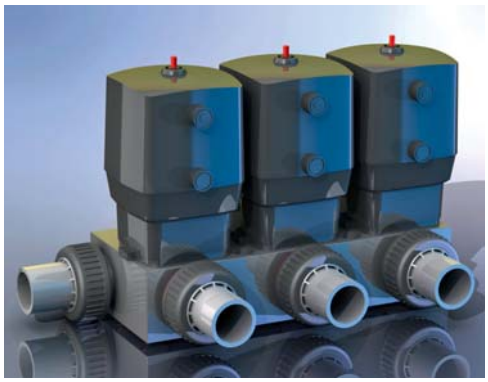


Planning and partnership

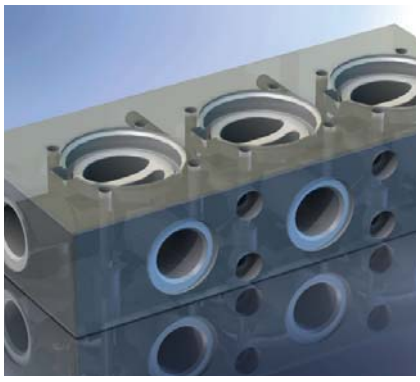
Good planning is critical in valve design. Errors in the planning of production plant can result in substantial consequential expense. Delays and extra costs due to problems during the process, late commissioning, contaminated batches, later modifications to the plant are just a few of the examples in favour of precise planning. Implementing complex process sequences requires a varied range of compact valve designs. We place great emphasis on ensuring that our customers get the optimum block for their specific application and not any standard solution from the catalogue. A number of aspects are considered when designing and arranging M-blocks. Top priority is given to the safety of applications and processes in the system in which the block is to be integrated. Essential specifications include the function of the block, the number, dimensions and function of the pipe connections, the number and size of the valve seats, the installation position and draining direction of the block, the space requirement, the type and function of the operators and the type of material. In order to facilitate this we have developed a specification sheet which serves as a basis for discussing your requirements.

Please give this specification sheet to your GEMÜ contact or send it directly to the Plastics Department in Switzerland (plastic@gemue.de).

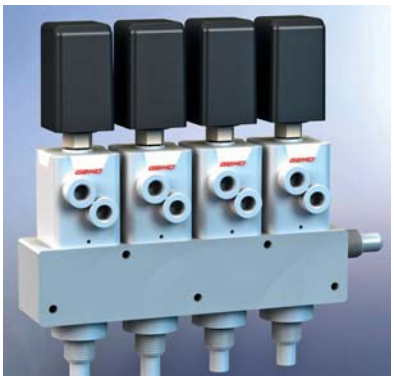
1. Enter the operating conditions and desired materials.
2. What function should the multi-port valve fulfil?
3. Draw a pictogram and make a sketch in the specification. You can of course use the examples shown in this brochure as a guide.
4. Label all connection types with S1, S2, ...
5. Assign the necessary features to every connection in the table and add explanatory remarks where necessary.
6. Specify the necessary operator, type and control function for every connection.
7. For extra remarks and descriptions, simply use an additional sheet.



3-way block in PVC with union ends and actuators type GEMÜ 600



Block with threaded connections



4-way block in PTFE with flare connections, pneumatic actuators type GEMÜ C50 and GEMÜ 1234 electrical position indicators

7-way manifold in PVC-U, with hose connectors, pneumatic actuators GEMÜ 630

Specification sheet – Plastic multi-port valve

Not for high purity applications. Please use specification sheet "Block valve PC 50".

Please complete this form and return it to your nearest GEMÜ office or to the address listed below!

Customer: _____

Application: _____

Medium: _____

Medium operating pressure: min: ____ norm: ____ max: ____ bar

Medium temperature: min: ____ norm: ____ max: ____ °C

Ambient temperature: min: ____ norm: ____ max: ____ °C

Max. operating pressure at max. medium temperature: _____ bar

Material - Multi-port valve:

PVC-U, grey	(Code 1)	☐
PP-H, grey	(Code G5)	☐
PVDF	(Code 20)	☐
Other		

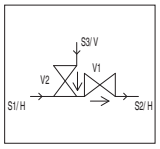
Material - Seal:

EPDM	(Code 14)	☐
NBR	(Code 2)	☐
FPM	(Code 4)	☐
PTFE	(Code 52)	☐
Other		
Certificates:		

Quantity: _____

Basic price: _____

Example:



Please draw functional diagram.

Note: Please observe correspondence of table and functional diagram.

Valve seat: V1, V2, ...

Spigot: S1, S2, ...

Preferred mounting position: **H**orizontal/**V**ertical

Flow direction (medium): →

Valve seat: ⋈

Connection + Operator:

Spigot	Connection		Valve seat	Operator		Other
Spigot no.	DN	Code	Seat no.	Operator type	Control function	Comment / accessories
S1			V1			
S2			V2			
S3			V3			
S4			V4			
S5			V5			
S6			V6			
S7			V7			
S8			V8			
S9			V9			
S10			V10			
S11			V11			
S12			V12			

The technical details of each enquiry will be checked by GEMÜ.

Contact (GEMÜ): _____

Customer: _____

Department: _____

Address: _____

Phone: _____

E-Mail: _____

Comment:

Plastic Valves and Flowmeters

Plastic Valves and Flowmeters

Complete range of GEMÜ plastic valves and flowmeters.
Includes an overview of the GEMÜ plastic valves and flowmeters, available body configurations,connections, nominal sizes and accessories.

Positioners and process controllers

Complete overview of the GEMÜ positioners.

Electrical position indicators and combi switchboxes

Complete overview of the GEMÜ electrical position indicators and combi switchboxes.

M600 Multi-Port Valves for Sterile Applications

Partial overview of available GEMÜ M600 multi-port valves, variations and specification form.

Dear Customer,

When installing GEMÜ products all current standards. provisions. directives and regulatory codes must be followed.
The application of other technical regulations during installation may also depend on local or relevant industrial guidelines and is the responsibility of our customers.
GEMÜ cannot accept any liability for improper installations which do not comply with current legal and engineering practise.
We reserve the right to make technical alterations to products as a result of developments.
The technical data specified in this documentation serves only as a guideline to our product range. The application and the use of these products needs to be checked by the user in every case.

Subject to alteration · 04/2013 · 88357629

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