

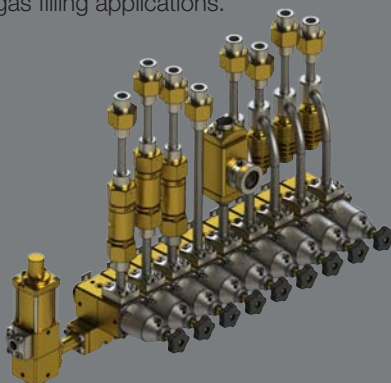
## Module mono - Module mix



### Manual Fill-Vent-Vac manifolds

This filling module can be customized according to a P&ID to reach all requirements. From just two up to nine manual valves this manifold delivers the highest flexibility for a tailor-made filling system. Its modularity permits variety in the quantity and functionality of gas inlets and outlets as well as venting, vacuum and pressure relief valves.

All valves have been adiabatically shock tested for use with oxygen application by either BAM or CTE to 420 bar. All components are cleaned for oxygen service and assembled in our ISO 7 standard cleanroom. This allows the manifold to be used in all gas filling applications.

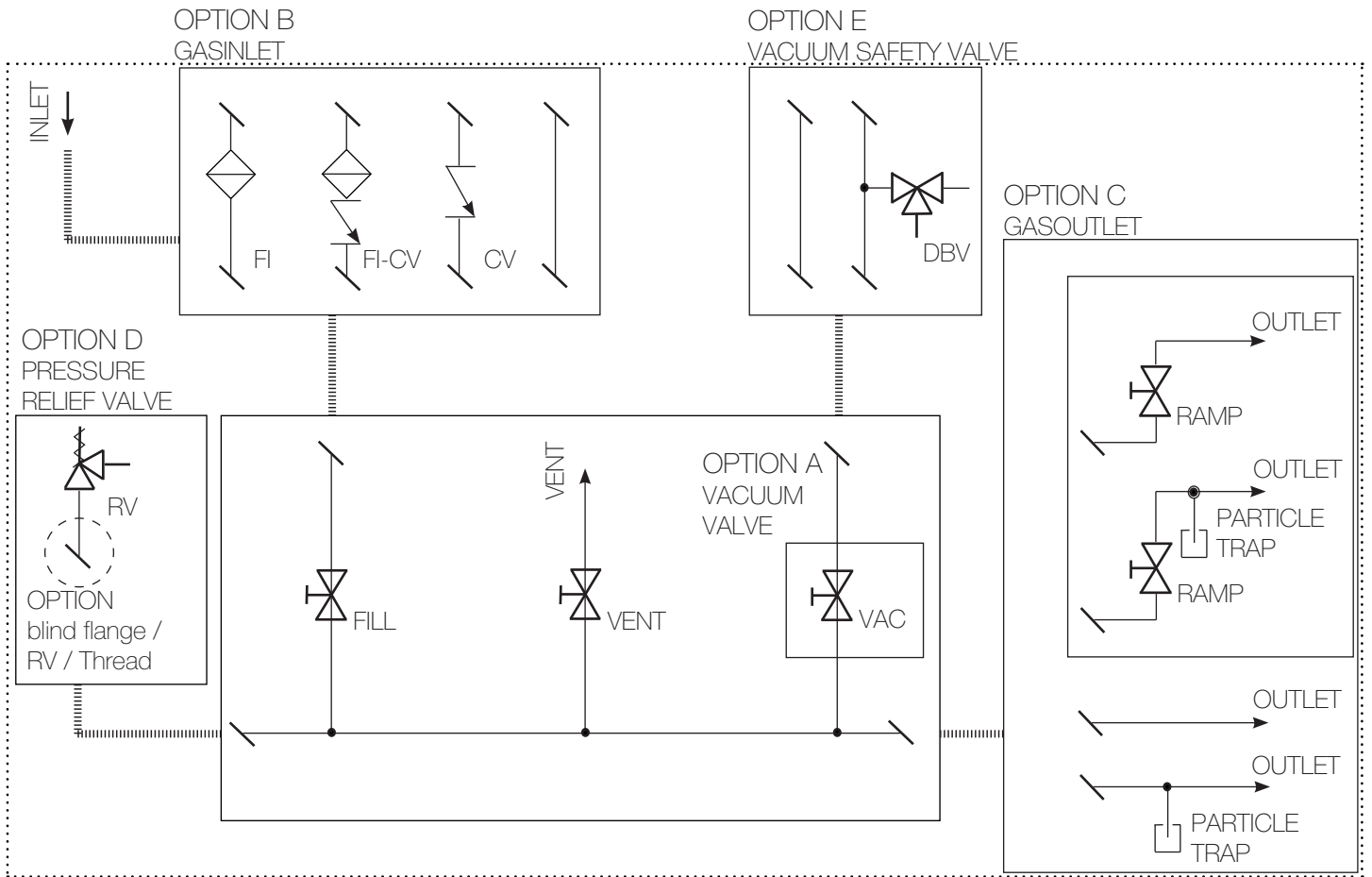


High reliability and standardized connections lead to short installation and maintenance time, ensuring the safety of the systems and surroundings.

This smart concept allows the combination or future upgrade with automatic or proportional control valves for semi or fully automated filling systems.

# P&ID

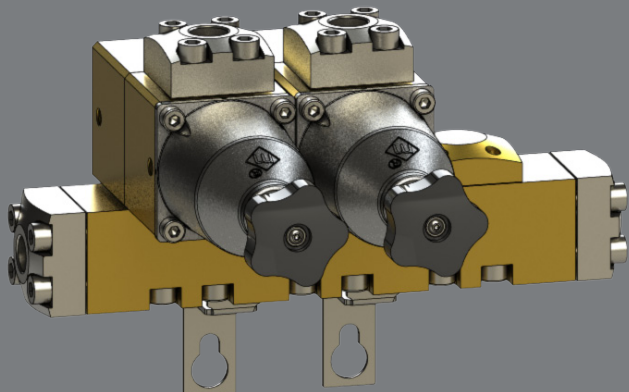
The following P&ID shows the basic configuration and the possible options.

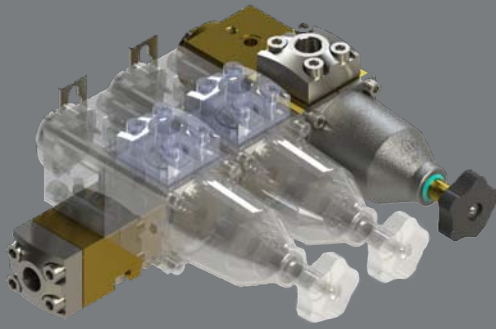


## BASIC MODULE

The basic module contains:

- ◆ 1 module row
- ◆ 2 manual valves MPG 12 HD 1 for gas-inlet and venting
- ◆ 1 blind port for further extension
- ◆ Customized connection flanges to piping or fittings
- ◆ Two or more stainless steel brackets for wall mounting





## Option A – Vacuum shut-off valve

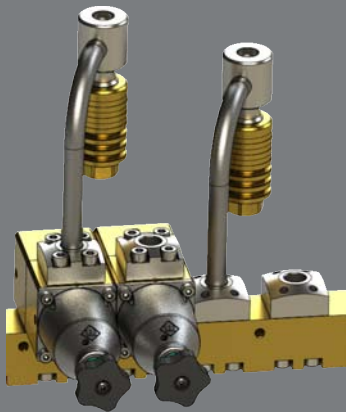
- ◆ Manual valve for vacuum line type MPG 12 HD <sup>1</sup>
- ◆ Connection flange (threaded or prepared for welding)
- ◆ Blind flange

## Option B – Gas inlet

It is possible to equip the valve manifold with up to 7 <sup>2</sup> gas inlets for multi gas fillings.

- ◆ Connection flange (threaded or prepared for welding)
- ◆ Filter MPG 12 FI <sup>1</sup>
- ◆ Filter-Check valve MPG 12 FI-CV <sup>1</sup>
- ◆ Check valve MPG 12 CV <sup>1</sup>

All connections to external piping or components can be customized.



## Option C – Gas outlet

It is possible to equip the valve manifold with up to 7 <sup>2</sup> gas outlets to manage different filling points.

- ◆ Connection flange (threaded or prepared for welding)
- ◆ Particle trap <sup>1</sup> to protect the system from dirt and other particles
- ◆ Manual valve type MPG 12 HD <sup>1</sup> to shut off filling lines
- ◆ Combination of manual valve MPG 12 HD <sup>1</sup> and particle trap <sup>1</sup>

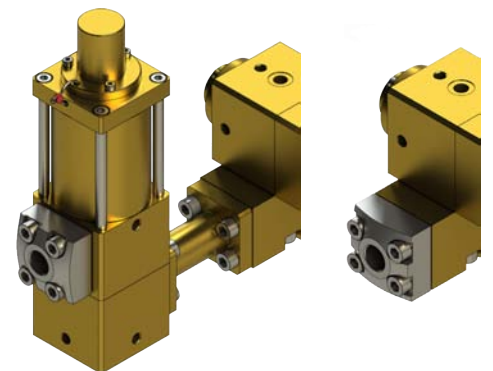
All connections to external piping or components can be customized.

## Option D – Pressure relief valve

It is possible to equip the valve manifold with one relief valve to protect the system against overpressure.

- ◆ Connection flange (threaded or prepared for welding)
- ◆ MPG12RV <sup>1</sup> with set pressure according to customer's request

The Relief valve MPG12RV <sup>1</sup> outlet is a connection flange which can be customized.



## Option E – Vacuum safety valve

It is possible to equip the valve manifold with one vacuum safety valve to protect the vacuum pump against positive pressure in the suction line.

- ◆ Connection flange (threaded or prepared for welding)
- ◆ DBV 20 <sup>1</sup> safety valve to avoid overpressure in the vacuum line
- ◆ DBV 20 <sup>1</sup> safety valve delivered loose

## Further options – other equipment

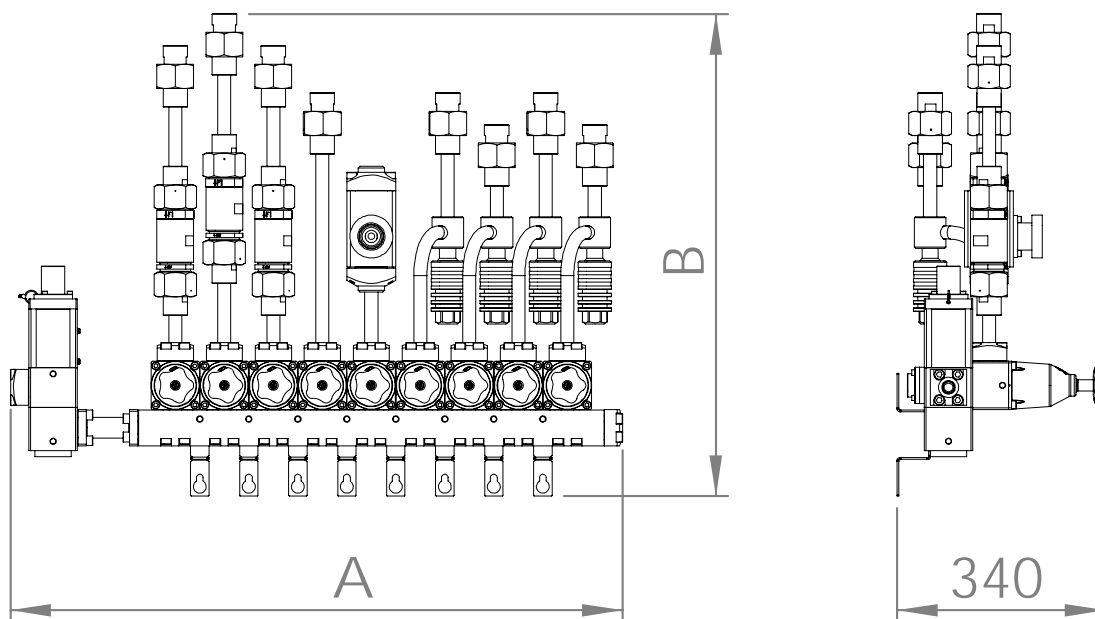
m-tech offers a large variety of equipment that the standardized filling system can be equipped with.

- ◆ Pressure gauges <sup>1</sup> Ø63 and Ø100 PN420bar
- ◆ Pressure transmitter type PTG <sup>1</sup>
- ◆ Breakable couplings <sup>1</sup> to connect to external pipework

<sup>1</sup> see individual datasheet for further details.

<sup>2</sup> the maximum amount of inlets and outlets is limited. The sum of inlets, outlets, vacuum line and venting valve cannot exceed nine. For further extensions, the manifold can be equipped with blind flanges as well (recommended for future expansion)

## Dimensions



This filling module can be customized according to a P&ID to reach all requirements. From just two up to nine manual valves this manifold delivers the highest flexibility for a tailor-made filling system. Its modularity permits variety in the quantity and functionality of gas inlets and outlets as well as venting, vacuum and pressure relief valves.

All valves have been adiabatically shock tested for use with oxygen application by either BAM or CTE to 420 bar. All components are cleaned for oxygen service and assembled in our ISO 7 standard cleanroom. This allows the manifold to be used in all gas filling applications.

Width	Basic module (2 valves + blind port)	Additional width per value	Relief valve	Maximum configuration (as shown above)
A	340	+80	+179	999

Example: Module with 2 inlets, vacuum line, venting valve and 3 outlets:

$$340\text{mm} + 4 \times 80\text{mm} = 680\text{mm}$$

Example: Module with 3 inlets, vacuum line, venting valve, pressure relief valve and 1 outlet:

$$340\text{mm} + 3 \times 80\text{mm} + 179 = 759\text{mm}$$

The height B is adjustable and free of choice.

Final dimensions will be fixed based on the chosen configuration.

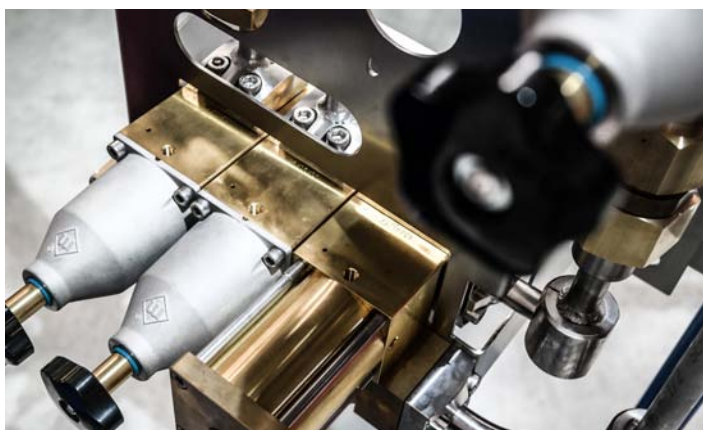
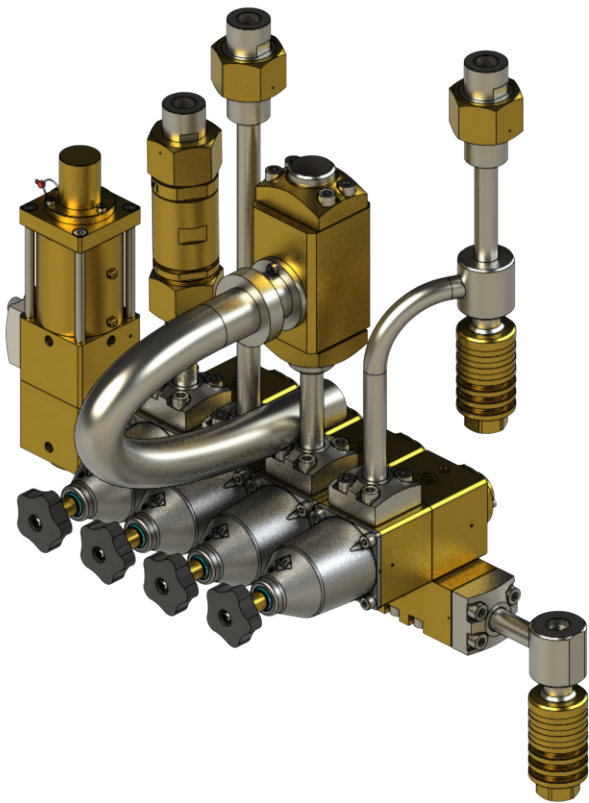


# Technical data

Pressure range	PN 420bar
Process connections	Socket welding, butt welding or threaded connections Others on request
Material	Piping: Stainless steel (monel on request) Valves: Brass and Monel (stainless steel on request)
Nominal diameter	All pipes 1/2" stainless Ø21,34 x 3,73 – others on request schedule 80 or 160
Medium	O2 (industrial, medical)/ Inert gases / CO2 / flammable gases / others on request

# How to order

Please mark up the generic P&ID on page 2 according your request and send it to [info@m-tech-gmbh.com](mailto:info@m-tech-gmbh.com) to get a tailored proposal. You can provide information on the general configuration as shown below as well.



General configuration	
Vacuum valve (Option A)	Yes / No
Number and type of inlet connection (Option B)	e.g.: 3 x IV
Number and type of outlet connection (Option C)	e.g.: 2 x I
Pressure relief valve MP-G12RV (Option D)	Yes / No
Vacuum safety valve DBV20 (Option E)	None / I / II / III
Other equipment (further options)	Please specify



ERFAHRUNG ♦ PRÄZISION ♦ INNOVATION



**m-tech gmbh**

Teslastraße 6  
DE – 74670 Forchtenberg  
Germany  
Phone +49 (0) 7947 939-0  
Fax +49 (0) 7947 939-010  
info@m-tech-gmbh.com

[www.m-tech-gmbh.com](http://www.m-tech-gmbh.com)