

A high-speed train is shown in motion, blurred background, with a white text box in the center. The train is white with a red stripe and is moving from left to right. The background is a blurred landscape with a blue sky and a white structure on the left. The text 'HAFNER' is written in a bold, blue, sans-serif font inside the white box.

HAFNER

**PNEUMATIC SOLUTIONS FOR
RAILWAY APPLICATIONS**

HAFNER valves are well received in the railway industry because of their robust design and ability to work in low temperatures down to -50°C .

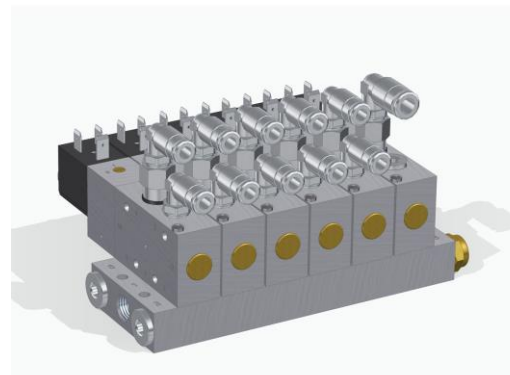
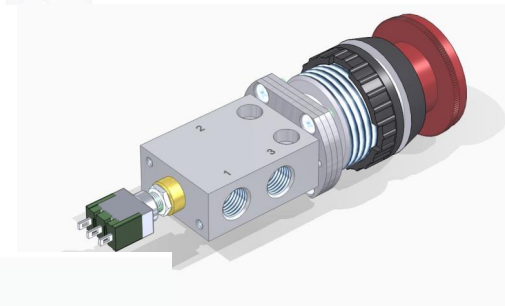
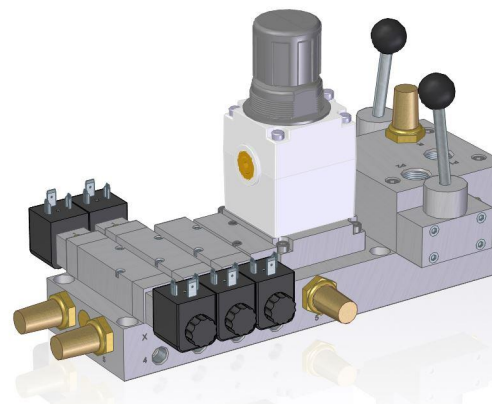
No matter if for train door controls, train couplings or wagon construction – HAFNER has the right solution!

Some technical features make our valves especially valuable in railway applications:

- ✓ Solenoid systems with a voltage tolerance of $\pm 30\%$ in railway-typical voltages
- ✓ Applicable for an ambient temperature as low as -50°C
- ✓ Robust design
- ✓ High flow with compact design
- ✓ Maximum sealing efficiency at low pressure
- ✓ Solenoid valves with up to IP67 protection

**Vibration tested according to
DIN EN 61373**

**Fire protection according to
DIN EN 45545-2**



When using solenoid valves in railway applications, it is the use of the right railway-approved solenoid system that is important.

- Voltage tolerance: +/- 30%
- Voltages: 24VDC / 110VDC, others on request
- Fire safety: Fire safety according to DIN EN 45545-2
- Temperature range: -40°C to +60°C
- IP-protection: IP 65, IP67 on request
- Vibration: Tested according to DIN EN 61373

- Feature: With adhesive protection ring for safe dropping of the anchor in the operator system even with residual voltage.



Our valves are available in different materials to provide the right corrosion protection for the respective application.

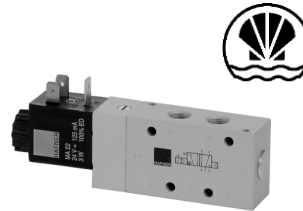
Aluminum anodized
Thickness 5-8 μm

Alu. hard-anodized
Thickness 15-20 μm

Aluminum Ematal

1.4404 Stainless steel

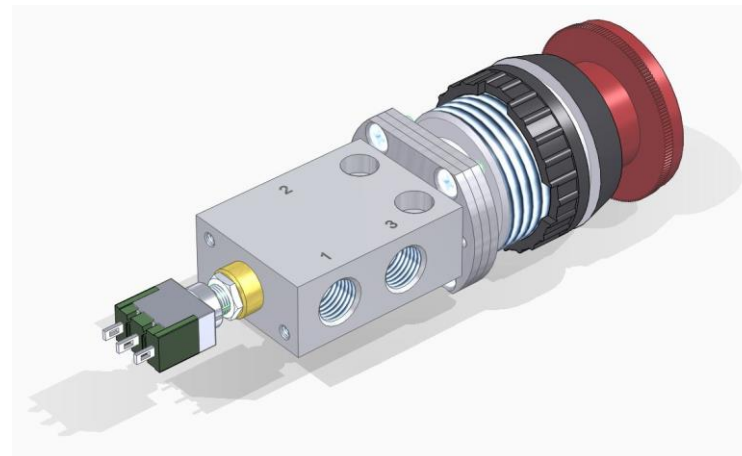
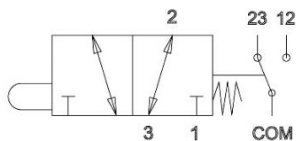
Epoxy-coating or C5
coating (Norsok M501)



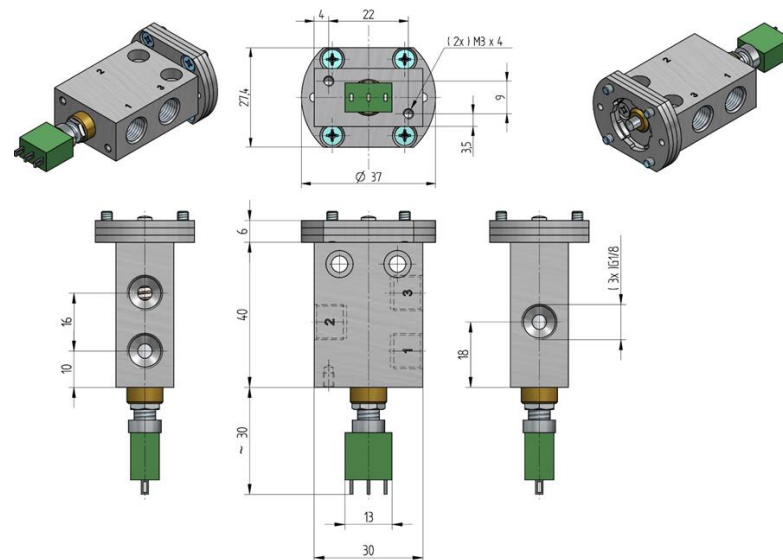
All internal and external
metal parts except of the
body in stainless steel.

Manually actuated 3/2-way panel mounting valve equipped with a 30 mm emergency stop button and an electric switch.

Product is used in work trains.

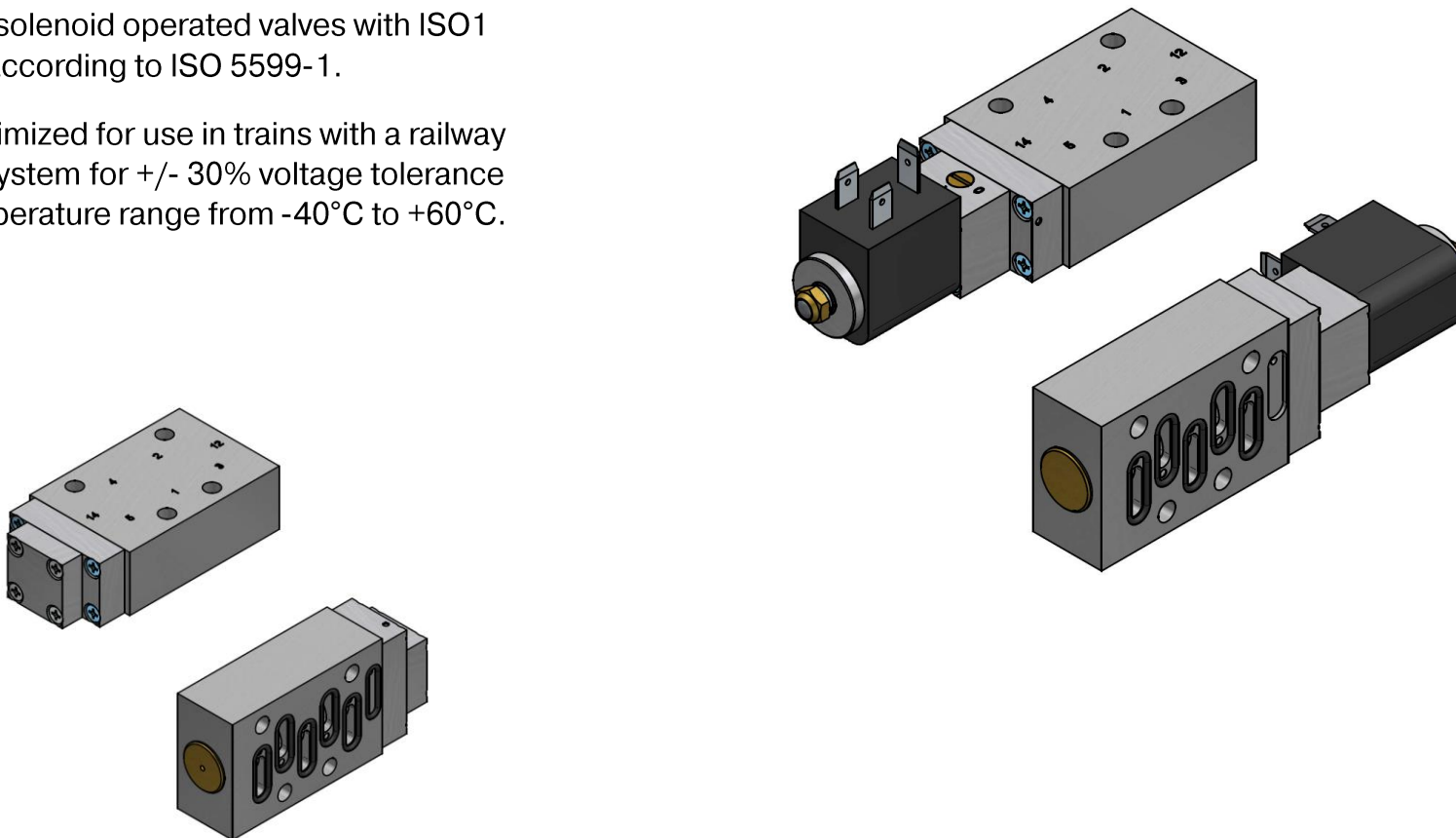


- Pressure range: -0,9 – 10 bar
- Temperature range: -20°C ... +50°C
- Orifice size: 3 mm
- Air-flow: 280 NI/min



Pilot- and solenoid operated valves with ISO1 interface according to ISO 5599-1.

Valves optimized for use in trains with a railway solenoid system for +/- 30% voltage tolerance and a temperature range from -40°C to +60°C.



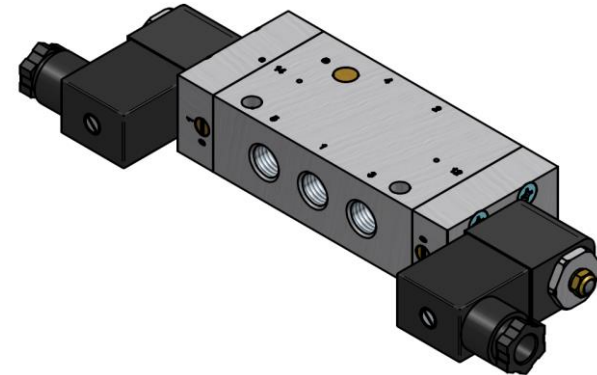
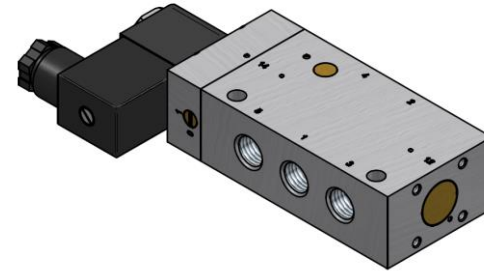
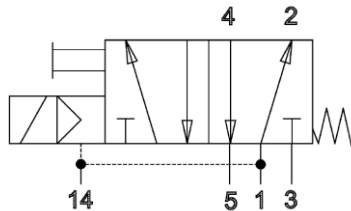
Range of solenoid valves which can either be used with internal or external pilot-feed.

Pilot pressure if used with internal pilot-feed:
1-10 bar

Pilot pressure if used with external pilot-feed:
3-10 bar

Temperature range: -25 °C ... +70°C

Versions for -40°C available on request.

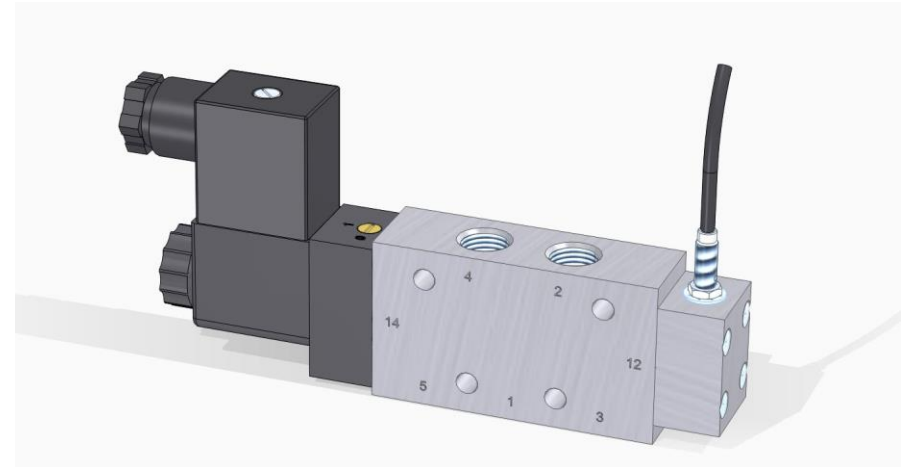


5/2-way solenoid valve with inductive sensor for position feedback.

The valve is used on inspection trains for eddy current- and ultrasonic testing devices.

The valve actuates a cylinder that moves the measuring equipment in the direction of the rail.

A vibration test in accordance with DIN EN 61373 category 2 was carried out successfully.




Test report
No. 2024-0328-VU

Date of test: June 2024
Technique: Digit. Sig. 30kHz
Technician: Linkölnius

No. of program: 10
Applicant: Hufner Pneumatik KG
Manufacturer: H-2024 (Hafner, Pflanzl & S)

Test specimen: 1 x DET 1, MH 511 501 G MT EA 24DC
Delivered on: June 24th, 2024

Test procedure / tests:
Random vibration test:
Base standard: DIN EN 60068-2-64 [09/2020]
Test standard: DIN EN 61373 [04/2011]
Shock test:
Base standard: DIN EN 60068-2-27 [02/2010]
Test standard: DIN EN 61373 [04/2011]

Date of report: June 20th, 2024
Test specimens: 

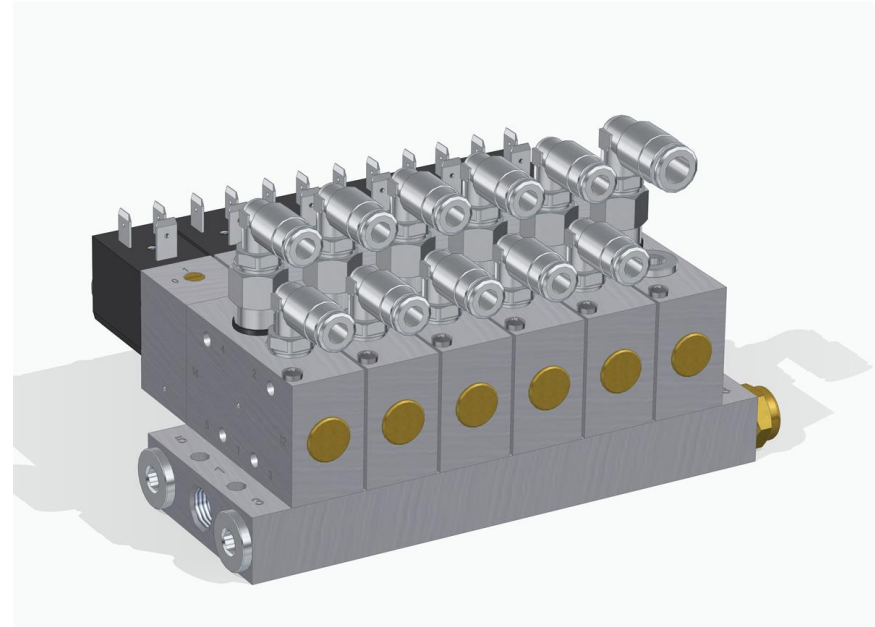
Test result: See page 4 "Result"

The document contains the test report for the test specimen. The test results are available in the test report. The test report is available in the test report. The test report is available in the test report.

2/2-way and 5/2-way solenoid valves combined in one manifold.

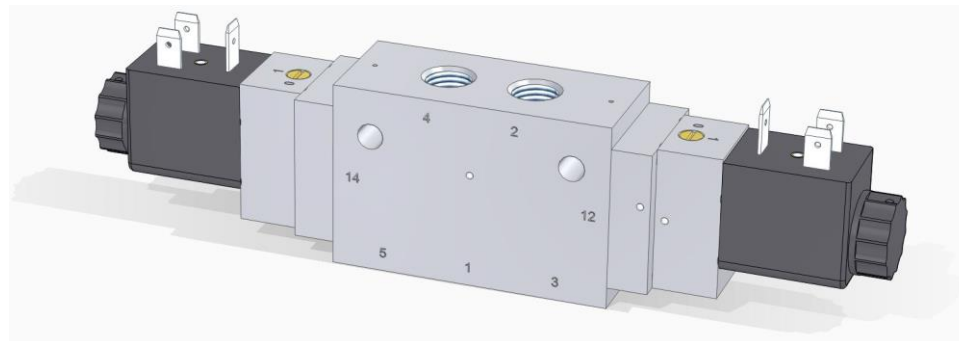
Valves are equipped with solenoids 24VDC with +/- 30% voltage tolerance.

Temperature range: -25°C to +70°C



Valves operate a double-acting cylinder that moves an electrical box. This creates the power supply between two train wagons during the coupling process.

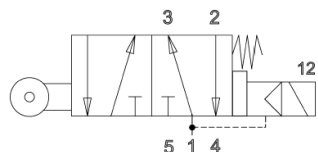
The solenoid valve is equipped with a railway-approved solenoid system for +/- 30% voltage tolerance and available for 24VDC and 110VDC.



Quelle / image source: J. M. Voith SE & Co. KG



This valve is operated by the roller plunger, but can be overrode with the solenoid coil.



It is used in the scenario that a mechanically detachable end-of-life vehicle meets a newer type of vehicle with a different electrical coupling, e.g. B. in the case of towing.

The electric coupling that is controlled via this valve must not move forward under any circumstances. In order to achieve this, the coil is activated before the coupling process, if necessary, which holds the piston valve in the non-actuated position despite the mechanical actuation of the valve.

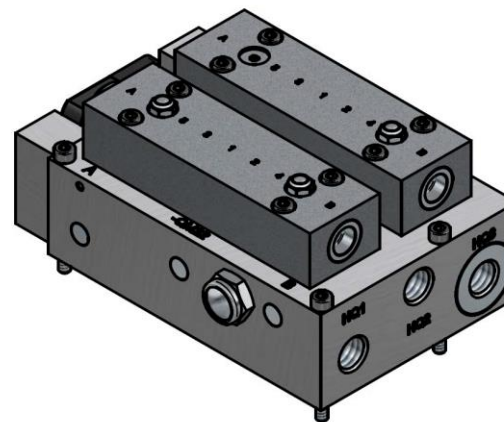
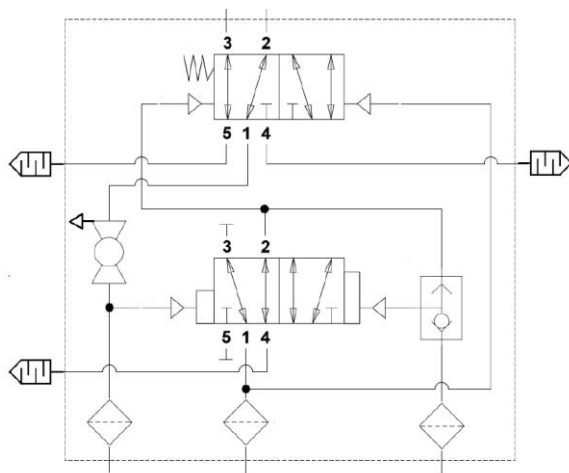
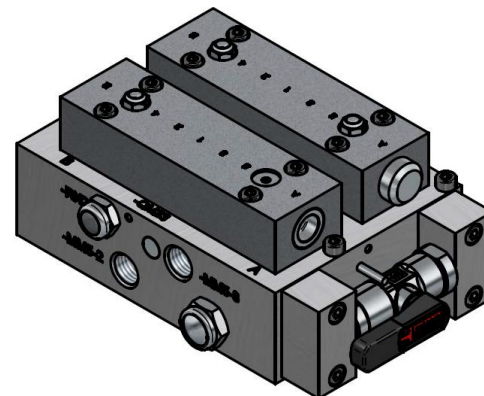


- Pressure range: 3 - 10 bar
- Temperature range: -40°C - +60°C
- Orifice size: 5 mm
- Air-flow: 650 NI/min
- Actuating forces:
 - Standard: approx. 35 - 40 N
 - Overriding: approx. 100 - 110 N
- Voltage: 110 VDC +/-30%
- Power consumption: 6 W

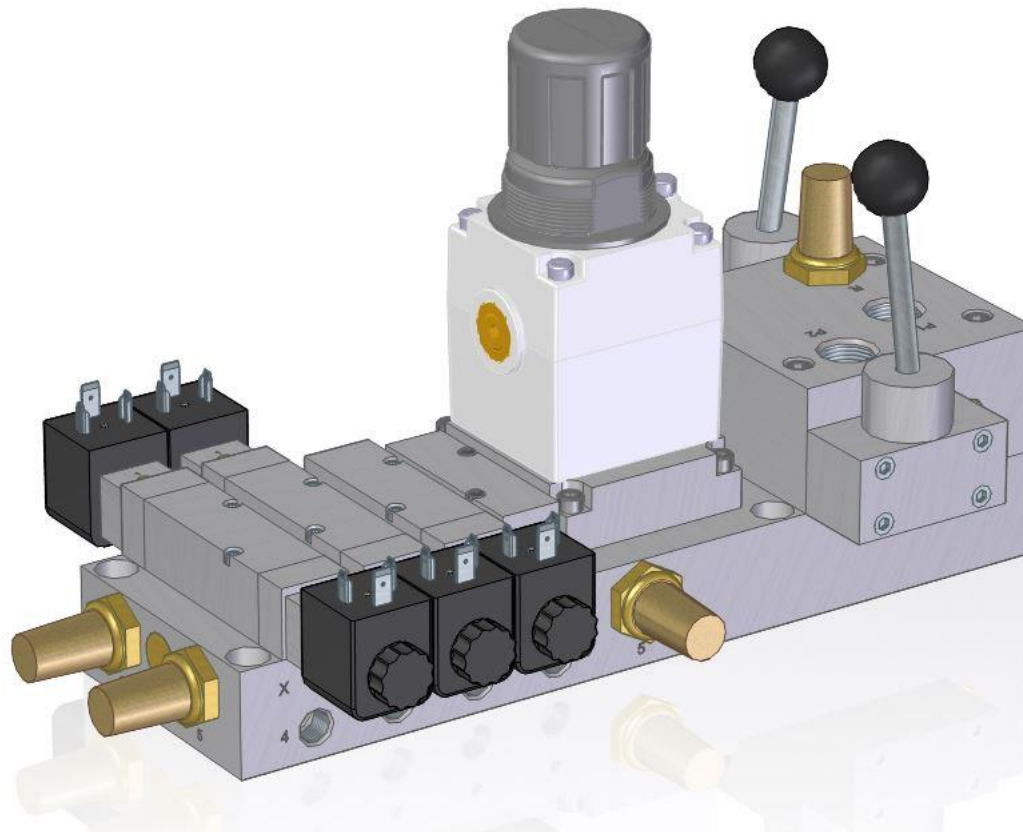
Valve block optimized for use in harsh environment. The valve block is made of aluminum with an Ematal coating. Other components are made of stainless steel.

Thanks to the Ematal option, we can offer our customer a cost-effective solution for use in corrosive conditions.

Temperature range: -40°C to +70°C

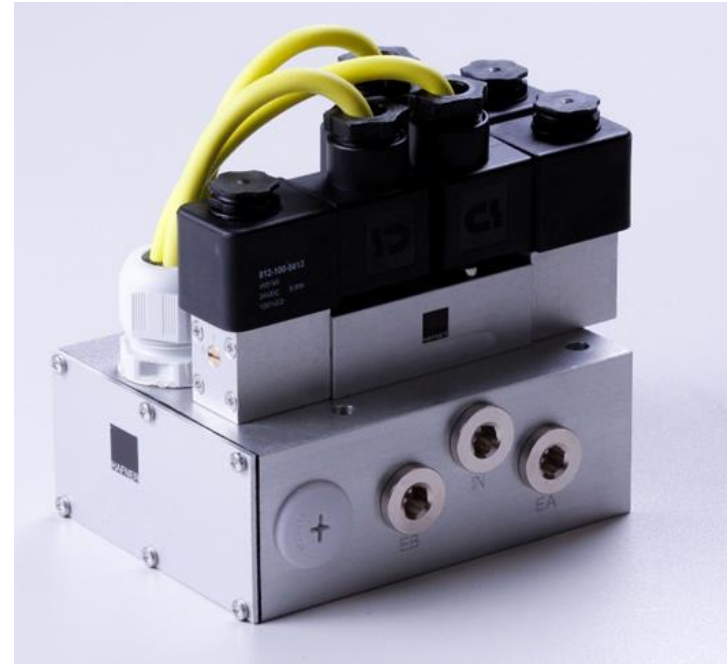
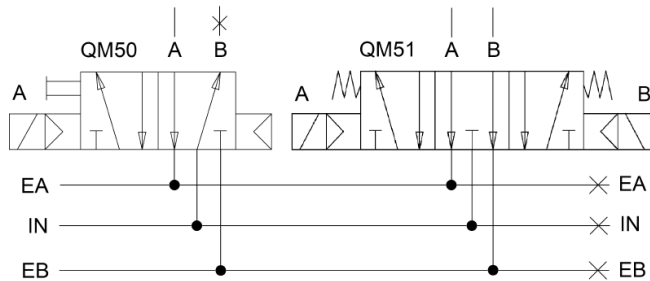


Module with 2 x on/off valves, pressure regulator, 1 x monostable solenoid valve and 2 x bistable solenoid valves.

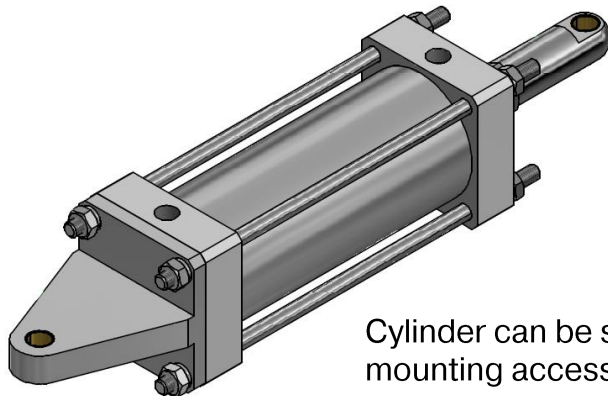
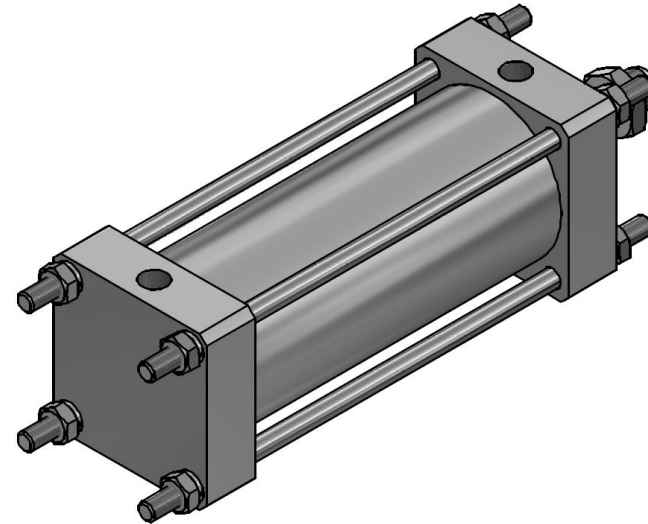


Valve block with a 5/2-way single solenoid and a 5/3-way centre exhausted solenoid valve.

All pneumatic connections are located in the plate to allow quick and easy replacement of the valves in the field.



- Double acting
- Piston diam.: 80 mm
- Stroke: 155 mm
- Pressure range: 1 – 10 bar
- Temperature range: -30°C - +70°C
- Magnetic piston



Cylinder can be supplied with special mounting accessories as well.

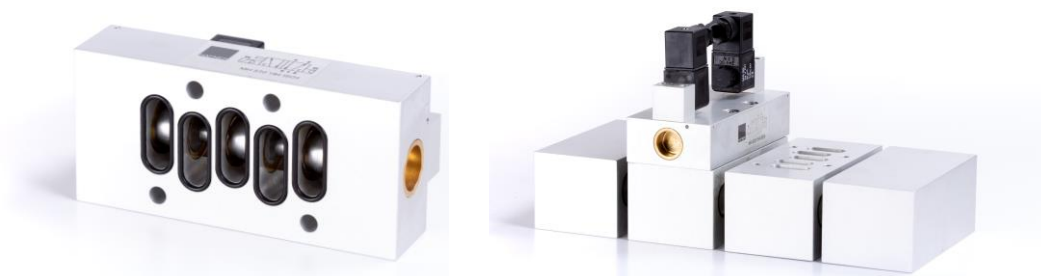
- Stainless steel cylinder made of 1.4404
- Piston diam. 140 mm
- Temperature range – 40°C ... +80°C
- Including fixing accessories



Hopper wagons

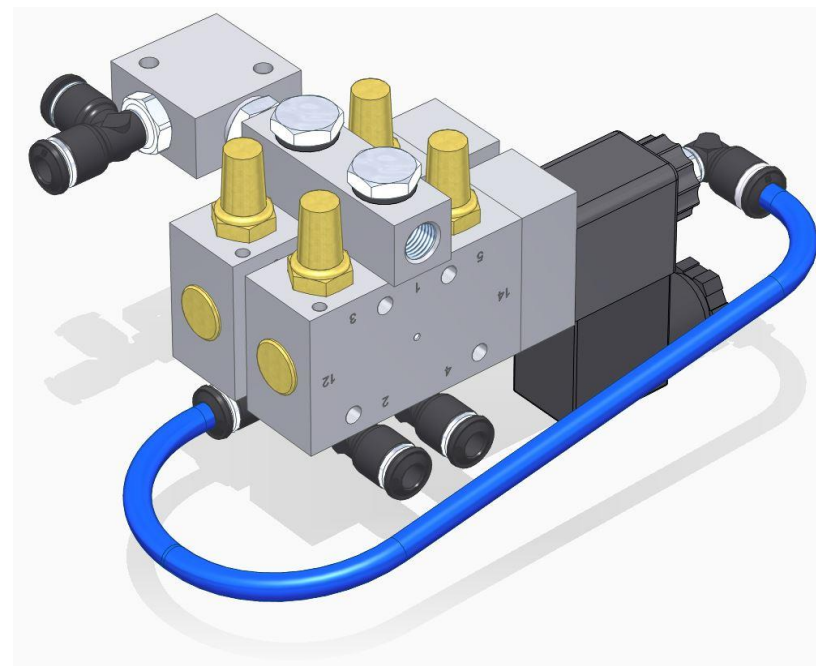
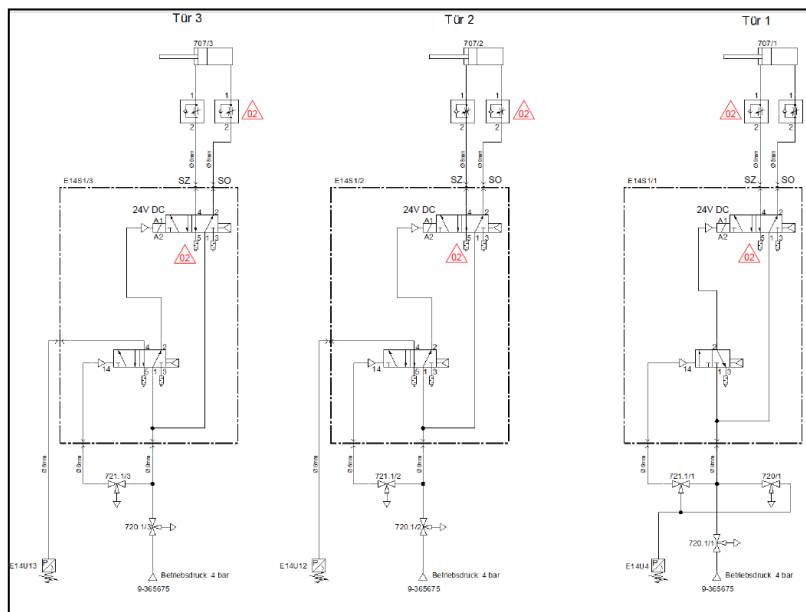
Cylinders according to ISO 1552 with piston- \varnothing 250 and 320 mm for hopper wagons.

Double acting cylinders with piston- \varnothing 250 and 320 mm and ISO4 pilot-valves for use in hopper wagons.

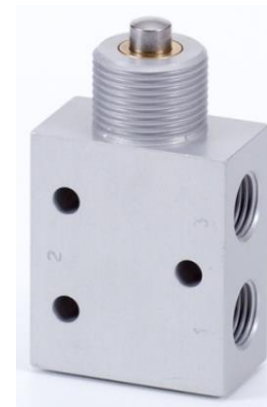
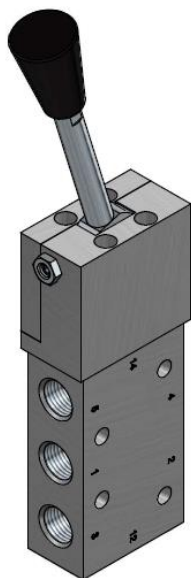


ISO4 valves, 6.000 NI/min flow, modular manifolds available

Combination of a 5/2-way pilot-operated and solenoid operated valve suitable for -50°C.



Extremely robust roller lever- and stem actuated valves for -40°C...



... as well as hand lever valves with a hand-lever axial to the spool.

Very precise flow regulation due to a slotted spindle-design. This allows a precise regulation over the entire regulation range.

Available as a uni- and bidirectional version.





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