

- VALVES AND COMPONENTS FOR GAS
- CRYOGENIC AND HIGH-PRESSURE ENGINEERING
- AEROSPACE, MARINE AND ENERGY INDUSTRY



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**PRESS RELEASE**  
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STÖHR ARMATUREN specializes in the design and manufacture of valves for industrial gases, chemical and pharmaceutical industry, for applications in aerospace, marine engineering and energy engineering as well as in research institutes. Temperatures from +250 °C to - 271 °C, pressure up to 420 bar, leak-tightness, corrosive or toxic media and fast shutter and opening times are exemplary for the extreme demands of our customers for STÖHR products. The actuator of our fittings can be operated manually as well as pneumatic, hydraulic, magnetic or electric driven.

Our standard product range comprises a variety of globe or control valves, check valves, pressure relief valves and filters in different body types with diameters up to DN250. Our valve bodies are made from a single piece of stainless or special steel and are sealed with bellows. There are variations available for the connections as well as for surface treatment. Additionally, there are special designs for specific customer requirements in terms of temperature range, pressure range, life cycle extension, or relating to the use of special materials.

More information can be found on our website [www.stoehr-valves.de](http://www.stoehr-valves.de). Please send us your questions by email to [info@stoehr-valves.de](mailto:info@stoehr-valves.de) or call us!

## STÖHR ARMATUREN – VALVES FOR THE EXTREMES



STICKS



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## Compact cryogenic valve from STÖHR with integrated pneumatic actuator

Typical cryogenic valves on the market are space consuming due to their large distance between the actuator and the medium. Conventional actuators lose power when they are exposed to temperatures below -40 degrees Celsius. Conventional cryogenic valves are therefore designed with long valve body and stem to position the actuator as far as possible from the cryogenic medium to avoid freezing as well as condensation. This leads inevitably to increase of height to almost double.

With its actual development FREES compact, STÖHR ARMATUREN developed a very compact valve with integrated actuator achieving various advantages:

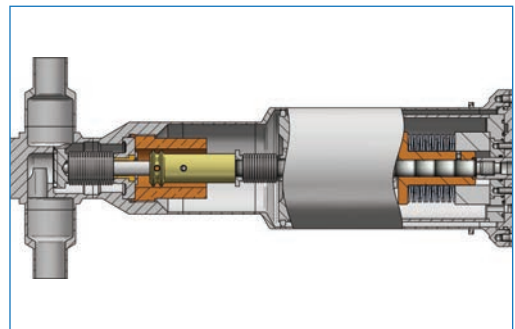
- pneumatic drive suitable for use in cryogenic applications (up to -196 degrees Celsius),
- maximum possible height reduction,
- total weight reduction,
- smaller footprint of the actuator,
- unrestricted fitting position in vacuum-insulated pipes, i.e. installation upside-down, also for the pneumatic actuator.

The 6-bar industry standard for the operating pressure of pneumatic valves could be retained. Also maintainability of valve stem and actuator were achieved which means easy installation and removal of actuator and valve insert unit is possible without opening the vacuum system. Change of actuator can be performed without opening the media space which means that no system downtime is required. In addition, life cycle of the pneumatic actuator was significantly extended by replacing O-ring seals with bellows instead. Overall, by its compact design a lower use of material could be achieved.

For the prototype a number of different ideas were implemented, for example using the dead space for functional units, avoiding long valve stems, replacing stainless steel components with alternative materials, using stainless steel pneumatic cylinders of variable length as well as separating of mounting and sealing forces.

New features are the replacement of heat-transmitting stainless steel components by special cryogenic-grade plastics including pressure and force transmitting parts in cryogenic areas such as the valve stem. In addition minimized frictional forces and an overall low-wear design were achieved.

The newly developed FREES compact technology demonstrator is shown at the VALVE WORLD 2012 in hall 3 on stand A82 of STOEHR ARMATUREN.



### Key data sheet FREES Compact

Nominal diameter	DN25
Nominal pressure	PN25
Actuation	pneumatic actuator with fail-safe function, normally closed (nc)
Operating pressure for actuator	6 bar
Media	Deep cold and liquid gases, including LOX

## COMPANY INFORMATION

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### Note on Safety

The STÖHR product catalogue, checklists, our sales staff and our sales representatives will assist in identifying and selecting valves for your requirements. The selection of a specific valve type as well as its proper installation, commissioning, operation and maintenance is, however, in the responsibility of the system designer and the user. Valve function, type of sealing, material compatibility, operating pressure, operating temperature and the system environment must be taken into account.

### Disclaimer

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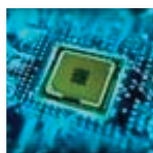
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GASES



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NAVAL



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