

NOVA SWISS



HIGH PRESSURE TECHNOLOGY

High-Pressure Technology

COMPONENTS AND SYSTEMS FOR THE MOST DEMANDING APPLICATIONS

Nova Swiss develops and produces high-pressure components and systems in the pressure range from 500 to 10'000 bar. Our product portfolio includes both standardized and customized solutions, which are used by numerous well-known companies in the fields of research and industry. Nova Swiss is a leading supplier of components for high-purity gas applications.

We determine and document all relevant procedures and processes to ensure that Nova Swiss products comply with all safety regulations at all times. On request, we can also provide ATEX certification.

Our in-house materials laboratory supplies our development specialists with the latest research results and materials analyses, thus ensuring the optimal combination of material and process for the respective application.



Gas stations and tank trucks

COMPONENTS FOR FILLING WITH HYDROGEN

For filling hydrogen-powered vehicles, Nova Swiss has developed components that are ideally suited to the required operating conditions, such as the fluid, pressure, flow rate, etc.



The benefits of Nova Swiss products in hydrogen applications are particularly evident – because we are able to draw on our extensive experience of processing the universe's smallest atom/molecule.

VALVES WITH AIR-OPERATED ACTUATORS FOR AUTOMATION AND MONITORING

High-pressure systems can be easily and effectively automated using Nova Swiss air-operated valves. Since the valve body and sealing system are identical to those of manually operated valves, they offer exactly the same benefits. They can also be retrofitted. Our extremely robust and reliable air-operated piston actuator is available in two versions:

- ATO (air-to-open), opens with compressed air.
- ATC (air-to-close), closes with compressed air.





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HYDROGENIUM

NOVA SWISS FUTURE TECHNOLOGY ON A WORLD TOUR

Hydrogen was the first element that ever formed. It was the substance that kindled the fire in the stars. And hydrogen is an important component of many future technologies.

→ This is the focus of our research.

Our compressor system is part of the hydrogen drive for the Energy Observer. This expedition boat has been sailing around the world since summer 2017. The catamaran is powered by solar/wind energy and hydrogen. The goal of its six-year journey is to provide new information on renewable energy sources and also to demonstrate the potential of sustainable technology. Nova Swiss supplied the H₂ compressor system that was installed in the expedition boat.



Extrusion

NOVA SWISS GAS INJECTION UNITS – NOW ALSO WITH REMOTE MAINTENANCE

These systems are designed to inject gases for the foaming of plastics. Advanced Nova Swiss technologies allow high-precision gas mixing under controlled pressure. The servo motor ensures state-of-the-art pressure regulation that is optimal for the respective application. The system therefore guarantees maximum precision during the injection process as well as exact gas metering at the required pressure.

Our customers benefit from:

- Maximum pressure accuracy
- Dosing of small quantities thanks to low-speed operation
- Contamination-free gases thanks to diaphragm technology.
- High flow rates
- Low maintenance costs
- No daily readjustments necessary
- Faster start-up after interruptions, with less waste during start-up
- No compressed air supply required
- Remote maintenance available on request



Universities and research institutions

NOVA SWISS PRODUCTS FOR EXPERIMENTAL APPLICATIONS

There are many applications for high-pressure systems in the laboratory. **Nova Swiss develops and produces systems tailored exactly to the customer's specifications. From argon pressure supply units to hydrogen test benches and swelling pressure measurement equipment,** NovaSwiss has world-class experience in the development and production of such extensive systems. For these applications, we can rely on high-quality components from our own product range, such as our diaphragm compressors.

These products are accompanied by a wide range of services, such as support for on-site installations, commissioning, user training and servicing.



HAND PUMP SYSTEMS

Nova Swiss hand pump systems are suitable for applications with all common high-pressure media, including those with low viscosity. The finely threaded spindle allows fine adjustment to the desired pressure. Nova Swiss hand pump systems can be used anywhere and are not dependent on a compressed air or power supply.

Aerospace technology

Nova Swiss components are designed to function under the most extreme conditions, even in space. The products are developed in accordance with customer requirements and delivered in perfect condition.

SOLENOID VALVES FOR SPECIAL REQUIREMENTS

The Nova Swiss coaxial valve is a solenoid valve that is ideal for applications in complex systems and harsh environments.

- It is made of stainless material and is suitable for use under the most challenging conditions (including salt spray).
- Its specialized design guarantees extreme leak-tightness.
- The small footprint and low weight of these valves permit a wide range of applications.



Products for industry

PRESSURE GENERATORS

Our standardized, modular pressure supply units allow the pressure to be set with extreme precision. They are available in three stages: 3'000 bar for gases and 7'000 to 14'000 bar for liquids. Customized adjustments are possible on request.

AIR-OPERATED HIGH-PRESSURE PUMP

The air-operated high-pressure pump from Nova Swiss is suitable for pressures of 4'000 or 7'000 bar as well as liquids.

ISOSTATIC PRESSES

Isostatic presses are specifically developed and manufactured by Nova Swiss in accordance with customer requirements. Cold, warm and hot presses are available with pressure ratings up to 10'000 bar and for temperatures from -20 to 2'200 °C.



HIGH-PRESSURE CONTAINERS

- For liquids and gases up to 145'000 psi (10'000 bar)
- For general pressure applications up to 60'000 psi (4'000 bar)
- In addition to a selection of standard models, the containers can also be optimized to meet customer requirements.



SAFETY VALVES

Nova Swiss safety valves are manufactured to CE standards and, if desired, ATEX-certified. They work in the pressure range up to 67'000 psi (4'500 bar) and at temperatures from -10 to +250 °C.

VALVES FOR EXTREME TEMPERATURES

Thanks to a special extension adapter, Nova Swiss needle valves for liquid and gas applications are designed to operate at temperatures ranging from -200 °C to +300 °C.





High-pressure technology in three variations

STANDARD

Standard valves, fittings, adapters and pipes for the pressure range up to 60 kpsi (4'000 bar).

BUSINESS

High pressure operating systems like Compressors, Gas dosing systems, Hand pumps and Pressure supply units. Supporting pressures up to 145'000 psi (10'000 bar) and gases like hydrogen, nitrogen, carbon dioxide, helium or argon.

EXCLUSIVE

Nova Swiss offers customized high pressure technology applications. Their distinguishing features are; mature product development and design, high precision, made-to-fit connection geometries and simple to use. The high pressure components have proven their service worthiness even under harshest conditions and high physical strain.

DEVELOPMENT AND CONSULTING

We create the basis for sophisticated, new and optimized products in the areas of High-Pressure Technology and Engine Components via the continual expansion of our expertise and results-oriented research.

Our material laboratory is equipped with state-of-the-art technology, and it is here that we analyze a wide range of substances in our search for suitable materials and manufacturing processes. Our service spectrum also includes complex calculations of our customers' requirements. Furthermore, we can also offer interdisciplinary partnerships in the area of surface technology in the form of complex analysis and test procedures for quality testing of coatings.

We constantly ensure that all Nova Swiss products meet the latest requirements of the market as well as all statutory regulations.

Our products and services

- New product development
- Optimizations
- Calculations and simulations
- Analyses and tests of materials and coatings

WHAT MAKES YOU SUPER
IS **NOVA**

**ENGINE
COMPONENTS**



**SURFACE
TECHNOLOGY**



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