

Hydraulic Valves and Drive Systems for

High Voltage Switch Gear

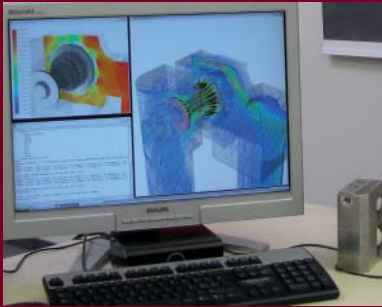


Your Success
is our Goal

BUCHER
hydraulics

Made in Switzerland

Quality



Research, development and production

By using the latest 3D-CAD and simulation software, we assure high efficiency and best quality in our products. Development and manufacturing are focused on usability and performance in order to fulfill customer requirements. The design of complete systems is optimized for compact and economic hydraulic solutions, which improves performance of the overall application.



Quality assurance

Features relevant to function are measured by our employees with first class measuring equipment, to ensure all manufactured and incoming parts as well as sub-assemblies comply with specification. Prior to delivery, every single product gets tested thoroughly by our state-of-the-art test equipment, which is in-house designed to ensure Bucher Hydraulics products are reliable, precise and long lasting.



Know-how and experience

Bucher Hydraulics has more than 35 years experience, not only in development but also in manufacturing and testing of hydraulic valves, actuators and drive-systems for high-voltage switchgear (HVSG). We offer, as the only independent supplier, a complete range of customized hydraulic solutions for high-voltage circuit breaker applications up to 1'100kV.



Customized Solutions

Customers

Bucher Hydraulics – always a good address

Experience & know-how

Bucher Hydraulics solutions are based on well proven technology, which has been in operation in high-voltage circuit breakers for decades all over the world.

Reliable quality made in Switzerland

Each valve is tested on sophisticated final hydraulic testing benches before delivery.

Excellent cost/performance ratio

As an independent supplier of valves and complete “plug and play” drive systems Bucher Hydraulics offers cost efficient hydraulic solutions, which are tailored to the individual customer’s needs.

Support from a strong partner

Challenge us around the globe! Bucher Hydraulics is a worldwide known expert for hydraulic products and solutions with competence centers in Europe, America and Asia.

ECOdraulics – our commitment to the mega trends in the world

Bucher Hydraulics actively contributes to environmental protection by supplying energy efficient, high quality and therefore, long-lasting products. It is our understanding that sustainable products are not only cost but also ECOlogical efficient.



Worldwide Installations

Market & Applications

Circuit breaker market

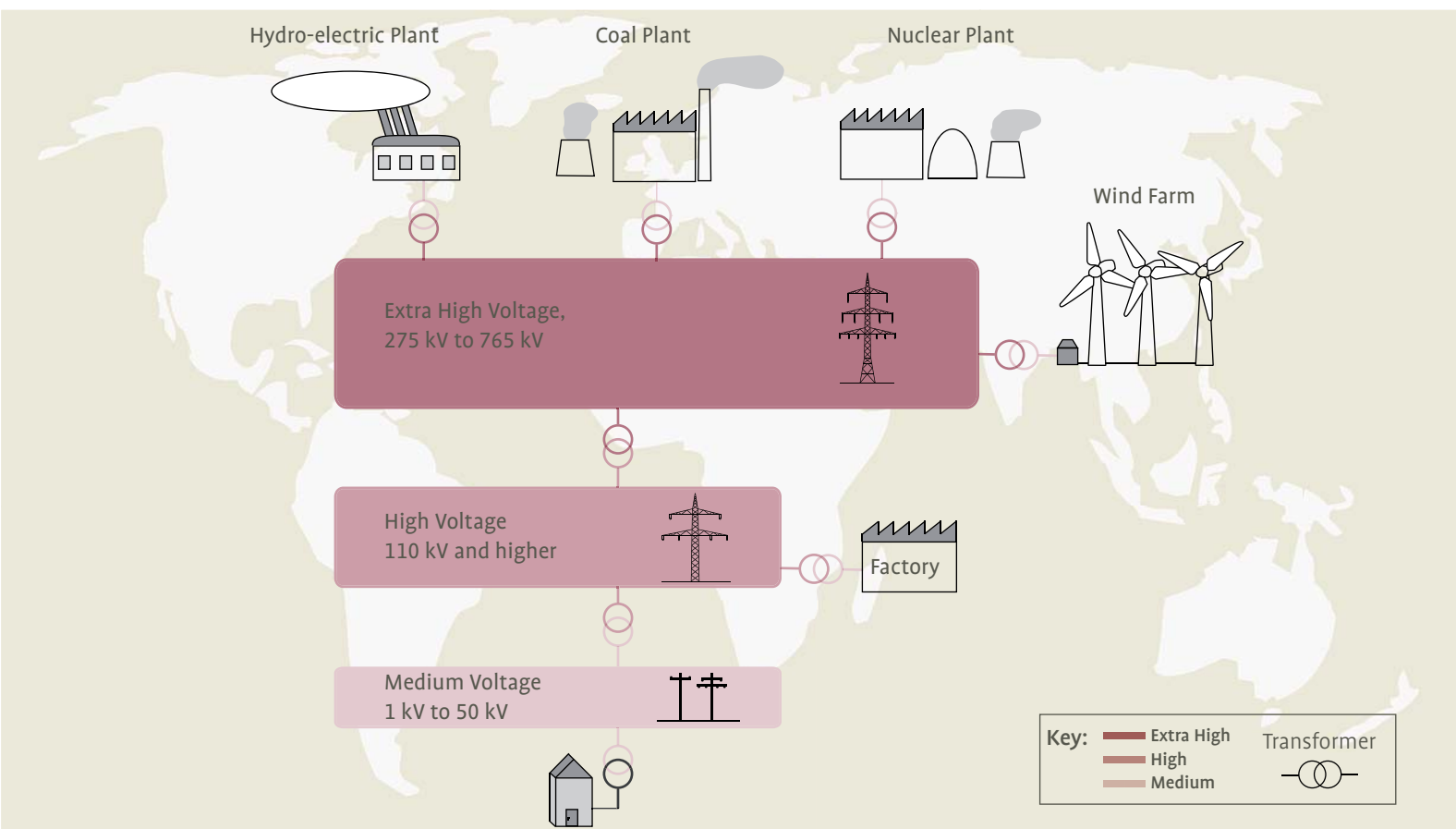
High-voltage and extra-high-voltage circuit breakers as well as GIS require high precision, force and speed from the drive unit. Bucher Hydraulics solutions offer best acceleration performance, first class dampening to protect the circuit breaker and fastest as well as constant/repeatable reaction time.

Tailored to your application

The Bucher Hydraulics HVSG-drive-unit can be tailored to fit your design of circuit breaker. If you plan to retrofit an existing hydraulic solution of your circuit breakers or GIS, you can expect smooth integration of a Bucher Hydraulics valve, actuator or entire drive unit.

Individual integration levels

Whatever the integration level of your hydraulic drive system is, Bucher Hydraulics has the solution for you. From hydraulic valves up to complete hydraulic drive systems, Bucher Hydraulics is your one-stop-shop offering it all.



Tailored to your needs

Products

Features

- Operating pressure up to 550 bar
- Hydraulic flow up to 2500 l/min ($\Delta p=20$ bar)
- Reaction time down to 6 ms, repeat accuracy of ± 0.1 ms
- Ambient temp. range from -30 to +70 °C
- Up to OCO-CO duty cycle without need for recharge
- Integrated design of oil channels allows eliminating leak-prone pipe-work

Advantages

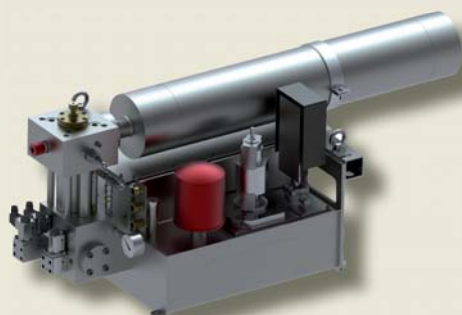
- 100% functionally tested
- Aging-resistant energy storage (nitrogen accumulator instead of springs)
- Compact and space saving design
- Customized design to reach best possible cost/performance ratio
- Outstanding switching performance especially for 2 cycle interrupting time class breakers

These are values for orientation, the specifications as agreed in the individual sales contract are relevant only.



Control Modules

Control modules are electro-hydraulic valve assemblies used to control the oil flow in hydraulic drive systems what is used to actuate high-voltage circuit breakers. Therefore, a control module is the really crucial core of each hydraulic drive system or mechanism. Depending on the requested specifications control modules are designed individually, in order to ensure not only high Swiss quality but also a competitive cost/performance ratio.



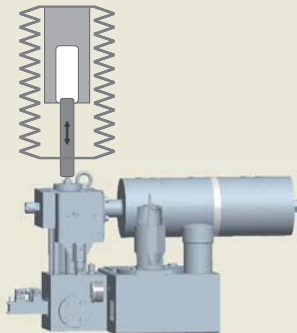
Hydraulic Drive Systems

Hydraulic drive systems are used as “plug-and-play” mechanisms to actuate high voltage circuit breakers. Each drive system is designed, manufactured and tested according the customer’s requirements. Bucher Hydraulics uses sophisticated calculation and simulation programs which are specially developed for the design of hydraulic drives.

Technology Advantages

Why Hydraulics?

Hydraulic mechanism



Features

- High capacity of stored energy
- Free of gearing parts
- Compact and modular design
- Leak-free valves

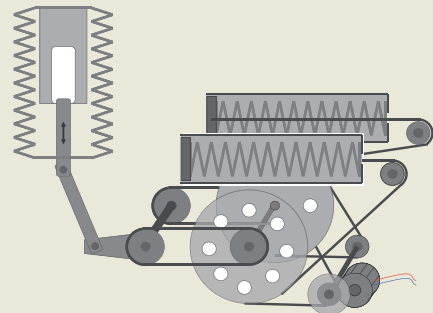
Advantages

- Capable of O-CO switching cycles w/o recharge and 2 cycle interrupting times at 60Hz
- Thermal compensation and gauge pressure reduction
- Immediate transmission of full force with accurate switching time repeatability

Benefits

- Low maintenance cost
- Cost-effective design, easy access to key parts
- Proven technology for applications up to 1'100kV

Spring mechanism



- Limited capacity of stored energy
- Many gearing parts
- Larger design
- Environmental protection is critical

- Capable of O-CO switching cycles w/o recharge and 2,5 cycle interrupting times at 60Hz
- Tendency to slower second O-operation
- Mass inertia delays transmission and force, moving parts suffer wear and need to be lubricated

- Higher maintenance cost
- Aging suffered springs need to be exchanged/ maintained

Bucher Hydraulics

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For further information visit us at:
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