

A background image of a hydropower plant. In the foreground, a large concrete dam structure is visible with water flowing over it. A blue metal walkway or bridge crosses the dam. In the background, there is a dense forest of green trees under a blue sky with some clouds.

HYDAC INTERNATIONAL

**Components,
Systems and Service
for Hydropower Plants.**

Fluid Engineering and Service – Worldwide.

User accessories

HYDAC has a comprehensive and proven range of condition monitoring products, components and systems designed for fluid conditioning and monitoring as well as for technical cleanliness of components.



Condition Monitoring

HYDAC offers a comprehensive range of Fluid Monitoring equipment for online monitoring of critical fluid parameters. So it makes a significant contribution to safe operation of the turbine hydraulics and the lubrication.



Condition Monitoring Unit CMU 1000



FAM dewatering unit

Particularly on lubrication oil systems of steam turbines, undesirably high levels of process steam and water enter the oil circuit.

This has a drastic effect on fluid ageing and lubrication properties. Continuous use of FAM dewatering and filtration units during operation guarantees systematic conditioning of the lubrication media.



TransformerCare Unit TCU

The TransformerCare Unit TCU is a service unit designed to extend the operating life of oil-filled transformers and reactors.

Continuous degassing, dewatering and filtration of the insulating oil ensures low levels of oxygen, water and particle contamination in the transformer, the breakdown voltage of the insulating oil is increased and as a result the service life is also prolonged.



Stat-Free® filter elements

The operation of modern power plant hydraulics and lubrication systems with zinc-free fluids runs the risk of electrostatic charging of the oils (especially via the filter elements). Uncontrollable voltage flashovers, formation of sludge and varnish as well as rapid oil ageing are then the result.

HYDAC Stat-Free® filter element technology prevents these undesirable side-effects and increases the safety of the system for the operator.



HYDAC China



HYDAC India



HYDAC USA



HYDAC Poland



HYDAC Brazil



HYDAC Austria



HYDAC France



HYDAC Norway



HYDAC Switzerland



Your Professional Partner for Hydropower Plants.

With over 6,800 employees worldwide, HYDAC is one of the leading suppliers of fluid technology, process technology, hydraulic and electronic equipment.

Our wide range of products, combined with our expertise in development, manufacturing, sales and service caters to the wide ranging requirements of hydropower plants worldwide.

Our quality and environment certification ISO 9001/2000 and ISO 18001 denotes first class quality and responsible management of our resources.

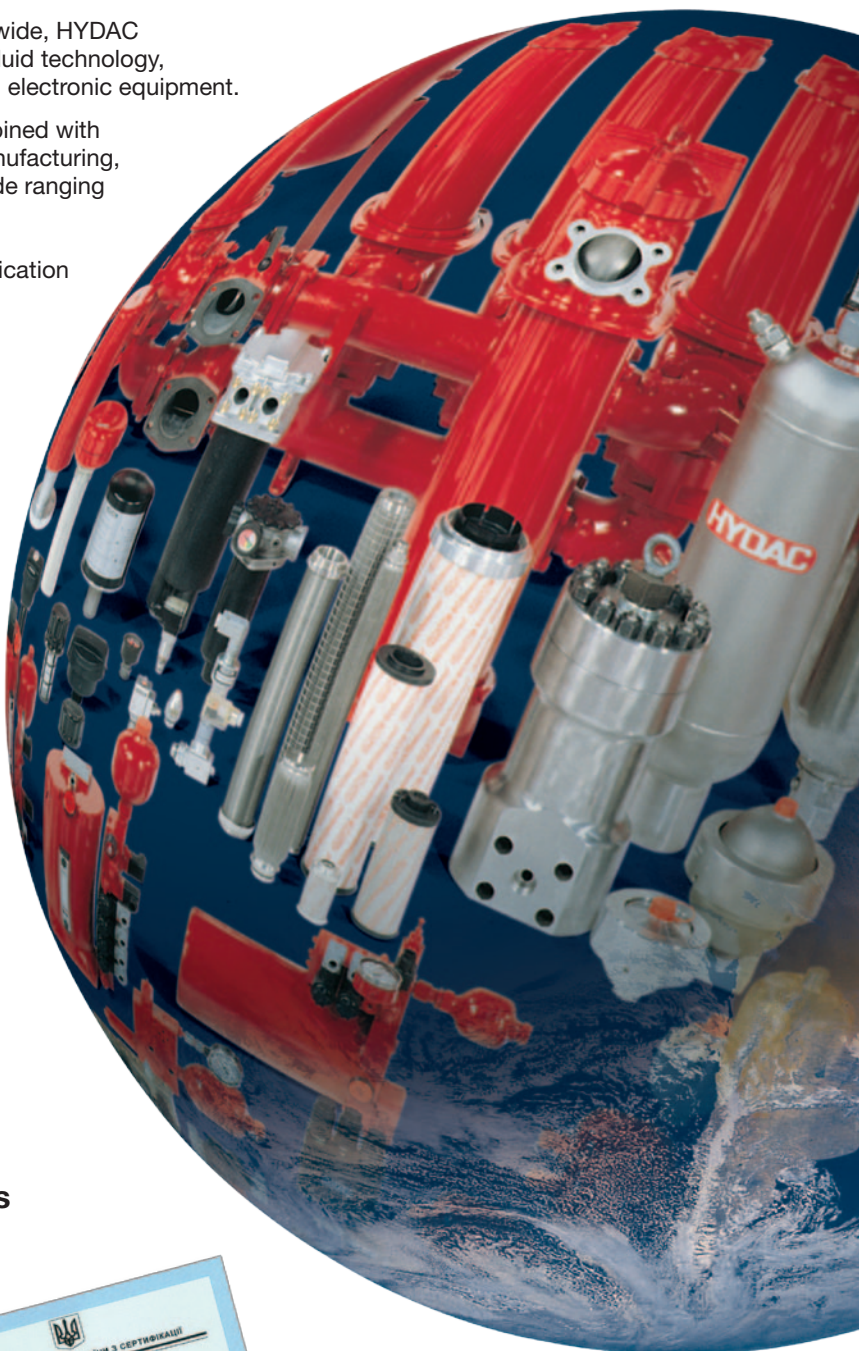
Global yet local.

With over 45 overseas companies, and more than 500 sales and service partners, HYDAC is your reliable partner worldwide.

System solutions. One supplier. One contact.

Wherever you need us, we are there to help you find the most effective solution. For every application - from components to a complete system.

Worldwide specifications and approvals.



Fluid Technology in the Hydro-Energy Sector.

Hydropower plants today make a vital contribution to the world's sustainable energy supply. HYDAC is determined to play its part in enabling people to gain maximum benefit from hydropower.

In opening flood gates and intake gates. In controlling and protecting the turbines and generators efficiently. HYDAC proves its expertise with hydraulic and filtration solutions in all sectors. Worldwide.

Hydraulic systems, like no other drive technology, provide a high degree of operating safety and power density, compact design, fatigue strength, minimum maintenance and – in conjunction with electronics – excellent control and monitorability.

Ideally suited, therefore, to hydropower.

We offer:

Global presence in power plant technology and service covering all aspects of oil hydraulics, project-specific design of hydraulic and fluid technology solutions in compliance with worldwide power plant standards and regulations (Pressure Equipment Directive 97/23/EC, Machinery Directive 2006/42/EC, Hydraulic Steel Structures standard DIN 19704, General Hydraulic Systems DIN 24346).

Cost optimization achieved through customized system solutions using standard components for hydropower plants.

In addition we can offer a complete range of products for condition monitoring of hydraulic and lubrication oil circuits as well as full service, worldwide, for:

Hydraulic steel structures / Hydro-mechanical equipment:

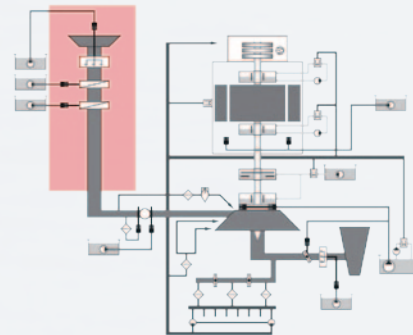
inlet sluice gates, sliding gate valves

Valves / Inlet valves: spherical valves, butterfly valves

Hydro-turbines: Hydraulic turbine controller, bearing lubrication, seal water

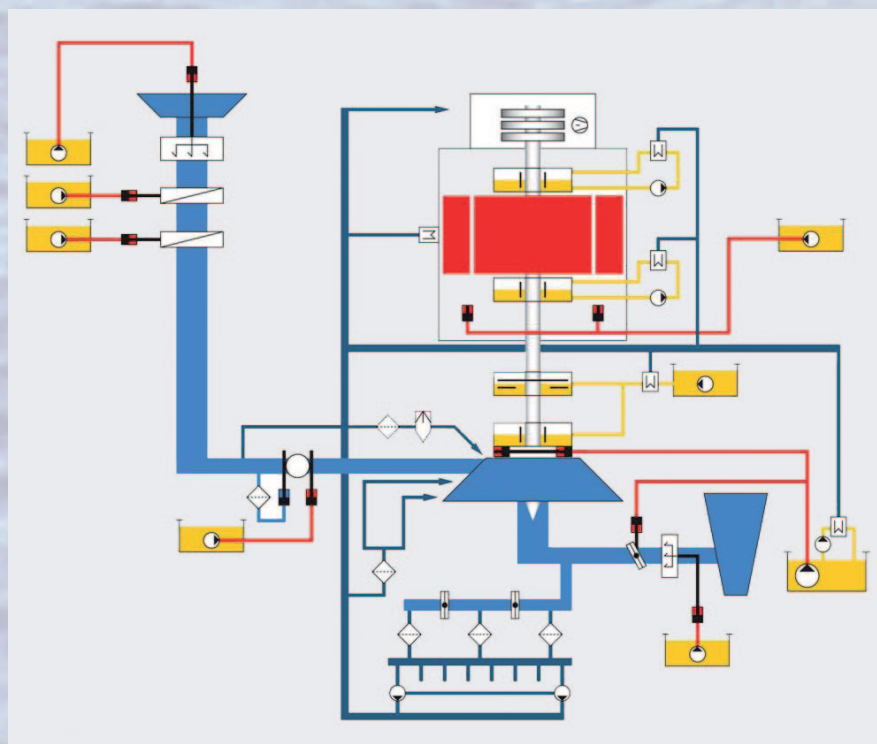
Hydro-generator: lift system (start, inspection), systems for bearing lubrication, braking systems, cooling systems

Secondary functions in the power plant / BoP: measurement technology, water for firefighting, service water filtration, maintenance equipment



1 Hydraulic steel structures

- Bottom outlet
- Overflow sluice gate
- Butterfly valves
- Water control sluice gate



Key:

Water	Filter
Control oil	Cooler
Bearing oil	Hydraulic servo
Control oil tank	Hydraulic servo (water)
Bearing oil tank	Fan
Supporting / Guide bearing	Hydrocyclone
Guide bearing	Suction pipe / Butterfly valve
Supporting bearing	
Trash rack	



Cylinder for trash rack cleaner



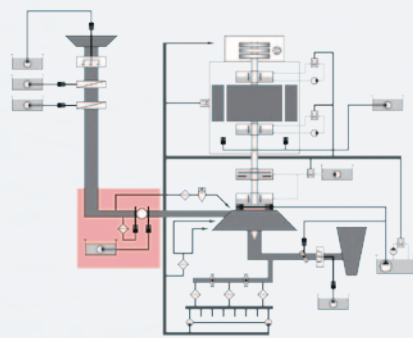
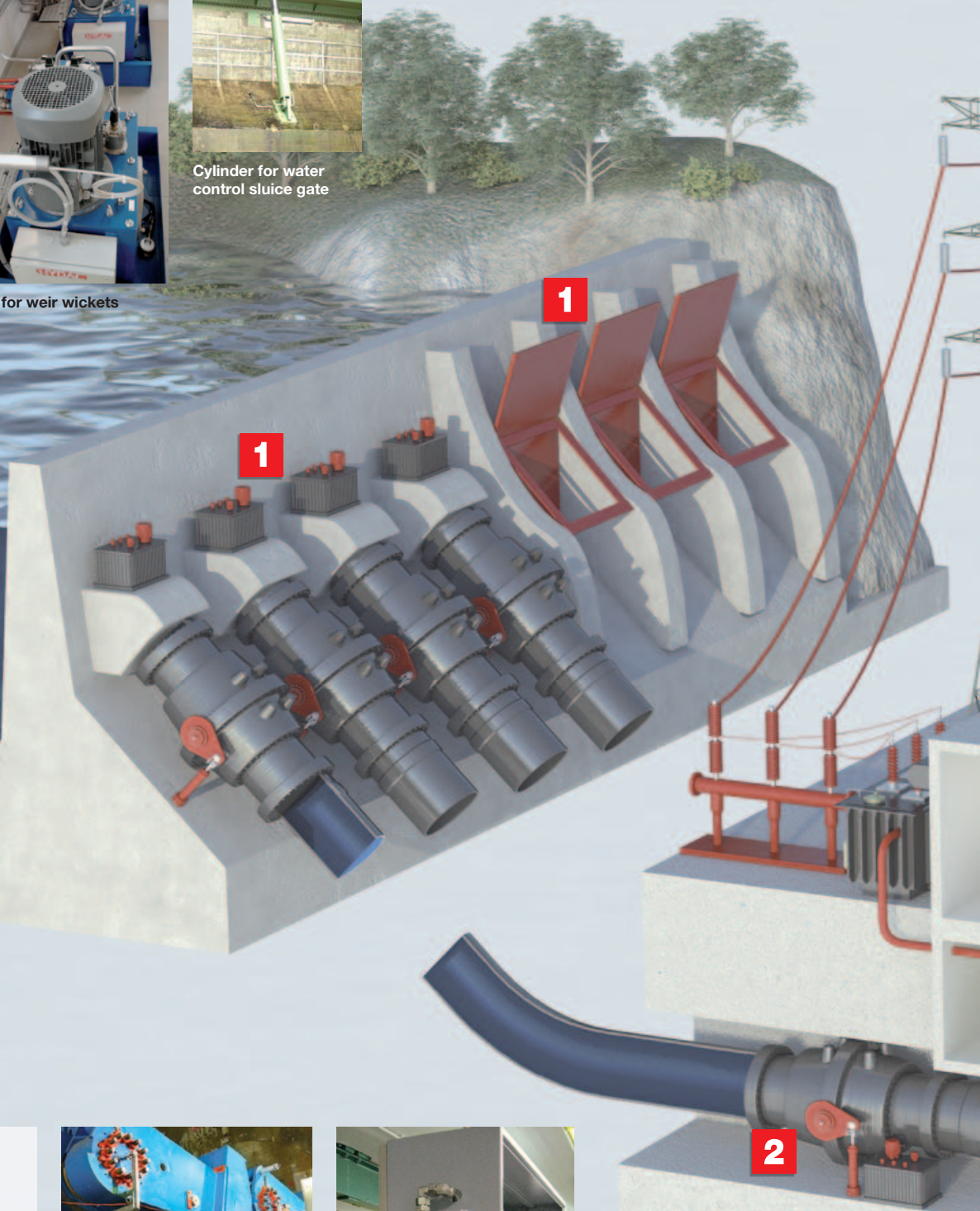
Power unit for weir wickets



Cylinder for water control sluice gate



Power unit for butterfly valve control



2 Valves

- Spherical or butterfly valves
- Servo motor
- Power unit
- Accumulator station for emergency shut-off



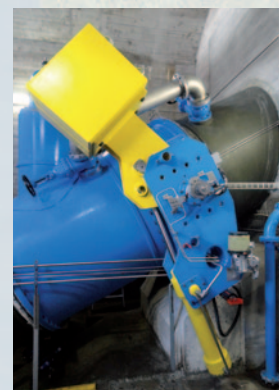
Servo motor (hydraulic cylinder on spherical / butterfly valve)



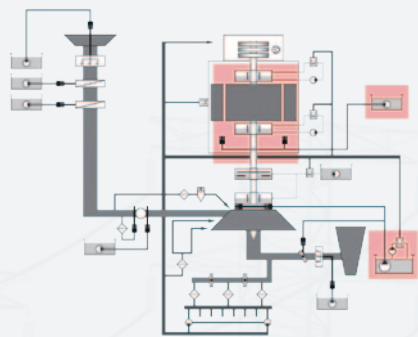
Accumulators for emergency shut-off of spherical / butterfly valve



High pressure water filter RFH for the control of the water spherical valve



Butterfly valve with servo motor (hydraulic cylinder)



3 Generator

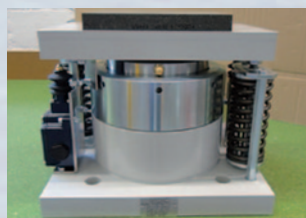
- Cooling systems
- Brake and lift systems
- Lubrication oil systems



Bearing lubrication and lift system



Cooling and seal water treatment



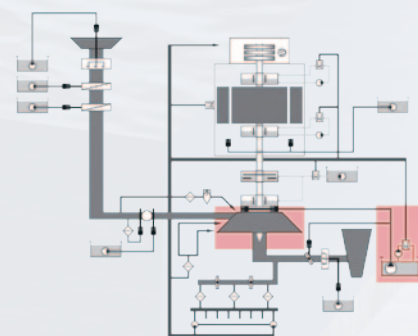
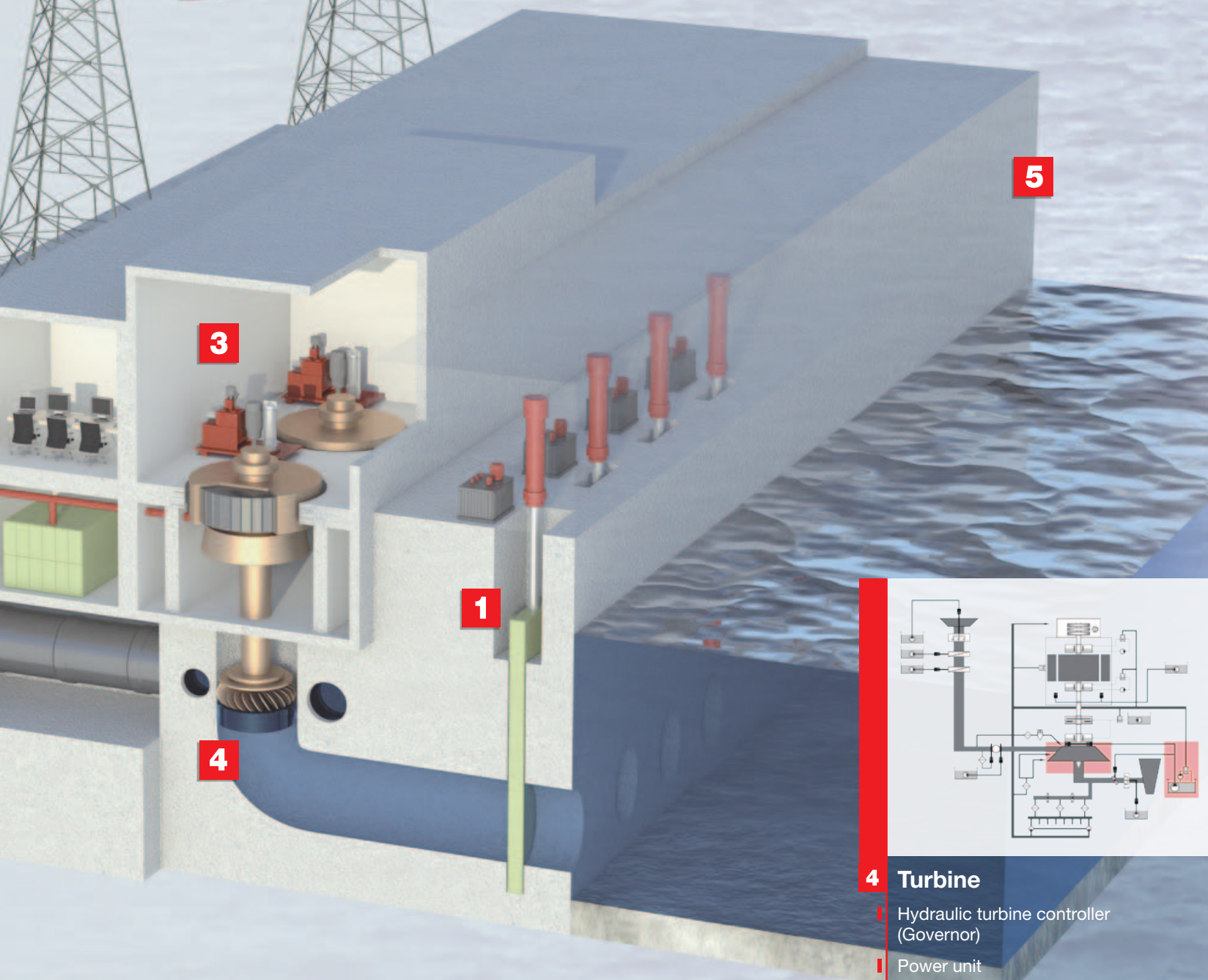
Lifting / braking cylinder



Mobile inspection unit

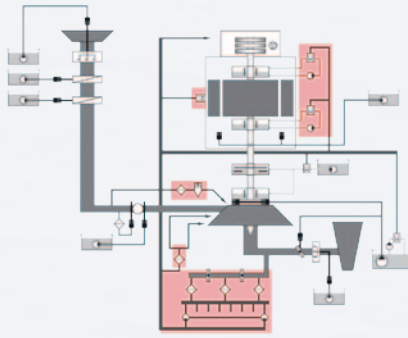


Start lift system (high pressure)



4 Turbine

- Hydraulic turbine controller (Governor)
- Power unit
- Servo motor
- Accumulator station



5 Secondary functions / Balance of Plant (BoP)

- Conditioning of cooling water
- Seal water filter
- Service water filter



Automatic back-flushing filter AutoFilt RF3®
(cooler protection)



Automatic Twist Flow Strainer ATF®
(for water pre-filtration)



Mobile unit for dewatering, degassing and
filtration: FluidAquaMobil FAM



Hydraulic turbine controller



Power units for turbine controller



Hydraulic cylinder (servo motor)
Turbine control guide vane
adjustment



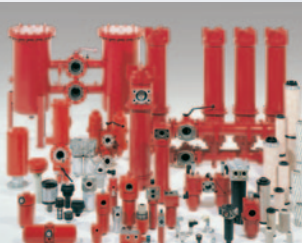
Water cooling and filtration system
(bearing oil)



HYDAC servo motor (hydraulic cylinder)
with lock, for turbine control



Accumulator Technology 30,000



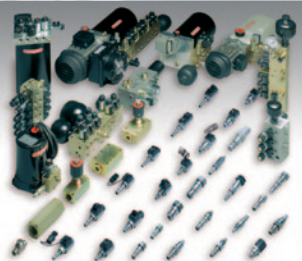
Filter Technology 70,000



Process Technology 77,000



Filter Systems 79,000



Compact Hydraulics 53,000



Accessories 61,000

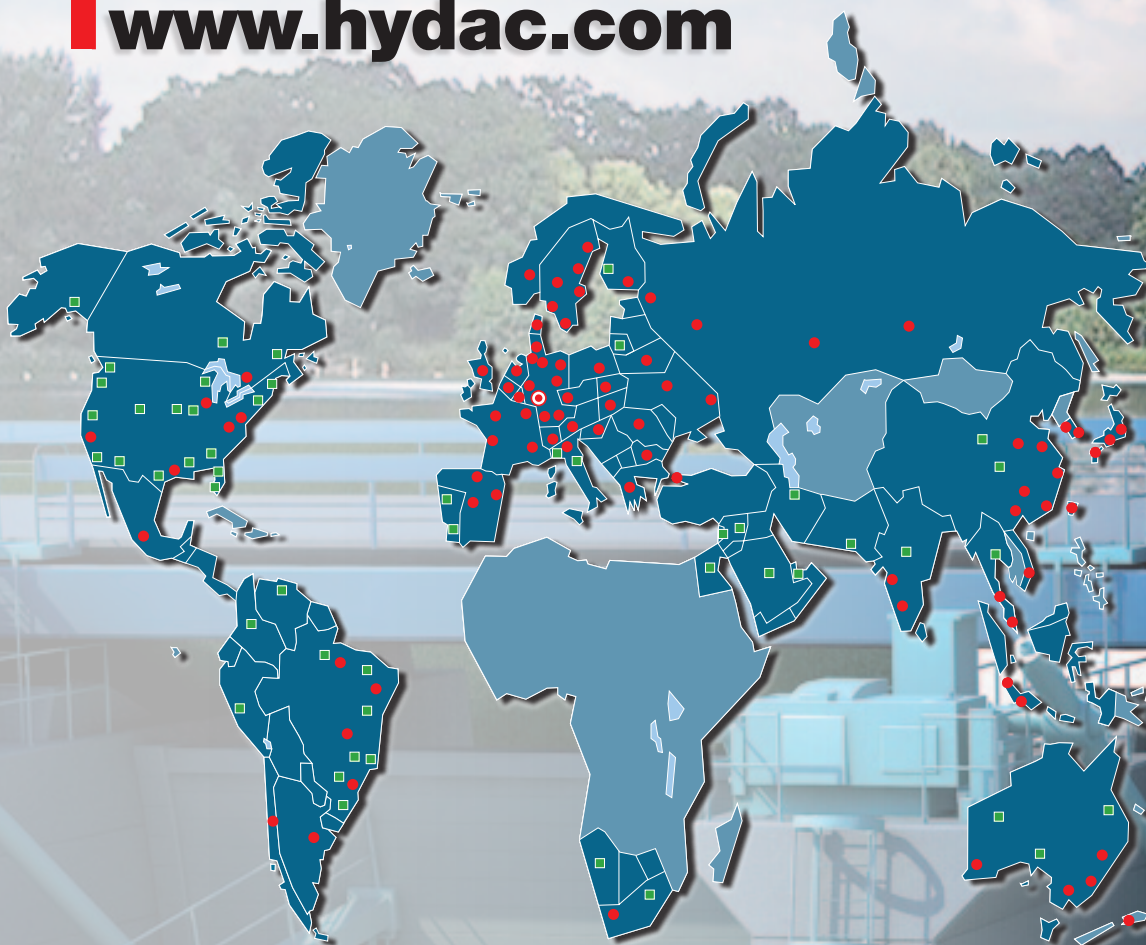


Electronics 180,000



Cooling Systems 5,700

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- HYDAC Companies
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HYDAC

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