

EXCELLENCE IS OUR STANDARD



TECHNOLOGIES FOR THE HIGHEST DEMANDS >>>
POWER ENGINEERING





WE ARE DIFFERENT FROM OTHERS – WE ARE HORA

>>> Building power plant technology means bearing responsibility for the safety and future of many people. Courage, foresight and progressive know-how are imperative. Therefore, we focus our solid experience on our core business: Engineering, manufacturing and sales of special control valves for the water and steam cycle of fossil fuel-fired and regeneratively fuelled power plants.

Only excellent products, "Made in Germany", leave our house, as we develop and build them ourselves with creative engineering and innovative technology.

We are different from others, and that is why we are successful

Regardless of the complexity of your requirements, HORA is the partner for a tangible positive result. From a nationally and internationally leading manufacturer of the sector, our well-trained and regularly trained employees are active for you.

As an owner-managed, highly specialized company, we have the required flexibility to directly implement the latest results from our close cooperation with research and sciences for the benefit of our customers.

HORA valves are renowned for their outstanding durability and precision. They are employed as standard products or in customized versions by customers all over the world.



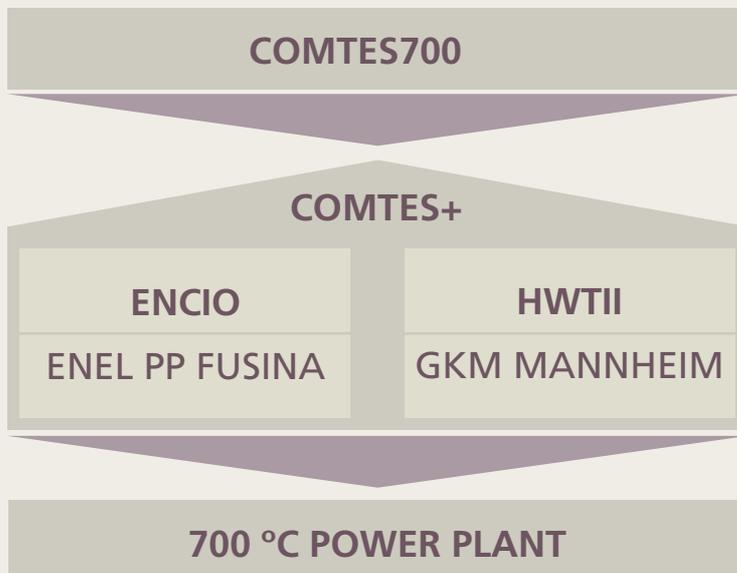
PRODUCT INNOVATION

>>> Power plant operators and plant manufacturers research and develop new processes and technologies for power plants world-wide with efficiencies of more than 50 percent and steam temperatures of more than 700°C. HORA is one of the first manufacturers world-wide to tackle the 700° technology and is involved in three projects in this important development. We commenced work in 2000 as a technology partner for the COMTES700 research project. The results have attracted international interest for some time. HORA is an official project partner for ENCIO and maintains the challenge in the development of future-enhancing results.

More detailed information about the projects can be found at www.comtes700.org and www.encio.eu.

We are different from others – We shape progress

HORA supplies the control valves for the extreme parameters of 700°C and 350 bar in these power plants. For this purpose, new resilient materials which contain high levels of nickel and chromium are researched and applied. In this way, the plant efficiency can be increased above 50 percent, and the CO₂ emissions can be reduced simultaneously by a third: Setting the agenda for safe and efficient energy supply across the globe, originating from Schloß Holte-Stukenbrock!





WE ARE DIFFERENT FROM OTHERS

DESIGN UND ENGINEERING

We are different from others, because we realize the highest levels of cost-effectiveness

- >>> HORA utilizes the most modern IT tools during the design of the control valves, such as 3-dimensional CAD software and virtual reality solutions. These advanced tools are decisive in optimizing the design of the valves, in calculating the flows via CFD or in minimizing FEM stresses in the bodies. In this way, the service life of the valves can be greatly extended, as well as saving costs.

ENGINEERING

We are different from others – We offer more

- >>> The product configurator "Abacus" is the interface between sales and production that provides HORA customers with significant benefits. Standardized valve design to the latest specifications with guaranteed process stability and short throughput times. The software for valve design, noise calculation and calculation of the actuating forces for designing the actuators, accesses an extensive materials database.

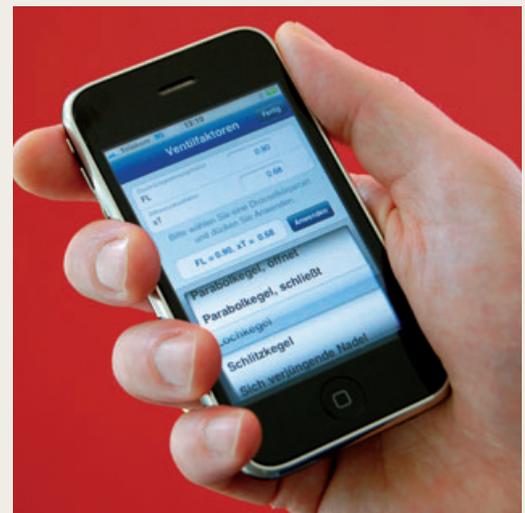
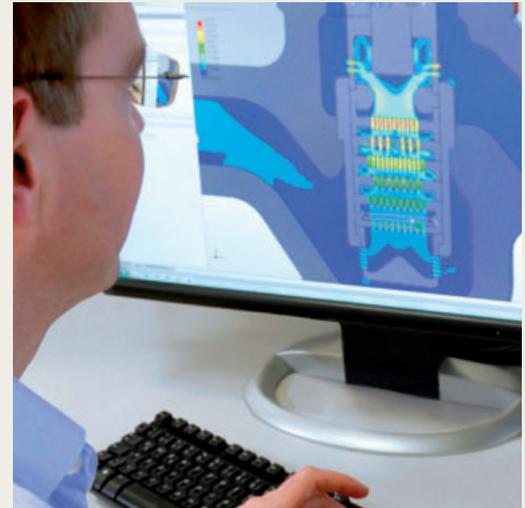
"Abacus" offers proprietary HORA algorithms for designing multi-stage valves, a special calculation for flashing liquids as well as two-phase flows. Parametric 3D CAD models are automatically generated on the basis of this data. The individual calculations are also available free-of-charge as an App. The link to the App can be found at www.hora.de/power-technology.

BODY MANUFACTURING

We are different from others – We shape progress

- >>> Vertical manufacturing levels of up to 90 percent and manufacture of all the most important components and products in Germany is possible at HORA, due to continuous investment in the most modern technology. Submerged arc-welding, 3D welding, CNC machining with indexing chucks are just a few examples for manufacturing methods with a big impact for our customers: Higher productivity, shorter throughput times, lower costs, precision manufacturing. Only a modern machine park can meet the challenges posed by new and future materials.

Installation at HORA also includes active transfer of competence. Your employees receive intensive training during commissioning and can also trust on the service and support from your HORA contacts partner in the future.





WELDING + TESTING

We are different from others, because our objective is always absolute reliability

- >>> The highest quality is required in particular in power plants. Ultimately, HORA control valves are subjected to high loads and must reliably perform their set tasks for many years. This also applies, without doubt, for the materials. In particular, for new materials of innovative products as offered by HORA.

Submerged arc-welding as well as 3D welding increase productivity, reduce the throughput times and provide more security. HORA employees undertake not just all of the welding operations including the heat treatment, all non-destructive material testing (NDT) is also performed in-house.

SERVICE

Our service is different from others, it is complete

- >>> The product reliability continues with HORA even after product delivery. Manufacturer product life cycle support means that our service requirements are introduced as early as the product development phase. Even the spare parts bear the original HORA label, and their availability extends across the entire life cycle of the control valves. Effective logistics and stockholding ensure that the spare parts are available to you in a few hours as well as in 30 years' time. You can contact our service team and our service partners world-wide 24 hours a day and 7 days a week. They are certified by HORA for all product phases – whether it is analysis, operation, repair or modernization.

The 24h hotline: +49 (0) 5207-8903-0

During a repair, any technical modifications are installed, so that HORA customers always have an improved product after a repair. Our knowledge for our customers – at all times!



EMPLOYEES

We are HORA

- >>> Each employee of our company can claim this at any time. Here at HORA, everyone counts and everyone can develop their individual capabilities in the medium-sized company environment. We demand and need creative thinking and action. Good ideas are received directly in flat hierarchies and can be implemented for the benefit of our customers. From the engineer to the clerk, from the apprentice to the manager – we have a corporate culture where talented people thrive.

Top performance is delivered as a matter of course in a relaxed and friendly atmosphere and in a vibrant environment, which is characterized by openness and respect. We are HORA.



WE ARE EXCELLENT – OUR PRODUCTS PROVIDE THE EVIDENCE

>>> Wherever energy is generated world-wide under difficult circumstances, HORA control valves are responsible for safe control of water and steam.

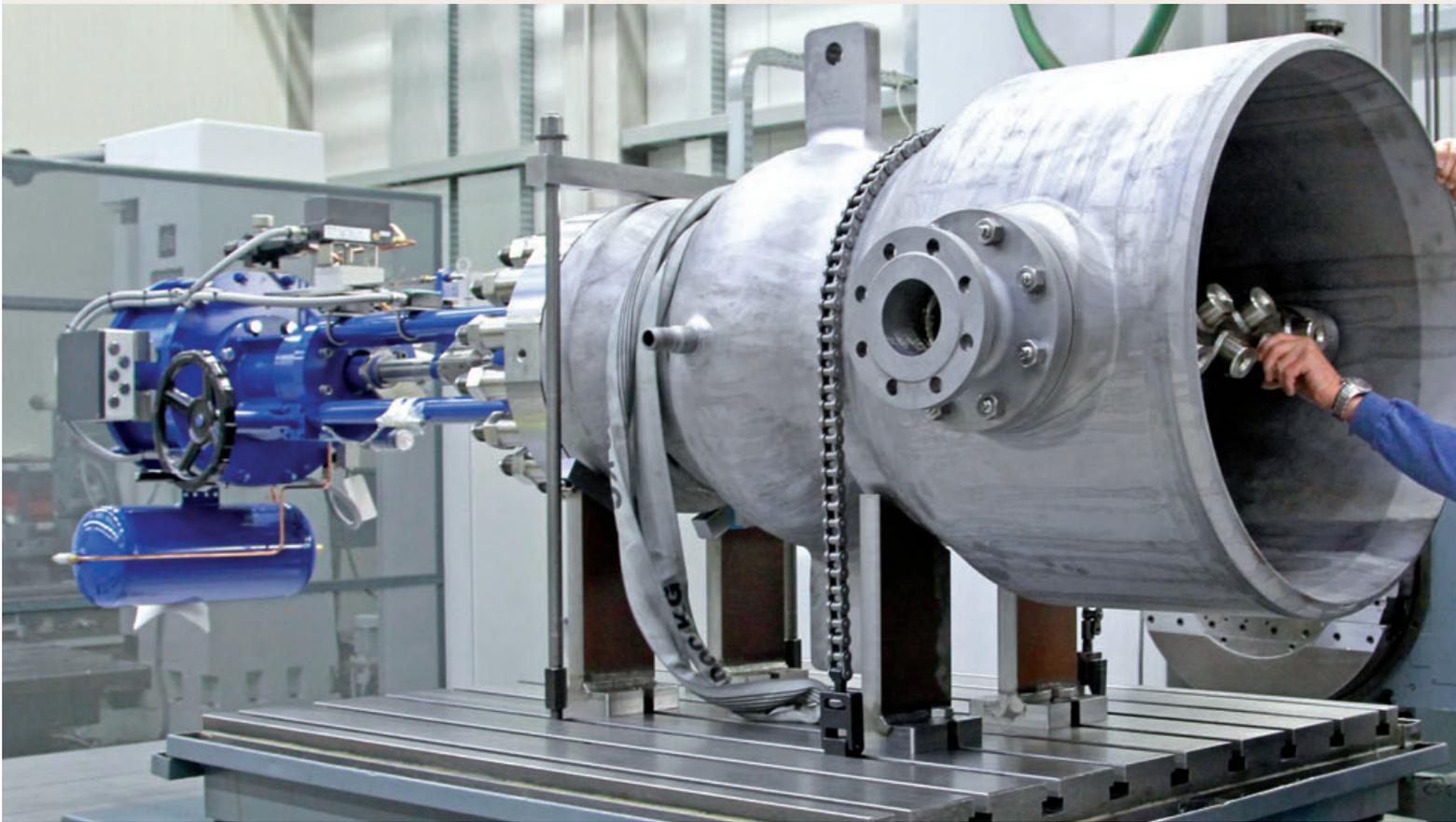
Our versatile, modular valves control gas, steam and liquid flows in all areas of industrial application. They are designed especially for water and steam at high pressures and temperatures.

Power plant technology has been subjected over recent years to increasingly stringent requirements from lawmakers as well as to technical solutions of increasing complexity.

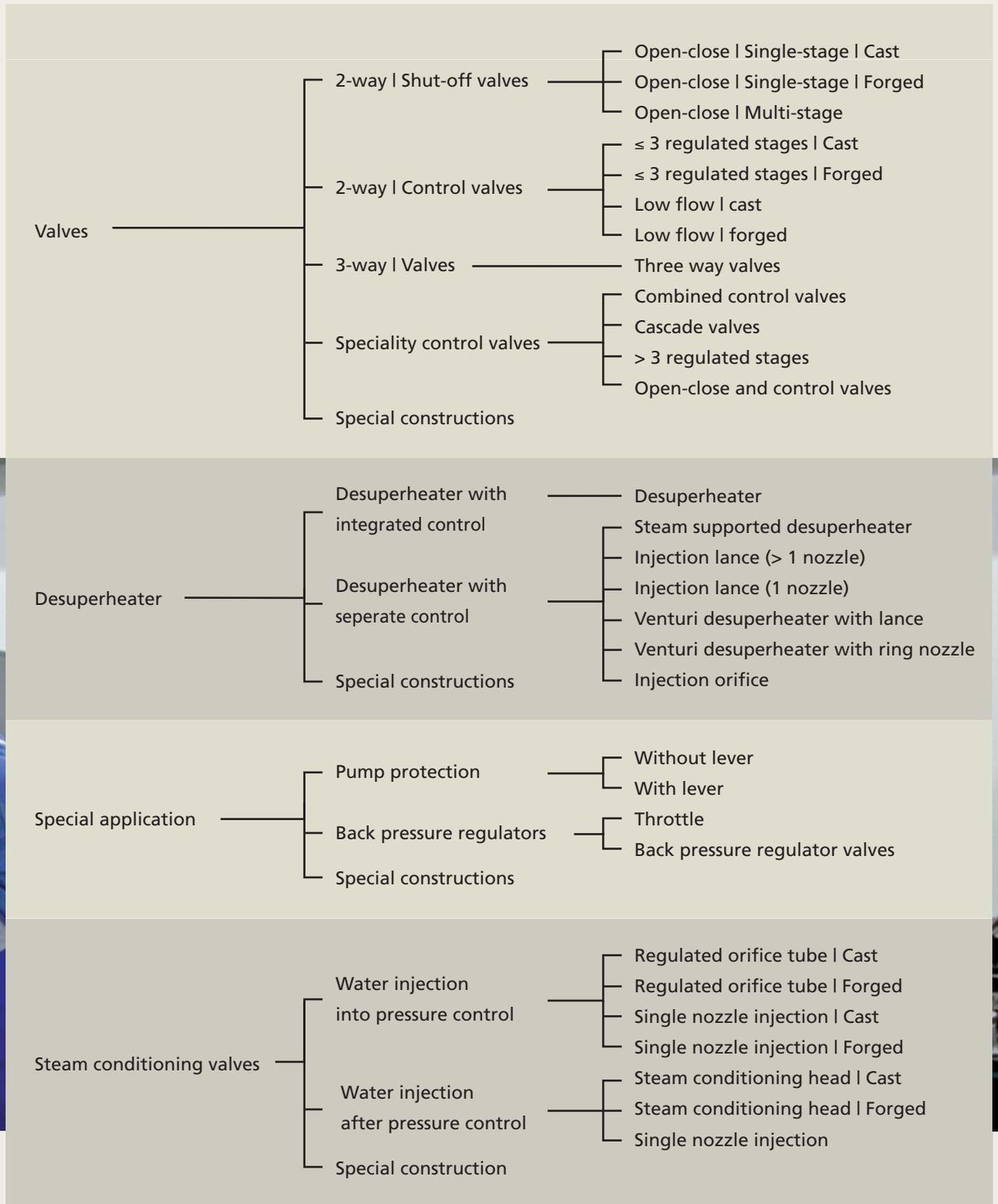
Whether standard or special valves, we deliver the right solution for every application and, thanks to our large product portfolio, are in a position to undertake every order for you.

Careful choice of material and experienced, precisely calculated construction parameters are associated with HORA products, which continuously deliver reliable performance under special operating conditions.

The Power Technology division is available to its customers around the clock, 7 days a week. Select the optimum products from our comprehensive range. We will be happy to advise you and assist in planning down to the finest details.



POWER TECHNOLOGY VALVES



OUR PRODUCTS



CONTROL VALVES

>>> HORA provides modular high-pressure and low-pressure control valves both for standard and special constructions for power plants and industrial systems. These are employed in pressure and flow reduction applications. The body, inner trim, valve seat and seals can be selected from a whole range of variants. Connections are provided with welded ends or flanges compliant to DIN or ANSI.

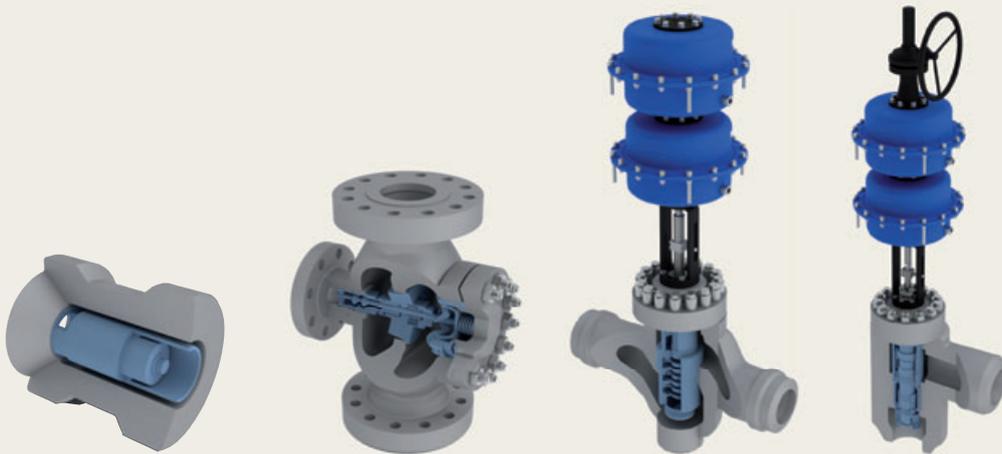


FEED WATER CONTROL VALVES

>>> HORA provides start-up and main feedwater control valves for feedwater control. The feedwater control valve is designed for the total flow of the steam generation at low differential pressures. The start-up valve is used for low flows and high pressures.

The combined feedwater control valve integrates the start-up and main feedwater control in one valve - a decisive cost benefit for our customers.

Main feed water control valves, start-up valves, combined valves are all available in different versions and different materials.



PUMP PROTECTION

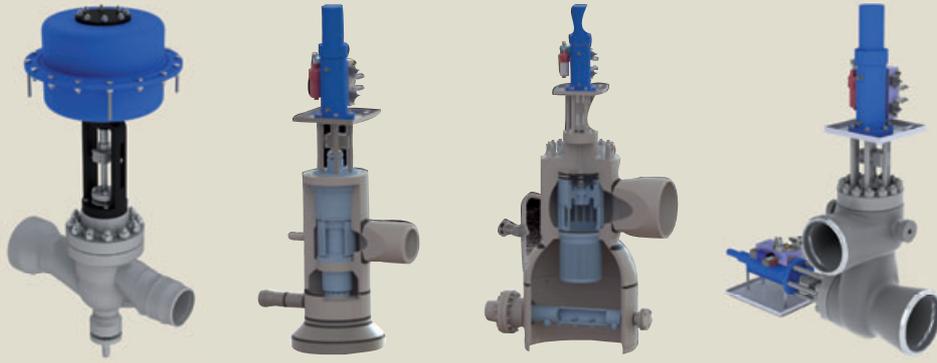
- >>> HORA delivers all pump protection variants. Pump recirculation valves control the automatic recirculation without an actuator. Furthermore, regulated and unregulated automatic recirculation valves are available for selection. Depending on the requirement, parabolic plugs right up to a combination of perforated plugs and perforated cages are used. Back pressure regulators (BPR) and throttles are designed and delivered by us.



STEAM COOLING

- >>> HORA implements steam cooling with a comprehensive product portfolio. Above all, however, we precisely determine the CFD (Computational Fluid Dynamics) analysis for your application providing the optimum, most cost-effective version. Only so can the operational safety of the plant be improved and the occurrence of a thermal shock be avoided. Various products are available for this purpose: e.g. injection lance with fixed or spring-loaded regulated nozzles, Venturi desuperheaters, steam supported desuperheaters as well as desuperheaters with integrated injection valve. Talk to us about the sizing data such as operational conditions, available pressures, temperatures, water/steam ratios, etc.

OUR PRODUCTS



STEAM CONDITIONING TECHNOLOGY

>>> In many steam cycles, the delivered steam pressures and temperatures must be controlled for the downstream process. HORA offers the right solutions: Steam conditioning valves for process and industrial applications in different versions and injections systems have been constructed and are available. In particular, high-pressure, medium-pressure and low-pressure turbine bypass stations are offered.

Steam conditioning, steam pressure throttling and cooling: HORA has the ideal steam conditioning solution for every plant constellation. The solution depends on the steam temperature relative to the saturated steam temperature, the flow of steam, the required cooling water flow, the cooling water pressure, the steam speed, the distance to the temperature sensor and the diameter of the pipe.



SPECIAL VALVES

>>> HORA delivers special valves to customer specifications. We support your planning phase and construct to suit your individual application.

Modern engineering also enables us to deliver tailor-made process parameters. HORA can implement any technically challenging application with FEM (finite element method) and CFD (computational fluid dynamics).



ACTUATORS

>>> HORA offers actuators in all designs. We are the right partners for every adaptation. Our own pneumatic actuators feature very long life-cycles and the highest reliability. This is assured by the use of roll diaphragms, special seal-wiper combination elements and maintenance-free slide bearings.



OUR REFERENCES



KRISHNAPATNAM POWER PLANT INDIA (COAL)

Capacity: 2 x 800 MW
Steam parameters: 573 °C / 266 bar
Commissioned: 2012
Scope of delivery: High-pressure turbine bypass valve
Low-pressure turbine bypass valve
Ancillary steam conditioning stations
Ancillary steam conditioning stations
Feedwater control valves
Pump protection valves



NEURATH POWER PLANT GERMANY (BROWN COAL - LIGNITE)

Capacity: 2 x 1100 MW
Steam parameters: 600 °C / 272 bar
Commissioned: 2011 / 2012
Scope of delivery: Control valves
Draining valves
Coolers
Steam reduction valves



WAIGAOQIAO, PHASE I, II, III POWER PLANT SHANGHAI, CHINA (COAL)

Capacity: 5000 MW
Steam parameters: 542/568 °C / 279 bar
Commissioned: 2000 – 2012
Scope of delivery: Feedwater control valves
Draining valves
Boiler valves
Ancillary steam conditioning valves



ANDASOL III SPAIN (SOLAR)

Capacity: 1 x 50 MW
Steam parameters: 408 °C / 143 bar
Commissioned: 2011
Scope of delivery: Steam reduction valves
Control valves
Draining valves



ZOLLING/LANDESBERGEN POWER PLANT GERMANY (BIOMASS)

Capacity: 2 x 20 MW
Steam parameters: 475 °C / 82 bar
Commissioned: 2004
Scope of delivery: High-pressure turbine bypass valve
Control valves
Draining valves



SHATURA POWER PLANT RUSSIA (GAS/STEAM)

Capacity: 3 x 400 MW
Steam parameters: 575 °C / 119 bar
Commissioned: 2011
Scope of delivery: High-pressure turbine bypass valves
Medium-pressure turbine bypass valves
Low-pressure turbine bypass valves

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