



Spanish delegation delighted with HORA

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One of the biggest valves that HORA has ever produced

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HORA: worldwide partner for major power plants builders



Developing the future of PT (from left): U. Peitzmeier, R. Liedtke, Ch. Arning, F. Hansknecht, M. Dirbach, N. Vegelahn, Dr. K. Mehnert, H.-J. Bracke, G. Köppke, L. Werner, H. Wick and St. Papenberg. Missing on this photo: H. Brakhage and J. Tews.

HORA is one of Germany's leading manufacturers of control valves and actuators for power technology and building automation. The HORA business unit Power Technology (PT) specialises in design, production and sales of special control valves for water and steam applications. Two strategic initiatives during the past ten years are the reason why HORA is successful in this area. Firstly, we have developed from a supplier of standard products to a supplier of severe service products. We are not only familiar with the latest state-of-the-art technology but we are also worldwide innovation leaders in the 700 degree technology for power plants valves. Secondly, we expanded our business internationally at an early stage from Germany and Europe into Asia and North America. We are now well established in the emerging markets of China and India. HORA is the partner

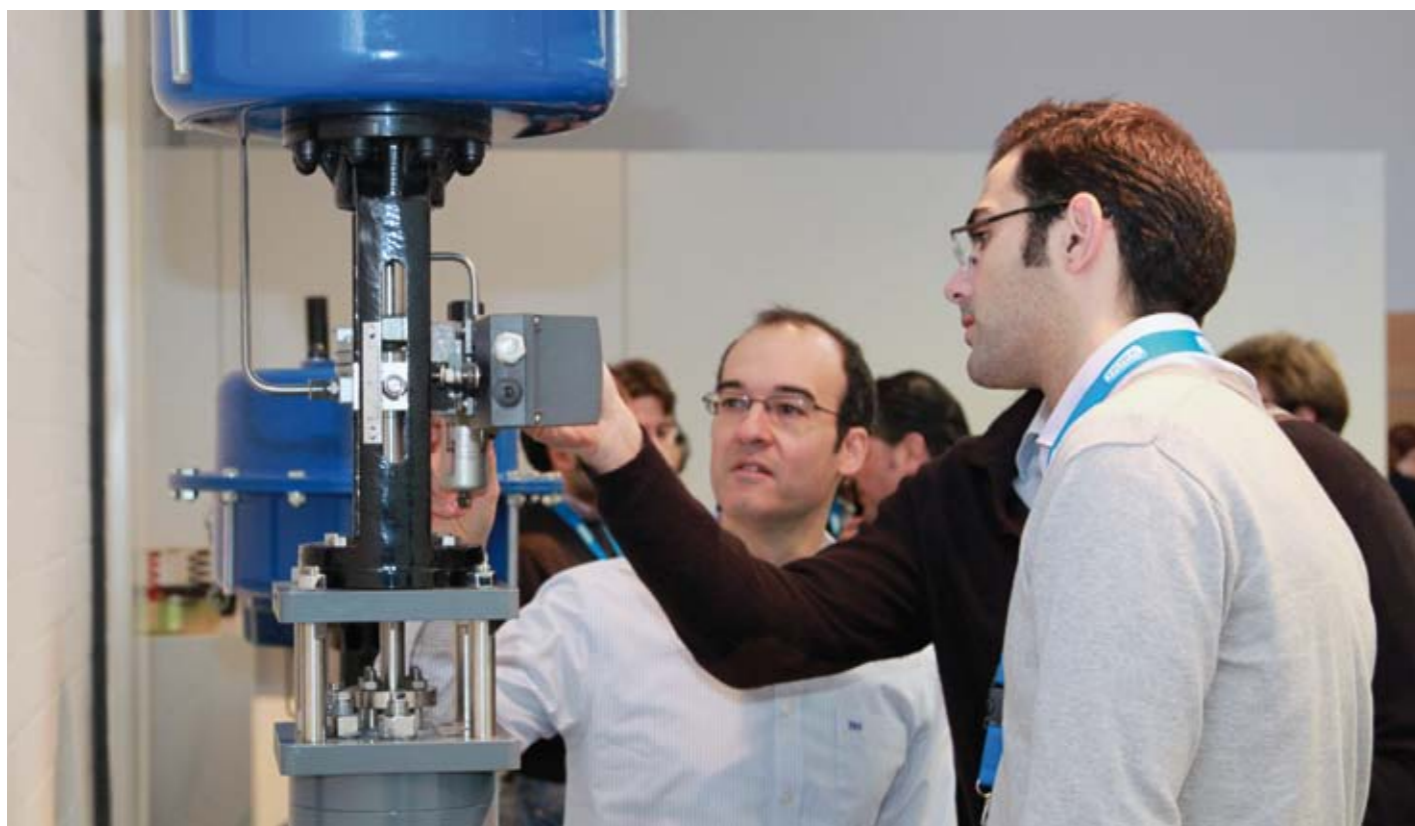
of the major global power plant builders such as Siemens, General Electric and Hitachi. This success is a good starting point for further healthy growth. This is based on investments in the millions, the new orientation of the business division and continuous optimisation of processes and products.

Compliance at HORA is more up-to-date than ever before

Whoever operates globally and successfully must address the subject of compliance. Managing Director, Georg Bode: „Not just because it is more necessary than in the past but because we wish to provide information and take preventive measures and because we have to confront changing and mainly more stringent requirements from outside again and again. Compliance affects all company divisions, but primarily those where

employees could quickly become entangled intentionally or unintentionally in cases of accepting advantage and/or bribery e.g. in purchasing, accounts, shipping, sales or as sales partners. „Compliance with all legal framework conditions is a matter of course for us, but it is something more: a value in itself. And, indeed, without any ifs or buts and irrespective in which position in the company someone is working and in which parts of the world our business partners are located“, said Georg Bode. This subject will be on the agenda at the PT sales meeting in November. „These individual steps will result in compliant contracts with our national and international partners but also revised framework conditions for different aspects of the employment contracts with our employees“, said Georg Bode.

Spanish delegation delighted with HORA



In depth: Spanish visitors inspect an injection cooler.

Our Spanish sales partner, Schubert & Salzer Ibérica, brought a large customer delegation this year. With 45 participants it was the largest group of foreign visitors in HORA's history. The customers' branch background was very diverse. They covered the power plants technology, engineering and new solar power sectors. „Solar power is the most exciting

area for us in Spain at the moment“, said Sven Podlech, Area Sales Manager Europe for PT. The buzzword is „concentrated solar power“ or CSP for short. Basically, it is a technology where solar power is bundled through parabolic mirrors. The power plants are below 50 megawatt for reasons of European law. HORA is able to collaborate on projects

of this magnitude with these two business areas: with oil control valves for thermal oils and in water vapour circulation. „We wanted to demonstrate that HORA is also innovative and totally competitive in this sector. We have been successful“, said Podlech. And in fact very successful!

B+A and PT have already received a total of three contracts for the Andasol 3 Project in Guadix, Spain. The power provided by the sun is used systematically in solar thermal power plants. The solar rays are intensified 80 times by specially shaped and coated mirrors in the solar field and conducted to an absorber pipe installed in the focal line of the mirror. This is part of a closed heat-carrier circuit in which special bellow valves from the B+A Division are used. The heat produced through heat exchangers in a centrally located power plants unit is then dissipated to a classical vapour circuit. Power is generated in this way by a turbine. Products from the PT division are used in this circuit. Totally in accordance with the motto: everything from one source from HORA.



Andasol 3: HORA has succeeded in entering the solar thermal power plants sector!

Foto: BSMPs

HORA is very well established in India



Matthias Dirbach with Indian partners on the HORA trade fair stand.



India offers tremendous opportunities for further growth in the coming years. We have been working with the Hi-Tech agency in India since 1997 and are now benefiting from an excellent reputation in this market. This year HORA was awarded the contract for the 2x800 MW Krishnapatnam Project. It is one of the first supercritical power plants in India. The experts from Larsen & Toubro received information on the technical design of the turbi-



ne bypass valves at the PowerGen Trade Show in Mumbai (Bombay) in spring. The HD and ND bypass valves with hydraulic actuators will be delivered in 2011. The cooperation agreement with the state-run valve manufacturer, Instrumentation Ltd. (IL), has been running since February 2006 and has been extended until 2012. Together with PT Sales, Matthias Dirbach has just concluded a major contract with the Indian key customer BHEL.

New Sales Partner in Serbia



New sales partner for B+A and PT (from left): Marius Mlynski, Gvozden Dzelatovic, Managing Director of Fluid-Mold Sistemi, and Michael Mostolski.

The B+A Division is expanding its international activities together with the new sales partner, Fluid-Mold Sistemi (FMS) from Jagodina in Serbia. FMS will also sell HORA control valves in future as an optimum expansion of their current product range of top-quality process valves. They already have contacts with potential customers. FMS's customers include the state-run company NIS (chemicals and petrochemicals, gas processing) and Velika Morava and Jedinstvo, the two largest water-supply companies in the country and also refineries and power plants. Sven Podlech held initial talks during a visit by Dzelatovic on the possibilities of collaboration with PT. A pilot project with unusual products for HORA has already been procured which should open the doors for the utilisation of HORA control valves. We have already delivered 26 control valves for potable water regulation to the largest water supply company in Serbia, Velika Morava. Valves for natural gas will be a further focal point. The capacities of existing underground gasholders are currently being increased eightfold in Serbia. The construction of new holders is in the planning stage.

„HORA has convinced us with its high quality, rapid response and flexibility“

Delivering reliable and durable valves to reduce outages due to maintenance work to a minimum and to guarantee production in multi-shift operation; to protect buildings and personnel through the high functionality of the valves. This was the input from Stadtwerke Bielefeld (public utilities) when they erected an efficient and environmentally friendly gas and steam turbine power plants on the factory premises of Mitsubishi HiTec Paper Bielefeld (formerly Feldmühle) in 2004. As HORA had already supplied valves to the combined heat and power plants in Schildescher Street 30 years earlier, it was natural to work together on this project right from the start. „Stadtwerke Bielefeld know us to be competent suppliers of reliable valves and flexible service providers due to our partnership over many years“, said Hans-

Jürgen Bracke, the employee in charge of PT Sales.

The modern gas and turbine power plants is owned by Stadtwerke Bielefeld and is remotely controlled from a central control room in the combined heat and power plants in Schildescher Street. It has two 14 MW gas turbines, one 9.5 MW steam turbine and three 3.5 t/h saturated-steam boilers. Hans Jürgen-Bracke said: „We have supplied twelve valves for the smooth operation of the plant and since then have provided service round the clock. This modern plant feeds around 36 MW of power into Stadtwerke Bielefeld’s grid and provides the paper factory with 66 MW of heat in the form of steam.

HORA has convinced us with its high quality, rapid response and flexibility with regard to maintenance and also as a competent, reliable partner“, emphasised Ulrich Kyewski, Manager Measuring and Control Technology District Heating Generation for Stadtwerke Bielefeld. „The preparatory work for maintenance visits was also exemplary: HORA service engineers obtained information about the anticipated works beforehand directly on site after the service orders were placed. HORA valves in the gas and steam turbine power plants for Mitsubishi HiTec Paper Bielefeld in operation since 2005:

- two steam conditioning valves
- two feed-water control valves
- two start-up control valves
- two desuperheater
- two injection control valves
- one steam temperature control valve
- one drum overflow

Stadtwerke Bielefeld Information Box

Stadtwerke Bielefeld provide innovative products and services for the power and potable water sectors, public transport, swimming pools and skating rinks and also telecommunications. Around 2200 employees generate a turnover of approx. 670m euros in a modern corporate group. The majority municipally-owned company is a national power supplier to Miele, Schüco and Bertelsmann, for example, thanks to efficient power generation in its own and associated power plants.



Heinz Mühlenkord is traveling the world as a service technician for HORA for over 40 years now.

Big, bigger, biggest



Big, bigger, biggest: one of the biggest valves that HORA has ever produced went to ABB in Moscow in the summer. With a nominal width of DN600 and weighing 2.3 tonnes, it will be used in a district heating plant. Erwin Hintke will conduct the tests for this direct-flow control valve. But there is still something bigger: a DN800 valve was produced in autumn.

DN600: Erwin Hintke will conduct the tests for this direct-flow control valve.

Modern tools, professional methods, outstanding engineers

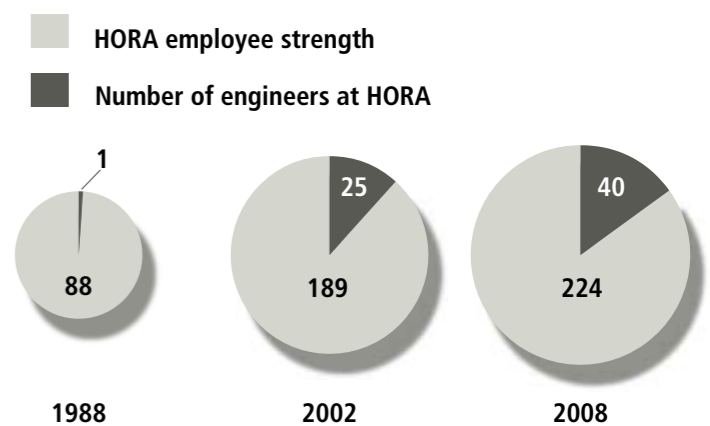
The PT Division has grown fast along with the market. There are also attractive market prospects in the future: Global energy requirements will double by 2030, as the emerging markets, Russia, India and China in particular have enormous energy requirements. HORA would like to generate additional contracts in these growing markets.

We cover 80 to 90 % of the necessary product range for power plants. Our product development plan will include products which we do not have at the moment. Turbine bypass valves offer enormous worldwide sales potential. Division Director, Ulrich Peitzmeier: „We are just the right partner for the high-tech sector because we have the necessary complexity at our fingertips with our well trained engineers, modern tools and professional methods. We are thinking about how the power plants of the future will look. We offer innovative solutions for the new power plants which will be built in the future and we are market leaders in the 700 degree area. Older, existing power plants are another interesting market: these are modernised or „converted“ under the retrofit label.“

Attractive market prospects:

- +5% p.a. increase in power consumption in developing countries
- growth in fossil power plant output worldwide by over 80% between 2005 and 2030
- greater efficiency requirements for future power plants
- replacement or retrofitting of existing coal-fired power plants

Source: Siemens 2008



Strong team and professional methods

The number of engineers at HORA has increased from one to 40 within the past 20 years. An unbeatable plus for PT sales is that they can give customers advice on both technology and sales. HORA is working with the latest technologies and professional methods in order to be better set up than the competition, and is using these profitably. The aim is to produce valves as cost-effectively as possible and at a very high quality level.

Successful audit is a milestone



Franz Hansknecht explains the 700 degree technology. The auditors, left and right of Hans-Jürgen Bracke, are very happy with the professional auditing at HORA.

The successful audit by the Nuclear Technology Committee is a milestone. The Nuclear Technology Committee audit has examined the management system and the associated processes at HORA and has decided that HORA continues to be entitled to supply products to nuclear plants. Certification is also a sign for operators of non-nuclear power plants that HORA operates at a high quality and safety level. Finally, the requirements of a nuclear plant are considerably higher than all other plants.

Innovative product development with professional tools and excellent employees only works because we provide considerable financial resources for this purpose. 100 % of taxed profits remains within the company for investment purposes. Low warranty costs are also a solid basis for success. „We had warranty claims from our customers amounting to less than one percent of turnover in 2008“, said Lothar Brakhage, Design Manager. „That is excellent because values of 2.5 to 3 % are the norm in mechanical engineering. We must focus on maintaining our excellent results of the past in the future and even to improve on them through quality circle meetings and other measures. Satisfied customers are the best starting point for future sales.

PT Design Division reorganised

HORA set up the Product Innovation Department two years ago in order to re-focus on the development of new PT products. It forms a link between Sales and Design.

The Valve Design Department now concentrates more on custom-made design and product standardisation. The organisation of the department into three specific working groups i.e. forged steel steam valves, water valves and standard valves enables further bundling of competences.

Progress with value analysis

Value analysis is an essential method for designers to minimise production costs. HORA has also trained employees in the Design Department in „Value Management“. In subsequent years we have successfully used value analysis for steam conversion valves in the high and low-pressure areas and reduced production costs by around 30%. We have just developed a new high-pressure plug-in version in a cross-department project team. We are using special methods such as the „mor-

phological box“, for example, to systematically search for cost-effective and top-quality solutions. New flow and stress-optimised housings were developed for this series with the aid of our modern simulation tools. The additional design of the housings in ANSI dimensions lengths enables us to approach new markets worldwide. HORA will exhibit the new, completely standardised BR89 series for the first time at the Valve World Expo 2010 in Düsseldorf from 30th November to 2nd December 2010.



The Product Innovation Team (from left.): David Temborius, Andreas Flöttmann, Dierk Joachim, Franz Hansknecht, Stefan Laustroer, Dr. Klaus Mehnert



The current contract situation is co-ordinated daily at the Contract Processing Management Board.

New factory layout creates perfect framework conditions

The current contract situation is co-ordinated daily at the Contract Processing Management Board.

Efficient, on time, cost-effective and better quality. These were the targets for a new type of production in the PT Division. The solution is a manufacturing cell in conjunction with the Contract Centre and Felios control software. The new factory layout creates the necessary framework conditions. The basic idea of the cell concept: the responsibility for what was usually controlled from a central office is now decentralised in the cells. Background: employees are much nearer to the subject and can better assess and carry out internal cell processes. A colleague directly on the spot knows what he is talking about. An autonomous manufacturing cell is able to control itself. It works in accordance with a customer-supplier relationship: every cell has the role of a supplier that supplies internal customers with parts. Teams are continuously trained to achieve the required product quality and on-time deliveries. Every cell is like a self-learning team that works independently with specific resources. Muda is the Japanese word for „waste“. Accordingly, only such activities, for which customers are prepared to pay, are value-adding. All other activities are waste by definition. „Avoidable“ waste must be eliminated immediately and waste, „which is not yet avoidable today“, must be continuously reduced.

Standardised, ergonomic workstations

All ten PT assembly workstations in the new factory building have been equipped with new worktables, lifting trucks and assembly trucks which are all height-adjustable. „All employees can arrange their workstations individually using the electric height adjusters so that they can work in an optimum and healthy manner“, said Andreas Ruthe. And the new machines are particularly user-friendly as well as using the latest technology. „Modern machines are unparalleled“, said Production Manager Roland Liedtke. „The two Gildemeister CTX Gamma 200 TC Turning and Milling Centres are distinguished by a special design and optimum operability.“ The machine control with clear and large screen can be rotated and swivelled in any direction on the Gildemeister machines. It is possible for users to set them ergonomically, in either a sitting or standing position, depending on requirements. The NRW Design Centre presented these machines with the „red dot design award“.

Action Plan 5S is a fixed component of the daily work routine

Workstations should be tidy, clean and clearly laid out with the 5S Action Plan so that searching, long transport paths and waiting times are eliminated, irrespective of uniform drawer arrangements and labelling or specially designed toolholders.

5S stands for sorting, structuring, cleaning, standardisation and self-discipline. The idea is derived from Japanese production concepts that assume that order and



„We can adapt the controls easily and quickly to suit our different body sizes“, said Werner Justus (left) and Peter Buschmeyer.

cleanliness form the basic requirements for the improvement of work processes. Werner Schnitker is manager of the spindle and mixed production cells and is responsible for the 5S Action Plan in his area. „A checklist helps us to recognise and to document problems“, he said. New ideas are put forward and discussed in the manufacturing cell managers' regular meetings. Manfred Krypczyk from PT Production tries out the innovations at a reference workstation. „All workstations should soon be set up in this way“, said Schnitker. „The standards are of course adapted to the respective workstation.“ The advantage is that colleagues can find their way around quickly and easily everywhere.

Werner Schnitker added: „Action Plan 5S is a fixed component of our daily work routine.“ New press for assembling pneumatic actuators Reduction in noise pollution during actuator assembly, quality improvement, as linear assembly is possible with the pressing process, and a time saving of 3.5 minutes per actuator - the new press for assembling pneumatic actuators provides all this. Jan Mohme, Adrian Wüllner and Markus Bliskowski, certified mechanical and electrical engineers at the Carl-Severing Vocational College, have defined the weak spots in PA actuator assembly and indicated potential optimisation in an eight-week project. This was used by a team from the manufacturing control, production management, assembly management, design and process innovation divisions together with the project team to establish and implement the main focus of the work. Stefan Fritze from the process innovation team led the project. The three engineers received top marks for their project work.



Werner Schnitker (left) with the checklist. Manfred Krypczyk shows his drawer arrangement at the 5S reference workstation. The blue mark indicates a missing tool.

Christian Fleiter is Deputy Quality Office Manager



Christian Fleiter is participating in the SXP Program. He will also take part in an intensive further education program on quality assurance. Christian Fleiter has been Deputy Quality Office Manager since the summer and brings with him his know-how and experience from 16 years with HORA.

„The Management Team has consciously decided to strengthen HORA’s quality assurance with such a position. They probably asked me because I have developed a sound and authentic view of our products during the course of the last 16 years“, said Fleiter. He used his initiative to make some suggestions for improvement which led to enormous cost savings.

Christian Fleiter was trained as a technical draughtsman at HORA during the mid 1990s after he was compelled to terminate his mechanical engineering studies for health reasons. The 43 year-old has remained loyal to the company since that time and has worked in a wide variety of activity areas. Upon completion of his training to become a technical draughtsman, he worked in the Design Department before he joined the PT field service. „I travelled the world at that time“, said Fleiter. After five years in the field service he returned to the Design Department in the Forged Steel Section. He now thinks that was a step in the right direction: „Since then I have been able to put a great deal of knowledge about valves into use in the Design Department.“ As Deputy Quality Office Manager he is responsible for quality assurance in metal-cutting production. Gerd Köppke is still in charge of the Welding Technology Complex.



Certified International Welding Engineer Gerd Köppke (right) was awarded the international welding supervisor certificate by the International Institute for Welding (IIW) during the summer. 50 countries are members of the Welding Technology Association. Silvio Schulz, Welding Technology Training Manager at Lehr- und Versuchsanstalt Halle (Halle Educational and Research Establishment), presented him with his certificate. International recognition of our welding competence is a great advantage for the worldwide export of our top-quality valves with heat-resistant weld seams.



Ulrich Brentrup (left) and Lothar Brakhage represent HORA on various specialist committees.



Present on specialist committees

HORA is currently cooperating on more than twelve standards committees, professional associations and research projects. HORA employees – **Ulrich Brentrup** and **Lothar Brakhage**, for example – are actively participating in important developments in our branch as a result of this. Lothar Brakhage is involved in various DIN and DKE engineering standards committees. A standard is currently being produced in engineering standards

committee K232 of Deutsche Kommission Elektrotechnik (German Electrical Engineering Commission) and a working party formed therefrom with representatives from TÜV, power plants operators and valve manufacturers. Mechanical, pneumatic and hydraulic components should be used in safety controls. The new standard should enable us to prove the safe function of our valves to our customers without statistical data.