

NEWS

by **WALDRICH COBURG**

600th Precision Grinding Machine Page 3

The production of 600 precision grinding machines is an exceptional accomplishment.

Longest Double Table-Type Milling Machine Page 4

Waldrich Coburg delivered its longest double table-type milling machine with a total length of 65 m to Konepaja Häkkinen Oy, Finland.

Successful Start-Up

RUAG: The Most Modern and Most Flexible Manufacturing Site of our Time?

The retrofit installation of a host-controlled pallet system helped RUAG Components AG of Altdorf, Switzerland to blaze a new trail. Dr. Viktor Haefeli, managing director of RUAG Components AG, already reported about the factory's reorganisation in our News of Winter 2006. The flooding of RUAG's manufacturing site in August 2005 led to the original consideration of the reorientation.

Today, the system operates around the clock for six to seven days a week and the results are excellent. This was the first time ever that a host-controlled pallet system had been implemented as a retrofit, together with the modification of three installed MultiTec machines. The new system that Waldrich Coburg built exceeds all expectations with its flexibility and performance.

The three MultiTec machines put particular demands on the pallet system. The most critical point was the installation height from

the floor level to the bottom edge of the pallet of only 250 mm. The construction was done without adapting the foundation or making specific cavities. Every necessary function of the double-pallet transport cart and of the loading and buffer stations had to be accommodated within the extremely low installation height. In addition a Waldrich Coburg MasterTec, a Deckel Maho machine and a measuring machine

had to be integrated into the system.

All in all, the system now comprises of 26 pallets of different types and dimensions. Nine rectangular pallets measuring 2.25 x 4 m, three 2 x 3 m rectangular pallets, ten 2.5 m round pallets and four 3 m round pallets. A maximum load of up to 35 t can be allocated to the different machines. Thus a machine with a turning and positioning table can also accommodate a rectangular pallet. Another unique feature is that besides Waldrich Coburg pallets, the system can also transport Maho pallets for use on the Waldrich Coburg - machines.

To use the available space as efficiently as possible for storing the large number of pallets, we had to think of something special. The result was the design of ten double storage stations. The pallet cart transfers the pallet to the storage station, which then moves the pallet into the rear position. The front position of the storage station is



served directly by the pallet cart. With the double pallet cart the system can get to the rear pallet very quickly.

Another challenge was the fact that all the machines have different distances to the pallet cart. The biggest distance is 3.4 m. A load system in the pallet cart bridges the different distances and allows pallet change in the shortest time.

Even a collection device for chips and coolant falling down during transport, has been fitted. There is a precision loading station and a standard loading station for the round pallets and similar stations for the rectangular pallets, outside the workshop. A large automatic rolling gate divides these areas. To reach all changing positions, the pallet cart has to travel more than 80 m.

The system is controlled by a Waldrich Coburg host computer system. Besides the logic to control more than 20 NC-axes, the host computer organizes the workflow of the orders to the machines, assigns the storage stations, prepares the list of tools required and provides the necessary NC-programs.

All the engineers and technicians involved in this project contributed to this successful result, which is probably unique in the world. At the end of September 2007 another machine is going to be integrated into the system from a parallel neighbour workshop. Even this is possible with this pallet system.

Waldrich Coburg - in close cooperation with RUAG Components AG - succeeded in setting new worldwide benchmarks for automated and flexible machining operations with different machine types as well as a measuring machine.



Flexible and computer-controlled pallet systems made by Waldrich Coburg.

by Hubert Becker

EDITORIAL

Great Demand for Waldrich Coburg Machines



In our last issue we reported about 2006, the year with the largest number of orders ever received in our company history. This trend is unbroken and the record high has already been exceeded this year, generating a 30% sales increase for the business year 2008. Our customers are evenly distributed all over the world and over a range of industries. Even for 2009 the order backlog will cover the whole year, and no change is in sight.

Waldrich Coburg is running at full capacity. Our main focus is to meet all contractual commitments to our customers. By the end of this year the head count will have increased to 650, which means that we have created more than 150 interesting new jobs, since the change of ownership. In September we look forward to welcoming 19 new apprentices, to start their career at Waldrich Coburg. This means that the number of apprentices has doubled compared to previous years. After a long time, we are now again offering apprenticeships as an industrial electrical technicians, and have already arranged everything required for this programme.

Moreover, we are investing in the company as never before. A milling machine for small parts, a precision grinding machine for gear cutting and the modernization of our heavy-duty machining centre will help to increase our production capacity. The external renovation of our facilities is nearing completion, and every visitor can see Waldrich Coburg's new look.

The cooperation with Beijing No. 1 is going very well. With our support they have received several orders for the Asian market, which would not have been possible on their own.

We at Waldrich Coburg do our best to be a reliable partner for our customers and to provide machines and service satisfying the highest demands.

Enjoy reading this newsletter!

Hubert Becker

HUMAN RESOURCES

Since the end of last year, we expanded our personnel by 54 employees to 623 people. 43 of them are working in the production, 4 in the design department and 7 in the administration section.

From the 1st of September 2007, 19 young people will get the chance to start their professional career. 17 start their apprenticeship at Waldrich Coburg as industrial apprentices, 3 of them as electricians for industrial engineering and 2 as commercial apprentices.

IMPRESSUM

News by Waldrich Coburg

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Apprenticeship Accomplished

Graduation of Apprentices



The successful apprentices of Waldrich Coburg and their instructors.

Eight apprentices have finished their apprenticeship at Waldrich Coburg with great success. Now they are going to be integrated into various sections of the company.

With the graduation on the 18th of April, six industrial mechanics and two industrial clerks have completed their apprenticeship with excellent results. Good news: all of them

have been taken over for full employment and have thus succeeded in getting a job at Waldrich Coburg.

by Sven Grosch

Comprehensive Package of Activities

Capital Expenditures Considerably Increased

With more than five million Euros Waldrich Coburg spends more money for the plant's infrastructure and the machinery in 2007 than the recent past. This concerns all areas of the company.

The activities, which have already begun, include the complete electrical revamp of the in-house gantry-type portal machining center 20-10 GM 300 NC, built in 1981, with a milling power of 120 kW. This measure will considerably increase the efficiency of the large-parts manufacturing.

Furthermore a new gear grinding machine has been ordered for the workshop to maintain Waldrich

Coburg's self-produced gears at their very high precision standard. At the same time two small milling machines will be installed, one in the small parts machining area and the other in the training workshop. This will enhance the high quality of apprenticeship to an even higher level.

The increased operating output of the company requires additional equipment in all fields of production to cope with the new load situation.

One year earlier than scheduled, the implementation of a new CAD-system takes place for engineering drawings in 3D.

Regarding the outside facilities, the reconstruction of the building for storing and priming the castings, as well as of the buildings connected to it, is in progress. In this context, the crane capacity in this section is considerably increased, thus highly improving material flow and process sequence.

The facade renovations started last year (issue 02/06) have been continued and will be finished this year.

All in all, you can say that this is the largest package of capital expenditures of the recent past.

by Uwe Herold

INTERNAL NOTES

News by Waldrich Coburg

News by Waldrich Coburg is sent at regular intervals to customers and potential buyers all over the world. It is read by our employees and is now available online.

The newspaper was first published in 2004 and was named "That's Waldrich", with an edition of 3750 copies. Now known as "News by Waldrich Coburg", the edition has expanded into 5500 copies.

35 percent are printed in English language, so that customers and potential buyers all over the world

get the chance to read our newspaper.

You can find it also online in the news section on our website. Former issues can be downloaded and an online version of the actual issue is available as well.

Continuative links on keywords provide the possibility to get further information on the articles. Benefit from the interesting offer and inform yourself about Waldrich Coburg.



If you would like to receive our news by e-mail, please send a message to: sven.grosch@waldrich-coburg.de. Then all future exemplars will be sent to you automatically.

by Sven Grosch

An Unprecedented Success Story

The 600th Precision Grinding Machine

As Albert Einstein once said, everything is relative. For conventional mass production,

600 machines might represent one month's output. However, in the heavy machine tool industry,

the production of 600 precision grinding machines is an exceptional accomplishment.

Our 600th precision grinding machine will be supplied to Kashifuji Works Ltd., in Kyoto, Japan – a leading manufacturer of gear hobbing machines for the Asian market. Kashifuji Works Ltd. bought a grinding machine from Waldrich Coburg in 1969, and has since been machining all of its components on this machine.

tics, i.e. high efficiency, infinitely variable speeds, absolutely vibration-free, it is still the core part of the modern Waldrich Coburg precision grinding machines – nowadays of course, incorporating the numerous design developments over the last five decades.

The heyday of grinding machines was between 1960 and 1990. Later, the development of new cutting tools and new production processes caused a decline in the grinding machine market.

The media praised the new technologies with headlines like “milling replaces grinding” because hardened guideways could now be machined with milling tools. But the limits soon became apparent.

Nowadays, both technologies are equally used, but when high workpiece accuracy is required, grinding is still the first selection.

The same is the case with linear guideways. When accuracy of the guideway system is required, grinding is the appropriate machining process for the contact faces where the linear guideways are bolted on.

For more than 38 years it has been providing precision machining in the micron-range – and this in around the clock, multi-shift operation. Is there better proof of the reliability and quality of Waldrich Coburg guideway grinders? In the mid-fifties, Waldrich Coburg started building grinding machines.

At that time, Waldrich Coburg's main product was hydraulically driven planing machines. The machines had already been equipped with grinding attachments many years before, so it was just a small step to the production of a “real” grinding machine.

The best drive for grinding machines proved to be the hydraulic table drive systems for planing machines developed by Waldrich Coburg. Due to its characteris-

by Wolf-D. Höcherich



Waldrich Coburg – grinding machines: A success story since the mid fifties

Cooperation Yields Fruit

Waldrich Coburg and Beijing No.1 Succeed Together

In order to expand the revenues of the worldwide group of companies, Waldrich Coburg's know-how and Beijing No. 1's production facilities are being combined to offer Vertical Turning Machines with table diameter up to 3 m.

In the context of the integration of Waldrich Coburg and Beijing No. 1 revenue growth and expansion of the market share of the worldwide corporate group was one of the most important strategic goals.

Both partners will bring their individual strengths together to offer an even wider product range of machine tools.

It is apparent that the Waldrich Coburg - designed and built Vertical Turning Machines up to 3 m table diameter are competitive regarding technology and accuracy.

The application of such a machine but only makes sense for customers with complex or

high-precision machining jobs because the price level is “above average” for all other applications.

By combining Waldrich Coburg's know-how and the production facilities of Beijing No. 1 the competitive position of this machine has been greatly improved.

The price/performance ratio of the Vertical Turning Machines is now more favourable particularly for applications where the technology is less demanding.

First orders have been placed and are presently in process.

by Uwe Herold

As Good As New

Overhauls and Modernizations

Machines built by Waldrich Coburg live up to their promise but after long service life, overhaul or retrofit might be a good idea.

Milling machines from Coburg can have a service life of more than 30 years. Because of constantly high demands a little additional “care and attention” might be necessary. Waldrich Coburg can offer advice and assistance to customers for such projects. As we do with the selection of new machines, a customer's new requirement for

overhaul will be discussed and technical features will be agreed upon. After thorough check of the actual machine status, a package of necessary steps is suggested. The original accuracies of the machine will be restored, the cutting speeds will be increased, the availability of spare parts and components for the control system will be confirmed and the machining times will be reduced through the higher degree of automation. In cooperation with the DSK Company, our partner in South-Korea for overhauls and moderni-

zations, a gantry-type machining center - built in 1968 - was updated to the latest state-of-the-art. The overhaul included a new 105 kW S20 type milling head, a new crossrail, new spindle units and a new control system. These measures ensure high machine availability, achieving the original machining accuracies and high productivity.

Stefan Ross is your contact for overhauls and modernizations.

by Stefan Ross



Before and after the overhaul: Veterans in top form

PowerTec 4500 AT Handed Over to Enduser

The Longest Waldrich Coburg Table - Type Milling Machine

With two tables each 14 m long and 3.5 m wide, Waldrich Coburg has built its longest double table-type milling machine ever. This machine offered a tremendous challenge to all those involved and resulted in a great success.

Delivered to Konepaja Häkkinen OY, Finland in 2007, this machine is part of the largest medium and large size parts sub-contract machining facility in Scandinavia. With over 25 years experience in precision milling and turning, this is Konepaja Häkkinen's second Waldrich Coburg machine.

The newly delivered PowerTec 4500 AT heavy duty milling machine with a total length of over 65 m, has effectively doubled Konepaja Häkkinen's machining capacity for 4-stroke medium-speed diesel engine blocks.

Globalisation has caused increased demands on the transportation industry worldwide and in turn, has also contributed to Waldrich Coburg's outstanding order intake over the recent past. Diesel engines used in ships, boats and trains, require the highest machining precision, as specified by the original engine designers and licensees - just the job for a Waldrich Coburg machine. The PowerTec from Waldrich Coburg with its high degree of automation includes a fully flexible automatic tool changer for 270 tools, an automatic spindle unit changer, tool breakage detection and advanced machine diagnostic system. For machining the straight and 'V'- type engine blocks the machine has been supplied with 15 specialised spindle units, reducing the number of set-ups and increasing productivity even further. This specification together with the comprehensive ma-

chine enclosure system means that Konepaja Häkkinen OY owns one of the most advanced pieces of capital equipment available to the diesel engine industry. Konepaja Häkkinen OY who is still expanding its

facilities, considers that this new PowerTec milling machine is still not enough... so a third Waldrich Coburg is on the way!

by Nigel Thorneloe



Waldrich Coburg's longest double table-type milling machine.

Application Dept.

New Manager



Peter Schneyer takes over the position vacated by Thomas Grimm, as the Manager of Application Department.

Peter Schneyer has started his new job in September 2007 and is responsible for an important department. The Application Department is responsible for the configuration of a machine and the selection of suitable tools for a customer's machining jobs. In addition they work out time studies and offer programming courses. This is all done in close cooperation with the Engineering Department, the Marketing Department and the customer.

Peter Schneyer is perfectly qualified for just this task by his professional experience. From 1984-1993 Peter Schneyer was employed in Waldrich Coburg's Electrical Engineering Department and Application Department. Since 1994 he worked as freelance engineer and also for Waldrich Coburg - customers all over the world.

We wish Mr. Schneyer much success in his new responsible position.

by Sven Grosch

CIMT & EMO

Trade Shows 2007



This year Waldrich Coburg is present at the most important international machine tool shows.

China - The "boom market" of the past years is one of the most important export countries for Waldrich Coburg. Therefore, the CIMT in Beijing has been the most significant Chinese trade fair for

Waldrich Coburg in 2007 because nearly all of the most important customers and potential buyers attended it. The trade show year 2007 will end with the world's biggest machine tool show - the EMO. This trade fair of the industry will take place from September 17 to 22 in Hannover.

For further information on our presence at trade shows, please refer to our website: www.waldrich-coburg.de

by Sven Grosch

PowerTec HB

Open House

Soon you can have a look at the latest development from Waldrich Coburg.

As reported in our last News, HPT company in Burg, Germany has ordered two Horizontal Spindle PowerTec HBs.

The reasons for deciding on Waldrich Coburg were the optimum cutting behaviour, short machining times and long tool life, good running characteristics and high accuracies as well as a milling spindle and boring spindle completely equipped with hydro-

static bearings. The complete system with two machines running on one X-axis bed is quite impressive.

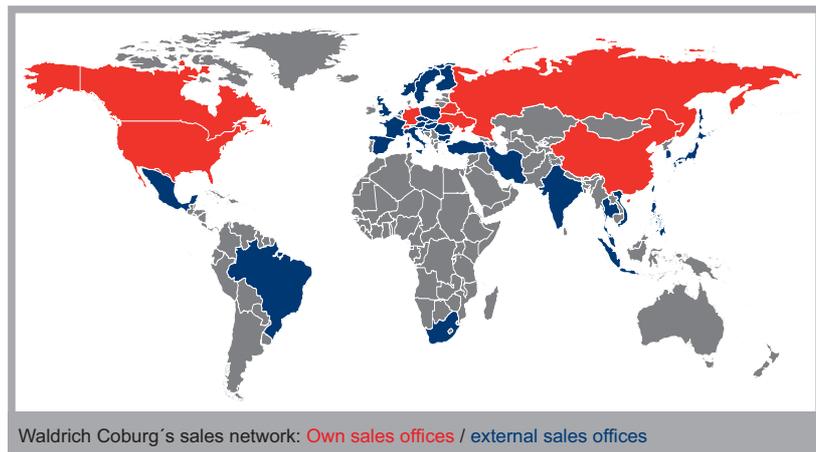
This system will be presented to the public during our Open House exhibition planned for November 2007.

We will give you an official invitation to this event on time. Please visit also our website and click on "News" and "Trade fairs" to see the exact date.

by Matthias Fleischer

Worldwide Sales Network

Top Priority on Sales Representatives



Waldrich Coburg's sales network: Own sales offices / external sales offices

To know the customers' tendencies and demands, you need to be close to them. That is the reason why Waldrich Coburg has sales representatives all over the world.

Sales offices are more important than ever in the course of globalization because they simplify and accelerate communication between customer and supplier.

For this reason, Waldrich Coburg has agencies all over the world since 1986.

Important markets, such as China, Russia and the USA, are served by Waldrich Coburg

branch offices, some of them having their own affiliated service centers.

In other countries there are field representatives and agencies.

The field staff is kept up to date by regular representative meetings held at Waldrich Coburg, and all agencies stay in close contact with the head office in Coburg.

For more information please visit the contact section on our website where you will find an overview of our sales representatives.

by Matthias Fleischer