

today

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Allrounder International

4 Our company

Annual motto 2007: Simply international!

6 Customer report

KWB: Zero faults guaranteed

8 Product

ALLROUNDER GOLDEN EDITION: Global approval

9 Product

ALLROUNDER V: Vertical and flexible

10 Project

GROSS + FROELICH: Project expertise

13 Our company

Spare parts experts meet

14 Customer report

Hayat: Medical technology from Turkey

16 Subsidiary

Blaze of colour in Shenzhen

18 Tech talk

Mould changing made easy



MASTHEAD

today, the ARBURG magazine, Issue 34/2007

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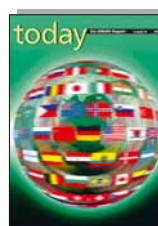
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"Allrounder International" is the new annual motto for 2007 and describes the quality and performance of employees and machines alike.

ARBURG



Dear Readers,

We are moving seamlessly from one important year to the next: Our anniversary, "50 years of ARBURG injection moulding machines" was a complete success worldwide, which we aim to sustain in this K year.

"Allrounder International" is the motto under which we have placed the year 2007. This is intended to highlight our global presence – in every respect. Find out more details in the pages immediately following this editorial.

Of course this motto will also be reflected in all of this year's issues of "today". However, there is nothing remarkable about this as we have always featured a variety of fascinating reports from around the entire ARBURG world.

Whether it is interesting customer reports, technical features or news from around the ARBURG organisation: the present issue contains new exciting examples of the

global topic mix so highly appreciated by our readers.

If you have interesting suggestions or ideas regarding the content you would like to see in "today" in the future, please do not hesitate to contact the editorial team.

In the hope that the pleasing stabilisation of the global economic situation will continue during this K year, we look forward to the trade fair highlight of the plastics world in October and warmly invite you to visit our stand "13 A 13" at the K 2007 in Düsseldorf.

Happy reading!

Juliane Hehl
Managing Partner &
Managing Director Marketing

Simply international

ARBURG has made a running start to the year 2007. With the annual motto "Allrounder International", the Black Forest-based global player emphasises its international approach in terms of organisation, technology, employees and service offerings.

As everyone knows, the world is getting smaller every day. The ARBURG world, on the other hand, is continuously expanding. Its own subsidiaries are now present in all major plastics markets worldwide and its already extensive sales network is constantly being reinforced. The slogan "Allrounder International" thus conveys the promise of know how at the highest level and high-tech services of ARBURG, a global player with strong regional ties.

"An annual motto with a message has become a well-established and successful tradition for us," emphasises the Managing Partner responsible for Marketing, Juliane Hehl. The company's thematic focus during the relevant period is reinforced and all activities are awarded a powerful strategic momentum, commented Hehl.

"And the term 'Allrounder' in no way merely relates to our machines," said Renate Keinath, Managing Partner responsible for Human Resources, "but also to our highly qualified employees who are active

worldwide." Their expertise ensures our customers' success around the globe.

In this regard, the international project business – the development and production of complex production cells – is also of major importance. ARBURG's steadily growing success is evidenced by numerous international references. The requirements are always different, consequently every project represents a new challenge for the internationally proven project department.

ARBURG is opening 2007 with four new machines and all of them reflect the spirit of expansion: at the forefront is the new ALLROUNDER 920 S, which marks an extension of the clamping force range to 5,000 kN at ARBURG.

At the same time, the hydraulic ALLROUNDER 520 U, the vertical ALLROUNDER 275 V and the ALLROUNDER 720 S GOLDEN EDITION were launched on the international market at the end of 2006, each of which represents the largest machine in its respective series.

"The expansion of our international ARBURG network is also one of the cornerstones of our focus this year," said Michael Hehl, Spokesperson for the Management Team, with regard to the intensive development of individual markets. Be it the new subsidiaries in Shenzhen and Indonesia or the state-of-the-art new buildings in the Netherlands and Thailand ARBURG is perfectly equipped for the international demands at hand. Subsidiaries and trading partners ensure comprehensive, individual customer consultation on a worldwide basis. These activities are complemented by

the extensive after-sales business which, in turn, rounds off ARBURG's offering as a complete service provider. Understanding local cultures is a basic prerequisite

Allrounder International



for business success abroad in foreign cultures. An eagerness to look beyond regional horizons is the starting point for international success.

Despite ARBURG's international orien-



nal!

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tation, the company's managing partners and management team have made a firm commitment to Germany as a production location. Michael Hehl, Managing Partner and Spokesman for the Management Team explains this as follows, "Based on thorough strategic analyses,

it makes sense for us to invest in modern production facilities at our headquarters and to carry on developing these on a continuous basis."



The standards for plastic parts used in the automotive sector are extremely stringent. Those who wish to succeed in this market segment must comply with the highest quality standards. Kronacher Werkzeugbau KWB achieves this comprehensively: with system services from their own mould construction department and injection moulding production, with certification according to DIN EN ISO 9001:2000 and DIN EN ISO/TS 16949 and an all-inclusive quality inspection and documentation system.

This has resulted in a cumulative increase in sales of 175 % between 2000 and 2005. KWB works in the higher clamping force range with ALLROUNDERS from ARBURG.

The company was founded in Kronach, Bavaria. Today, following relocation from Bavaria to Neuhaus-Schierschnitz in Thuringia in 1995, moulds and plastic parts are manufactured over 3,600 square metres of floorspace.

Managing Director Dietmar Korb sees the sustained upward trend above all as the result of synergy effects resulting from combining mould construction and injection moulding production under a single roof. "Together with the modernisation measures carried out in terms of increased automation of our production, I anticipate continuous moderate sales increases in line with the market in future. We will also take new technologies on board in order to ensure competitive production on an international level. The fact that this strategy even creates jobs has been clearly demonstrated through the development of KWB according to Steffen Thomas, Commercial and Human Resources Director.

"Some 80 % of our products and components", says Michael Scherbel, Department Manager for Plastics Production, "are destined for the automotive sector, mainly for interior applications. We mainly

produce as a subcontractor for OEMs (Original Equipment Manufacturers). However, our portfolio is also completed by other products, for instance for the electrical, household and toys sectors."

Production quality is assured by an in-house quality department. A broad range of materials is used for plastic parts production, including special plastics with particular visual and quality features as well as highly temperature-resistant plastics. KWB's customers are based primarily in Ger-

solutions for our specific requirements as well as a good and affordable service. The package is just right," comments Michael Scherbel.

With 16 ALLROUNDERS, complemented by several MULTILIFT H robot systems, ARBURG produces more than half



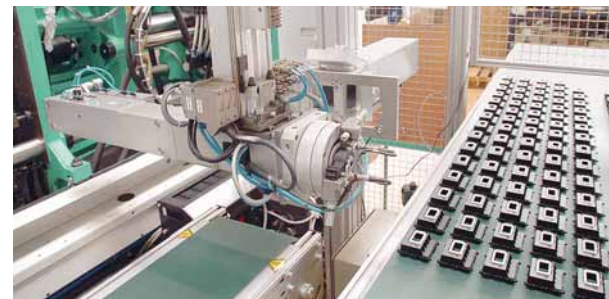
Photos: Kronacher

Zero faults

many, France, Spain and Poland.

One product line the company specialises in are fan blades, the materials for which have a glass fibre content of up to sixty per cent. Hard/soft combinations with modified polyamides in conjunction with SEBS and TPE materials are a further production focus as well as thumbwheels made from several plastics, which are installed in vehicle interiors and backlit. "It is evident from our main product focus," says Michael Scherbel, "that our expertise is primarily concentrated on the production of highly-complex multi-component items with the highest requirements in terms of surface quality and durability."

The cooperation with ARBURG dates back to 1984, when the Kronach-based company built up its plastics production facility. "In addition to the excellent machine and peripheral technologies, with the comprehensive consulting by the field service and the expert support from headquarters, ARBURG has offered us perfect



of KWB's injection moulding machines, which cover a clamping force range from 1,000 to 2,000 kN. All the machines run in three-shift operation, some shifts are even unmanned. Maintenance of the machines and equipment is performed jointly by the ARBURG customer service and Kronacher's internal maintenance department.

During the production of multi-component parts, KWB guarantees its customers "zero faults" as the ALLROUNDERS operate with camera monitoring. Both hard/hard and hard/soft combinations are produced here. A good example for this type of machine-based 100 per-cent control is a housing produced as a hard/soft



guaranteed



**Kronacher Werkzeugbau
Klug GmbH & Co. KG**

maintain a high technical level over the complete running time, which is of course enormously important for our stringent quality standards.

combination, which is checked for quality at every shot.

In terms of material combinations, some unusual solutions have been implemented. One example is a two-component connector for the electronics industry. The special feature here is that the PPS material is encapsulated with a conductive Luvocom in a single process step, allowing time-optimised and cost-effective production.

How do the decision-makers evaluate the ARBURG injection moulding technology? Michael Scherbel says, "All the ALLROUNDERS are equipped with the SELOGICA control system, a 3-axis servo motor handling system, which operates behind special guarding, and conveyor belts, all made by ARBURG. The entire production process can be managed in a highly integrated manner according to the SELOGICA control philosophy. Overall, we have found that the machines are able to

Modern production and quality control over an area of 3,600 square metres with 113 employees in Thuringia.

INFOBOX

Founded: 1954 by Alfred Klug, Paul Riedel and Franz Schneider

Employees: 113

Machine fleet: 29 machines with clamping forces from 250 to 2,000 kN, incl. 16 ALLROUNDERS

Products: High-quality moulds for plastic injection moulding and dies for die casing, the production of single and multi-component injection moulded components made from high-quality and difficult-to-process plastics.

Address: Kronacher Werkzeugbau Klug GmbH & Co. KG, Bahnhofstr. 32 a, D - 96524 Neuhaus-Schierschnitz, www.kc-wzb.de

Global approval

Owing to its outstanding international success, the ALLROUNDER GOLDEN EDITION series has gained a permanent place in the ARBURG product range beyond the anniversary year. The premiere of the ALLROUNDER 720 S GOLDEN EDITION has also since followed.

With the new machine, the ALLROUNDER GOLDEN EDITION machine series now comprises six machine sizes covering a clamping force range from 400 to 3,000 kN.

The high-quality standard equipment, the broad application range and the attractive price/performance ratio are the pillars of the successful machine concept, which is appreciated by customers worldwide.

"Our enthusiasm for the ALLROUNDER GOLDEN EDITION is the result of the technological innovations with regard to the standard equipment", is how Stefano Colombo, Direzione Tecnica of the Italian company Colombo Sergio & Figli, S.r.l., for instance, described the machine series. He also particularly praised the SELOGICA 'direct' control system in this context.

Owing to the high level of satisfaction with the ALLROUNDER 420 C GOLDEN EDITION machines already in operation, he is also certain that, "When replacing

older machines, we are sure to choose machines from this series again."

For British company McLaren Plastics Ltd., the targeted modernisation of their machine fleet was also an important factor. "With the purchase of the two ALLROUNDER 320 C and 470 C GOLDEN EDITION machines, we have significantly upgraded our machine fleet," explains Joint Managing Director Neil McLaren with regard to the strategic investment and also singled out the SELOGICA 'direct' control system with touchscreen, "the user-friendliness of which has impressed the operating personnel," as an outstanding feature.



The ALLROUNDER 720 S GOLDEN EDITION celebrated its premiere at the Fakuma 2006.



INFOBOX

Series: ALLROUNDER GOLDEN EDITION

Sizes: Six machines with clamping forces from 400 to 3,000 kN, each with fixed clamping force/injection unit combinations.

Design: High-quality hydraulic injection moulding machines with defined options for a broad application range at an attractive price

Vertical and flexible

Many customers requested a standard vertical hydraulic machine for the encapsulation of inserts. With the ALLROUNDER V machine series, which can either be fed manually, or integrated into automated production lines, ARBURG has met this need.

After the great success of the smaller ALLROUNDER 175 V with a vertically arranged, fixed clamping unit, the expansion step was a logical consequence and followed soon afterwards. Consequently, the big brother of the ALLROUNDER 275 V was premiered only one year later at the Fakuma 2006.

"With our hydraulic vertical machines, we have tapped a very interesting market", explains Herbert Kraibühler, Managing Director Technology & Engineering at ARBURG, citing the insert application shown in Friedrichshafen as an example: the production of a six-pin connector from glass-fibre reinforced PA 6 for an oxygen sensor used in the automotive industry.

Owing to the clamping unit with integrated C clamps, which is designed as a free-space system, the ALLROUNDER V machines feature an impressive degree of freedom around the mould. Together with their small footprint, they are unre-

servedly suitable for integration into the production process and a variety of automation tasks. Rotary and sliding tables especially designed for this type of application can be integrated. The manual insertion and removal of moulded parts can also be implemented thanks to the ergonomic table heights.

"The vertical machines are also extremely versatile due to the use of injection units of differing sizes and their flexible arrangement – vertically, centrally or horizontally in the mould parting line," says Kraibühler naming a further advantage of the V machines. Moreover, the cylinder modules and injection units can be adapted perfectly to the various injection moulding process and materials, enabling the processing of liquid silicone rubber (LSR), thermosets, elastomers and powder materials. The control technology can be expanded with features such as injection control and the position-regulated screw through to injection process control. The electro-mechanical dosage drive has also been implemented for the ALLROUNDER V.



Insertion of the inserts and removal of the finished moulded parts can also be performed manually with the ALLROUNDER V.

INFOBOX

Series: ALLROUNDER V

Sizes: ALLROUNDER 175 V with clamping force of 125 kN and size 30 and 70 injection units, ALLROUNDER 275 V with clamping force of 250 kN and size 70 and 100 injection units.

Design: Hydraulic vertical machine designed as a free space system for the encapsulation of inserts

A close-up, high-angle photograph of a professional microphone boom arm. The boom arm is dark grey or black with a textured, leather-like finish. It curves from the top left towards the bottom right. Attached to the end of the boom is a circular microphone head, also with a textured, greyish surface. The background is dark and out of focus, showing the legs of a chair and other parts of the studio environment. The lighting is dramatic, highlighting the textures and curves of the microphone.

Project



expertise

The specialists for furniture and chair casters are based near Stuttgart. More precisely, the company GROSS + FROELICH, which was founded in 1879 in Stuttgart has been located in Weil der Stadt since 1997. In family ownership for four generations, the company has produced a large variety of casters for generations of families. The decisive parameters with regard to casters include the necessary load-bearing capacity and the starting, rolling and swivelling resistances which must be overcome.

These stringent quality requirements were also placed upon the ARBURG project department during the task of developing a simple and low-cost solution for inserting the wheel cores.

The so-called "soft" casters from the caster specialists' product range consist of a hard wheel core (PA6) and a polyurethane encapsulation. The wheel core is also produced by GROSS + FROELICH. A two-component machine was not possible for technical reasons relating to the mould. The casters also had to be produced in different colour and material combinations.

The ARBURG project department's goal was to reduce the mould open time and consequently the overall cycle time by means of an economical solution. A highly -autonomous production cell with part separation and positionally correct feed of the pre-moulded parts in accordance with the mould cavity spacing were required, followed by insertion and encapsulation.

The production cell had to be capable



of producing furniture casters with diameters of 50, 60, 65 and 70 millimetres. The robotic system and peripherals therefore had to be designed such as to enable fast and simple mould changes.

The centrepiece of the cell is a ALLROUNDER 520 C 2000-800 with a 16-cavity mould and an integrated MULTILIFTH.

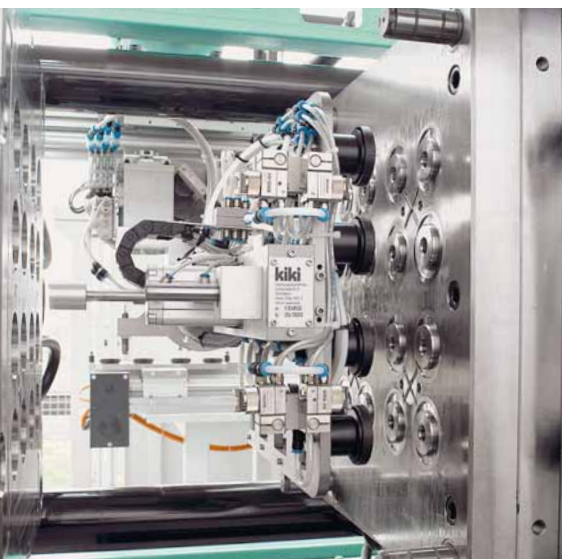
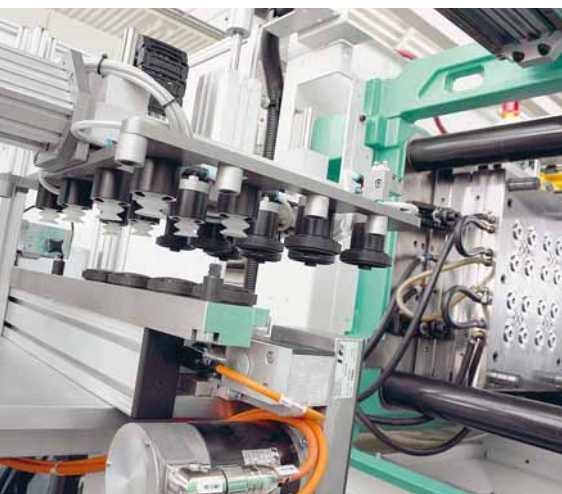
The gripper is designed to accommodate the different caster diameters and features a total of 16 suction cups with clamping rings attached to a pneumatic lifting plate.

The wheel cores are fed via a bin conveyor in a steep-belt design to ensure ergonomic feeding. The inserts are sepa-

rated and aligned in the bowl feeder and then fed to a chute. The wheel cores slide down to a transfer station by the force of gravity. Continuous feed is ensured by means of a sensor.

The parts are aligned by their hubs, which enter into recesses in the receptacle of the transfer station. As soon as all recesses contain insert parts, the receptacle advances to the transfer position. A total of 16 (4x4) insert parts are aligned and received by the robotic system.

The gripper is centred at the separation device and picks up four inserts via the suction cups. The gripper then moves to the open mould and, following a specified



delay, the two mould halves are sprayed with release agent via nozzles mounted on the gripper. The spraying procedure is also programmed via the SELOGICA control system. The gripper lift plate then advances and places the inserts in the mould.

When the mould opens at the end of the cycle, the finished parts are demoulded by the ejector and transported from the injection moulding machine via an integrated conveyor belt.

Thanks to the project solution implemented, mould open time and consequently the overall cycle time is shortened significantly. To date, ARBURG has supplied two of these project systems to GROSS + FROELICH. Project engineer Andreas Armbruster likes to emphasise that "the robotic system was implemented only to the extent necessary in order to achieve an economically interesting concept. This particular challenge was solved very efficiently with the MULTILIFT H." Armbruster also assessed the cooperation with GROSS + FROELICH as very pleasant and trouble-free.

The long-standing caster manufacturer was also highly satisfied with the solution developed jointly with the ARBURG project department. In contrast to previous solutions, considerable savings are now being achieved.

Manfred Wörner, Production Manager for Plastics Injection Moulding at GROSS + FROELICH, is "highly satisfied with the consulting competence and the smooth implementation of the project by ARBURG."

The MULTILIFT H integrated in the autonomous production cell guarantees a considerable and economically valuable reduction in the overall cycle time. The gripper picks up the separated wheel cores by means of 16 suction cups.



INFOBOX

Founded: 1879

Machine fleet: 27 injection moulding machines, incl. 21 ALLROUNDERS

Products: Casters, glides

Contact:

GROSS + FROELICH GmbH & Co. KG
71263 Weil der Stadt, Germany
www.gross-froelich.de



Spare parts experts meet



The annual motto "Allrounder International" also applies to the spare parts specialists at the subsidiaries. In order to refresh their knowledge, exchange experiences and continue to support their customers perfectly in future, 18 specialists from 14 countries met in Lossburg in November 2006.

International service events have a long tradition at ARBURG. "International meetings of this kind are not only important in reaching a common level in technological terms," explains Helmut Heinson, Managing Director Sales, "a global exchange of opinions of this kind brings valuable new insights which all the subsidiaries and therefore all our customers benefit from worldwide."

The event in November 2006 was specially aimed at the persons responsible for spare parts from the subsidiaries around the world. They used the three days in order to gain in-depth information on the current state of ARBURG technology, to freshen up and extend their know-how in the spare parts sector and to exchange ideas with their colleagues.

One main focus were the electrical drives, as the participants will increasingly be confronted with this technology in future due to the global success of the ALLDRIVE electrical machine series. The new machines in the ALLROUNDER range were also presented in detail.

A further focus were plasticising components, a field in which there is tough competition worldwide. The participants were able to experience the high quality of the original ARBURG screws, cylinders and non-return valves at first hand, both in theory and in practice.

The international spare parts experts were also presented the "Active Spare Parts Management" (AEM - Aktive Ersatzteilmanagement) programme, which has already been successfully implemented in Germany. One of its goals is, for instance, the comprehensive consulting of customers and the creation of customised maintenance and wearing parts packages in order to reduce downtime and the associated costs through proactive planning.

Despite their busy schedule, the participants still found time to converse in depth with colleagues and share their experiences. Whether they have worked in spare parts for years or are relative newcomers, all the participants benefited from the international spare parts conference and took important information and ideas home with them.

The participants gained interesting insights into the processing and shipping of spare parts.

hayat®

Medical techn



Photos: hayat

Ten years ago, at a time when many in Europe were still discussing Turkey as a potential economic factor and partner, ARBURG began developing its activities in the region by establishing a subsidiary there. The fact that this was the right step is evidenced not least by the development of interesting co-operations such as the one between Hayat Tibbi Aletler and ARBURG in the medical technology sector.

At the beginning of its activities, the medical technology arm of Hayat Tibbi Aletler was concerned with the production of three-part syringes. Little by little, the specifications in this segment broadened out. Today, Hayat produces a wide variety of syringes, cannulae and intravenous catheters, as well as catheter systems for use in medical practices, but also in the clinical sector. Initially, eleven million syringes were produced annually in a production area covering 800 square metres. Today, some 300 million syringe systems are produced annually. The production area has been expanded to cover 5,000 square metres. Production is in three shifts, 330 days per year, i.e. virtually full capacity. Quality

assurance is awarded the highest priority, as everywhere in the medical technology sector. Hayat is comprehensively certified according to DIN EN ISO 13485, DIN EN ISO 9001, CE, GOST, DIN EN ISO – IEC 17025 as well as TSE. The medical technology products are manufactured in a Class GMP 100.000 clean room environment.

In the syringe production segment, a distinction is made between two-part, three-part, insulin and tuberculin syringes with and without integrated needles. The latter are suitable for minimal filling volumes and allow the use of extremely small needle diameters as well as in the self administering sector. The filling volumes vary between one millilitre for the insulin and tuberculin systems and fifty millilitres. Colour-coded plastic needle hubs facilitate unambiguous size allocation. The injection needles are encapsulated fully automatically using the conventional insert procedure.

As a system supplier, Hayat supplies ready-for-use syringe systems to its customers. This means that the complete syringes as well as the necessary needles and catheters are produced completely in-house and then sterilised and packaged as required. The same applies to the disposable gloves which are produced from latex,

Photo: PHOTODISC



ology from Turkey

quality checked, disinfected and reach the customer sterile packaged in user-friendly containers.

The plastics required for this purpose – mainly PP, PE, latex and latex-free – are tested for quality at the in-house laboratory, as are all the end products. One-hundred per cent monitoring throughout the entire production process is a matter of course. This approach has not only made Hayat into one of the most reliable, but also into one of the largest Turkish manufacturers in the medical technology field. Today, 50 per cent of their products are manufactured for international sale. Besides Europe, their main customers are located primarily in Africa, the Middle East, Russia and the CIS States.

The start of the cooperation between Hayat Tibbi Aletler and ARBURG dates back to 1994. Currently, 14 of the 24 injection moulding machines in the Hayat production halls are ALLROUNDERS, with this number set to increase in the future. The complete machine fleet covers a clamping force range between 500 and 2,000 kN. The ten ALLROUNDER 470 C machines, all with a clamping force of 1,500 kN were integrated in production in 2004. Three are equipped with size 675 injection units, a further seven with size 800 units. The remaining ALLROUNDERS are older machines. All the machines are standard versions, which are predestined for the production of mass articles of this type.

At Hayat, the assessment of the ALLROUNDER injection moulding technology is unanimously positive. The Technical Director, Lütfü Budak, sums it up, "The ALLROUNDER technology supports us in an ideal manner during our day-to-day production tasks. The servo-regulated valve technology and the dual-pump hydraulic system enable fast cycle times,



while reproducibility is maintained at a high level. In addition to the particularly clear and easy-to-operate SELOGICA machine control system this is ensured by the high mould reliability achievable. This positive impression also extends to ARBURG's service activities. The technical support provided by the ARBURG service personnel is exceptional. This has allowed us, for instance, to have our machines periodically checked by our own technicians with the aid of a maintenance schedule in order to ensure the necessary high production quality. We believe that these factors combined will greatly contribute to our maintaining a high level of cooperation with ARBURG in the future."

Photo, left: In a suitable clean room environment, 300 million syringe systems alone are produced annually at Hayat Tibbi Aletler.

Illustration in centre: At Hayat Tibbi Aletler, the ALLROUNDERS run in three-shift operation, 330 days per year.

Photo, right: The ALLROUNDER 470 Cs are standard machines. The parts are collected automatically in containers and then packaged downstream.

INFOBOX

Founded: 1987 by a ten-party consortium in Çorum/TR

Turnover: approx. ten million USD in 2005

Employees: 110

Machine fleet: 24 machines with clamping forces from 500 to 2,000 kN, incl. 14 ALLROUNDERS

Products: shoes, cartons and packaging, medical products ranging from disposable gloves through to high-end items such as disposable syringes, etc.

Contact: Hayat Tibbi Aletler Maden ve Gıda Sa. Ve Tic. A.Ş., Osmancik Yolu 3., Km CORUM/TURKEY, www.hayatsiringa.com



Blaze of

Red and yellow were the prevailing colours at the inauguration of the new ARBURG subsidiary in Shenzhen. Traditionally, these colours symbolise luck and imperial dignity in China. Not the worst colour scheme for the official ceremony at what is now the third ARBURG subsidiary in the “Middle Kingdom”.

Some 120 guests were invited to the inauguration, including high-ranking personalities from the worlds of politics and business as well as numerous customer representatives. Of course the subsidiary managers from Hong Kong, Shanghai and Singapore, Sunny Poon, Toni Tong and David Chan attended in order to wish Max Man and his team all the best for the future in Shenzhen.

Shenzhen, with a population of almost twelve million is located in the greater Hong Kong area and was formerly regarded as the communication bridge between mainland China and Hong Kong. Many electronics and plastics processing companies are locating to the commuter belt around the city. The infrastructure here is excellent. Helmut Heinson, Managing



Director Sales at ARBURG, summarised the management team’s strategic decision concisely, “We have long been highly successful on the Chinese market through our subsidiaries in Hong Kong and Shanghai. However, to achieve even greater customer proximity, we have now opened the Shenzhen subsidiary for the South China region.”

Proximity is decisive, but so is the consistently high quality of the ARBURG services worldwide. In Shenzhen, a fully equipped subsidiary was established with

a floor space of some 500 square metres housing an in-house testing centre for customers, a generous presentation room, an applications technology area, a spare parts store as well as administration.

Eleven highly-qualified employees support Subsidiary Manager Max Man – if necessary, additional service technicians can be drafted in from the Hong Kong subsidiary.

Demand for state-of-the-art, modular, custom-adaptable injection moulding machines is increasing on the Chinese

colour in Shenzhen



The opening ceremony in Shenzhen was designed according to traditional and modern conventions. Managing Director Helmut Heinson and Subsidiary Manager Max Man fielded questions from the press (Photo, top right.)

high-tech market. With the new subsidiary in Shenzhen, ARBURG is strategically expanding its sales network in China in order to meet growing demand.

New subsidiary in Indonesia

In the ARBURG world there has now been an independent subsidiary in Indonesia since 1 January. It is simultaneously the first subsidiary of a European injection moulding machine manufacturer in Indonesia. The fact that ARBURG is the European market leader in the world's largest island state, with a population of around 280 million, finds due recognition with the new subsidiary.

Christianto Adisuhanto, the newly appointed subsidiary manager is visibly proud of his successful market position with more than 70 customers. It is a market which ARBURG had served through



its representative office since 1993. Some 500 ALLROUNDER injection moulding machines have so far been sold in Indonesia. Adisuhanto, who has worked for ARBURG since 2002, has complete trust in his competent five-person strong team.



TECH TALK

Dipl. Ing. (BA) Oliver Schäfer, Technical Information

How can the mould changes on injection moulding machines be performed economically, ergonomically, flexibly and safely without overhead or slinging cranes? This was the subject for much thought on the part of the technicians from ARBURG and Stäubli Connectors. The result was the design and construction of a simple mould-changing vehicle for horizontal mould changing.

The centrepiece is a standard electric lift truck, which is capable of precise manoeuvring and positioning thanks to its electric steering. Its lifting unit also makes mould changing possible on machines of different sizes. At the same time, the moulds can also be put into storage on vertically-arranged shelves. For this purpose, electronics provide for smooth and precise lifting and lowering movements.

However, the universal electric lift truck first becomes a tailor-made solution for mould changing on injection moulding machines with the addition of a separate attachment. This is permanently mounted on the lift truck and consists of two vertically-arranged roller conveyors. In comparison with the customary horizontal systems, two moulds can be accommodated simultaneously thanks to the double-decker arrangement, without increasing the space requirement for manoeuvring. Thus, the new mould can be brought to the injection moulding machine without interrupting production. The mould change can be performed quickly, without renewed manoeuvring. Furthermore, the old mould can be put back into storage during the heating phase of the new mould. Mould changes can be optimally organised and planned. The integration of additional processes

for the optimisation of mould changing is also easily achievable, such as mould heating via a separate preheating station, for example.

Both roller conveyors are equipped with guide strips, in order to laterally align and secure the mould on the roller con-

veyor during the transfer. When the correct transfer height is reached, this can be easily read off by means of suitable markings on the injection moulding machines or on the mould shelves.

As, in the case of horizontal mould changing, a distance to the mould in-

Mould chang



veyor during the transfer. The moulds are prevented from falling during transport by means of a front locking mechanism.

A swivel device allows the roller conveyors to be moved into the required position for the transfer, which facilitates manoeuvring of the mould-changing vehicle. Thus, mould changing is also possible in the most confined of spaces and is, in addition, faster, safer and ultimately more efficient. Conversions to the injection moulding machines for improvement of access are not necessary.

The roller conveyors are additionally equipped with a laser pointer for the pur-

stallation area on the injection moulding machine must be bridged, each roller conveyor is fully extendable via a guide unit. This guide unit is adapted to ARBURG's mechanical rapid-clamping system. In this way, the moulds can be easily pushed from the roller conveyor into the injection moulding machine and can be secured in a few minutes via the rapid-clamping system. For this purpose, indexing the central position of the nozzle and mould clamping are performed by means of four permanently-installed clamping bars.

Standardisation of the clamping platens is generally required for working with



ing made easy



the rapid-clamping system. In comparison with conventional mould changing, mould change times and thus machine down-times can be significantly reduced.

The use of a mould-changing vehicle is appropriate, if no overhead crane or slinging crane is available at the installation location of the injection moulding machine. Thus, it is possible to dispense with the potentially expensive investment and maintenance costs for such fixed production facilities. The simple, intuitive and functional operation of the mould-changing vehicle in conjunction with the ARBURG rapid clamping system, makes mould changing

economical, ergonomic, flexible and safe. "Our experience has shown that we can save up to twenty minutes during a mould change," said Jürgen Schray, Department Manager for Applications Technology at ARBURG.

For optimal mould changes, the mould-changing vehicle features a swivel device (photo, centre) as well as guide units for extending the roller conveyors (photo, right).



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