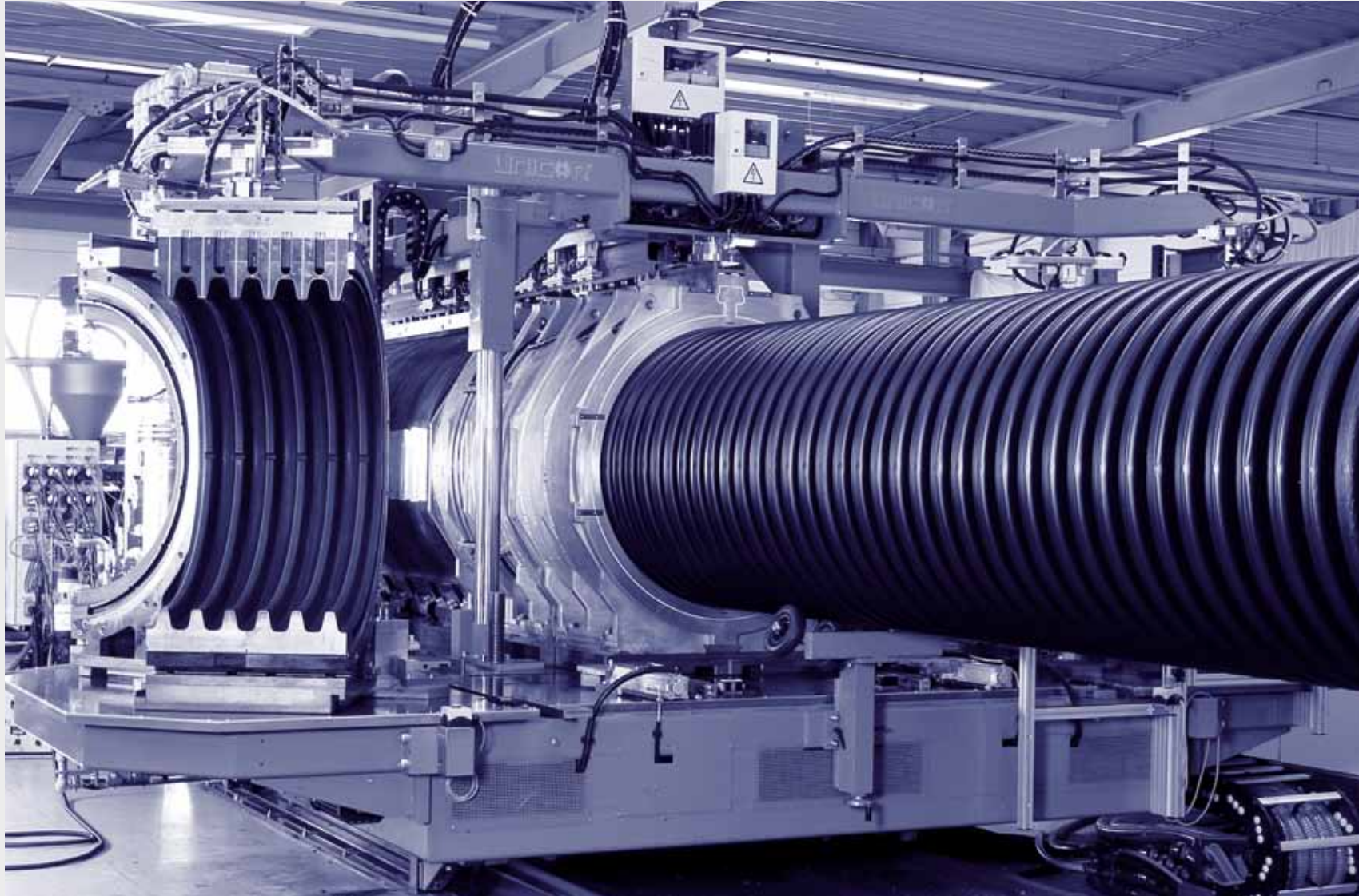




# GAWGROUP

## NEWS FROM THE **imteam** GROUP

### GAW Group growing in the field of plastics technology



**GAWGROUP**  
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**GAW**

**Ki** **KRESTA**  
industries

**osmo**  
membrane systems

**ARTEC**

**thomas**  
SPANNUNG  
Gesellschaft m.b.H.

**ECON**

**UNICOR®**

Edition 2 | 2012  
limited edition

Shortcuts

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### Shortcuts

#### UNICOR corrugators commissioned in Iraq through remote service.

UNICOR corrugators have recently started production of PVC drainage pipes in Iraq by government contract. The machines were purchased by the Iraq government and the Iraq Ministry of Water Management is responsible for the production of pipes. The drainage pipes manufactured on the corrugators have diameters up to 130 mm and are additionally equipped with a filter fleece on a fleece wrapping plant to facilitate water collection and prevent ingress of dirt particles. Since the ongoing hazardous safety situation in Iraq did not allow commissioning on site by the UNICOR technicians, the entire production line was commissioned by a remote maintenance system.

A camera application afforded direct views of all the necessary elements of the machine and the Iraqi technicians and UNICOR experts communicated via a voice link.

#### Reliable granulation of high-tech composites

The manufacture of composites based on different materials can open up possibilities for the use of plastics by far exceeding the scope of pure polymers, especially when anorganic materials such as graphite, ceramics or glass are added to the mix. Such compounds, however, demand special granulation techniques and ECON, after completion of a six-month test phase, managed to convince the German Ensinger Group of companies, a group focusing on the development and manufacture of high-tech materials. With the acquisition of an underwater granulation plant including their patented melt flow path type EUP 50 with an output of 75 kg granulate per hour, Ensinger is now in a position where they can realise many material combinations which were considered impossible in the past, offering the market special materials which many industries need.

### Editorial

We are living in times of fundamental change. Change! A word at first conjuring up difficulties with many of us, leading us to waste our energy in desperate efforts to maintain yesterday's world a little longer. And this is risky and irresponsible in our crucial times of battling for the future, for competitiveness and quality of life. We are all challenged in this respect. It is the responsibility of politics to create optimal framework conditions for achieving social, economic and technical progress. Good entrepreneurs and their managers are tasked with recognising the opportunities change is bringing and to prepare their organisations to exploit these opportunities.

And each person, by exercising his rights, but also his duties, must live for and with the changing times – for the benefit of society as a whole. Because: Should we wish to continue living as we do today, then we must change. This is the mantra which we follow at GAW Group and which regularly throws up the question of what we need to do now, in times of progress, to safeguard long term survival of the company and to honour the responsibility which we as employers have towards our staff and their families. The answers are manifest through the different projects in terms of organisation, staff development and innovation in the individual companies, but also through investment projects such as the current extensions to the GAW Group and Technologies headquarters in Graz and various company acquisitions. A significant step in the expansion of the special plastics engineering division was recently taken with the acquisition of the German UNICOR company, a global market leader in the manufacture of corrugated pipes, and of the ECON company, headquartered in Upper Austria and technology leader for underwater granulation.

Following the takeover of the two companies and with a present staff complement of 1 300, the GAW Group has surpassed the 200 million Euro turnover mark, again increasing its global presence. We have also this year proudly received the "Top Exporter" award of the Federal Economic Chamber. This again confirms that the GAW Group has for many years been counted in the league of the Big Players and most important exporters, occupying a central position in the globalisation of the Austrian economy. But, as before, we will not rest on our laurels but keep looking for improvement – for the benefit of our company, our staff and their families and towards ensuring a sustainably successful and robust economic location

Styria, endeavouring to ensure its population a consistently pleasant quality of life.

Allow me in this vein to wish all our readers a peaceful Christmas with health and a fresh appetite for action in 2013!

Mag. Jochen Pildner-Steinburg

The Editorial team:

Left to right: Marc Pildner-Steinburg/GAW, Alexandra Pichler-Jessenko/PJ, Sigrid Tertinegg/GAW, Nina Pildner-Steinburg/GAW, Christian Stine/GAW, Oliver Koroschetz/GAW, Josef Mohl/GAW

In cooperation with:

Thomas Frühauf/Dispatch THOMAS, Hagen Mosser/ARTEC, Andreas Mühle/GAW, Christian Steiner, Silke Thamerl/KRESTA

#### Editorial team Edition 2 | 2012



www.gaw.at



COMPANY  
REPORTGAW Group  
is growing in the plastic  
technology sector

The family run business has consolidated its position as a broad-based global mechanical engineering and manufacturing plant constructor, following its UNICOR and ECON take-over.

The GAW Group successfully brought two acquisitions in the field of plastics technology to conclusion in recent weeks, broadening its presence in this important industry.

The companies in question are UNICOR GmbH in Haßfurt, Germany, and ECON GmbH in Weißkirchen on the Traun, Austria.

The GAW Group family run business acquired the majority share in both companies, with the existing management also retaining shares in their business. This constellation ensures not only retention of technical/technological know-how in the specific companies, but also their ongoing and sustained development – all under the common roof of a powerful industrial partner.

The two acquisitions represent consistent further progress along the road taken towards development of the plastics technology field

Compared to other products (e.g. smooth plastic, metal or concrete pipes), plastic corrugated pipes have the advantage of both higher rigidity and higher ductility. They are furthermore resistant to many media, require less material and are faster to produce. Against this background, continuing growth is certainly anticipated in this market segment in future years.

A string of international and European patents protect the innovations and technologies, constituting a solid foundation for the future.

UNICOR has a staff complement of about 130 and an average annual turnover of approx. 20 - 25 million Euro. Full mechanical and electrical planning and construction, including manufacture of the machines, are carried out at the company headquarters. Control of the machines is also planned and implemented by UNICOR in-house. Apart from its headquarters in Germany, UNICOR also has a presence worldwide in the form of 25 independent agencies.

UNICOR management is in the hands of the management team Klaus Kaufmann (Managing Director), Hubert Kossner (authorised signatory, Head of R & D) and Gerhard Häfner (authorised signatory, Technical Manager), who have together racked up almost 70 years of 'UNICOR experience'. This team is complemented and supported by Mr. Robert Zschischmann (authorised signatory and Head of Commercial Management) and Mr. Fabian Spitzner (Sales Director). These gentlemen too have many years of experience in the field of mechanical engineering and plastic pipe technology.

#### ECON – the technology leaders in underwater granulation

The ECON machines and plant are used in the production of a variety of plastics such as PET, PA, PP and PE and also in composite plastics and filled special plastics, whereby the product portfolio essentially includes three groups.

The granulation plants ensure that fresh plastic leaving the extruder, hot and in liquid form, freezes and assumes a predefined shape (lenticular, pellets). Depending on the type of plastic, a variety of machine types are available, individually adjusted to match the

requirements of the customers. The product portfolio is complemented by special straining machines and strainer exchangers as well as thermal regeneration systems for strainers and extruders.

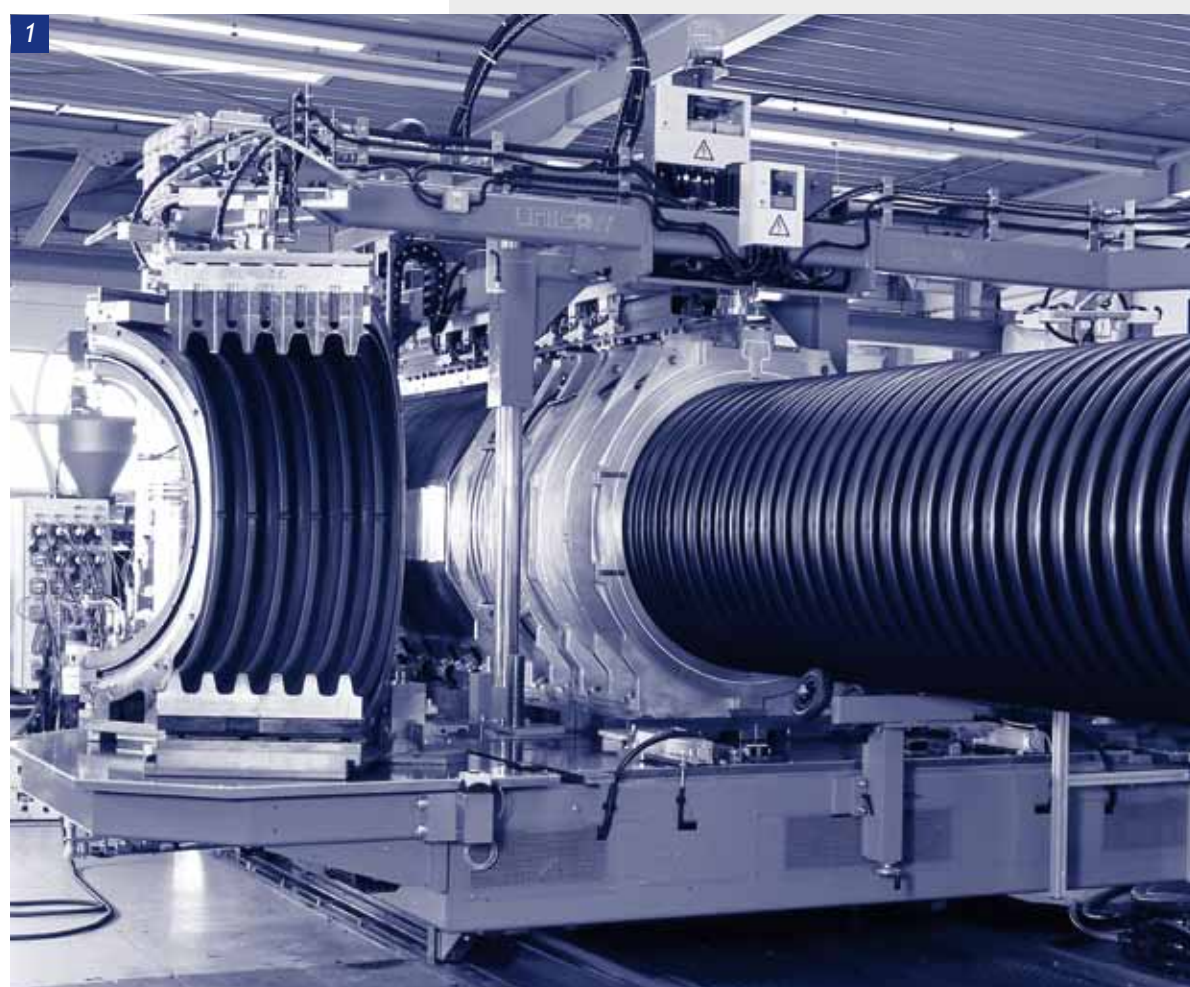
#### Winner of the National Award for Innovation

A team of specialists in the field of plastics machine engineering founded ECON in 1999 and has ever since set new international standards through consistent technical innovation. Technologies and know-how are protected by numerous national and international patents and references worldwide testify to the practical success of today's leader in underwater granulation technology. ECON was awarded the National Award for Innovation in 2007, followed by ECONVIUS in the next year, a special prize by the Austrian Economic Chamber awarded for innovative SMB's.

ECON is generating an annual turnover of 5 million Euro with a staff complement of 30. The company is headquartered in Weißkirchen on the Traun in Upper Austria, where the machines and plant are both designed and fully manufactured. Comprehensive customised experimental programmes may also be conducted at the local technical college. A network of independent sales representatives ensures close contact with international customers.

Company management remains in the capable hands of the founding shareholder Mr. Gerhard Hehenberger, who also remains a shareholder in ECON. Mr. Hehenberger has decades of professional experience in mechanical engineering for the plastics industry; he is also the technical mastermind behind the development of the company to date.

- 1 Corrugator
- 2 process water- & drying system
- 3 Granulation plant



embarked upon with the acquisition of ARTEC Machinery GmbH in 2010, further strengthening the position of the GAW Group as a broad based global mechanical engineering and plant construction company.

#### UNICOR – market leader for corrugated pipe manufacturing machines

UNICOR is engaged in the development and construction of special machines for the production of corrugated pipes with one or multiple walls, counting among the globally leading technology companies in this field.

The corrugators and the associated die head technology are the centrepieces of the product portfolio, i.e. machines designed to produce corrugated plastic pipes and other similar continuous products such as connecting elements for pipes, using various plastic materials such as PE, PP and PVC. The corrugated pipes are used in a variety of applications such as in the automobile industry (cable protection tubes), in medical technology (respiratory tubes), the foodstuffs industry (drinking straws), the building industry (protective tubes for a variety of conductors, drainage pipes, canal and wastewater pipes, ventilation pipes) and also in household machines (pipes for dishwashers, washing machines and vacuum cleaners). UNICOR is often consulted by customers in the design phase for the pipes already in order to find an optimal combination of production plant and finished product, given the multitude of products and materials.

Apart from the corrugators, UNICOR also produces machines for production finishing (so-called downstream equipment). These machines are individually developed to match the specific demands of the manufactured pipe and to ensure the quality of the complete pipe production. These machines include spray belts for cooling, sawing and slotting units and tilt tables, among other.





# ARTEC – new polymer separation system saves energy and resources

## COMPETENCES



How do you describe a technology for which there is no comparison or analogy due to its first ever use in a major technical application? It is best described by zooming in on the actual application and its requirements in the technical process.

### Pilot application in a direct processing plant

The pilot application is in a direct processing plant comprising a polyester (PET) polymerisation plant with four in-line linked foil stretching units and an additional bypass line for processing of any excess quantities in a granulation plant. The four foil stretching units are fed with PET polymer melts via four melt lines, each around 50 meters in length. Each of these supply lines has a melt pump to transport the melt towards slot dies which each feed a connected stretching unit. The process requires that the melt temperature in the slot die remains in a very narrow temperature range of -1°C to +3°C and that, almost more significantly, the spectrum of molecular weight is controlled within an equally tight range of viscosity. In this respect the polymer chains degraded – i.e. shortened – through shearing in the melt pipe regularly affect

the viscosity and the properties of the produced foil unfavourably.

A practical method for production scale separation of the degraded products in the production line was therefore demanded and also found: The basis for implementation of a technical solution is exploitation of the physical fact that the aggregate state of a polymer material and its molecular weight are directly related quantities – the lower the molecular weight, the more does the aggregate state tends towards gaseous. Following this principle, ARTEC designed a special screw unit that does not plasticise but merely feeds the melt through a specially designed rotating screw.

### The new process technology is unlike any conventional filter technology

The melt is pressure relieved in the deeply cut “inlet zone” and fed past two large dimensioned outgassing apertures. These are connected to a powerful, two-stage vacuum pump via a piping system, creating a deep vacuum of between 1 mbar and 0 bar. After outgassing, the high molecular melt fraction reaches the front section of the screw which is designed as a conveying and compression zone and combined with

A new filter technology separates different molecular weight melt fractions and is unlike any conventional filter technology.

*The intrinsic viscosity, measured at the beginning and end of the melt line, serves as the characterising variable for the degassing process. The change of the melt viscosity is an indication of polymer degradation as a result of shear when flowing through the melt infed. The intensity of the degassing plant is adapted to match the viscosity difference.*



two short mixing sections for homogenisation. The melt then proceeds towards the slot die at a pressure up to about 70 bar.

### New polymers based on low molecular polymer fraction

The low molecular polymer fraction suctioned from the melt and arriving from the outgassing zone is sucked through a condensation tank where it condenses against cooled tube spiral, slowly filling the tank. There are two condensation units – as soon as one unit is filled up to the specified maximum level, the other unit is switched in. The filled polymer vessel is then heated up under controlled conditions until the condensate may be pumped off to be used as the base for new polymers.

### Direct processing saves energy and resources

Provided the throughput volumes on the processing side are large enough, direct processing offers enormous potential for energy saving, since it eliminates the intermediate granulate production step. In this application, four foil stretching units with a throughput of 5 tons per hour each are connected to the polymerisation plant. Assuming energy savings of 0.22 kW/kg compared to the detour over granulate and “ultra-drying” as required for foil production, the new system can offer a remarkable reduction of production costs, increasing with every increase of electricity tariffs. Beyond the energy saving potential it also allows monitoring and adjustment of the optimal application molecular weight fraction for the application. Utilisation of resources would be optimal if the low molecular part of the melt could be fed back into the polymerisation plant.

4 The volatile melt fraction reaches a condenser unit via the outgassing system, where it precipitates on cooling spirals. After reaching the maximum level, the polymer condensate in the tank is liquefied again by controlled heating and fed away for further processing. The two condenser units operate alternately.

5 The degassing system is coupled to a two-stage vacuum plant. Stage one comprises a water ring vacuum pump. It is combined with a vacuum booster pump based on a Roots blower.

# GAW delivers more banknote paper production plants to India

## PROJECTS

Within the framework of an order Bank Note Paper Mill India has given to Voith for the supply of two banknote paper machines to Mysore, India, GAW technologies is handling the entire design concept, the delivery of all mechanical equipment and commissioning of the chemicals and pigment processing as well as the work stations for both production lines. With a strainer width of 2 800 mm and an annual production capacity of 6 000 tons, each machine will produce banknote paper with a grammage of 90 g/m<sup>2</sup>.

- The monetary unit in India is the RUPEE; one Rupee has 100 paise.
- Banknotes come in values of 5, 10, 20, 50, 100, 500 and 1 000 Rupees.
- 1 and 2 Rupee banknotes are rare since they are only produced in low quantities.
- The current exchange rate is approx. 70 Rupees for 1 Euro.

GAW technologies received an order to supply the chemicals and pigment processing plant for the new production line of the Indian banknote paper manufacturer SPMCIL in Hoshangabad in 2010 already and, together with the paper machines Bank Note Paper Mill India has now installed, the current demand for banknotes in India can be met.

Since banknote paper must be counterfeit proof and able to withstand extreme stress, the production of banknote paper and therefore the processing of chemicals are extremely demanding.

Commissioning of the GAW plant is scheduled for autumn/winter 2013.

Banknote paper must meet high quality standards, requiring production lines specifically tailored to the specific conditions of a country.

6 Rupee





## PROJECTS

7 Kanzas Works Neumühl

8 GAW ContiMixer

# GAW receives order from KANZAN Spezialpapiere GmbH

The ContiMixer proves itself the best solution in a joint test series with Kanzas in the GAW laboratory.

GAW technologies received an order from KANZAN Spezialpapiere GmbH, the leading European producer of thermal, ink-jet and special paper, for the continuous PM 6 undercoat treatment in the Neumühl Works in Düren (approx. 50 km West of Cologne).

This extension of the coating kitchen will comprise not only the treatment and dispersion of diverse media and additives for the coating, but also provisioning and dosing.

#### The core of the scope of supply – the GAW ContiMixer

The ContiMixer is the core of the scope of supply and offers enormous advantages compared to conventional processes: continuous preparation allows maximum solids content and viscosities to be easily achieved at consistent quality. Significant energy savings are also possible, whilst loss of coating material is avoided during fast change of formulations. Products sensitive to shearing can also be used, with individually adjustable dwell and mixing times.

The GAW Technical Research and Development team in cooperation with KANZAN carried out series of tests in preparation for the current



order, with the end result being that the GAW ContiMixer was judged the technically optimal solution to the customer requirements.

The continuous undercoat preparation system was delivered in October 2012 and commissioning is scheduled for December.



The Kanzas location in Düren manufactures thermal paper and other special products (for application in e.g. labels, tickets and coupons, boarding passes, luggage labels, gambling receipts, fax paper, etc.). KANZAN employs around 300 members of staff and is part of the Oji Paper Group – the largest Japanese paper manufacturer with 22 000 employees and an annual turnover of approx. 12 billion Euro.

#### ContiMixer attracts international attention

Apart from the Kanzas project, the current GAW order book contains more ContiMixers. Customers in Europe and in China deploy the systems in various applications such as application of coating colours to curtain coaters or for film presses and blade coaters for special papers.

Compared to dispersion machines operating as batch processors, the costs of both energy and investment are lower – due, among other, to significantly smaller dosing equipment. Add to this the little space the ContiMixer needs.

The trend towards continuous processes is therefore ongoing and likely to gain in future significance when the demand for continuous high quality in the production process based on smart, highly efficient and energy saving processes increases.

# APP Ningbo places another major order with GAW

Economy and environmental protection through recycling of coating residuals.

Another major order was placed with GAW technologies by Ningbo Asia Pulp & Paper Co. Ltd (NAPP). After successful commissioning of the first paperboard machine (BM6) in 2003, for which GAW supplied the wet-GCC plant, the coating kitchen, wet end and Deinking chemicals preparation and the working stations, NAPP grew into one of the largest manufacturers of premium packaging cartons. Following its current investment in the new BM4 paperboard machine, NAPP is now on track towards becoming the globally leading company in this segment. GAW will supply the coating kitchen, including complete engineering, assembly supervision, commissioning and training, for the new production line with a capacity of 600 000 tonnes annually.

#### 100% recirculation of coating unit waste water

The supply of a treatment system for coating colour waste water is part of the scope of delivery. Dewatering and downstream contaminant treatment designed to restore the coating colour residues to the purity required for feedback to the coating process are at the core of the plant, ensuring verifiable savings in the cost of raw materials, energy, transport and disposal – without sacrificing quality.

Ningbo Asia Pulp & Paper Co. Ltd, together with its subsidiary Ningbo Zhonghua Paper in Ningbo, Zhejiang Province, China, constitutes the key production location of the APP Group, one of the globally leading pulp and paper companies.

*Apart from the option of collecting coating colour residues from different coating units with different coating formulations and recycling these in a single plant before feeding back to different coating units, the popular GAW system boasts a number of further advantages:*

- 100% recovery rate
- Cost savings on flocculants
- Treatment of coating colour waste water without additives
- No contaminants in the recycled coating colour residuals
- Long service life



PROJECTS

# GAW demonstrates its strength in conveyor plant engineering

GAW, with a full order book for 2012, once again provided proof of their competency as prime contractor for conveyor plant engineering with orders by the Volkswagen Corporation for the VW utility vehicles Works Hanover, Audi Brussels, Neckarsulm and Ingolstadt.

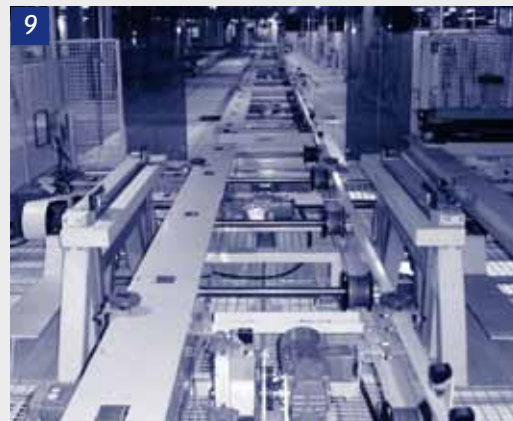
The “C-suspension” projects at Audi Brussels and the “plastic link conveyor” and “conveyor and screw technology” orders for VW Hanover were successfully concluded in early autumn of this year. And in August 2012, the “extension of the KTL [cataphoretic painting] finish & W-store” major project and integration of the Amarok into the KTL finish line Porsche Panamera also successfully started into a new production phase as planned in the paint shop at Volkswagen utility vehicles Hanover.

### Cataphoretic painting skid conveyor technology for Magna Steyr

GAW has been engaged with an order for the reconstruction of a skid conveyor in the paint shop department at Magna Steyr in Graz since end of September. In order to increase the efficiency of the production process, the conveyor circulation of the KTL carriages will be reduced from the start of the new year.

Apart from the standard components such as roller tables, lift tables etc., the delivery also includes special conveyor technology elements such as a skid changing station integrated into the cross-chain conveyor capable of handling up to seven different vehicle types/models and also a skid arresting station.

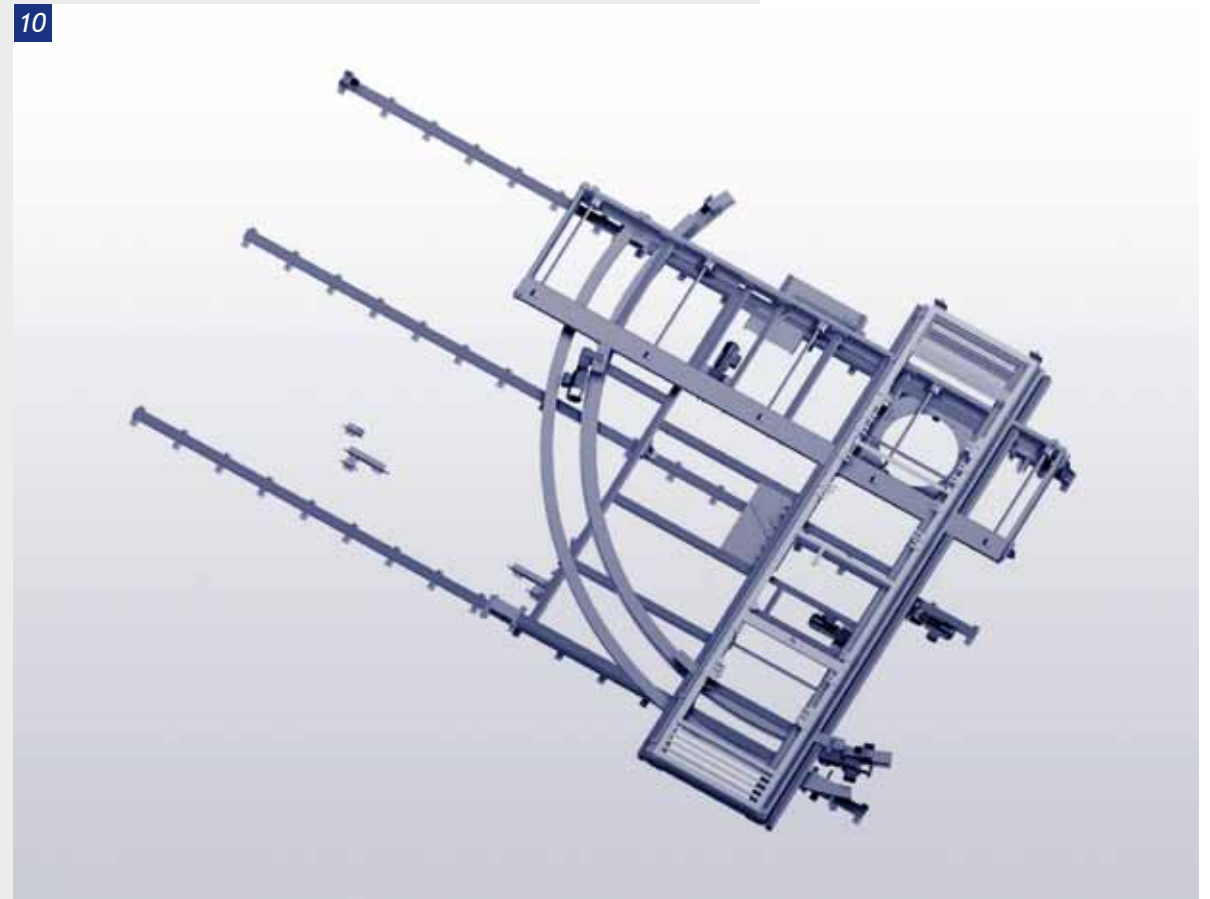
The implementation and reconstruction phase is extremely short and makes very high demands on the GAW Automotive team. To ensure start of production on 7 January, 2013, the plant must be installed and ready by the end of December 2012.



Both the VW Corporation and Magna Steyr regularly call on GAW competency for their conveyor systems.

9 Skid conveying technology roller bed

10 Cross-slide swivel table, project KTL carriage circulation at Magna Steyr



# OSMO delivers demineralised water treatment plant for German smelter

OSMO received an order from a well-known German smelter mid-2012 for the supply of an additional VE<sup>1</sup> water treatment plant for the production of boiler feed water and treatment of condensate.

The existing treatment plant thus far provided salt-free make-up water, but this was no longer satisfactory for TRD<sup>2</sup> and VGB<sup>3</sup> quality demands of the new steam turbine to be installed.

### Process selection based on customer demands

An initial order was awarded for planning and to establish the economy of the different water treatment plants. The evaluation included both classic ion-exchange technologies and modern membrane based processes. Based on location prerequisites, infrastructure and the low volume of waste water, a decision was made in favour of conventional plant technology, applying the procedures below.

De-carbonisation of the untreated water (drinking water) is based on a layer bed cation exchanger with the resin layered bed separated into weak and strongly acidic cation exchangers to match the untreated water quality. The cation exchanger is regenerated<sup>4</sup> using the so-called “split-flow process”. Downstream thermal degassing is through a trickle degasser. A separate cation exchanger is used for the treatment of condensate.

The full demineralisation plant is supplemented by an anion exchange system (analogous to the layer bed cation exchanger) and a mixed bed exchanger as polishing filter.

### Resource preservation

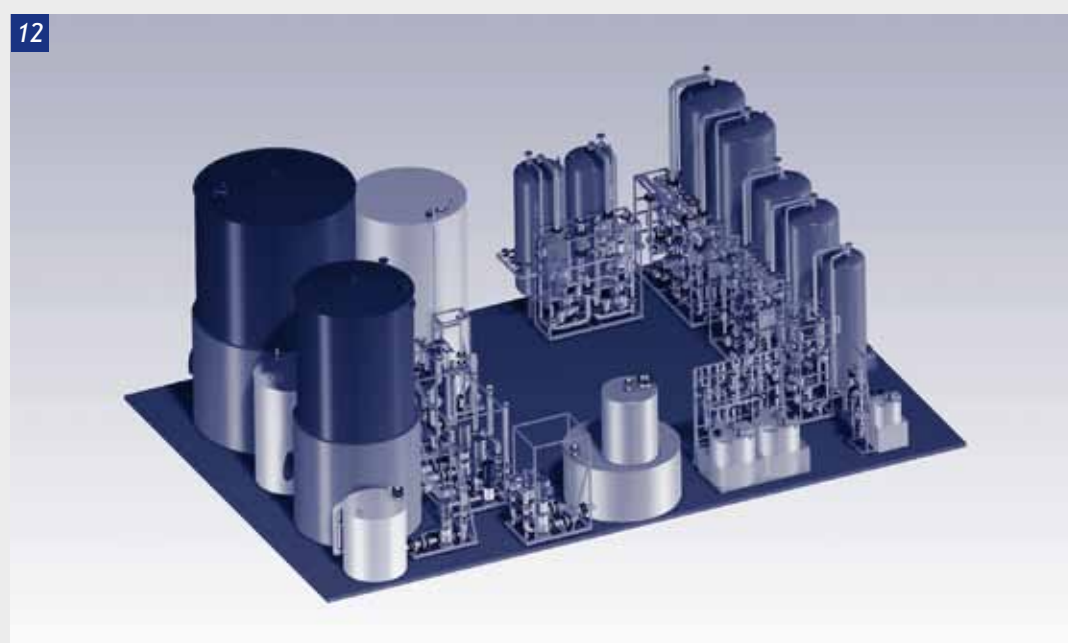
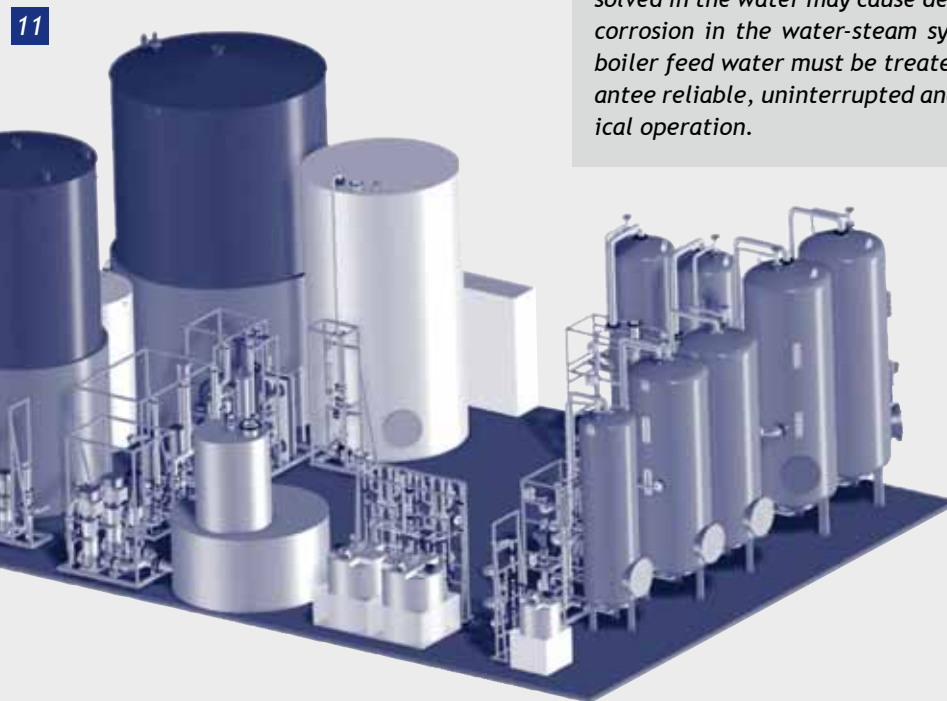
The plant as designed by OSMO has an overall output of 60 m<sup>3</sup>/h and produces a deionisation quality with a conductivity of < 0.2 µS/cm. The design of the treatment plant and the process deployed allow the resources used, such as regeneration chemicals, water and energy, to be minimised and also ensures high availability due to redundancies in the design.

An OSMO designed water deionisation plant has been in successful operation in a group company of the customer for more than 10 years. This order once again confirms that the constantly high quality of OSMO's performance earns sustained customer appreciation. Commissioning is scheduled for the first quarter of 2013.

The design of the treatment plant and the chosen process technology economises the resources used.

### Boiler feed water treatment

Steam boiler plants use the water or steam as carriers of energy and heat – both for process steam and for the generation of electrical power in steam turbines. The water used for feeding the steam generator is termed boiler feed water and comprises make-up water and condensate. Since the various gases and minerals dissolved in the water may cause deposits and corrosion in the water-steam system, the boiler feed water must be treated to guarantee reliable, uninterrupted and economical operation.



1 VE = full demineralisation

2 TRD = Technical regulations for steam boilers

3 VGB = European technical association for generation of electrical power and heat

11 Pump station

12 Columns

4 Ion exchangers only work whilst easy to displace ions exist on the exchanger. The exchange is also termed loading of the exchanger. A fully loaded ion exchanger must be regenerated. Regeneration means replacing the charged ions with the previous ions again. This is based on the principle that the ion exchange process is reversible, as are most chemical reactions.



## FOCUS ON

**13** Economic Chamber President Christoph Leitl presents the Export award to Marc Pildner-Steinburg.

## Top award for GAW Group

GAW Group was honoured as Top Exporter.

**G**AW Group Pildner-Steinburg Holding has been awarded the “Top Exporter” prize by the Austrian Economic Chamber for its outstanding achievements in the Austrian exporting industry. This again confirms that the GAW Group ranks in the league of the Big Players and most important exporters, occupying a salient position in the globalisation of the Austrian economy.

### GAW Group crosses boundaries

To achieve top performance in foreign trade, boundaries must be crossed in every respect. Being successful requires focus on your company's strengths, highly qualified staff, sufficient capital resources and, last not least, patience. The GAW Group was awarded the Export prize in 2002 already. The GAW Group's contribution to the success of the Austrian export trade has increased significantly since then, with the export ratio increasing from 80% to 90%, the turnover from 72 million Euro to 200 million Euro and the staff complement from 500 to 1 300.

### Growth engine foreign trade

Foreign trade in principle is a highly significant economic engine in a small and open national economy such as Austria's; virtually every second Euro of our prosperity is generated from the export of industrial products and services.



Especially Styria is a traditional export region where every second job depends directly on the success of local companies abroad. Thanks mainly to the presence of Styrian industrial

companies in global growth regions, Styria was able to recover from the crisis fairly quickly; work and prosperity cannot be assured by the inland market alone.

## Accepting responsibility for the future – investing in the Graz location

Extensions to the GAW office building started in autumn.

“**E**xpressing GAW's ongoing organic growth and its road to success over the decades” – the project demands may certainly be described as challenging and the planning process was equally intensive. The time had finally come in September this year and a start was made on construction work.

### Functional integration of old and new

Building has been progressing well since then and the project dimensions were soon evident. Construction of the framework was particularly impressive, since 12 support pillars were constructed on the left and right of the production hall adjacent to the office

building, to carry the floor for the 2-storey addition.

The existing building will furthermore also be renovated in the course of the project, in order to visually but especially also functionally integrate this into the new structure. 883 additional square meters of floor space will be available after completion.

Ever since its founding in 1951, GAW's declared goal has been to ensure the company's long-term survival, to retain the independence of the family run business through adequate liquidity and profitable growth and to maintain existing and create new jobs.

Apart from the hall erected last year which houses, among other, a modern test laboratory, this investment in extensions to the building signals the ongoing commitment to the location and to the growth strategy.

### With the sun's energy

The installation of a photovoltaic system on the roof of a production hall commenced simultaneously with the building activities. A total of 400 modules were installed which, at an output of 100 kW<sup>p</sup>, will convert light to electrical energy to feed into the national grid. The photovoltaic system was planned in cooperation with GAWEnergy GmbH, headquartered in Munich, Germany.

**5** kWp: The Kilowatt peak unit stands for peak output, indicating the output of a solar module in full sun (under defined standard test conditions).

**14** A bridge construction creates the floor for building extensions at GAW.





# GAW at the Paper Middle East

The Paper Middle East trade fair ranks among the most important events of the pulp, paper, tissue and carton industries in the Middle East and North Africa (MENA). The trade fair this year took place in Cairo at the beginning of November.

Egypt has a well-established paper and packaging industry and its strategic location makes it a gateway to the Middle East and the African markets. The Paper Middle East attracts visitors from virtually all leading manufacturers in the region, including also representatives from the Middle East Paper Company (MEPCO)/Saudi Arabia – the largest producer of container board in the Middle East.

Major investments to increase capacities are planned throughout the entire MENA region, both currently and for future years – towards meeting increasing local demand and also to boost exports. Egypt will in this respect be the region's main player – the forecast growth of demand for paper and carton products for the coming years is estimated between 700 000 to 800 000 tonnes per annum.



15

Egypt, gateway to the Middle East, venue for the important Paper Middle East trade fair.

## FOCUS ON

15 Trade fair Middle East, left to right: Samy Safran / CEO MEPCO and Raj Venugopal / GAW

# Hamburg – gateway to the world



16

The good relations Spedition Thomas has fostered with the Geodis-Wilson forwarding company as well as K.O.G., a member of the Heavy Lift Group and a project forwarding specialist, allowed me to complete several weeks of practical training in Hamburg during which I gained in-depth knowledge of processes of global transportation of all types of goods – irrespective whether import or export, whether complete containers, groupage freight or conventional cargo.

10 million containers per year

Hamburg harbour, covering an area of approx. 7 200 ha, is Germany's largest harbour and the second largest in Europe after Rotterdam, ranking in the top 20 worldwide. And another 1 000 ha have furthermore been "pre-booked" to

Thomas Frühauf used his practical training at Hamburg harbour to expand his knowledge in ocean freight. A travel report.

enable further expansion of this harbour on the Elbe River. About 10 million containers are also handled annually in addition to conventional bulk cargo and motor vehicles.

I experienced the workings of the large packaging firms at close quarters and witnessed the negotiations on container ships between harbour authorities, the shipping company and the ship's captain, where the type of loading, weight distribution and expected draught of the ship were the subject of much haggling. I also witnessed how fully automatic container chassis – so-called AGVs – and container bridges load and unload container ships independently under automatic control.

### Hospitality writ large

Hamburg harbour has from times immemorial been defined not only geographically and architecturally, but also culturally by its many trading firms – shaping it into a rich and yet human city. Togetherness is writ large here, irrespective of nationality, colour of skin, poor or rich. Contrary to the "coolness" the North Germans are often accused of, Hamburg exudes friendliness, almost familiarity of interaction between locals and foreigners alike.

I got to know and love Hamburg as a tourist before, but this time I saw the city from another point of view and gained new experiences which will certainly in future also benefit our customers and partners.



17

16 Loading in Hamburg harbour

17 Hamburg is characterised by river and ocean. With its 2 500 bridges, Hamburg has more bridges than Amsterdam, Venice and London together.

# Transnational training and continuing education

The annual summer camps at KRESTA industries are part of the comprehensive training programme for apprentices. In addition to their education at the vocational school, the trainees also participate in 36 days for continuing education during their training period.

The curriculum is constructive: The first apprenticeship year focuses on personal strengths, the second deals with team and team roles and the third year serves to assist the young people in their orientation towards a future career.

### Academy knowledge

The Wolfsberg KAI – Knowledge Academy International – this year conducted the summer camp for the first time. The KAI programme addresses companies from many sectors and of all sizes in the entire German-speaking region.

### Contacts for the future

Angela Kramer, Head of Personnel at KRESTA, and Wolfgang Sattler, Head of Development at KAI, concisely describe the background to the additional training programme.

At the beginning of August, the new Wolfsberg Knowledge Academy KAI – Knowledge Academy International – held its first summer camp for trainees from the KRESTA group of companies.

It is important to both that knowledge transfer based on experience and know-how should be the priority. Interaction and personal contact between participants is high on the agenda. Projects and leisure activities are designed to build networks and friendships with the aim of facilitating future cooperation in joint ventures. Apart from training apprentices and specialists, the KAI Knowledge Academy also offers interesting programmes for future and present leaders.

Info at: [www.knowledge-academy.at](http://www.knowledge-academy.at)



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18 KAI Knowledge Academy



## FOCUS ON

19 Innovation in progress behind monastery walls

## ARTEC – Innovation Workshop

Technical developments, constantly changing international competitive conditions and increasingly complex customer demands pose ever increasing challenges to organisations and it is indisputable that the competitiveness of companies is crucially dependent on their ability to innovate.

The entire innovation process was analysed in a SWOT analysis lasting two very intensive days:

With the ultimate objective of developing practical and marketable products with high customer acceptance in mind, the status quo was first analysed in terms of current strengths and weaknesses but also including the development of novel, even utopian ideas.

A very ambitious total package of innovations was assembled with the dedicated commitment of all the colleagues, including clear definitions of objectives and schedules for implementation.

Intensive work for innovative customised solutions in St. Florian's Priory.



## KVP network Carinthia

KVP network Carinthia (KVP = ongoing improvement process) – this is the name of the initiative which by now includes over 40 companies in all of Carinthia, including KRESTA. The objective of this network is to jointly increase the product, process and service quality in the companies to mutual benefit.

The KVP philosophy is based on the Japanese approaches, placing people at the centre of small and ongoing steps of improvement. KRESTA has completed the Lean Production and Lean Office courses already. KRESTA has since then been conducting intensive KVP projects towards ongoing improvement

Chaos is the best reason to finally create order.

and advancement of production and office processes.

The first Lean Office project was “5S at the workplace” in the transport department and the integration of transport requests in the existing ERP system.

## Health and Fitness day at GAW

Active health care is the best and easiest way of ensuring health and well-being, beginning with regular preventive examinations. And it was time in October again for the annual “Health and Fitness” day, introduced at GAW many years ago, when the mobile medical team of the Styrian Chamber of Labour arrived on the premises with modern diagnostic equipment and conducted an extensive programme of tests, starting with blood pressure and blood sugar via lung function to cholesterol, body fat measurements, sight and hearing – time and again enthusiastically attended by many of the GAW staff.

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The health care programme at GAW is very popular.

## People

## IMPRINT

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Left to right: Walter Pfeifer,  
Daniel Rusnarczyk, Franz Stranzl

### Daniel Rusnarczyk GAW PCS / Engineering

Daniel is a College of Engineering graduate and CAD designer at GAW PCS in Chicago and spent two weeks in Graz in October, for knowledge transfer. The specific objective was planning for an ongoing project for piping for a DF Curtain Coater, whereby the many years of experience of the Graz team were systematically passed on to Daniel.

A wide-ranging cultural and leisure time programme was naturally part and parcel and here we would like to thank the Graz Foundation and piping planning team Franz Stranzl, Walter Pfeifer and Dietfried Gotwald for their extensive support.

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### Daniel Gangl Electrical planning and commissioning

Daniel Gangl is a graduate of the HTL for Electrical Engineering in Kapfenberg and is responsible at GAW for electrical systems planning and commissioning of plant worldwide. Based on his many years of practical experience, he is considered a specialist especially in the field of PCS7 programming.

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### Hagen Mosser ARTEC / Sales Manager

Hagen Mosser has been with ARTEC since June 2012 and is in charge of international sales and market development. He can look back on more than 15 years of experience in international sales of capital goods in the field of mechanical engineering and plant construction. He gained experience over these years in both the plastics and metal industries and acquired extensive marketing expertise in many positions.

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