



The perfect PU foam gasket

Automatic production
of large quantities

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Did you know?

In 1937, after years of extensive research, the chemical scientist Otto Bayer (1902 – 1982) filed a patent application for a completely new type of material that would revolutionise numerous industries: polyurethane (PU). Polyurethane has been commercially available since 1941, but it was only after the Second World War that consumption increased sharply.

Polyurethane is now one of the primary materials that can be processed with metering and mixing systems from DOPAG. In single or dual-component form, it can be used as an adhesive and sealant or as a potting compound for a wide range of applications, for example for bonding in the automotive industry, for sealing and potting of housings and electronic assemblies, or in the production of household appliances. PU is easy to process, offers very good adhesion and has high chemical resistance. Polyurethane can be processed with eldomix or variomix from DOPAG. PU gaskets can be produced with dynamicLine. This enables the material to be mixed dynamically. The gasket then foams up and hardens at room temperature. PU gaskets are found in applications such as lights and speakers (see photo) in cars or in door seals in control cabinets.

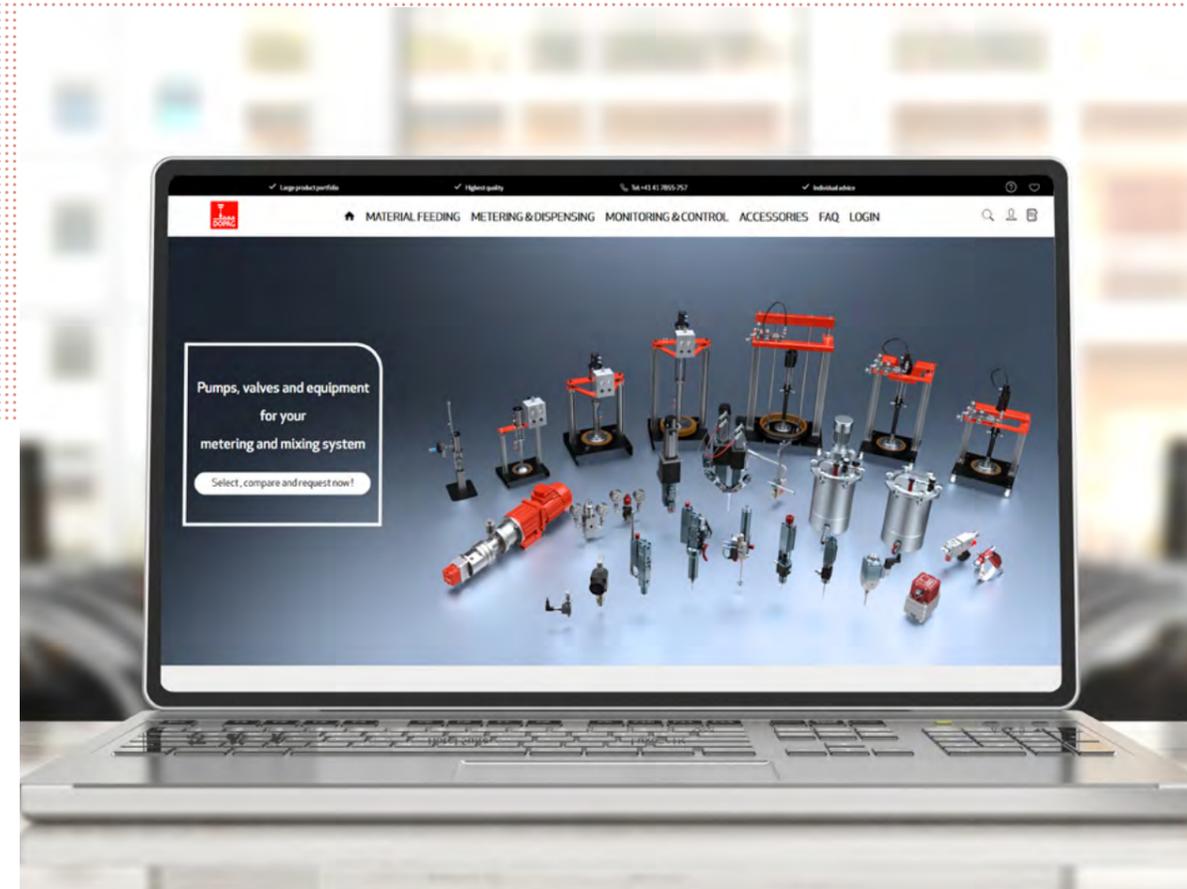
Incidentally, when Otto Bayer invented polyurethane, he was working for the Bayer Group in Leverkusen, but it is purely coincidental that the two names are the same.

Legal notice

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NEW

Select, compare, send a request online

Our online product portal offers a wide range
of pumps and valves

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The rapid availability of components, whether for new systems or spare parts, is essential for successful production. The DOPAG online product portal now contains all of our metering components and pumps. In addition to product information and technical data, you can find STEP files and lots more. You can also compare products online and send requests. With original components from DOPAG, you can ensure reliable and stable processes in your daily production operations.

Enjoy the benefits now

Are you an operator of metering and mixing systems, a system integrator or a supplier of dispensing technology? Then our product portal is perfect for you.

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In our product portal, you can find all the relevant information about a wide range of products – pumps, metering valves, dispensing valves and accessories. You can access technical data, STEP files or service literature online whenever and wherever you need them on the product portal and request items directly. You can also select products and compare them directly.

Individual solutions

The modular structure of the product range enables an individual solution to be developed that meets all the requirements for the application. Single-component and dual-component lubricants, adhesives, sealants and potting compounds with different viscosities and properties can be processed. From various material supply systems and metering technologies

and a wide range of valve types to process monitoring systems, we offer everything from a single source. Different variants of individual products guarantee maximum flexibility.

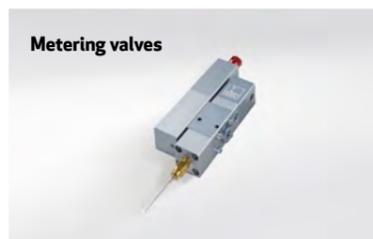
Global availability

Thanks to our extensive stocks, we can supply urgently needed spare parts as well as components for new metering systems at short notice. Our global distribution network ensures consistent production standards and fast availability for international companies throughout the world.

Our product range



Drum and barrel pumps



Metering valves



Dispensing valves



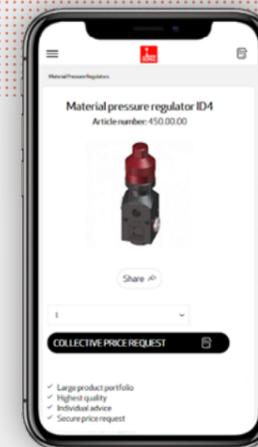
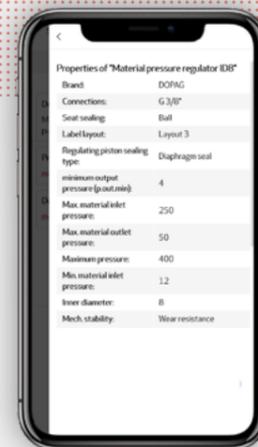
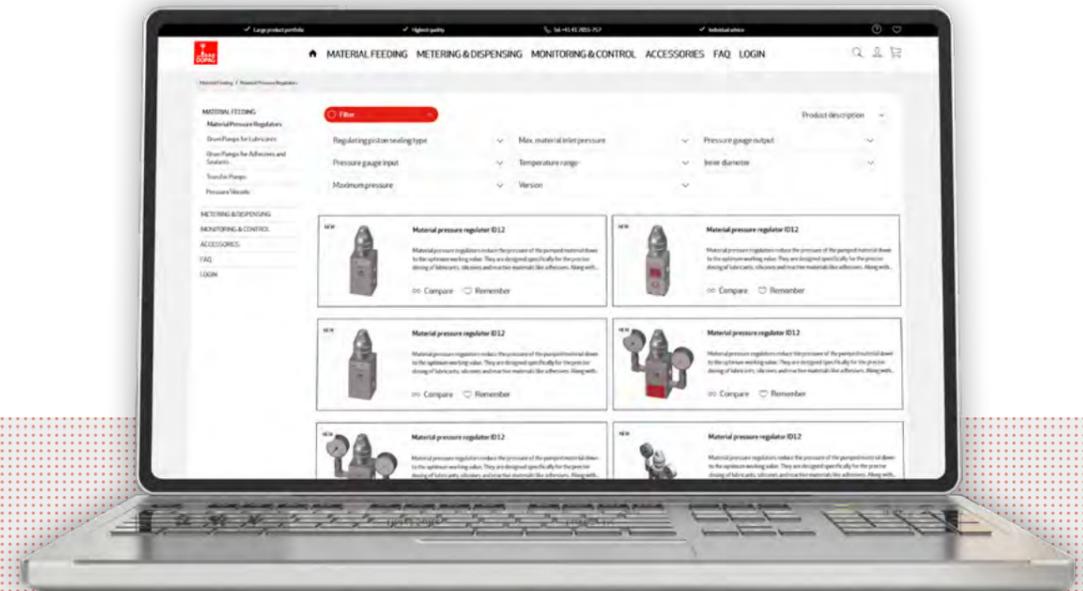
Metering technologies



Components for monitoring and control



About DOPAG product portal



Functions and contents

- Comprehensive filter function for product selection
- Compare products
- STEP files
- Technical data
- Service literature
- Technical drawings



Individual support



Large product range



Maximum product quality



Fast delivery

APPLICATION CASE



Making clever use of the sun

Precise bonding for the world's first retractable solar roof

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Parking spaces, logistics areas and wastewater treatment plants require a lot of space. Why not make efficient use of this space? This is what the Swiss start-up dhp technology thought when it constructed the world's first retractable solar roof. The individual modules are manufactured with dispensing technology from DOPAG.

At the car park for Kronberg cable car system in the Swiss canton of Appenzell Innerrhoden, visitors have a pleasant surprise in store. They can park in the shade and charge their electric vehicles at the same time. The 4,000 m² car park is covered by a retractable solar roof. This provides power to the Kronberg cable car system, which climbs from the valley to the mountain station situated at approximately 1,600 metres. During stormy weather, hail or snowfall, the solar modules fold up by themselves and are stored in long garages. The world's first patented retractable solar roof was developed under the name Horizon by dhp technology AG. The car park roofing is one of the latest projects from

the young Swiss company based in Zizers in the canton of Graubünden. This all began with the roofing of wastewater treatment plants. In 2018, the first model went into operation in the wastewater treatment plant for the town of Chur. It was the first installation of its kind in the world. With an area of 6,400 m², the retractable solar roof covers 20 per cent of the electricity demands of the energy-intensive wastewater treatment plant. The benefit of this is that the entire system remains fully accessible, and the retractable solar roof provides shade during necessary maintenance work in summer and reduces algae growth.

The retractable solar roof has a system control function with an integrated meteo algorithm. In connection with data collected by a weather station mounted on the system, the modules are either unfolded or, during inclement weather, folded up and stored in a garage. Managing directors Andreas Hügli and Gian Andri Diem have found a niche in the market with this business idea.



Everything is fully automated in the production hall: the photovoltaic modules are bonded to the metal frame with the eldomix metering and mixing system. The material is supplied via gear pumps. They are then assembled into a complete retractable roof group.

Photos: dhp technology

The pair turned to cable car technology for the flexible photovoltaic roof. The lightweight system consists of a galvanised support structure and the roof made of solar modules suspended from supporting cables. These are made from non-glare plastic and connected to one another by means of hinges.

'As far as production is concerned, we have focused on automation from the very beginning, as this allows us to grow.'

Gian Andri Diem

For the production of the individual solar modules, the eldomix metering and mixing system from DOPAG was integrated into the production line. It meters and mixes a dual-component adhesive which is used to bond the thin plastic photovoltaic modules to a metal frame. Application of the material is fully automated. The individual modules are then assembled into a complete retractable roof group..



Managing directors Gian Andri Diem and Andreas Hügli

The company has already used a rental system from DOPAG in the production of a prototype. 'The solar modules are exposed to extreme weather conditions, from strong solar radiation, wind and rain to snow and sub-zero temperatures,' says Andreas Hügli.

'Stable, durable bonding of the modules to the frame is therefore vital for us. We are impressed by the precise, reliable metering and mixing technology from DOPAG.'

Andreas Hügli

Eldomix conveys the two components by means of two gear metering pumps. These are driven by three-phase asynchronous motors and offer high metering precision. The material is supplied directly from the original container by means of two drum pumps. In general, eldomix is suitable for processing low to medium-viscosity multi-component materials based on polyurethane, epoxy or silicone. The material is homogeneously mixed via a static mixing system. The mixing ratio and the discharge quantity are variable. The material can be discharged in shot form or continuously via a dispensing valve.

In this way, the photovoltaic modules can be safely and reliably bonded to the metal frame and then assembled into a high-quality retractable solar roof. Andreas Hügli and Gian Andri Diem have been successful with their idea. The production line is running at full capacity and more retractable solar roof systems will soon follow in Switzerland and Germany.

Precise metering from distance

Metering systems for contactless application of lubricants

The contactless application of lubricants meets all conditions for complex, automated production processes and is now standard in many industries. We present the options available and what needs to be considered in the design of the metering system.

Today, the limitations of dot application or continuous application in bead form are quickly reached. Lubricants often have to be applied in hard-to-reach places. This is the case, for example, in the automotive industry, where grease has to be applied to components after they have been assembled, as well as in other industries such as the furniture and

household appliance industries. Here, contactless greasing in the form of shot or spray application is often the only option.

Contactless material application offers numerous benefits: precision, speed, reproducibility, reliability and documentation. With contactless material application, the lubricant is applied to the component from a set distance. Regardless of the positioning of the valve on the axis, for example, shots can be set with 100 per cent accuracy with a shot or high-speed valve, even from distances of up to 120 millimetres. The shot valve can perform up to 200 switching cycles in a second with minimal amounts of ma-

terial. Both valves apply the material in dot form, with the application taking place in the longitudinal direction of the nozzle. With the shot valve, the shot direction can be varied depending on the extension. The dots can be set individually or overlapping in the form of a bead. Application remains contactless compared to a dot application using a needle metering valve, where lubricant temporarily bridges the gap between the metering valve and the component. Spray valves are ideal for contactless, full-surface application of greases and oils. They are capable of both intermittent and continuous material application. Here, too, the shot direction can be varied depending on the extension.



High flexibility

Contactless greasing is always a solution when the point of use of the valve is not freely accessible. Thanks to a wide range of extensions, attachments and nozzles, all valves offer a high degree of flexibility. Different distances, shot angles and spray patterns, as well as complex geometries, are possible without any difficulty. Contactless greasing is a good solution when the component in question cannot be greased before the assembly of other parts that subsequently prevent access to the application point or when a long immersion distance has to be bridged. With the shot valve, for example, grease can be applied on two sides simultaneously, while, with the spray valve, 360° application is possible.

High cost-efficiency

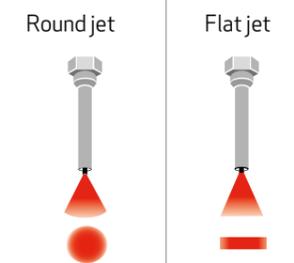
Whether contactless greasing is suitable and offers advantages over material application with a metering valve should always be checked for the particular application. Both contactless application with dispensing valves and metering valves enable precise metering and clean material application. The nature of the material itself plays an important role in the choice. The optimum combination

of material and valve should always be chosen. The main advantage of contactless greasing is the higher frequency and speed of metering. In series production, in particular, a few seconds can be critical and can lead to improved efficiency and greater cost-effectiveness. The valves can be optionally supplemented with various measuring devices for optimum quality assurance and documentation, such as a light barrier for shot detection, a gear flow meter, stroke detection or a pressure sensor. This means that process reliability, high quality, and continuous monitoring and control are possible at all times, even with short cycles, high repetition rates and stringently defined tolerances.

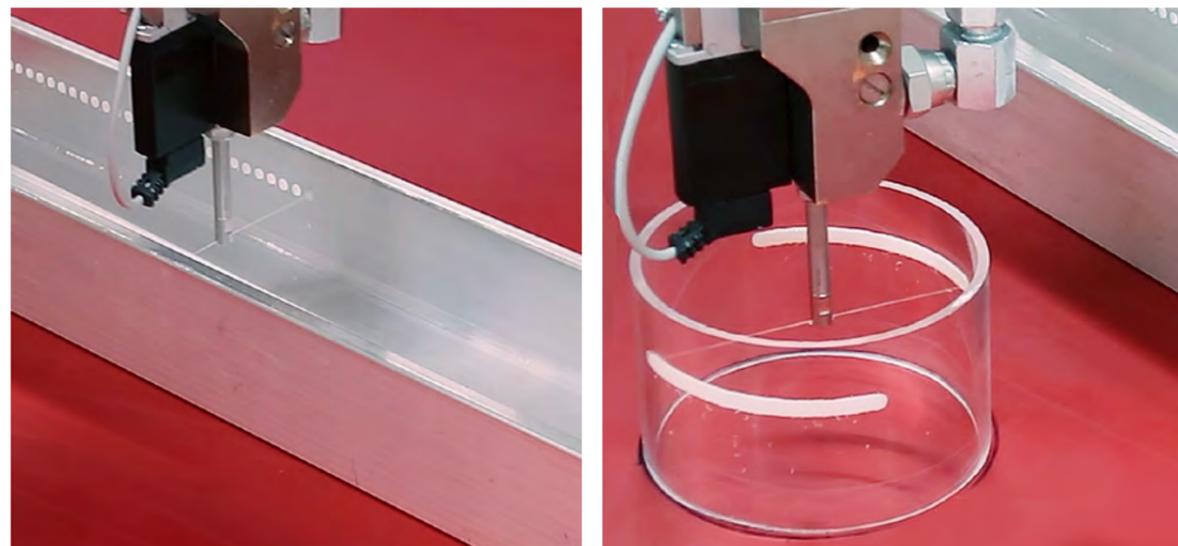
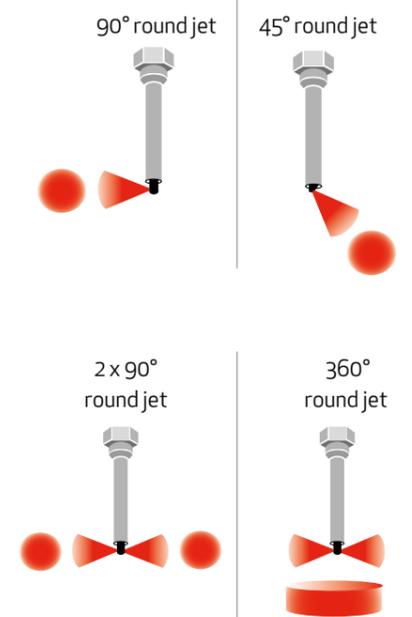
The challenges involved in contactless greasing should not be underestimated. The type and consistency of the grease and oil play an important role. Not all types of material are suitable for all valves, for example thin wetting of surfaces with the spray valve. Depending on the nozzle size, materials with different viscosities can be processed with the high-speed and shot valve. In any case, it is important to consider the main criteria involved in the decision process before selecting the metering system. In this way, there are many benefits in terms of speed, precision and material cost savings.

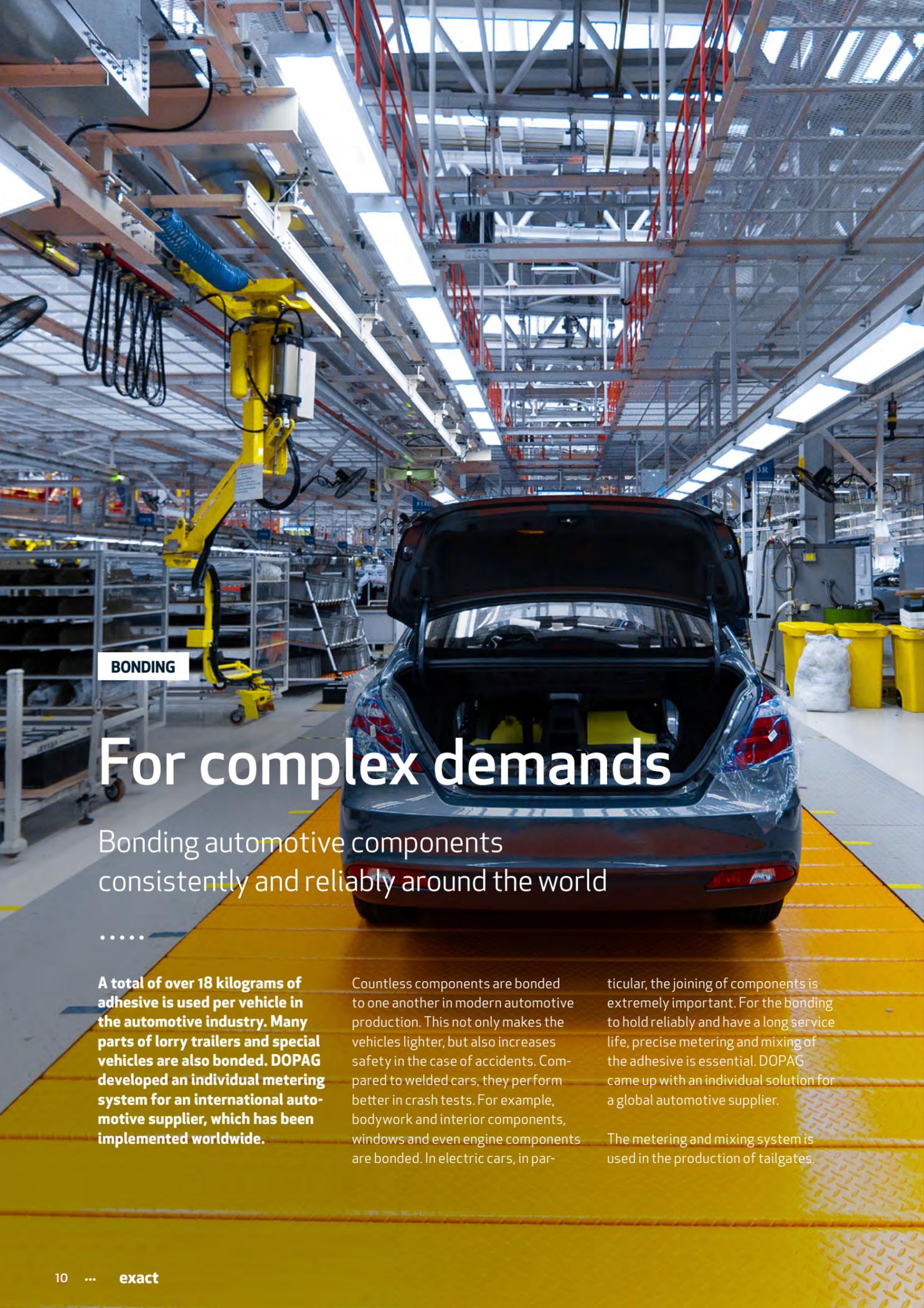
Spray valve: spray cone and directions

1. Spraying straight



2. Spraying at an angle





BONDING

For complex demands

Bonding automotive components consistently and reliably around the world

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A total of over 18 kilograms of adhesive is used per vehicle in the automotive industry. Many parts of lorry trailers and special vehicles are also bonded. DOPAG developed an individual metering system for an international automotive supplier, which has been implemented worldwide.

Countless components are bonded to one another in modern automotive production. This not only makes the vehicles lighter, but also increases safety in the case of accidents. Compared to welded cars, they perform better in crash tests. For example, bodywork and interior components, windows and even engine components are bonded. In electric cars, in par-

ticular, the joining of components is extremely important. For the bonding to hold reliably and have a long service life, precise metering and mixing of the adhesive is essential. DOPAG came up with an individual solution for a global automotive supplier.

The metering and mixing system is used in the production of tailgates.

This involves bonding a plastic component to a metal or composites panel. The eldomix metering and mixing system from DOPAG is used, which is ideal for bonding applications and can be easily integrated into the highly automated production lines in the automotive industry. A dual-component polyurethane is metered and mixed. In the application, a robot with a speed of 300 cc/min places a bead around the trim of the tailgate with maximum precision.

Precise, reliable metering

In the automotive industry, high precision with extremely stringent tolerances as well as high process reliability and reproducibility are required. Due to this, and owing to the sensitive nature of the material, DOPAG put the entire mixing head of the eldomix at the end of the robot arm in the design process. As a result, deviations of the measured values from set parameters are very small and all requirements for metering precision can be met. Eldomix enables a highly complex material to be metered with a high flow rate and a very narrow error rate to be controlled and maintained.

Material pressure regulators and flow meters are used to ensure optimal control and process monitoring. The material pressure regulators reduce the pressure of the material being conveyed down to the necessary working pressure. The flow meters enable accurate measurement of the current material flow, thus ensuring highly precise application. Gear metering pumps with a servo drive are used for material supply and mixing. Even slight changes in temperature could lead to overpressure or fluctuations in the mixing ratio. The material cannot be allowed to overheat. To ensure a constant temperature, the entire material supply takes place in a climate-controlled cell. Observance of all of these requirements ensures continuously high metering precision and repeatability.



Above: Gear pumps ensure reliable conveying of the material

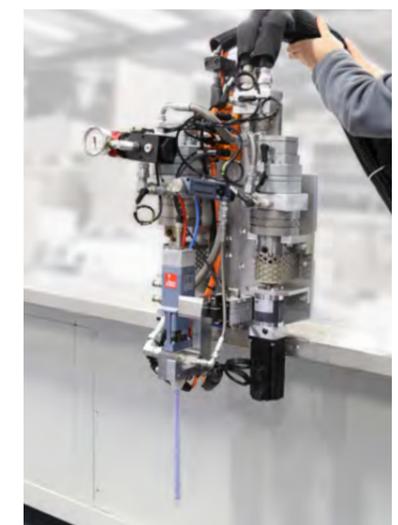


Right: The eldomix metering and mixing system was implemented worldwide and ensures consistent standards in production

Metering system in operation around the world

The automotive supplier has production sites in more than 30 countries. Production lines are planned once and then implemented worldwide. As a global manufacturer itself, DOPAG is able to meet this requirement precisely and replicate the metering system at all desired final locations across the world. For the automotive supplier, in addition to the individual design, this was a key reason for the partnership with DOPAG. Should modifications to the system be necessary due to changing requirements, DOPAG implements these modifications worldwide on all systems that are already in use and on future systems.

Below: A dual-component polyurethane is metered and mixed. A robot then places a bead around the trim of the tailgate



New product line for 1K bonding and sealing glueLine offers a wide range of components and complete systems



With its glueLine product line, DOPAG offers individually configurable solutions for the metering and application of single-component adhesives and sealants in all industries. The product line includes high-quality components such as drum pumps for material supply, metering pumps, dispensing valves and components for monitoring and control that can be integrated individually into existing production lines. For customers who need an operational metering system for their production, DOPAG offers complete system solutions. All components and systems are available in various forms, individually configured by DOPAG experts based on the requirements of the respective application and production process. The DIN standard 2304 for the professional implementation of adhesive processes is met in each case.

Overview of all products: www.dopag.com/glueline

Clean application of lubricants Individually configurable dispensing stations for manual application



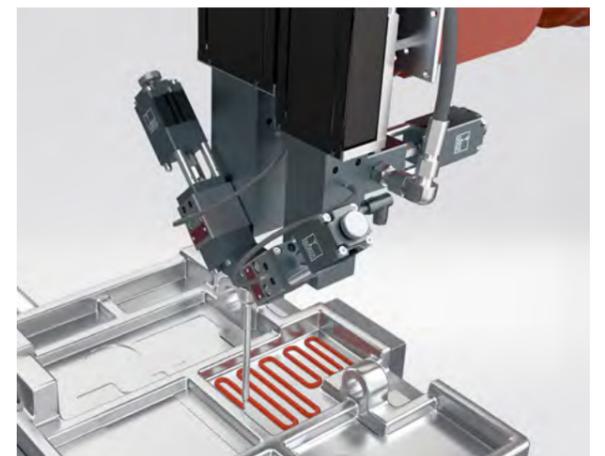
DOPAG uses special dispensing stations for the manual application of lubricants. With the help of an adapter, components such as O-rings and other seals can be greased or oiled manually. The metering process is triggered by the downward pressure of the component on the adapter. The oil or grease is metered and evenly applied to the component. The dispensing station is easy to use, and any contact between the user and the material is prevented. The dispensing station is particularly suitable for semi-automated assembly stations and fully automated assembly cells, such as in the automotive industry. The adapter and the entire system can be configured individually. Volumetric metering valves also offer high repeatability. Pneumatic compressed air is required for material supply.

Coating release papers evenly coatingmix processes silicone for the production of stickers



To enable stickers to be removed from their release paper, the release paper is given a silicone coating. With its coatingmix metering and mixing system, DOPAG offers an efficient, safe solution that is specially tailored to this application, meeting all requirements and offering high flexibility. Coatingmix can be easily integrated into automated and existing application systems. It fills the material reservoir and keeps this full during production. The metering system is suitable for all system types as well as for the highest coating speeds (from 200 m/min to > 1,000 m/min). The material is supplied directly from original containers such as IBC containers or 200-litre drums. Coatingmix enables the processing of silicone coatings with two to seven components. Several variants of the formula can be stored and accessed flexibly.

Dispensing technology for battery production vectomix TC processes thermally conductive materials



DOPAG offers its vectomix TC metering and mixing system with special features specially for the processing of thermally conductive materials. In the field of electromobility, it is used in the production of batteries, in particular, as well as in the potting of printed circuit boards or sensors. The vectomix TC dispensing system consists of two piston metering units which are available in different sizes and which can be combined together. This modular structure enables a diverse range of applications as well as variable mixing ratios and discharge ratios. The components are equipped with a special coating to protect them from excessive wear and to ensure consistent and reliable processing. The material can be discharged in shot or bead form.



IN FOCUS

The perfect PU foam gasket

Automated production with dynamicLine

Strong adhesion, long durability and high reproducibility
- with dynamicLine from DOPAG, series production of PU
gaskets can be designed efficiently.



IN FOCUS

PU foam gaskets

High-quality and efficient production



Polyurethane (PU) gaskets protect component interiors from moisture, dirt and other environmental influences. For example, they seal control cabinets, their housings and doors, or the lights and speakers in cars. They are also used in the filtration and packaging industries. PU foam gaskets can be inserted manually. However, an automated solution

offers significantly higher process reliability. The seal adheres firmly and permanently to the component. There are no coupling points or open notches. Thanks to a controlled overlap, the start and end points of the foam bead merge. A nozzle-closure system ensures seamless closure of the sealing bead. It prevents dripping at the nozzle

opening, which could otherwise create an untidy sealing bead or make the component or belt system dirty. PU gaskets can also be produced much faster and in higher volumes by means of the FIPFG process (formed-in-place foam gasket).

PU gaskets are made from reactive polymer materials. In general, two components are processed with a dynamic mixing system. Metering and mixing are carried out precisely and with consistently high quality. With the use of a linear robot, the gaskets can be applied directly onto the component automatically. It is also possible to position the component beneath a permanently installed mixing head with the aid of an industrial robot and start with the geometry of the foam bead. The result is a soft foam seal that hardens at room temperature. To compensate for different ambient temperatures, the temperature of the mixing chamber as well as that of the material containers



The application of PU gaskets on components for control cabinets is a typical application of dynamicLine



PU foam gaskets

Benefits of automated production compared to manually inserted seals

- They are automatically fixed in position and can stick without any additional adhesive tape.
- Thanks to the precise coordination of metering volume and robot speed, the start and end points of the foam bead come together perfectly, so there are no undesired coupling points or open joints or notches.
- Considerably lower costs for a seal
- Higher-quality seal
- Short cycle times enable efficient, automated production.
- Practically no waste compared to punched or cut seals
- System is rinsed with water, solvent-free

Watch application video



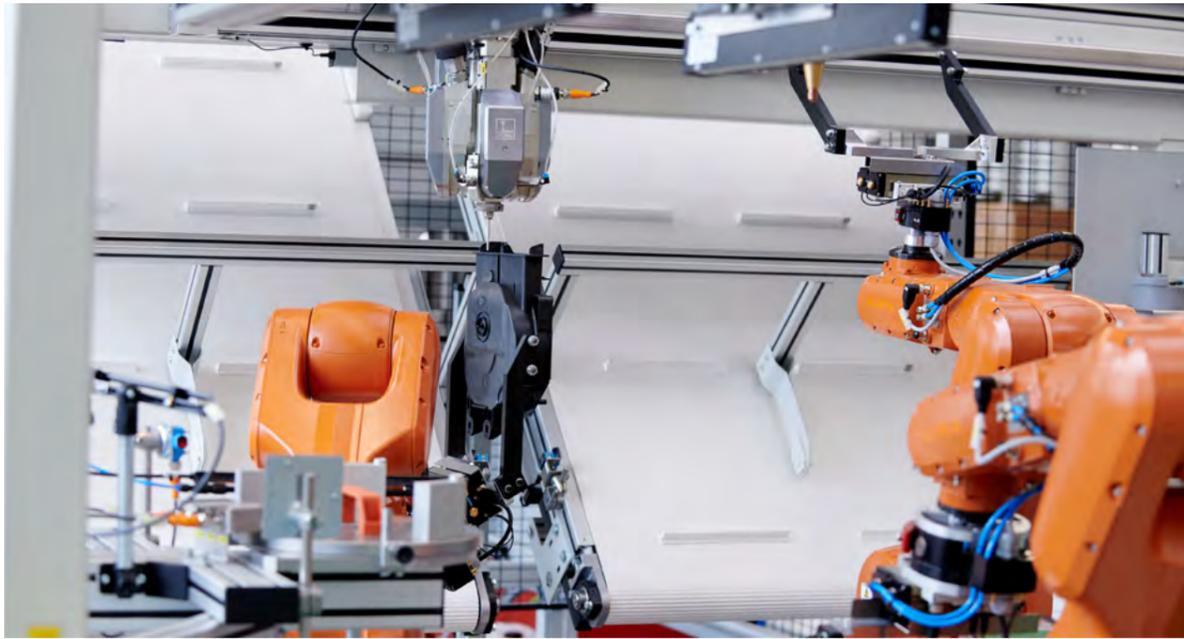
and hoses can be controlled. The control unit can store several metering and positioning programmes. For example, it is possible to switch between different components or material formulations. Furthermore, different discharge capacities with varying seal widths or heights can be selected.

High flexibility: applications for bonding and potting

DynamicLine also offers solutions for the dynamic mixing and automated metering of adhesives and potting compounds. The dynamic mixing head is suitable for a wide range of materials, from extremely liquid to highly thixotropic. The use of linear or industrial robots makes automation possible that meets the exact requirements of the application.

Knowledge

With the FIPFG process (formed-in-place foam gasket), reactive polymeric materials are metered, mixed and then applied using a dynamic mixing system such as dynamicLine from DOPAG. This involves an A-component (polyol) and a B-component, as well as the hardener (MDI isocyanate). The A-component has molecule chains of different lengths. They determine how soft or hard the foam is after hardening. The longer the molecule chains, the softer and more flexible the foam. Mixing the A and B-components in the mixing system starts the reaction. The molecule chains connect with one another and a polymer is formed. This produces carbon dioxide as a fission product. With the technology used by DOPAG, the low-pressure process, this is responsible for foaming the material and then hardening it at room temperature.



PROJECT OUTLINE

Series production of PU gaskets in the automotive industry

The challenge

Production in the automotive industry involves high-quantity orders, where reproducibility, process reliability and quality assurance play a crucial role. DOPAG developed a system that meets these requirements exactly for Gealan Formteile GmbH (a developer and manufacturer of industrialised plastic parts and components) and Foster (a sound system manufacturer) for the application of PU gaskets to speaker modules. One of the primary requirements of the system is high flexibility. PU gaskets are to be applied to multiple different components at multiple points.

The solution

The system has several procedural steps, with three robots handling the components. These are inserted manually and supplied via two conveyors. A robot picks up a component on the left or right and directs it to a nozzle for plasma pre-treatment. This 'activates' the surface of the component, enabling the gasket to stick to it. The robot then places the component in a workpiece carrier. These have an important secondary function, as they help with ionisation. The components are statically charged and the surfaces are neutralised for the subsequent application of material. The other two robots then take turns picking up the components from the workpiece carriers. The gasket application then follows. The polyurethane is metered and mixed in

the dynamic mixing head, which is mounted on a travelling axis. The mixing head can move to the two positions on the left and right in order to apply the material. The robot then takes over the application and moves the component in accordance with the contour. The benefit of this approach is that a gasket can be applied to a component on multiple sides in a single work step. The PU gasket then hardens at room temperature on a specially produced conveyor. Extensive process assurance systems meet all the requirements of the automotive industry. The workpiece carriers can be replaced within a few minutes and the appropriate metering process can be conveniently selected using the system's touch panel. This gives the user maximum flexibility in series production. The user can respond quickly to different needs and manufacture variable quantities of different components.



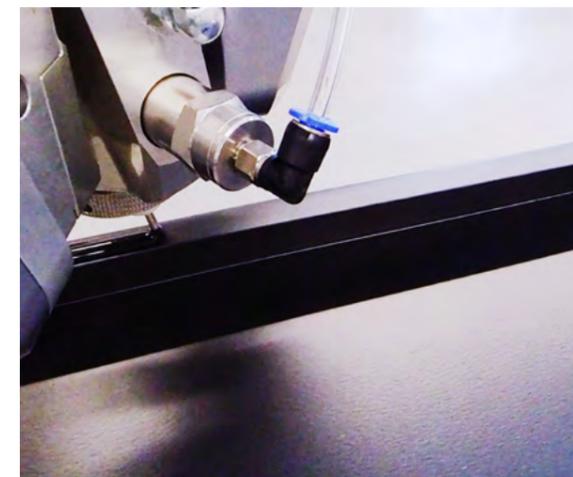
Automated application of gaskets to a control cabinet door.

PROJECT OUTLINE

Convenient material handling thanks to shuttle sliding tables

The challenge

The automated production of PU gaskets is only efficient if the handling of the components is optimally integrated into the production process. For an Eastern European manufacturer of electronic products, DOPAG adapted its dynamicLine product precisely to the company's requirements. The customer needs to apply a PU gasket to control cabinet doors of different sizes. Handling should be as ergonomic and convenient as possible for users, even in the case of large doors, and should also take as little time as possible.



The solution

To ensure efficient production processes, DOPAG combined dynamicLine, consisting of a dynamic mixing head and a linear robot, with a shuttle sliding table. The control cabinet doors are manually placed on the shuttle sliding table. When the start button is pressed, the shuttle sliding table moves into the application area, and the linear robot with the dynamic mixing head moves into position and starts applying the PU gasket. In the meantime, the user can prepare and insert the second control cabinet door on the second level. The software automatically identifies which level is ready for application of the gasket and brings the dynamic mixing head into the right starting position automatically. The user can respond flexibly, e.g. with the help of the hole pattern grid on the shuttle sliding table, and can even insert several smaller control cabinet doors. A corresponding programme can be stored for each application and then selected in just a few steps as required, ensuring maximum flexibility in the production of PU gaskets at all times. The materials for the subsequent PU gasket, the A-component and the B-component, are conveyed into the mixing head via pressure tanks. A material conditioning system controls the temperature of the containers and hoses. This compensates for fluctuations in the ambient temperature and ensures that the material is prepared reliably with a constant temperature and consistent level of quality.

Maximum comfort

Premium metering and mixing technology ensures durability and high quality for kitchens and household appliances



For protection against dust and moisture or for a secure hold, various components are potted, bonded, greased and sealed during the production of household appliances. High-precision metering and mixing technology ensures safety and high quality for consumers and producers.

The quiet hum of the refrigerator, the gurgle of the dishwasher or the smell of freshly ground coffee – there is an array of electronic devices in every modern kitchen to ensure a high level of comfort. The appliances, which are easy to operate, have gone through countless production steps before ending up in the kitchen. Metering and mixing technology is an integral part of almost all production steps. Automated processes require high reproducibility and reliable application. The various parts and electronic components are bonded, sealed, greased or potted during the production process. Single and dual-component materials based on polyurethane, epoxy or silicone, as well as lubricants, are also used. DOPAG provides the customised metering and mixing systems required for every type of application.

Bonding and potting

In joining technology, the household appliance industry relies primarily on partially and fully automated processes, in which various pre- and post-treatment processes, such as plasma pre-treatment or hardening of the components, are already integrated. Silicone is primarily used here, as it can withstand the often high ambient temperatures without any difficulty. For example, panels and housings for washing machines, dishwashers and refrigerators are bonded. In ovens, for example, glass panes and profiles for the doors are bonded together. There are various different options for every application. The adhesive can be applied in a multifunctional cell, which can also be integrated in the line. Alternatively, DOPAG designs individual special systems that meet all requirements precisely. The same applies to the potting of electronic components with epoxy resin, such as in heat condensers for tumble dryers or control units for dishwashers and refrigerators. In addition to protection against dust, moisture, corrosion and shock, this also includes sight protection and protection against replication.

Washing machine: drum bearings and seals are greased, the control housing and water pump are sealed, heat condensers are potted



DOPAG offers solutions for all steps involved in the production of household appliances: bonding, sealing, greasing, potting and gasketing

Systems for sealing

For sealing, DOPAG offers metering systems for the dynamic mixing and application of sealing foams as well as metering and mixing systems for the application of sealants. Various systems fitted with piston or gear pumps are available for the metering, mixing and application of sealants. For the dynamic mixing and application of PU foam gaskets, DOPAG offers an efficient, automated solution in dynamicLine. Ceramic or stainless steel sinks, for example, have foamed seals like this on the installation

side. Ceramic hobs or the frames of washing machines and dishwashers are also sealed in this way.

Application of lubricants

Greases and oils ensure low friction, smooth, quiet operation and long durability for components and knobs. Lubricant is therefore used in numerous components in the production of household appliances. For example, lubricant is applied in various places in pumps for washing machines and dishwashers and in electrical motors. For greasing and oiling, a modular

range of metering components, valves and pumps enables individual systems to be set up, which can be integrated into automated production lines. All metering and mixing systems are adapted to the specific application and configured according to the requirements.



Above: Automated application of adhesive to components for the production of oven doors. Pre-treatment with Pyrosil has already been carried out



International networking of teams

DOPAG digitises distribution processes

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With eleven of its own branches and more than 30 distributors, DOPAG has a global presence. The majority of the company's customers also operate internationally and cooperate locally with DOPAG. With a new CRM system, the company shapes its distribution processes transparently and internationally. Customers in particular stand to benefit from this.

In just a few clicks, DOPAG employees around the world will be able to get an overview in the future: What metering and mixing system was the customer previously using? Where is the system in operation? Which colleague was working on the project and is familiar with the application? – These are the types of questions that DOPAG employees deal with every day. Thanks to the recently launched customer relationship management system (CRM), these questions will be answered in the future. In 2019, DOPAG began to introduce the world's leading CRM system Salesforce. Additional countries followed in 2020 and further

DOPAG branches will be connected to the CRM in the next months.

New customer, quote and project management processes are presented clearly with the CRM system and organised efficiently. 'In this way, we can process each enquiry in the best-possible form, no matter how complex it may be, and share it with the right contact person, so that our customers receive an expert answer promptly,' says managing director Steffen Knaus. From the initial enquiry and project management to delivery of the system, all data is stored in the CRM system.

Sharing knowledge around the world

The aim is not simply to optimise and digitalise the entire distribution process as part of DOPAG's global digitalisation offensive. It is more that the CRM system simplifies interdepartmental and, above all, international cooperation, and thus also offers many benefits to the customers. This is because many customers who have multiple production sites worldwide

want to work with the same technology at each site. With the help of the CRM system, DOPAG employees worldwide can access the data from the previously installed metering and mixing system and configure it at the relevant location with the same parameters. 'We want to shine the light even more on our international customers and sales teams,' explains Knaus. 'With the CRM system, we are connecting all of our teams in DOPAG's branches around the world and increasing transparency.' This increases knowledge transfer between the individual branches and also provides the option to access existing data and experience during the construction processes of new systems. The CRM system remains flexible despite the international nature. It has a modular structure and is scalable. It will also serve as a strategic control tool in the future, helping to identify trends more quickly and use the insights for the benefit of DOPAG customers.

Following DOPAG

This time in Switzerland

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Which highlights should not be missed?

- **Villette-Park** – Magnificent English-style park with mature trees spread over an area of 46,000 m², located directly on Lake Zug in Cham. There's plenty to discover and lots of places to relax along the 7.4-km loop trail.
- **Zugerberg** – Easily accessible with the Zugerberg funicular. Even though it's just 1,000 metres high, the views of the mountains, lake and, depending on the weather, the sea of fog are amazing. There are also lots of leisure opportunities available.
- **Tour on Lake Zug** – With a tour on the lake, you can explore the region from the water. Or hop off at one of the nine stops, such as in Zug or Arth am See. From Arth, you can climb the Rigi and admire Lake Lucerne.

What can be explored off the beaten path?

- **Chomer Märt** – Has traditionally been held in Cham on the last Wednesday before the first Sunday of Advent for almost 200 years. There are over 100 market stalls with lots of different things on offer.
- **Ziegelei Museum** – Small museum near Cham on the history of brick making, the only one of its kind in Switzerland. You can take classes to create your own bricks.

Cham is located on Lake Zug in Switzerland and is home to DOPAG Dosiertechnik und Pneumatik AG. DOPAG was founded here in 1976 and the first metering valves and pumps for greasing and oiling in the automotive industry were developed here. The entire expertise for 1K dispensing



Roger Hermann is Director Key Market Automotive & Lubrication at DOPAG AG, Switzerland. Here, he introduces Cham and Lake Zug and gives some tips for a visit there.

- **Sunset with lake views** – There are no mountains around the town of Zug, so it makes for a great spot to admire some beautiful sunsets. The sun then sets in the lake. Before that, you can enjoy a piece of traditional Zuger Kirschtorte there. It can only be made in the canton of Zug and contains kirschwasser made from the famous Zug cherries (Swiss German: Zuger Chriesi).

Where to go for a culinary experience?

If you're in Villette-Park, you can enjoy some high-class Swiss cuisine with lake views at Villa Villette. If you prefer a more rustic experience, then Restaurant Raben in Cham serves delicious Swiss cuisine. The time-honoured surroundings provide an intimate atmosphere.

What do you like most about your region?

Cham and Lake Zug are very diverse. The lake and mountains offer a wealth of leisure opportunities, and if you've already done everything around Lake Zug, you can also be in Zurich or Lucerne on Lake Lucerne quite quickly.

technology has been concentrated in Cham to this time. Here, all metering systems for greasing and oiling are designed and produced according to customer requirements and tests are carried out in DOPAG's own technical centre.



Global sales and service network

You can find your local DOPAG contact at
www.dopag.com/contacts



We are one of the world's most experienced manufacturers of high-quality metering and mixing technology. Wherever adhesives, resins, silicones, sealing foams or lubricants are metered and applied in industrial production, we offer reliable, precise solutions. We provide systems and components for highly automated production processes, including for the automotive, wind, household appliances and electrical industries, as well as for aerospace.

DOPAG is part of the HILGER & KERN GROUP, a reliable supplier and a development and service partner to industrial companies in a variety of market segments for more than 90 years. The group employs around 350 people and has subsidiaries and distributors in more than 40 countries.