MAAG AT A GLANCE
Products and Service Overview

- maag pump & filtration systems
- automatik scheer strand pelletizers
- gala automatik underwater pelletizers
- reduction pulverizing systems
Maag today is formed by five successful and well experienced companies with an impressive heritage. Maag Pump Systems, Automatik Plastics Machinery, Gala Industries, Reduction Engineering Scheer and Ettlinger have joined forces to help you meet and manage the challenges of today’s plastics processing opportunities better than ever before.

Each of them brings a wealth of knowledge and years of experience. All five have achieved much in the past and will achieve even more together in the future. The brands you know and trust proudly building better solutions for you, together.

We offer customized product solutions and services from a single source to maximize your performance and create a competitive advantage. More than 1,000 employees are always at your service with their great application know-how and capabilities in engineering and manufacturing. Maag wants to be everywhere you are. With 20 locations and several test and service centers in the main regions Europe, Americas and Asia, we have made great progress to achieve our goal: being close to our customers.

It is that masterly overview of all process steps, in particular, which has made Maag the market leader it is today. Our know-how developed over decades of experience means you can be sure of having an expert partner at your side even when confronted by the toughest of challenges.

Alongside expertise in hardware, a sound understanding of the overall process is vital, and is an increasingly key factor in achieving efficient production. Our experts are able to support you and to introduce you the solution that best fits to your individual demands.

New at Maag: Ettlinger

Maag’s latest family member is Ettlinger Kunststoffmaschinen GmbH – the global specialist for high performance melt filters and customized injection molding machines.

Ettlinger melt filters are specifically designed for processing a wide variety of recycled materials using a patented principle that has already demonstrated its functionality and performance in many applications throughout the world. In contrast to conventional models, Ettlinger filters use a combination of a scraper and auger to clean and remove all contaminants from the melt chamber on a continuous basis. This provides a pressure stable environment for weeks or months between screen changes. Ettlinger filters are used for processing polymers with input contamination up to 16% in some cases. These applications include recycling, processing of end products such as sheet or strapping, and compounding lines.

Ettlinger injection molding machines offer several crucial advantages compared to conventional models: their unique technical concept unites high shot volumes and short cycle times. They thus ensure consistently high productivity at very low energy consumption.
PUMP & FILTRATION SYSTEMS

Pump Systems

Pressure building capability with minimal temperature or energy influence on the polymer and a uniform output without pulsation – this is the traditional job of a gear pump. With our x6 class, we are setting new performance standards to the industry: higher product quality, better volumetric efficiency increased production capability, compared to earlier pump generations.

Extrusion/Elastomer & Compounding:
Our gear pumps optimize the extrusion process of thermoplastics and elastomers since they ensure a constant flow of material, generate the required operating pressure and therefore relieve the extruder of pressure build-up. This increases the production plant’s performance, improves the quality of the end product, thanks to lower melting temperatures and extends the extruder’s lifetime. The innovative design allows highest speeds and highest throughput rates for a given pump size.

Virgin-Polymer:
Our pumps for virgin polymer production are used in different processes at low and high-viscosity applications where they provide the best available performance in the market. Thanks to outstanding filling properties and short residence times they are suitable as discharge pumps. In compounding processes they build up the pressure after the compounder for downstream equipment. In reactors our pumps prevent the pressure overlay, thus ensuring an efficient production process.

Industrial/Chemical:
Conveying media and operational requirements vary extremely in different industrial and chemical applications. In our portfolio you will find the best in class low and high viscosity gear or screw pump to optimize your process in terms of efficiency, accuracy, reliability and safety. Therefore we offer corrosion and abrasive resistant pump systems for high temperatures and high pressures.

Filtration Systems

Virgin polymer production:
Reliable filtration has become a given in the polymer production process. The degree and rates to which they have to be filtered, is increasing. That is why we are committed to continuously improving and expanding the range of our candle based large area filtration systems. Maag offers vessel based large area filters as well as screen changer technology, that allows changing screens on the fly.

Extrusion & Compounding applications:
Our modular single and double piston screen changer design offers the right screen changer for any extrusion application, throughput rate and filter fineness. All filter sizes are available with flat screens, arched screens, disc and candle filter elements as well. A wide range of slide plate screen changer and a horizontal vessel filter complete our portfolio.

\[\begin{align*}
\text{Viscosity} & \quad \text{up to 30,000 Pas} \\
\text{Temperature} & \quad \text{up to 350 °C} \\
\text{Throughput} & \quad \text{up to 16,000 kg/h} \\
\text{Differential pressure} & \quad \text{up to 500 bar}
\end{align*}\]

\[\begin{align*}
\text{Viscosity} & \quad \text{up to 20,000 Pas} \\
\text{Temperature} & \quad \text{up to 350 °C} \\
\text{Throughput} & \quad \text{up to 170,000 kg/h} \\
\text{Differential pressure} & \quad \text{up to 320 bar}
\end{align*}\]

\[\begin{align*}
\text{Viscosity} & \quad 0,3 \text{ up to } 4,000,000 \text{ mPas} \\
\text{Temperature} & \quad -30 \text{ up to } 320 \text{ °C} \\
\text{Throughput} & \quad \text{up to 2,400 l/min} \\
\text{Differential pressure} & \quad \text{up to 200 bar}
\end{align*}\]

\[\begin{align*}
\text{Candle area:} & \quad \text{up to 265}\text{ m}^2 \\
\text{Throughout:} & \quad \text{up to 70,000 kg/h} \\
\text{Operating pressure:} & \quad \text{up to 250 bar} \\
\text{Temperature:} & \quad \text{up to 350 °C}
\end{align*}\]

\[\begin{align*}
\text{Candle area:} & \quad \text{up to 30}\text{ m}^2 \\
\text{Screen area:} & \quad \text{up to 2}\text{ m}^2 \\
\text{Throughout:} & \quad \text{up to 40,000 kg/h} \\
\text{Operating pressure:} & \quad \text{up to 700 bar} \\
\text{Temperature:} & \quad \text{up to 350 °C}
\end{align*}\]
Whether for complete high-performance production systems, small machines for lab applications or anything in between, Maag tailors strand pelletizing solutions to meet exact customer requirements and preferences. Our pelletizers are available as stand-alone components or automated systems to create virgin polymers in continuous or batch productions as well as compounds, blends and masterbatches of highest quality.

Successfully used by hundreds of customers, our Dry Cut strand pelletizing systems produce cylindrical pellets or micro pellets, ideally suited for further processing. Our underwater strand pelletizing systems are especially designed for medium up to the highest production capacities. The systems are available in various configurations to meet the exact processing requirements of any virgin or reinforced polymer. With our belt conveyor pelletizing system we also offer a smart solution for processing highly filled (> 60 %) and/or fragile compounds. Finally our pultrusion cutter for cutting long glass fiber, has been benchmark for decades.
UNDERWATER PELLETIZERS

Our underwater pelletizing systems are first choice for compounding, masterbatch and virgin polymer production. We provide solutions for your processing needs with safety, efficiency and profitability. Our wide array of applications ranges from commodity plastics, engineered polymers and recycling to engineering resins and reaction processes and Hot Melt Adhesives, Gum Base and Biopolymers. Design flexibility and efficiency – to meet your needs: our pelletizers are available as floor mounted, on rails or top mounted models with a small footprint. Centrifugal dryers and water systems complete our systems and offer you the perfect solution from one hand.

With our direct crystallisation process technology you can avoid the use of expensive precrystallizers prior to taking the pellets into downstream after-treatment processes.

Our underwater pelletizing systems produce mostly spherical pellets of superb quality including micropellets as well as other shape pellets, ideally suited for further processing.

Our new pelletizer series shows the integration of the extraordinary features from Gala and Automatik within completely new machines. Our customers now benefit from the best attributes all at once.

- Throughput: 2 – 36,000 kg/h
- Motor power of pelletizer: 2.2 – 90 kW
- Number of die holes: 1 – 900
We design and manufacture our pulverizers with the flexibility to easily evolve with your business. Your need for higher productivity, better product surface quality, and shorter molding cycles has resulted in machines that are easy to operate and deliver maximum efficiency with minimum waste or down-time. Almost 25 years of experience and constant development based on customer feedback are leading to our state of the art product portfolio meeting the individual requirements. Our range goes from small units for lab trials and small sample production over medium size production systems with short change-over times. Our big systems are characterized by high outputs and best performance in relation to kilograms produced over power consumed.

The Disposable Discs technology helps our customers to reduce their operating and maintenance costs. Cost- and time consuming regrinding off-side is eliminated by simply replacing the discs by a set of new ones.
Service at Maag is much more than providing spare parts. Through our intensive contacts and support to our customers with either small specialized compounding plants or a large multinational polymer manufacturer we have built up our know-how such that it is unique in this industry. Experts on all locations are able to support you and to introduce to you the service solution that fits best to your individual demands.

Comprehensive process analysis is gaining enormously in importance. Only if all the individual components of a system are ideally matched and coordinated waste can be minimized, downtimes reduced, product quality improved and production and energy costs saved. This way production and minimal unscheduled downtimes can be attained.

Outranging number of installed machines and systems, Maag has over recent decades built up a level of know-how in pelletizing, filtration and pump engineering which is unique worldwide. The provision of specialist advice and process support is an integral part of what Maag offers today.

Maag delivers comprehensive services worldwide – and that is what differentiates us in this industry.

Our service centers are located in Germany, Switzerland, Italy, Malaysia, USA, Brazil, Taiwan, China, Thailand and India.

We have earned a reputation for providing prompt, dependable service – before, during and after the sale. Maag maintains a comprehensive inventory of spare parts for immediate shipment. Manufactured to the original specifications, you can be confident in their design, quality and reliability to keep your system running at peak performance.
### Europe

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<tr>
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<th>Address</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>Maag Pump Systems SAS Villeurbanne</td>
<td>+33 4 72 68 67 30</td>
<td><a href="mailto:MaagFrance@maag.com">MaagFrance@maag.com</a></td>
</tr>
<tr>
<td>Germany</td>
<td>Maag Automatik GmbH Grosostheim</td>
<td>+49 6036 503 0</td>
<td><a href="mailto:Info@maag.com">Info@maag.com</a></td>
</tr>
<tr>
<td>Germany</td>
<td>Gala Kunststoff- und Kautschukmaschinen GmbH Xanten</td>
<td>+49 2801 980 0</td>
<td><a href="mailto:Maag.Xan.Info@maag.com">Maag.Xan.Info@maag.com</a></td>
</tr>
<tr>
<td>Italy</td>
<td>Maag Automatik s.r.l. Rozzano (MI)</td>
<td>+39 02 575 932 1</td>
<td><a href="mailto:MaagItaly@maag.com">MaagItaly@maag.com</a></td>
</tr>
<tr>
<td>Switzerland</td>
<td>Maag Pump Systems AG Oberglatt</td>
<td>+41 44 278 82 00</td>
<td><a href="mailto:Welcome@maag.com">Welcome@maag.com</a></td>
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### Americas

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</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>Maag Automatik c/o Dover do Brasil Jundiaí – SP</td>
<td>+55 11 2923 6600</td>
<td><a href="mailto:InfoBrazil@maag.com">InfoBrazil@maag.com</a></td>
</tr>
<tr>
<td>USA</td>
<td>Maag Automatik Inc. (Reduction Engineering Scheer) Kent, Ohio</td>
<td>+1 330 677 2225</td>
<td><a href="mailto:Maag.KEN.Info@maag.com">Maag.KEN.Info@maag.com</a></td>
</tr>
<tr>
<td>USA</td>
<td>Ettlinger North America LP Atlanta, GA</td>
<td>+1 770 703 8541</td>
<td><a href="mailto:sales-na@ettlinger.com">sales-na@ettlinger.com</a></td>
</tr>
<tr>
<td>USA</td>
<td>Gala Industries, Inc. Roanoke, VA</td>
<td></td>
<td><a href="mailto:gala@gala-industries.com">gala@gala-industries.com</a></td>
</tr>
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### Greater China

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</tr>
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<tbody>
<tr>
<td>China</td>
<td>Maag China Guangzhou Branch Hugang District, Guangzhou, 510730</td>
<td>+86 20 8985 0116</td>
<td><a href="mailto:MaagChina@maag.com">MaagChina@maag.com</a></td>
</tr>
<tr>
<td>Singapore</td>
<td>Maag Systems Singapore Singapore 119843</td>
<td>+65 6460 0160</td>
<td><a href="mailto:MaagSingapore@maag.com">MaagSingapore@maag.com</a></td>
</tr>
<tr>
<td>Taiwan</td>
<td>Maag Taiwan Taipei City 106</td>
<td>+886 2 2703 6336</td>
<td><a href="mailto:InfoTaiwan@maag.com">InfoTaiwan@maag.com</a></td>
</tr>
<tr>
<td>India</td>
<td>MaagAutomatik c/o Dover India Pvt. Ltd. Vadodara, Gujarat</td>
<td>+91 960 175 286 4/5</td>
<td><a href="mailto:MaagIndia@maag.com">MaagIndia@maag.com</a></td>
</tr>
<tr>
<td>Malaysia</td>
<td>Automatic Plastics Machinery Petaling Jaya Selangor</td>
<td>+60 3 7842 2116</td>
<td><a href="mailto:InfoSEA@maag.com">InfoSEA@maag.com</a></td>
</tr>
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