MAAG Group
a DOVER company

PELLETIZING & PULVERIZING SYSTEMS ›

› UNDERWATER PELLETIZING

HOT MELT ADHESIVE PELLETIZING SYSTEMS

Simplify production processes with pelletized adhesives

GALA

MAAG Gala Hot Melt Adhesive (HMA) pelletizing systems are engineered to provide you the most cost effective way to process and handle a wide variety of adhesive materials. Pellets instead of blocks, pastilles or pillows streamline downstream production processes and ensure easy handling and transporting of otherwise challenging to manage materials.

Hot melt is defined as any polymer based glue that is applied in a molten state. HMA is composed of a polymer and additives, including a tackifying resin to create bond properties. Pressure sensitive adhesive (PSA) is a type of adhesive that bonds when pressure is applied.

Examples of use of these adhesives range from book-binding, packaging, tapes and labels to HVAC duct-work, auto interior trim, and furniture assembly.

With over 30 years of experience in pelletizing hot melt and pressure sensitive adhesives, MAAG Gala's dedicated HMA team is offering practical experience our customers can rely on. With our industry knowledge and lab capabilities, we can provide unique and valuable solutions for any material type. A lab line is available to demonstrate the advantages of pelletizing and to assist our customers in getting their products to market easier and faster.

Performance

- High output in small footprint
- Low energy consumption
- Pellet form consistency

Experience

- Over 30 years in the HMA industry
- Process engineering group dedicated to HMA
- Applications experience

Speed to Market

- Ability to evaluate new products for scale-up in our HMA vessel or twin screw extrusion lab
- Provide quicker response for customer to market

Versatility

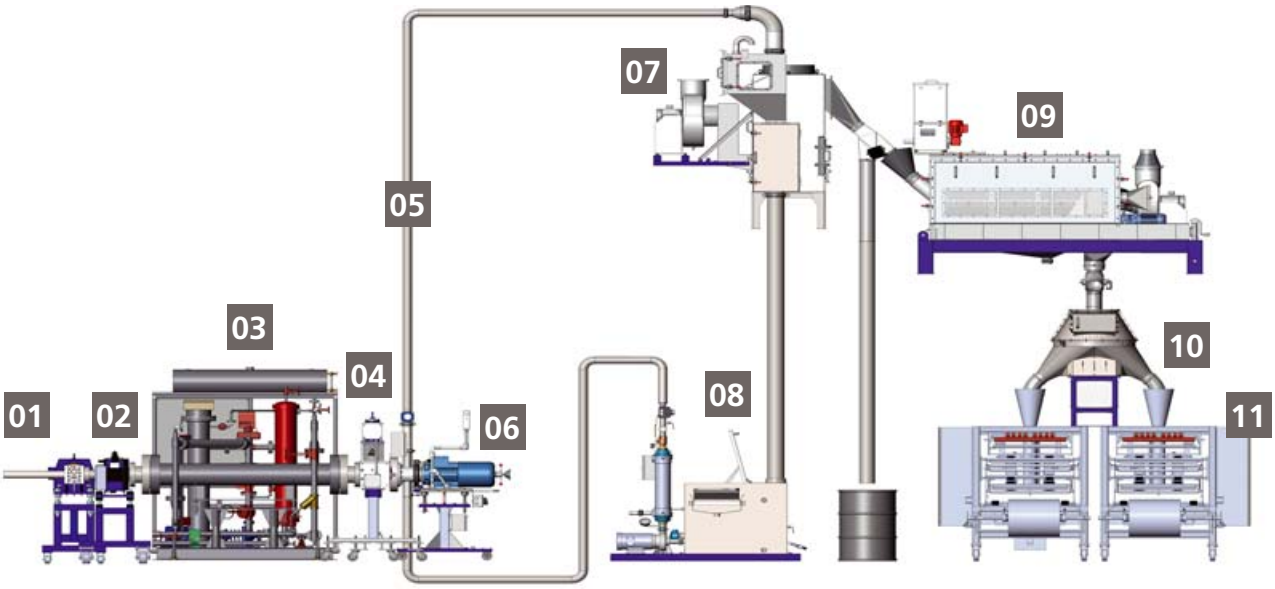
- One system can pelletize your complete portfolio of products
- Integrated system to simplify start-up and support

HMA PELLETIZING SYSTEMS

Functioning and applications

How it works

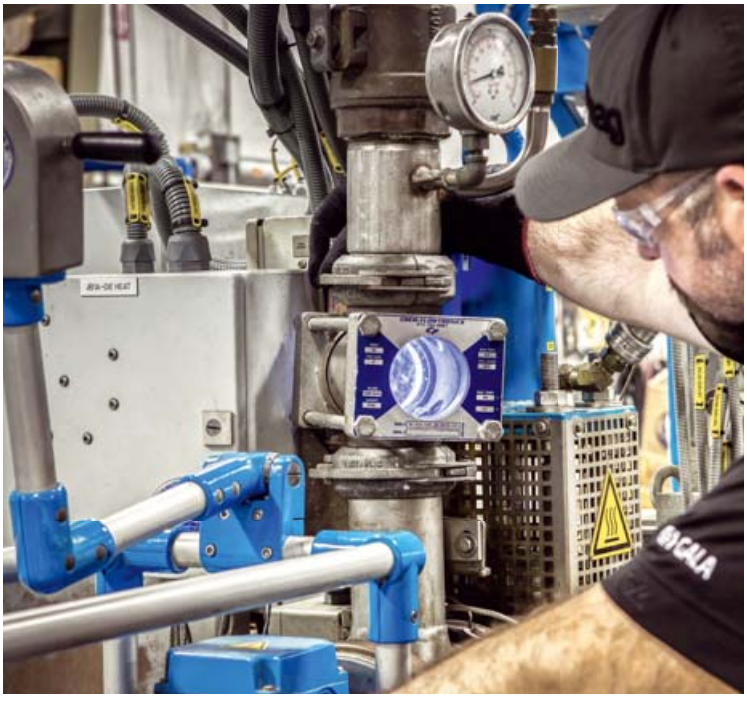
Molten adhesive from the melt vessel or extruder flows into an optional booster pump to deliver and maintain a consistent, pressurized flow to the melt pump **01** and screen changer **02**. The heat transfer or melt cooler system **03** (HT/MC) serves to lower the melt temperature before pelletizing. A diverter valve **04** diverts the melt until setpoints have been achieved to begin cutting pellets. The water box by-pass system **05** diverts process water away from the pelletizer cutting chamber for start-up and maintenance. The melt flows through a die plate **06** and the pellets are cut in process water flowing through the cutting chamber **06**. Pellets are conveyed to the centrifugal dryer **07** and the dry pellets are discharged. The process water is recirculated through a water tempering system **08** and back to the cutting chamber. A tumbler **09** can be added for further drying. An optional rotational valve **10** can divert pellet flow to packaging or a bagging system **11**.



A complete line is shown; including a tumbler for additional drying, a multi port rotary valve to divert pellet flow and a bagging system. Lines can be tailored to customers' needs and budgets.

Range of applications

MAAG Gala engineers and supplies complete HMA or PSA pelletizing systems downstream of an existing melt vessel or extruder. The fully integrated system includes components to receive molten adhesive and cool it to a manageable viscosity prior to pelletizing a nd producing consistently high quality pellets.



Our Experience = Added Value to our Customers

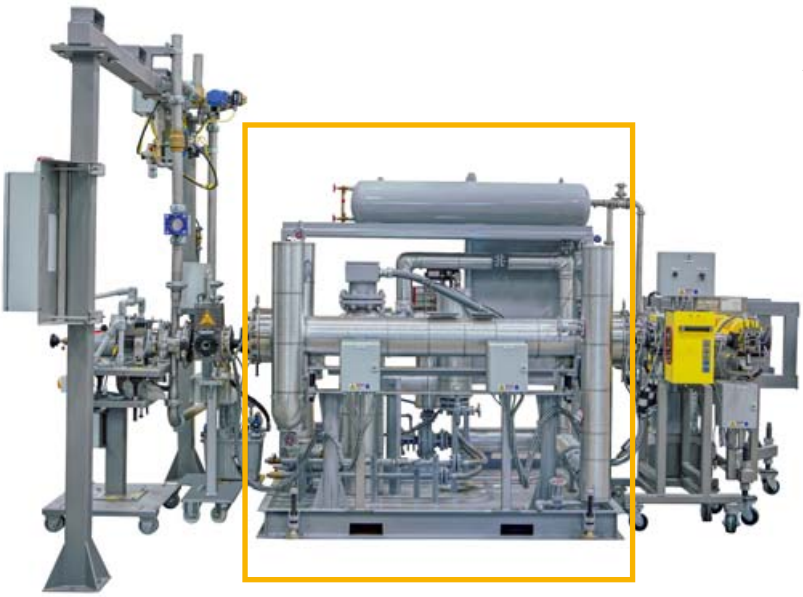
Expertise from over 300 underwater pelletizing installations globally, processing various forms of hot melt and pressure sensitive adhesives, gives our team the knowledge required to custom design an underwater pelletizing system for specific applications whether it's a simple extruded HMA or a custom engineered system for PSA. Maag Gala is capable of commissioning and servicing the entire package downstream of the existing melt vessel or extruder. This experience and knowledge is an added value to our customers.

HMA PELLETIZING SYSTEMS

Features

ROI: Increase in production volume = optimized profit margins
Example: HMA System with addition of Melt Cooler / Heat Transfer System (MC/HT)

MAAG Gala was the first in the industry to offer a complete system that includes a melt cooler / hot oil unit. This unit eliminates the typically required cool down time to increase the viscosity of the HMA material to the point where it can be pelletized. With the addition of the MC/HT system, the material is cooled in-line and conveyed to the underwater pelletizer. The in-line process significantly increases production capacity.



Melt Cooler / Heat Transfer (MC/HT) System

As an example — a retrofit at a MAAG Gala customer added the MC/HT, yielding:

- $2,500 revenue gained per batch with an additional 333 batches per year
- Incremental annual revenue = $1,125,000
- ROI = 6 weeks

Engineered Leak Prevention for Low Viscosity HMA (LV)
MAAG Gala's **LV Design** specifically address the challenges of common leakage issues experienced when running very low viscosity adhesives. Under proper operation, we can guarantee leakproof operation. Customers have reported benefits of the LV Design equipment, including:

- Safety — no exposure of molten adhesive to the operator
- No waste as a result of product contamination
- Constant pellet rate and capacity
- Elimination of extra work functions for the operator
- Ensures pellet quality by maintaining proper pressure upstream of the die

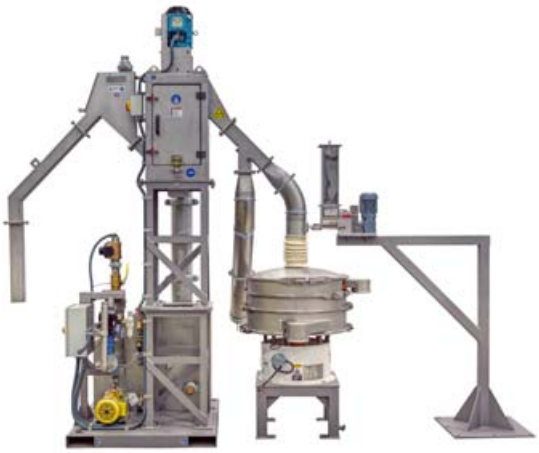
HMA PELLETIZING SYSTEMS

Testing and equipment options

Testing Lab for Hot Melt Adhesive (HMA)

MAAG Gala has a fully equipped lab for testing and pelletizing adhesives to your specifications. Adhesives range from easy to pelletize and package. High viscosity to the pressure sensitive, low viscosity adhesives that require specialized processing. We can pelletize most adhesives and accommodate special batch runs to assist you in speeding your products to the market. Our customers are always welcome to visit our facilities to witness and assist in the pelletizing of their own adhesives at our technical center.

MAAG Gala Pelletizer / Melt Line



MAAG Gala Tempered Water System / Centrifugal Dryer

Approximate Viscosities of Common Materials (at room temperature – 70° F.) melt cooler / heat transfer system is needed

Material	Viscosity in Centipoise
water	1 cps
milk	3 cps
SAE 10 motor oil	85-140 cps
SAE 20 motor oil	140-420 cps
SAE 30 motor oil	420-650 cps
SAE 40 motor oil	650-900 cps
castor oil	1,000 cps

Approximate Viscosities of Common Materials (at room temperature – 70° F.) no melt cooler / heat transfer system is needed

Material	Viscosity in Centipoise
Karo syrup	5,000 cps
honey	10,000 cps
chocolate	25,000 cps
ketchup	50,000 cps
mustard	70,000 cps
sour cream	100,000 cps
peanut butter	250,000 cps

Specialized Equipment Options for Pelletizing HMA / PSA

The MAAG Group offers optional equipment to suit your special needs when pelletizing adhesives:

Tumbler

Some brittle materials crushed by a centrifugal dryer

Multi-Port Rotary Valve

The same brittle materials dried by gentler motion in the Tumbler

Bagging System

Pressure sensitive Gala Form® pellets packaged in the bagging system

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