JSG

Automatic Dry Cut strand pelletizing systems – compounding at the highest level

The proven JSG strand pelletizing system solutions made by Maag Automatik have been particularly designed to achieve highest throughput rates in plastics compounding. The JSG systems produce cylindrical pellets of perfect quality, ideally suitable for further processing. Variable system configurations allow for optimal matching with the processed material.

Your benefits
- Utmost stable process due to automatic strand feed into the pelletizer upon start-up and during production
- Perfectly adaptable for a wide range of filled and unfilled polymers; extended process window
- Minimum residual moisture due to integrated drying section
- Low staff requirements due to automatic mode operation
- Very high machine availability thanks to wear-resistant cutting tools and minimal maintenance requirements
- Throughput rates of up to 9,000 kg/h with superb pellet quality and minimized product losses
JSG

Automatic strand pelletizing systems – compounding at the highest level

Processes and machines and systems made by Maag Automatik stand for cost-effectiveness, flexibility, and reliability worldwide. With over six decades of experience and an installed base of currently more than 8,000 pelletizing systems, the company helps its customers to achieve the maximum level of profitability.

Range of applications
JSG strand pelletizing systems are particularly suitable for the production of specialized or reinforced compounds with a variety of fillers based on:
- Polyolefins, e.g. PP, PE
- Styrene polymers, e.g. ABS
- Polycarbonates, e.g. PC
- Polysters, e.g. PET, PBT, PEN
- Polyamides, e.g. Pa 6, PA 6.6, PA 4.6, PA 12
- Polymer blends

Functioning of the JSG system
Polymer strands extruded from a die head 01 pass through the water-flooded strand guide section 02 where they are cooled.
The water is collected at the end of the strand guide section. The strands are deposited on the conveyor belt 03 and fed to the pelletizer.
Suction dies 04 dry the strands prior to cutting and fix them in place on the conveyor belt.
The feed tools 05 of the strand pelletizer catch the polymer strands and direct them to the cutting tools where the strands are cut into pellets.
The pellets are then classified, cooled, and conveyed in downstream processes 06.
The cooling water is filtered and tempered in the process water unit 07, then returned to the strand guide section.
As your most competent system supplier of Maag Automatik, Maag Automatik provides high-performance solutions to meet your exact requirements. In close cooperation with you we find solutions to increase the efficiency of your pelletizing process – either with specific system components or with complete production lines.

### Die head
- Electric heating
- Absolutely uniform melt distribution
- Swiveling joint for fast access to extruder screws
- Wear-resistant die plate for abrasive products

### Strand guide section
- Automatic system start-up
- Automatic take-up and transfer of broken strands
- Increased process reliability due to strand monitoring
- Height-adjustable strand guide section for simple adjustment to process parameters
- Water separation and spray nozzles designed for optimized cooling results
- Start-up scraper available for operating widths above 400 mm

### Conveyor belt and air knife
- Tough, temperature-resistant conveyor belt which is easy to dismantle and to clean
- Open-mesh fabric, highly permeable to air and water
- Exhaust air nozzles with variable positioning
- Negative pressure fixes the strands on the conveyor
- Spray nozzles extend the cooling period
- Dehumidification of exhaust air with maximum reuse of process water

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**JSG 600 start-up device with scraper**

**SG 900 die head in operation**

**JSG 300 strand guide section**

**Variable positioning of the exhaust air nozzles**
The heart of each JSG system is the strand pelletizer. Maag Automatik offers the PRIMO\textsuperscript{Plus} line for medium throughput rates and the M-ASG line for higher throughput rates – each according to your specific requirements.

**PRIMO\textsuperscript{Plus} and M-ASG strand pelletizers**

- Strand draw-in speeds of up to 180 meter/min
- Automatic strand lacing, supported by air nozzles (patent no. DE 19931222)
- Driven upper steel feed roll
- Minimal effort required for cleaning and setting
- Adjustable pellet length
- Maximum availability due to quick-change die head replacement feature

**Cutting tools**

- Extended lifetime due to tempering section
- Wide range of materials, e.g. tool steel, tungsten carbide, ceramics, and diamond
- Wedged tungsten carbide cutting rotor available (patent no. DE 19855617)

Patented wedged tungsten carbide cutting rotor segment
JSG

System components

Process water unit

- Continuous filtration of the return water through replaceable filter inserts
- Cooling via plate heat exchanger
- Water tank with refill level control as buffer for system start-up
- Separation of process water from central cooling water supply unit

Classifier

- Contributes to constant high-level pellet quality
- Single-decker to screen out overlengths
- Double-decker to screen out fines and overlengths
- Very low vertical acceleration makes oversized particles slide smoothly on the deck surface
- Quick replacement of sieve insert
System components

Spiral conveyor
- For drying and transporting the pellets
- Easy to clean
- Maintenance-free

Machine controls
- All controls for the system components can be integrated into the controls of the pelletizer (air knife, classifier, spiral conveyor)
- Data exchange with higher-level control systems
- SPS design with process visualization
## Technical data

<table>
<thead>
<tr>
<th>Technical data:</th>
<th>JSG 200</th>
<th>JSG 300</th>
<th>JSG 400</th>
<th>JSG 600</th>
<th>JSG 900</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strand pelletizer:</td>
<td>PRIMO™</td>
<td></td>
<td></td>
<td>M-ASG</td>
<td></td>
</tr>
<tr>
<td>Operating width:</td>
<td>200 mm</td>
<td>300 mm</td>
<td>400 mm</td>
<td>600 mm</td>
<td>900 mm</td>
</tr>
<tr>
<td>Pelletizer motor power (depending on material type, pellet weight, and pellet size):</td>
<td>5.5-18.5 kW</td>
<td>7.5-22 kW</td>
<td>11-30 kW</td>
<td>15-45 kW</td>
<td>30-75 kW</td>
</tr>
<tr>
<td>Line speed:</td>
<td></td>
<td></td>
<td></td>
<td>50-150 m/min</td>
<td></td>
</tr>
<tr>
<td>No. of strands (at 3 mm pellet diameter):</td>
<td>25</td>
<td>40</td>
<td>50</td>
<td>80</td>
<td>120</td>
</tr>
<tr>
<td>Length of strand guide section:</td>
<td>2, 3 or 4 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of conveyor belt:</td>
<td></td>
<td></td>
<td></td>
<td>3, 5 or 7 m</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Throughput [kg/h]*:</th>
<th>JSG 200</th>
<th>JSG 300</th>
<th>JSG 400</th>
<th>JSG 600</th>
<th>JSG 900</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA 6, PA 6.6 + 15-50 % glass fiber or fillers:</td>
<td>2,000</td>
<td>3,000</td>
<td>4,000</td>
<td>6,000</td>
<td>9,000</td>
</tr>
<tr>
<td>PE, PP + 15-50 % glass fiber or fillers:</td>
<td>1,000</td>
<td>1,500</td>
<td>2,000</td>
<td>3,100</td>
<td>4,600</td>
</tr>
<tr>
<td>ABS/PC blend + 15-50 % glass fiber or fillers:</td>
<td>1,300</td>
<td>2,000</td>
<td>2,600</td>
<td>3,900</td>
<td>5,900</td>
</tr>
<tr>
<td>PET, PBT + 15-50 % glass fiber or fillers:</td>
<td>1,600</td>
<td>2,600</td>
<td>3,200</td>
<td>5,200</td>
<td>8,000</td>
</tr>
<tr>
<td>PPS + 15-50 % glass fiber or fillers:</td>
<td>1,300</td>
<td>2,000</td>
<td>2,600</td>
<td>3,900</td>
<td>5,900</td>
</tr>
</tbody>
</table>

* At 3 mm of pellet length and 3 mm of pellet diameter; further products on request.