

# Energy savings with Gema Systems

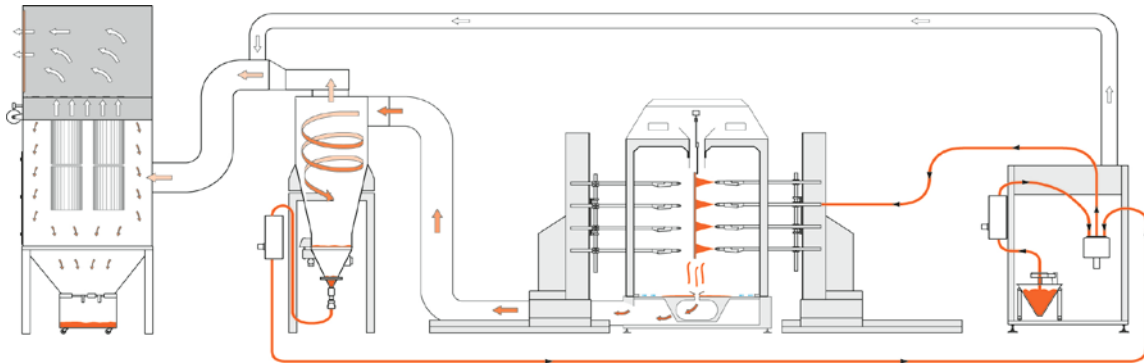
## Energy efficient Gema Systems


Energy efficiency is taking on a greater importance, as energy costs become a significant factor and both national and international laws and regulations become stricter.


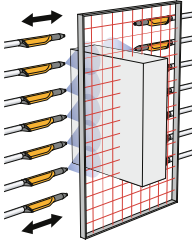

Take advantage of the savings potential for your plant design by using the energy efficient Gema solutions. Gema offers innovative and high quality products that guarantee savings in terms of pressurized air consumption and energy. The ATEX-motors used inside Gema systems also comply with the European Efficiency Class IE2 and are therefore energy optimized.

Reduce your energy consumption during operation and maintenance of your powder coating plant and save money.

**A significant customer benefit is created by compressed air savings and energy savings for each component of the powder circuit for the Gema powder coating system:**



Product	Features	Savings Potential
 <p><b>OptiFlow Injectors</b></p>	<p>The OptiFlow injector transports more powder by using <b>less compressed air</b> and as a result <b>reduces the wear</b> of the injector and powder gun.</p> <p>The patented DVC-Technology allows a precise and reproducible powder output regulation and improves the film thickness distribution.</p>	<p>Standard injectors with a 90° angle need ca. 4.5 Nm<sup>3</sup>/h pressurized air. Because of its optimized geometry, the 135° angle and short suction tube, the OptiFlow Injector only needs 3.0 - 4.0 Nm<sup>3</sup>/h of pressurized air for the same conveying capacity, e.g. 150 g/min.</p> <p>Example for cost savings:                      Typical amount of guns: 10 guns, 2,000 h operating life at 80% capacity, results in 1,600 h real operating time.                      Pressurized air savings 1.5 Nm<sup>3</sup>/h for each gun. Costs of pressurized air 0.03 €/ Nm<sup>3</sup>.</p> <p><b>Savings Potential with Gema:</b>  <b>10 x 1.5 Nm<sup>3</sup>/h x 1,600 h x 0.03 €/ Nm<sup>3</sup> = 720 €/year</b></p>

Product	Features	Savings Potential
 <p><b>OptiCenter Powder Management</b></p>	<p>Conventional powder centers operate with an independent exhaust system with corresponding energy consumption. The OptiCenter on the other hand is vented <b>directly through the after filter</b>, with no energy costs the result.</p>	<p>Energy Costs Conventional Powder Center: Ventilator motor 2.2 kW, Operating time 2,000 h, Coating time 90%; Energy Costs: <math>2,000 \text{ h/year} \times 0.9 \times 2.2 \text{ kW} \times 0.11 \text{ €/kWh} = 435.6 \text{ €/year}</math></p> <p>Energy Costs OptiCenter: no motor installed = no costs (direct suction into the after filter)</p> <p><b>Savings Potential with Gema: 436 €/year</b></p>
 <p><b>Part Detection</b></p>	<p>Conventional systems operate constantly, with the guns in constant operation. With the Gema <b>Gap-/Height-Detection</b> the guns are automatically switched on/off.</p>	<p>Savings Potential with Part Detection: Pressurized air consumption Conventional System = 100% Pressurized air consumption with Gap-/Height-Detection = 60%</p> <p>Costs of pressurized air with 10 guns: <i>100% Operation</i> <math>10 \times 4.0 \text{ Nm}^3/\text{h} \times 1,600 \text{ h} \times 0.03 \text{ €/m}^3 = 1,920 \text{ €/year}</math></p> <p><i>60% Operation</i> <math>10 \times 4.0 \text{ Nm}^3/\text{h} \times 1,600 \text{ h} \times 0.03 \text{ €/m}^3 \times 0.6 = 1,152 \text{ €/year}</math></p> <p><b>Savings Potential with Gema: 768 €/year</b></p>
 <p><b>Filter Separators</b></p>	<p>In a conventional system the filter system operates continuously. Significant cost savings can be achieved by using <b>frequency converters</b>.</p>	<p>Typical operation modes:</p> <ul style="list-style-type: none"> <li>■ Coating mode</li> <li>■ Color Change mode</li> <li>■ Conveyor gaps</li> <li>■ Pause / Stop</li> </ul> <p>The energy consumption of the filter is automatically regulated according to the used operation mode. The energy savings potential is 15-20%.</p> <p>Example: Motor performance ventilator 20 kW, Energy costs 0.11 €/kW, Operating time 1,600 h effective</p> <p><b>Savings Potential with Gema:</b> <math>20 \text{ kW} \times 1,600 \text{ h} \times 0.11 \text{ €/kW} \times 20\% = 704 \text{ €/year}</math></p>

Gema Switzerland reserves the right to make technical changes without notice!