

Enamel Application Concepts

Perfect coating results with abrasive enamel powder



Enamel powder coating systems

Gema offers a full range of solutions, developed specifically for the enamel coating.

Wear-resistant design, high transfer efficiency, outstanding application performance and short return on investment are the common advantages of our enamel systems.

Your global partner for high quality powder coating



Gema enamel systems for higher productivity and profitability



Flexible booth solutions

Gema offers two booth systems for a targeted increase in productivity in single- or multi-color applications. The MRS booth, consisting of stainless steel walls, is suitable for the classic single-color application in large series production. Compactness, greater flexibility and faster color changes in multicolor applications are the hallmarks of the MagicCompact booth.



Optimum enamelling conditions

Both booth types provide ideal coating conditions and are adapted to the coating products and local conditions. Targeted airflow and an efficient recovery system maintain powder quality and cleanliness in the working environment.

Qualitative design

A robust design and the use of durable materials make the Gema systems reliable systems for highest coating requirements and reduce maintenance requirements and costs considerably.

Highest quality and reproducible results

Robust and precisely working OptiFlow enamel injectors are used for a controlled powder transport, the OptiSpray dense phase technology is used for the highest quality requirements. The latter convince with a long-term stable and reproducible powder output.

Highest coating efficiency

The core of the coating is Gema's application technology. Optimally coordinated equipment masters every coating requirement. The latest charging technologies and finely controlled powder ejections bring the coating results to the highest level.

User-friendliness

MagicControl 4.0 is the central control unit of the powder coating system. The clear and structured user interface allows you to control the entire coating process and keep automation firmly under control.

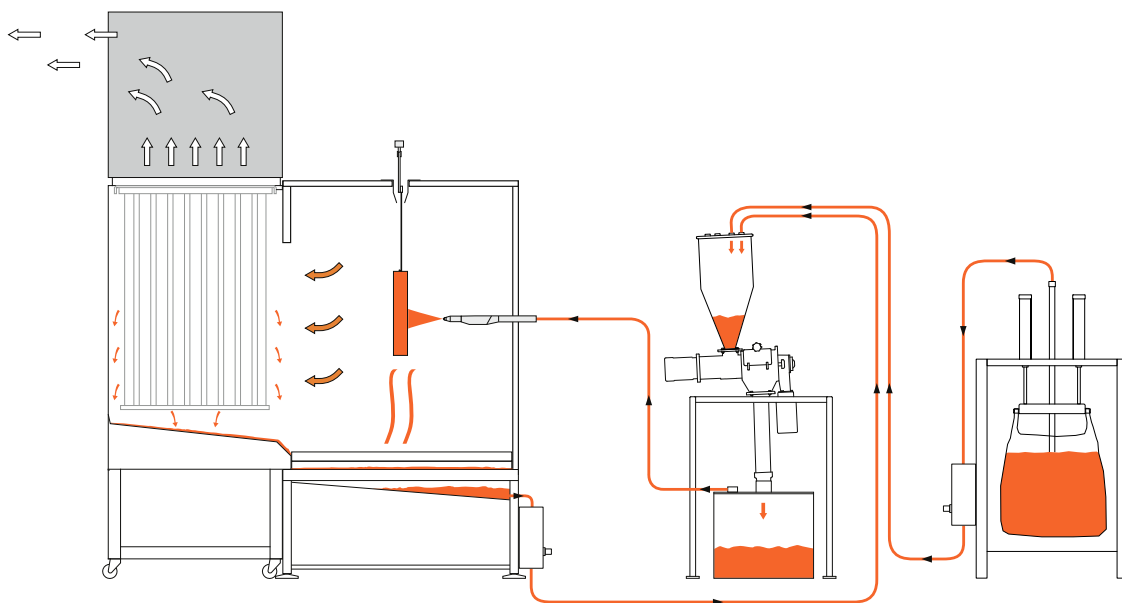
Savings on enamel powder

Precise powder output, optimum electrostatic charging and high conveying efficiency are the keys to uniform layer thickness and optimum powder consumption.

Enamel Powder Circuit

MRS Single-Color Booth

The enamel overspray is recovered by the filter unit that is directly integrated in the booth wall. The reclaimed powder is continuously removed from the booth floor by the squeegee unit and reclaimed via the fluidized channels. Before returning into the main hopper the enamel powder passes through a magnetic separator and a sieving machine that remove all metallic contaminations.



Closed and efficient powder circuit of MRS booth - single-color application

MRS Single-Color Booth

The **MRS system** for **single-color applications** can be designed in a wide variety of configurations. The booth is suitable for applications with white or ground enamel, for flat parts, boilers or for cavities. The modular design of the booth allows a flexible solution for any application requirements. Its compact design is very easy to integrate into any plant layout.



Booth design customized to your needs



The booth floor is flat and allows an easy and safe access for maintenance. Booth walls made of stainless steel guarantee highest robustness and wear resistance.

Automated floor cleaning

The squeegee system cleans the floor of the booth continuously and powder is automatically reclaimed.

Excellent separation efficiency



The sinter plate filters have an excellent separation efficiency of 99.99%. Thanks to their very robust construction they have an exceptionally long life with the lowest maintenance costs. The extremely energy efficient fan motors fully comply with the standards of European Motor Efficiency Class IE2.

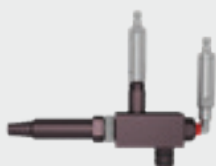
The heart of enamel coating



High transfer efficiency, uniform enamel application, optimal penetration into any geometry, the Gema enamel powder guns represent the heart of the enamel coating process. The robust construction with wear-resistant components is another highlight of the guns.



Apply the right amount of enamel powder at any time



The injector aims for ease-of-use, continuous and consistent feed and extended life of components.

The powder hopper can be optionally heated and / or vibrated in order to condition the powder optimally. The fresh and recovery powder can be transported through a wide range of powder feed systems and can be conditioned through various sieving solutions. This covers even your highest quality requirements.

Coating in every direction



The Gema reciprocators and axes cover all movements. No matter what configuration you need, whether horizontal, vertical or synchronizing axis, in-out or rotary axis, Gema has a solution for all your requirements.

Control the coating process

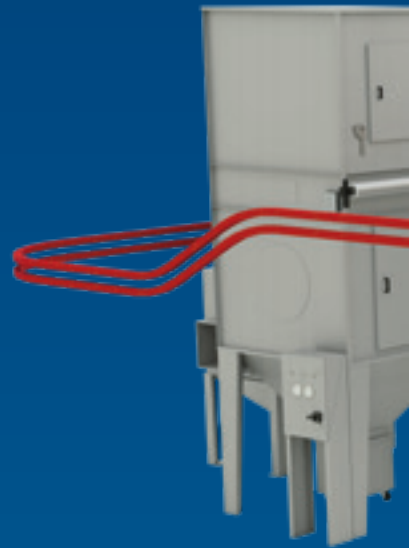


Do you want to save enamel powder? Do you insist on high user comfort combined with the highest coating quality? The user-friendly touch panel of the MagicControl 4.0 with integrated PLC for controlling the guns and axes allows easy access to all coating parameters and control relevant factors of the entire system at any time.

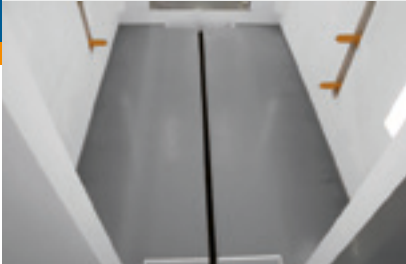
MagicCompact® EquiFlow® BA04-E Multi-Color Booth

The **EquiFlow BA04-E** booth is specially designed for **multi-color applications** that require color changes.

The use of non-conductive plastic materials for the booth construction and its self-cleaning floor prevent powder accumulations. One operator can clean the booth in minimal time. Air extraction is concentrated where it is needed most, at the booth's entry and exit. This prevents a contamination of the environment and creates an ideal airflow.



A completely different kind of booth



The MagicCompact EquiFlow Enamel BA04-E version features a double-wall booth construction. As a result powder accumulation is minimized on the booth walls. The booth floor is equipped with an automatic blow-off system to prevent powder deposition. The intelligent air distribution of the EquiFlow technology ensures homogeneous air flow in the automatic coating zone.

Exhaust air switchover

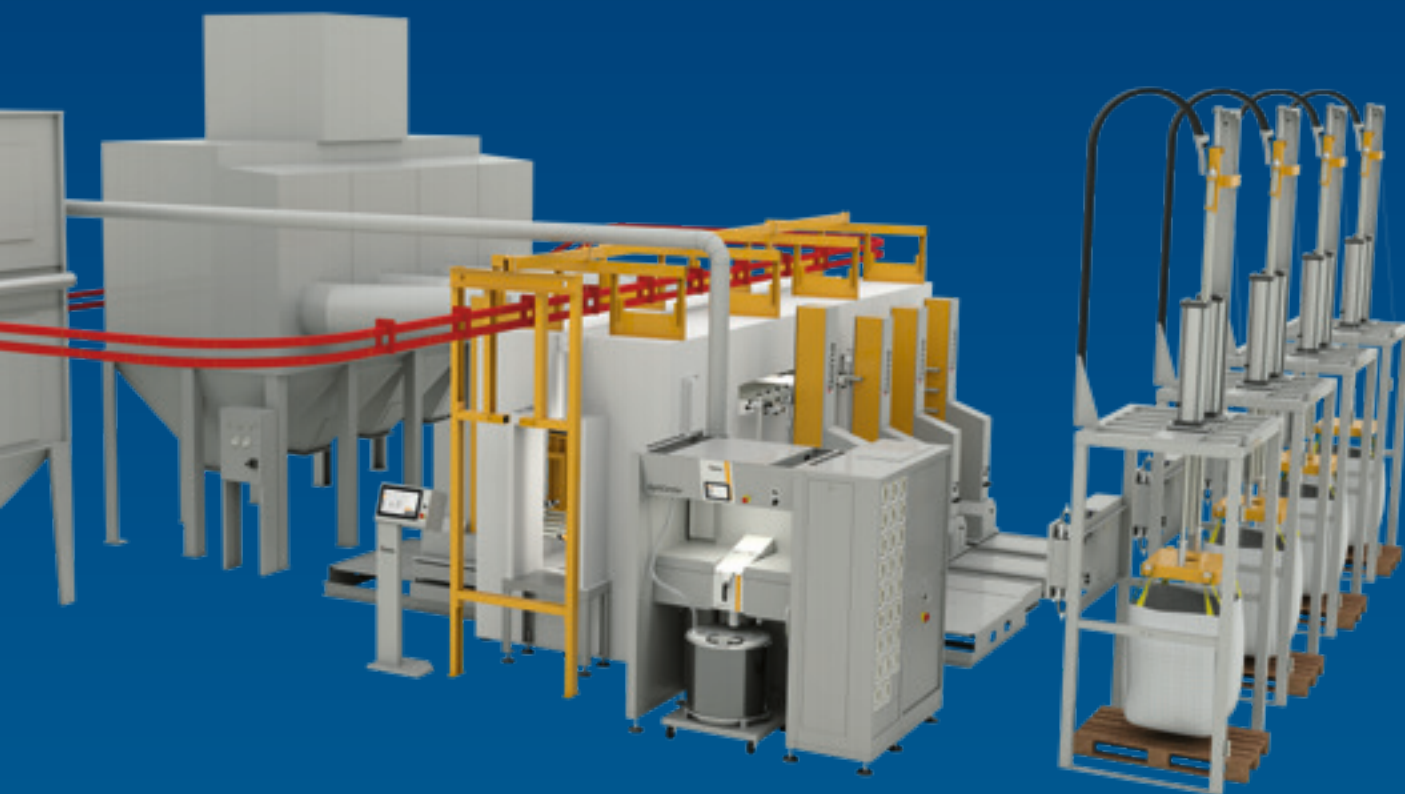


An easy-to-operate exhaust air switchover and the use of a multiple filter allow the operation of further colors. The filter units are characterized by their extremely long lifetime, and their high separation efficiency.

Apply enamel powder in different colors



The OptiCenter powder center is the basis for high-quality coating results, minimal powder consumption and fast, clean color changes. The closed powder circuit is automatically and precisely controlled and maintains a continuous and consistent powder supply.



The heart of enamel coating



High transfer efficiency, consistent powder output and uniform powder application: Gema powder guns together with the powder feeding technology (injector or pump) form the heart of powder coating. A design with wear-resistant components is indispensable for enamel coatings and ensures maximum coating efficiency.

Coating in every direction



The Gema reciprocators and axes cover all movements. No matter what configuration you need, whether horizontal, vertical or synchronizing axis, in-out or rotary axis, Gema has the right solution for all your requirements.

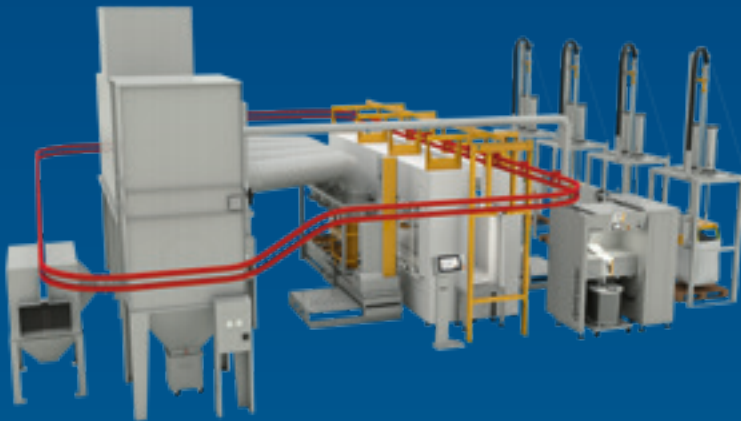
Control all coating parameters



Powder savings are important. Repeatable coating results and operator comfort have priority.

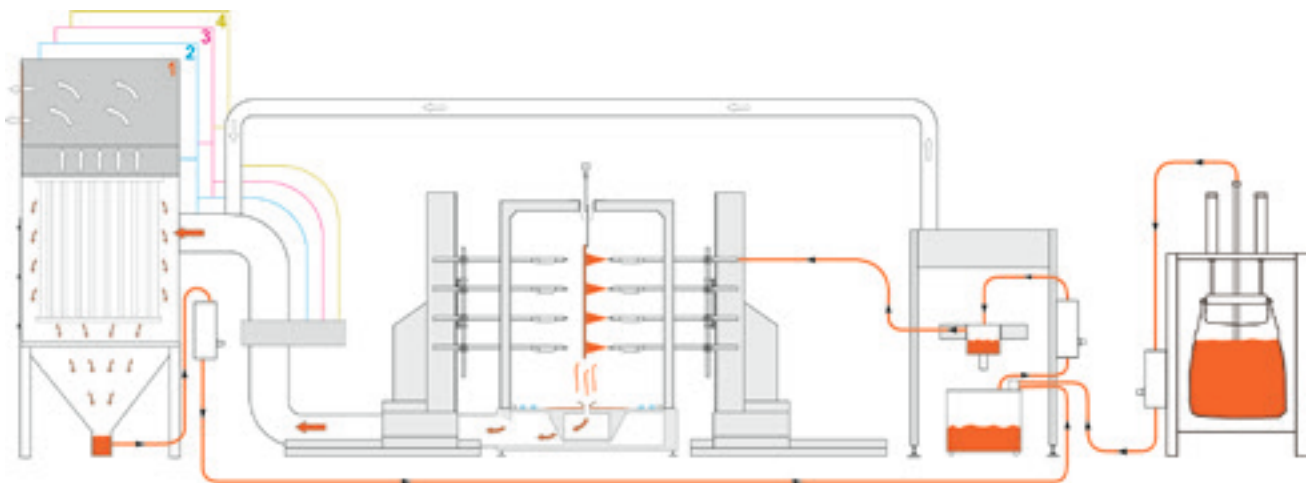
The versatile control system MagicControl 4.0 with touch panel provides continual access to all parameters of the coating process.

Gema Enamel Booths: Boost your productivity and profitability



Multi-Color Booth MagicCompact EquiFlow BA04-E

The booth floor is equipped with an automatic cleaning system to prevent powder deposition. The enamel overspray is recovered via a central suction channel in the booth floor and short ducting into the separate filter unit. Before returning to the main hopper, the enamel passes through a magnetic separator and a sieving machine that remove all metallic contaminations. An easy-to-operate exhaust air switchover and the use of a multiple filter allow the operation of further colors.



Powder circuit MagicCompact EquiFlow BA04-E booth - multi-color application

OptiCenter: Multi-Color powder management

Efficient powder management

The core of the OptiCenter is the OptiSpeeder (powder hopper) which is equipped with the OptiSpray AP01-E. This unique container concept prevents powder loss during operation.

Control of the entire powder circuit is done fully automatically and precisely. The result is extremely low powder consumption and an excellent coating result.

Improved coating quality

The powder suction distance is considerably shorter than with conventional powder centres. These features result in improved uniformity of the powder flow and improved coating quality.

The OptiCenter can be equipped with different fresh powder supply systems and therefore ensures a constant powder level inside the hopper.

Color change

The overall design of the OptiCenter allows an optimal and easy color change.



Powder Hopper: directly integrated into the OptiCenter for a perfect conditioning

- Mobile 150 litre container
- Optionally heatable
- Automatic powder transport into the OptiSpeeder powder hopper
- Level detector
- Magnetic separator

OptiSpray AP01-E: constant and reproducible output

- Stable powder output over long period of time
- Powder output 50 – 300 g/min
- Constant film build by reproducible powder output
- Automatic cleaning for color changes
- Easy maintenance
- Easy system integration
- Equipped with automatic diagnostic function



Powder Hopper



OptiSpray AP01-E

Enamel application components:

The core of the electro-static coating process



OptiGun® - Designed for wear resistance and ease of color change

The OptiGun GA04-E automatic powder gun is compact and easy to maintain. During color changes, the gun is rapidly cleaned and ready to be used again. All the components are easy to clean and designed for wear resistance.



OptiSelect® manual gun with remote control

Keep eyes on the work piece, not on the control unit! With the remote control on the back of the OptiSelect Pro GM04-E, the right program can be selected, even if the control module is out of reach.

OptiStar® 4.0 - All parameters at a glance

With the OptiStar 4.0 control module you have precise control of all coating parameters. Clear symbols, easy programming and perfect reproduction of coating results contribute to significantly increased coating quality.

SuperCorona

The optional SuperCorona ring neutralizes free ions and avoids crater formation.



The most advanced powder application technology

The enamel powder guns are perfectly matched to the OptiStar 4.0 control unit and offer the highest degree of coating efficiency and user-friendliness:

- High transfer efficiency with every type of powder thanks to the 100 kV high-performance cascade
- Constant powder delivery and continuous powder charging for a uniform coating thickness
- The PCC mode (Precise Charge Control) ensures greater precision and regulation of current settings below 10 microampere and thus improves the coating quality.
- The DVC technology (Digital Valve Control) enables precise control of the powder output and results in uniform coating thicknesses.
- A display pilot ensures easy access to pre-set and customized coating programs
- Reduced maintenance costs through wear-resistant design



Manual coating with Enamel powder

OptiSelect® for enamel powder

The OptiSelect Pro, type GM04-E gun, offers the performance and control to achieve the best possible surface finish with enamel powder. The lightweight and ergonomic design gives you the power and control to achieve the best looking finish with enamel powder.

- The OptiSelect Pro presents itself with the outstanding PowerBoost® high-performance technology for maximum charging capacity. The advantages of the additional performance ensure higher productivity and maximum area performance. This means more powder on the workpiece, less powder in the recovery system.
- The remote control on the back of the gun can be used to select the right program even when the control module is not within reach.

Manual unit OptiFlex®Pro FE

The OptiFlex Pro FE manual unit is specially designed for manual enamel applications. The unit with a fluidized 50-liter powder container is equipped with an OptiSelect Pro manual gun, type GM04-E, and an OptiStar 4.0 gun control. Product highlights include:

- State-of-the-art design and high-performance materials for application of abrasive enamel powder
- OptiSelect Pro enamel gun and OptiFlow injectors made of robust and wear-resistant Ceramic materials
- Wear-resistant and versatile nozzle assortment



Manual application of enamel powder

The OptiFlex Pro FE puts the world's most advanced manual powder coating technology in the palm of your hand. Spray enamel powders with ease, coat complex geometries with outstanding efficiency and quality.

Complex part geometries will not slow you down. OptiFlex Pro FE simplifies the coating of difficult shapes by applying the enamel powder precisely where needed.

Wear-resistant spray nozzles provide excellent powder distribution and penetration needed to coat difficult parts.

Nozzle assortment

Wide range of nozzle assortment for all application requirements, compatible for automatic and manual coating.



Gema Switzerland

Your global partner for high quality powder coating

Take advantage of our expertise and experience from more than 50 years of electrostatic powder coating applications. From simple hand coating through to fully automated powder coating, we offer solutions that meet the demands and requirements of customers around the world in a wide range of industrial sectors. A global service network ensures you always get professional support, at any time and any place!

Gema is part of Graco Inc. Our goal is to help our customers to increase their productivity while creating attractive, long-lasting products. Our experts continually set new standards in the surface coating industry.



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