

Reciprocators & axes

Cost reduction and quality improvement through automation



Systems for automatic powder coating

Making the right choice of automation will save a lot of money!

ITW Gema offers a broad range of multi-axis systems with different levels of automation selected to meet the individual needs of the customer.



Your global partner for high quality powder coating

The base for all motion



Reliable and precise

Quiet running, individual programming options and stability combined with high loading capacity are indispensable for uniform powder coating. The reciprocators of the ZA series meet these requirements perfectly and feature a solid and maintenance-friendly design. They constitute the base for all automation, from simple vertical strokes to complex and multidimensional processes.

Benefits of the ZA reciprocators

- Long-stroke and short-stroke operation
- Timing belt transmission for quiet running
- Maintenance-free AC-motor
- Narrow column design for space-saving gun configurations

OptiMove Control



The OptiMove axis control unit is user-friendly, allowing ease of programming. Each control module controls a single axis. Despite its compact design, OptiMove offers many functions normally found in more complex control units.

Features:

- Programming via touch panel
- Up to 255 programs
- Segment operation and stroke adjustment
- Cycle times displayed
- Integrated DigiBus / CAN-bus

Detection of gaps, height and width

Gap detection

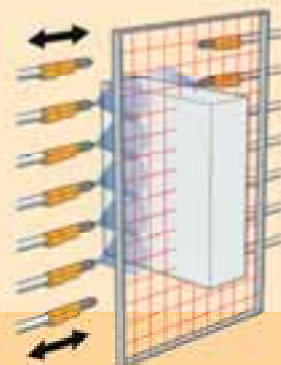
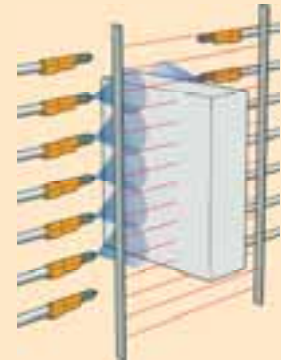
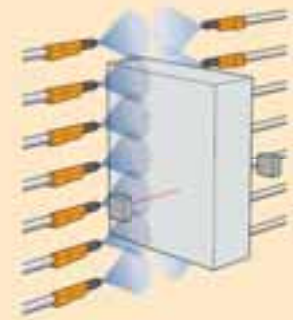
The gap control turns off the guns where a gap is detected. For this reason a light barrier detects the object to be coated at the booth entrance and the guns are only activated just before the object passes through. In case of a gap, the guns are turned off after the object has passed.

Height detection

For the height detection a light grid is used, which automatically triggers the required guns. With horizontal gun arrangement, the reciprocator stroke lengths are automatically adapted to the object heights.

Width detection

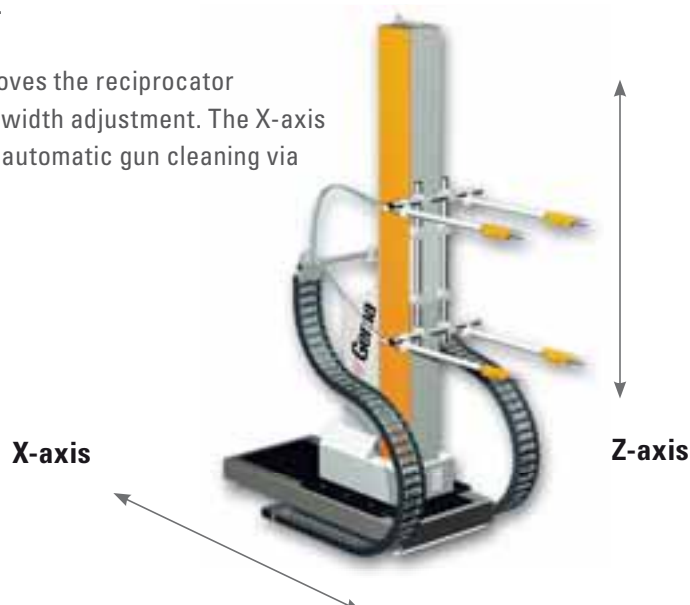
In addition to the gap and height detection systems, the width detection automatically adapts the reciprocators via X-axes to the variable object widths. Ideally the guns are arranged vertically, so that the object contour can be scanned exactly.



Standard axes for all applications

Z-axis: This is the standard axis. It moves the guns in a vertical direction.

X-axis: This axis moves the reciprocator horizontally for the width adjustment. The X-axis is also used for the automatic gun cleaning via blow-off nozzles.



Multidimensional solutions



Synchronization with conveyor (Y-axis)

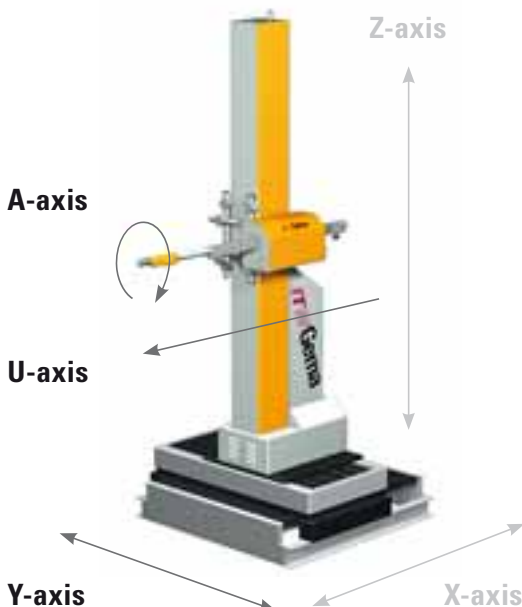
This option is used for the inner coating of hollow bodies such as ovens and control cabinets. A rotary encoder synchronizes the reciprocators to the chain speed, guaranteeing accurate coating of edges, recessed parts and hollow elements. The ideal coating data is calculated beforehand and stored in a database, where it can be recalled at any time.



Infeed axes (U-axis)

For special object geometries and applications, there are different axes available (with rotating axes if required). These are equipped with an independent drive, which accurately drives the gun in and out of predefined zones.

Special axes for complex applications



U-axis:

The U-axis moves the single guns horizontally, one by one, into the recessed areas of the object.

A-axis:

Rotates the spray gun around its own axis.

Y-axis:

Moves the reciprocator synchronised with the conveyor along the booth.

Robots & rotating axes

Robots

When the highest flexibility and free programming are required, robots offer the perfect solution. The programming is done via „teach-in“. They track the geometry and motion sequences with the spray gun, whereas the robot stores the data for the coating process.



Rotating axes (A-axis)

Rotating axes are ideally suited for the coating of inner edges and recessed parts (for example on control cabinets and rotating parts). They accurately trace the rounded geometries and guarantee optimum coating results even on difficult-to-reach areas.



Special axes

Solutions for complex applications

Special application cases need special solutions. Thanks to our vast experience and wide range of products, we will find, in close collaboration with you, the ideal axis geometry for your specific needs.





Magic Control CM-10



All parameters under control

MagicControl CM-10 centrally controls all parameters of the powder coating plant. The individual application layout is shown on the screen, and all operations and functions are transmitted in real-time.

Individual programming

You program all parameters directly on the screen. With clear symbols, the touch screen displays the action messages. Different security levels prevent programs and parameters being modified by mistake.

Storing with maximum comfort

Your individual coating programs are precious. That's why you can store them on CompactFlash cards. Call up your personal programs and repeat your coating results at any time.



PLC control units for fully automated coating

What is CAN-bus?

The CAN-bus system is a 2-wire serial bus, which allows hardware components to exchange data with each other. A field-bus connection enables data exchange with the company's own control system. Your work becomes even more comfortable and process-safe!

MagicControl is a fully programmable, central PC-based control module for controlling the booth, the gun control units, the reciprocators, the axes and the powder supply. MagicControl allows for interlocking and data exchange with higher-level plant control units.

The control and command of height, width and depth detection are easily executed via TFT color monitor with touch-screen function and large 12" display. Clear symbols offer a simple and intuitive operation. The coating programs and production data are stored on CompactFlash cards and can be recalled at any time.



ITW Gema

Your global partner for high quality powder coating

Benefit from our competence based on more than 40 years of electrostatic powder coating application.

From basic manual coating to fully automated powder coating, our solutions meet the requirements and needs of customers and industries all over the world. A global service net guarantees professional assistance any time, anywhere.

ITW Gema is part of the ITW (Illinois Tool Works) Finishing Group. Our objective is to design durable and attractive products for our customers and to assist them in increasing their productivity. Our experts from the Finishing Group regularly set new standards in the surface industry.

Our products are developed and tested in compliance with international standards. They are subject to regular quality tests according to ISO 9001, ATEX, CE, FM.



The powder coating world of ITW Gema



Cost reduction and quality improvement with ITW Gema reciprocators and axes



Benefits of the ZA reciprocators

- Long-stroke and short-stroke operation
- Timing belt transmission for quiet running
- Maintenance-free AC-motor
- Narrow column design for space-saving gun configurations
- Broad assortment of axes
- Wide range of control options
- Positioning accurate to within a millimeter
- Vast program diversity



ITW Gema GmbH
Mövenstrasse 17
CH-9015 St. Gallen / Switzerland
Phone +41 (0)71 313 83 00
Fax +41 (0)71 313 83 83
Mail info@itwgema.ch
Web www.itwgema.ch