

WAGNER

## Movement Technology

ACCURATE AND ECONOMICAL COATING



- Precise
- Robust
- Reliable

## Electric reciprocators

The automatic electric reciprocators are subjected to constant loading, so the reliability and robustness of the reciprocator mechanism is particularly important. The electronic controller offers the latest movement technology for high quality application requirements and an optimal surface finish.

A very wide variety of work pieces have to be coated. Intelligent movement technology leads to better coating quality and a massive reduction in the powder consumption. The automatic reciprocators are controlled using the following control concepts:

### PrimaTech control system:

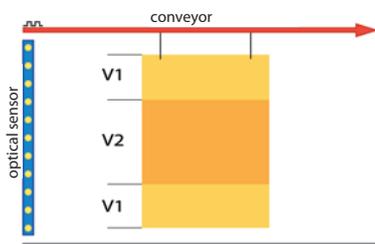
Central control module CCM Prima and reciprocator module RCM Prima

### DigiTech control system:

Central control module CCM-D1 with reciprocator controller LSR-D1

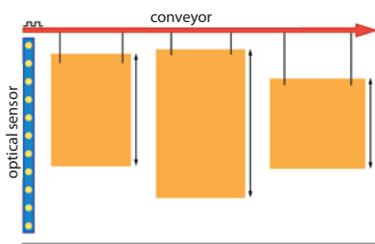
### ProfTech control system:

Touch-Control (SPS)



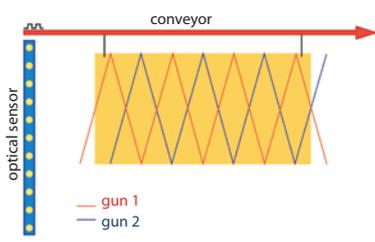
### One and two way operation for automatic reciprocators

The stroke speed can either be held steady, or two different stroke speeds can be set. Thus for example a specific coating zone can be traversed more slowly or more quickly, and thus more or less powder applied.



### Automatic stroke height controller

This is used in a combined reciprocator and gap/height controller for horizontal gun arrangements. It offers considerable benefits when coating work pieces with different dimensions as part of one coating order. The reversing points for the guns are variable so the part can hang at any height required. In addition to this, the automatic powder reduction will ensure that with shorter stroke movements the powder output will be reduced to suit.



### Sine curve regulation ASR

For uniformly distributed film thickness on flat parts the automatic sine curve regulation ASR is used. This guarantees that the whole surface of the work piece will be covered evenly. For this the gap/height controller module measures the actual speed of the conveyor. The controller for the reciprocator calculates the optimal lifting and lowering speed from the stroke height and the conveyor speed and regulates these to suit.

### LONG STROKE EBA-6

Suitable for more complex automatic coating processes with a maximum of up to 12 powder guns. The reciprocator slide is fitted with 16 rollers ensuring smooth stroke movements without any natural vibrations.

- High load capacity up to 70 kg
- Reciprocator slide with 16 guide rollers
- Adjustable limit switches
- Lip seal
- Motor cover
- Suitable for Zone 22 (EX II 3D)

### LONG STROKE EBA-1

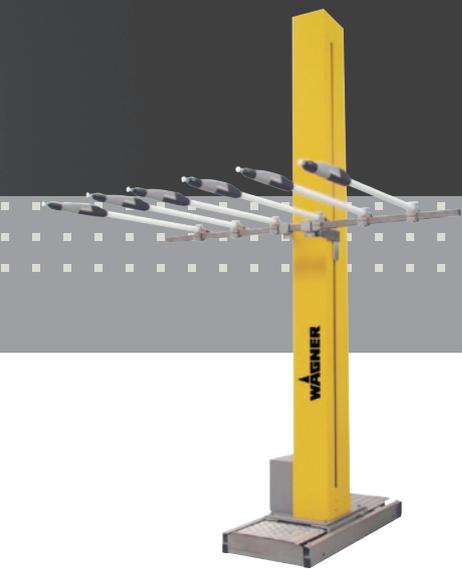
Due to its motor rating of 0.75 kW, it is best suited for simple serial coating processes.

- Stroke speed up to 40 m/min
- Load capacity up to 15 kg
- Reciprocator slide with 12 guide rollers
- Adjustable limit switches

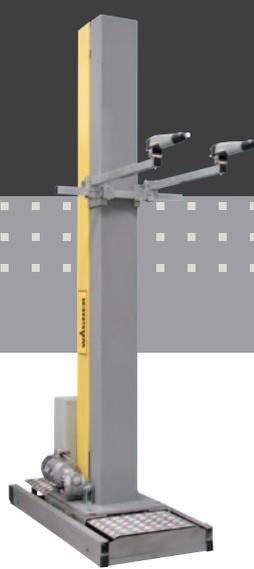
### SHORT STROKE KHG 350

For the vertical arrangement of the spray guns. This allows an optimal integration of compact, fast colour-change booths into the units.

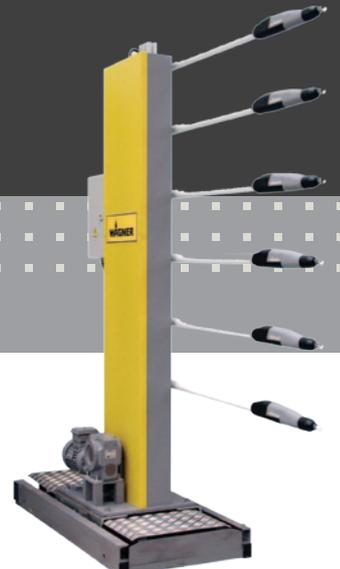
- Robust design with a high load capacity
- Adjustable stroke for a wide range of applications
- Regulation of the stroke speed from 15 m/min. to 55 m/min. using frequency converters
- Geared motor with crank mechanism



EBA-6 with positioning trolley



EBA-1 with positioning trolley

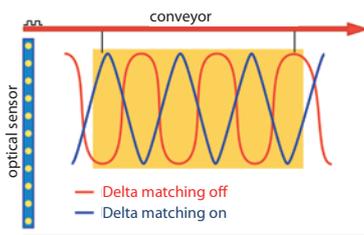


KHG 350 with positioning trolley

### THE SHORT STROKE CONTROLLER SSR-D1

With this control module the short stroke unit can be controlled with a DigiTech system:

- Switching the unit on and off
- Adjusting the stroke speed
- Moving the guns into the cleaning position
- Delta matching



A special feature is the Delta matching. When using short stroke units the work pieces are coated more thickly at the top and bottom, because the guns have to travel a longer distance at the reversing points and therefore apply more powder. The SSR-D1 can increase the stroke speeds at the reversing points and thus distribute the powder evenly on the work piece.

# Control functions with MRS-D1 positioning trolley controller

## Depth controller

The automatic depth controller is recommended for production runs with work pieces of different depths. The depth of the components is recorded immediately they enter the booth, using horizontal light strips, and is passed on to the MRS-D1 control module.

## Position controller

The pre-defined position of the spray units is entered as a parameter for the work piece. When the parameter is called up, the guns are automatically moved into the desired position.

## Parking position

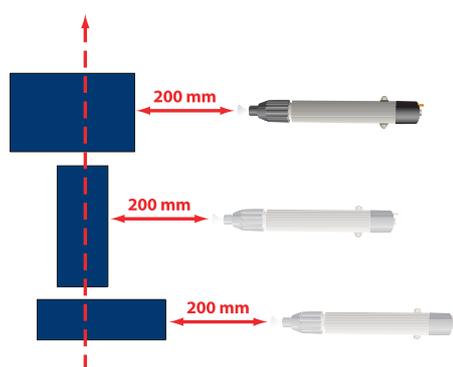
When changing the colour, doing maintenance or cleaning the powder booth, the guns have to be moved out of the booth. The parking position can be pre-defined and stored as a parameter and if required be called up and automatically moved to.



## POSITIONING TROLLEY ZW

With changing depths of work piece, it is necessary to position the spray system correctly for spraying. The positioning trolley is also useful in the cleaning process, for colour changes or to facilitate maintenance.

- Robust design
- Roller chain drive, worm drive motor
- Safety limit switches
- Walk-on cover



The „ZW“ can be operated through a manual forward and reverse switch or by an external WAGNER Controller from the PrimaTech, DigiTech or ProfiTech control system range.

For further information please look in the brochure or visit us at [www.wagner-group.com](http://www.wagner-group.com)

# Sensing, recording, controlling – the gap and height controller

## Automatic pre- and afterspraying

Since the position of the work pieces is known precisely due to the recording of the component, the point of action of the guns can be specified exactly, so it is possible to define a pre- or after spraying distance. The same applies if it is intended to spray over or under the work piece.

Work piece recognition by light sensors and tracking them when passing through the powder booth is a core function of all control variants. In comparison to simple time controls, the synchronization with the conveyor speed, using a pulse encoder flanged to the conveyor drive will avoid a collision between work pieces and guns. Conveyor speed can be changed at any time while control parameters are adjusted automatically.

### Height controller

The height controller is used with vertically aligned guns for coating components of varying heights. Here the stroke remains constant. The sequence and the gap between the parts of different heights can be freely selected. Powder guns that would spray past the work piece are not switched on.

### Gap controller

Ensures that spraying only occurs when there is a work piece in front of the gun. The powder feed is switched off in the gaps.



	Lifting devices				In/ Out positioner			Axle equipment		
	Long stroke		Short stroke		Set of casters	ZW	EVW	Z-axes	Y-axes	Rotation axes
	EBA 1	EBA 6	KHG 350-F	KHG 350-6R						
<b>Direction of movement</b>	↕	↕	↕	↕	↔	↔	↔	↔	↕	↻
<b>Movement range</b>	1000 mm - 2900 mm	400 mm - 3400 mm	100 mm - 350 mm	225 mm - 350 mm	0 mm - 1376 mm	0 mm - 2200 mm	0 mm - 2000 mm	individual	individual	0° - 300°
<b>Speed (max.)</b>	40 m/min	33 m/min	33 m/min	33 m/min	manual	3 m/min	15 m/min	30 m/min	30 m/min	180°/sec
<b>Number of pistols* (max.)</b>	4	12	8	16	-	-	-	1	individual	1
<b>Pistol-arrangement</b>	horizontal	horizontal vertical	vertical	vertical	-	-	-	individual	-	individual

\* WAGNER Guns Type PEA-C4 or PEA-C4 XL 1.4

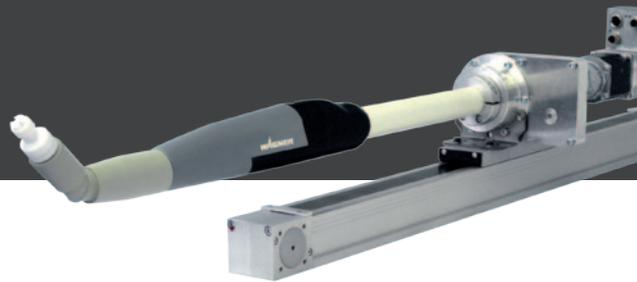


## Dynamic 3D coating without robots

The coating of complicated parts such as e.g. the internal coating of cabinets requires the individual movement of independent guns. The Z axis with rotary drive makes this possible without the purchase of an expensive robot.

### BENEFITS FOR THE USER:

- simple programming
- low investment costs
- high surface coverage
- little space required (short spray booth)
- for simple and complex applications
- integration in color change systems
- process reliability proven by numerous references



### 3D - Coating

## Technical Data

#### Speed:

X-axis	0,2 m /sec
Y-axis	0,5 m /sec
Z-axis	0,5 m /sec
R-axis of rotation	180° /sec
--> Angle of rotation	340°

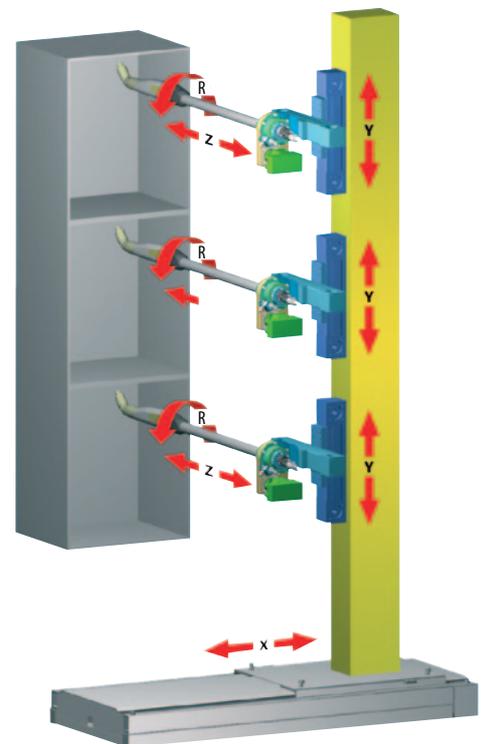
#### Positioning accuracy:

X-axis	+/- 5 mm
Y-axis	+/- 2 mm
Z-axis	+/- 0,5 mm
R-axis of rotation	+/- 0,1°

## Each axis is a module

THE DIRECTIONS OF MOTION CAN BE COMBINED IN MODULES AS REQUIRED:

- X** X-axis: for the coating of surfaces and edges synchronous with the conveyor
- Y** Y-axis: for height positioning
- Z** Z-axis: for moving in and out
- R** R-axis of rotation: for the internal coating of corners, edges, rebates etc.



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