

Part detection systems: quality and savings

Automatic guns positioning, triggering and guns setting improve finishing quality and reduce powder wasted in the recovery system.

	Technical solution	Degree of automation			
		Guns triggering	Guns settings	Guns stroke adjustment	Guns in-out positioning
Gap detection	Photo-cell or light barrier	Automatic	Manual	Manual	Manual
Part height detection	Light barrier	Automatic	Manual	Automatic ¹⁾	Manual
Part height + width detection	Light barriers	Automatic	Manual	Automatic ¹⁾	Automatic
Part recognition, used in combination with one of the above detection methods	Code plates / Object numbers	Automatic	Automatic	Automatic ¹⁾	Automatic

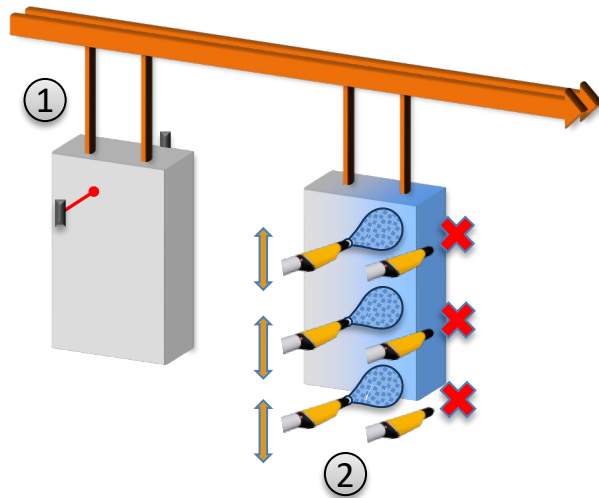
Reduced
overspray

Powder
savings

Stable, improved
coating quality

Gap detection, no object – no spray

- The presence of each object is detected at booth entrance (1) and tracked with the help of an encoder mounted on the conveyor
- **Guns triggering:** powder output is on when the object is in front of the gun and is off when no object is in front of the gun (2)



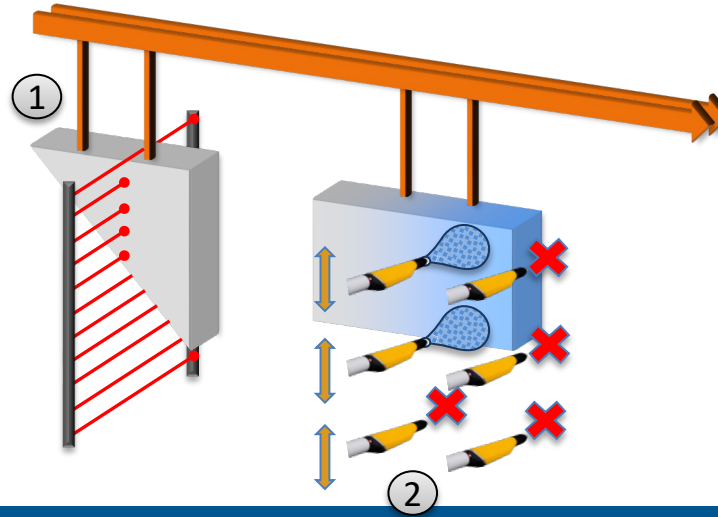
Part
presence detection

Reduced overspray
and powder waste

Improved
application quality

Part height detection – no object no spray

- The **presence and height** of each object are detected at booth entrance (1) and tracked with the help of an encoder mounted on the conveyor
- **Guns triggering (2):** powder output is on when the object is in front of the gun and is off when no object is in front of the gun



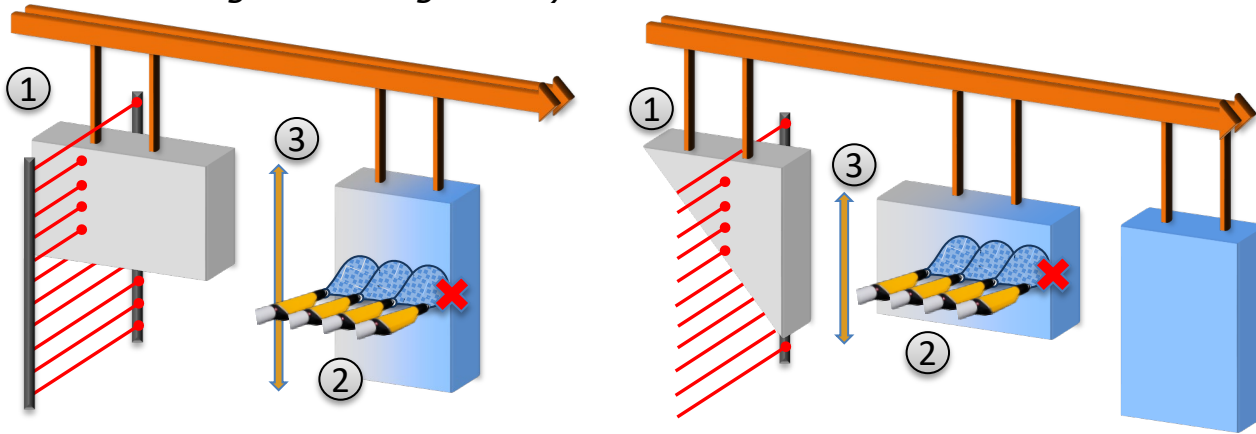
Part presence
and height detection

Reduced overspray
and powder waste

Improved
application quality

Part height detection with stroke control

- The presence and height of each object are detected at booth entrance (1) and tracked with the help of an encoder mounted on the conveyor
- **Guns triggering (2):** powder output is on when the object is in front of the gun and is off when no object is in front of the gun
- **Stroke adjustment (3):** guns stroke is automatically adjusted depending on object height (*only with horizontal guns arrangement*)



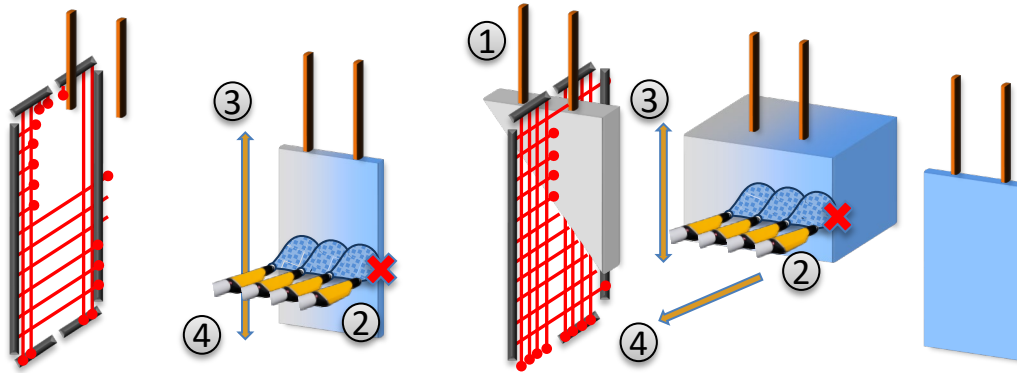
Part presence
and height detection

Reduced overspray,
reduced waste

Improved productivity
and quality

Height / width detection

- The presence, height and width of each object are detected at booth entrance (1) and tracked with the help of an encoder mounted on the conveyor
- **Guns triggering (2):** powder output is on only in front of the object
- **Stroke adjustment (3):** guns stroke is adjusted to the object's height
- **Guns positioning (4):** guns – object distance is adjusted based on object width



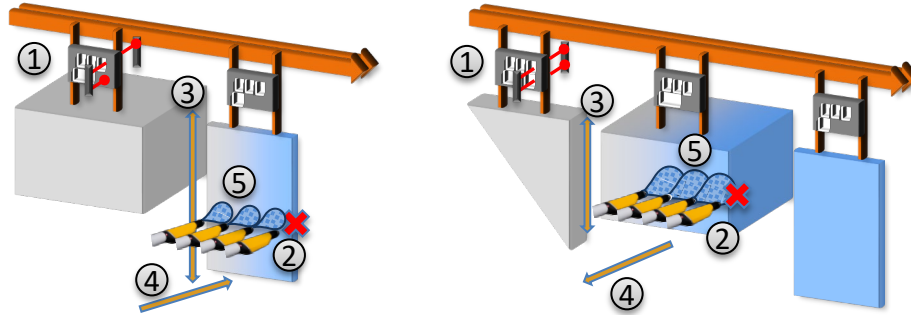
Part presence and
dimensions detection

Reduced overspray,
reduced waste

Precise application,
improved quality

Part recognition, how does it work?

- The object presence and type is identified at booth entrance (1) (by code plates or by a 3rd party PLC) and tracked with the help of an encoder mounted on the conveyor.
- **Guns triggering (2):** powder output is on only in front of the object
- **Stroke adjustment (3):** guns stroke is adjusted depending on object height
- **Guns positioning (4):** guns – object distance is adjusted based on object width
- **Guns setting (5):** application parameters are adjusted for each object type



Part presence and
dimensions detection

Reduced overspray,
reduced waste

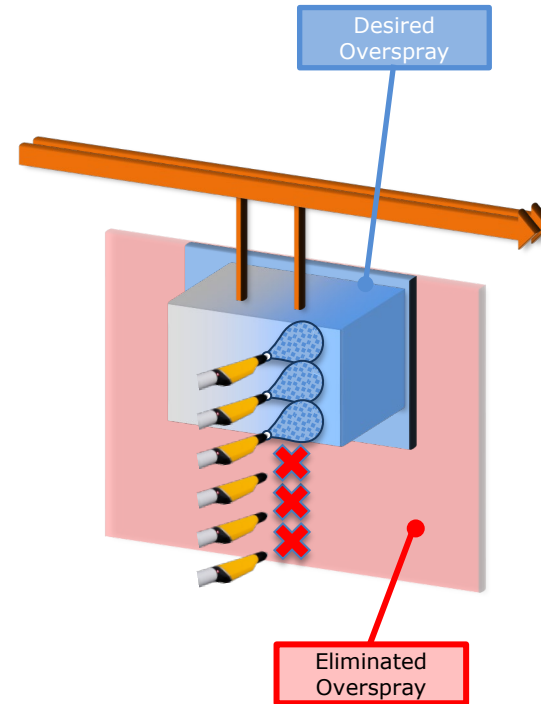
Application adjustment,
best quality

Reduced overspray

- Gema part detection systems ensure that the guns spray powder only on the object.
- Guns are turned off when there is no object in front of them.
- Guns stroke is adjusted so that guns spend most of their time in front of the object.
- Excessive overspray is eliminated

→ **Reduced powder waste in the recovery system**

→ **Reduced deterioration of powder in the recovery system**



Powder savings

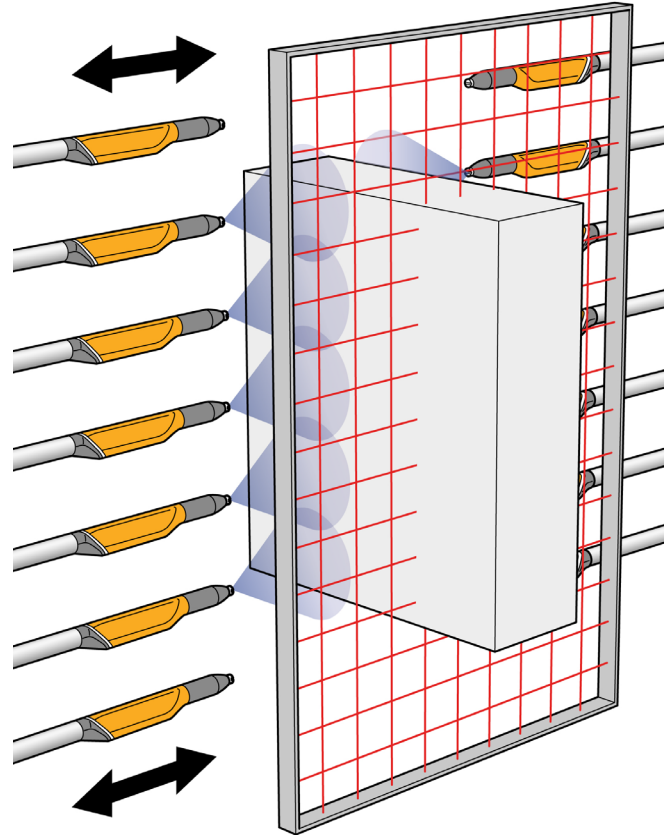
- Gema part detection systems reduce powder overspray to a minimum.

→ **Reduced powder waste in the recovery system**

- Powder application settings can be optimized based on the object to coat

→ **Optimized film thickness control**

→ **Reduction of excessive film thickness**



Stable, improved coating quality

- Gema part detection systems reduce powder overspray to a minimum.
- **Reduced deterioration of powder in the recovery system**
- Guns stroke, positioning and application settings can be optimized based on each individual object to coat
- **Best coating quality for each individual object type**
- **Full automatic operation, no manual intervention required**

