

## AUTOMATIC POWDER SYSTEMS



### POWDER BOOTH

Gema are the recognised world leader in Automatic Powder Coating Systems, incorporating reciprocator mounted automatic powder guns, quick colour change booth, magic powder centre, bulk bag feed unit and high capacity cyclone and after filter.

Gema's technology, quality, and research, coupled with the knowledge, spares and service backup of The Surface Finishing Equipment Group bring our customers decisive advantages in powder coating technology. A selection of products from the Gema range is shown below.

### OPTI AUTOMATIC POWDER GUN, OPTISTAR CONTROL UNIT, AND OPTIFLOW INJECTOR

- ◆ Integrated 100,000 volt Cascade with provides maximum charging and powder transfer.
- ◆ Sealed gun-body stops cross colour contamination.
- ◆ Large tube and range of nozzles for best coating pattern.
- ◆ Quick-change hose connector.
- ◆ Simple to use Control Unit stores up to 250 programs and allows for fast recall of all settings.
- ◆ Patented Digital Valve Control, offers high precision and repeatability.
- ◆ Optiflow Powder Pump is simple to maintain with one wear part and consistent uniform powder delivery.

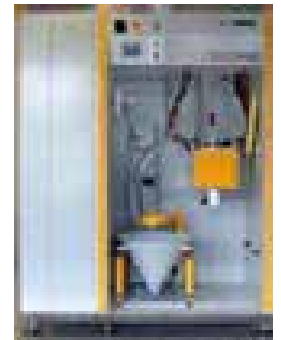
### QUICK COLOUR CHANGE BOOTHS AND POWDER CENTRE

Changing powder colours can be costly and time consuming. Any cross contamination between colours must be avoided.

Gema produced the Magic Booth and Opti Powder centre to minimise this downtime. A fully integrated powder management system. The Opti Centre uses the powder directly from the original 25kg bags. The internal cleaning of the suction tubes, injectors, powder hoses and guns takes place automatically. A level probe ensures an even powder output and detects when the powder container is empty.

#### Advantages:

- ◆ Quick Colour Change System.
- ◆ Very Short Cleaning Times.
- ◆ Plastic sandwich-wall booth surfaces are non-conductive to minimize powder accumulation.
- ◆ Easy-access booth design allows an operator to quickly perform any manual cleaning procedures from outside the booth.
- ◆ Powder quantity in the recovery system kept to a minimum.
- ◆ Optimum coating conditions in the booth for high quality work.
- ◆ Space saving design.



### RECIPROCATORS

Used in powder systems worldwide to mount and move automatic powder guns. The Gema ZA reciprocators provide easily programmable and accurate automation of powder gun movement. This give best powder coverage, coating quality, and minimum powder wastage for each batch of components.

- ◆ The Gema ZA Reciprocator is an easily programmable, reliable, and maintenance friendly unit.
- ◆ Allows you to easily and precisely control gun positioning and movement for maximum flexibility.
- ◆ Displays accurate digital readouts.
- ◆ Up to 255 programmes can be stored for optimum flexibility.
- ◆ Multi axis systems are controlled by the Magic Control CM10 or the Compact opti-control CM20.



## INTRODUCTION TO COMPLETE FINISHING PLANTS

The Surface Finishing Equipment Group includes Ercon Finishing Systems who design and build complete product finishing plants and equipment including:

- Powder Coating Plants
- Electro Painting Plants
- Wet spray booths
- Box Ovens



### POWDER COATING PLANTS

Centred around the market leading Gema powder application technology, Ercon design, manufacture and install complete powder coating plants which include, dip or spray pre-treatment sections, dry off ovens, powder booths, cure ovens and the conveyor system.

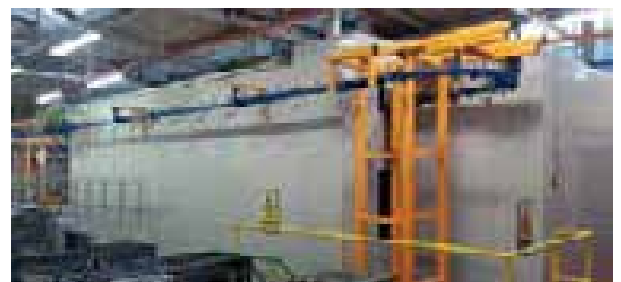
### PRE-TREATMENT SECTION

The automatic pre-treatment sections spray the product with degreasing and etching chemicals. For larger parts such as aluminium profiles a dip pre-treatment system can be included in the plant.



### DRY OFF OVEN

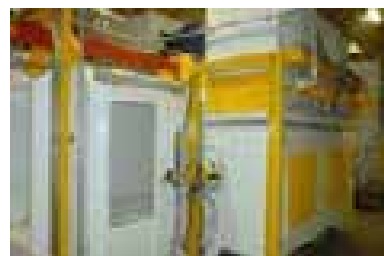
On a conveyerised plant the pre-treated parts pass through a tunnel style dry off oven running at around 100 degC in order to dry the parts ready for the powder application. A dip tank style pre-treatment uses a well oven to dry the pre-treated parts for the required amount of time.



## POWDER BOOTHS

Several styles of powder coating booth are available including the standard stainless steel booth for spray to waste applications or Plastic booths for fast colour change applications. Each booth is custom designed for the product size and chosen combination of manual and automatic powder spraying equipment. Access for the operator is either via an opening in the booth side or via a platform at one end of the booth to provide full walk round access.

The booth designs incorporate reciprocator slots for automatic guns and manual sprayer openings for operators using manual spray guns. All booths are linked to a cyclone and after filter to remove any surplus powder. Full powder recovery and recycling is possible using our advanced cyclone design with a bottom mounted sieve and powder pump, which returns the recycled powder back to the powder centre for re-use.

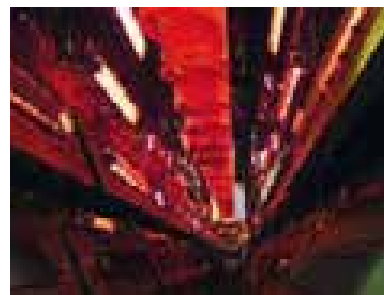


## CURE OVEN

The cure oven is an air circulation type design with either single or multi-pass layouts, depending on the available space. The cure oven typically heats the product to around 180 degC for 15 minutes to melt and cure the powder.

The burner fuel can be natural gas, oil or electric depending on the availability on site. Inverters can be fitted to the burners to improve the accuracy of the temperature control and improve fuel efficiency.

Electric or gas infrared stages can be added to the oven in order to provide a pre-heat zone to achieve fast powder gelling and reduce the length of the air circulated zone. They can also be supplied as a stand-alone oven for certain applications.



## CONTROL SYSTEM

Like all the other parts of plant our control systems are designed and built in house. From a basic push button control panel to a fully integrated PLC controlled HMI system our plant control systems are designed to meet the customers required level of automation and reporting. The control panels include all the motor contactors, inverters for variable speed drives, timers and interlocks to enable the plant to be run and controlled in a safe manner.

Our more advanced control systems include a touch screen interface for the operator who can see the plant status on a schematic plant layout and access historical data on plant performance and error diagnostics.



## CONVEYORS

Ercan design and build the Rayridge range of conveyors which are selected to give the required capacity to carry the product around the plant. The conveyor system includes the track and chain supported from the floor or factory roof, together with the drive system and chain lubricator.

### RAYRIDGE RR12 CONVEYOR

This medium duty conveyor has enclosed track and is available with either bottom or top entry. The conveyor carrying capacity is 30kg per pendant on a 300mm pitch. The chain uses custom bearings for long term reliability.

Individual pendants or flight bars can be used for more flexible loading of products or jigs.



### RAYRIDGE RR8 CONVEYOR

This is our heavy duty conveyor with a standard 406mm pitch and load capacity of 63.5kg per pendant. Heavier loads can also be carried using a double pendant and a load bar.

Both types of conveyor are available in a conventional or inverted style, where the inverted style provides protection for the chain from overspray and dust is prevented from dropping onto the product.

