

# SAMES KREMLIN



## Electrostatic Powder Coating



## Catalog v1.0


"Powder coating solutions for the highest Productivity since 1960"

**Apply your Skills**

[www.sames-kremlin.com](http://www.sames-kremlin.com)



## Editor's **note**

 In order to help you increase your competitiveness, **SAMES KREMLIN** daily dedicates itself to excellence in terms of innovation and reliability.

We constantly improve our performances as well as quality to satisfy your needs.

We also help you in defining the equipment allowing your installation to comply with V.O.C. directives. We enable you to benefit from reliable technologies while ensuring you a swift return on investments.

You will find in this catalog the equipment that will enable you to reach the paint application results you are aiming at.

**Providing you with the best, whatever your requirements, is our mission.**

All **SAMES KREMLIN** team is at your disposal to answer your questions.

Enjoy your reading.

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## SYMBOLS



Gun Sprayer



Rotating Bell Sprayer

# A strong identity at your disposal

In over 65 years of experiences, **SAMES KREMLIN** has built up a unique know-how in many different fields of activity.

Numerous installations such as car manufacturing, tier 1&2 and many other industrials markets are equipped with our electrostatic solutions.

This know-how is for you the guarantee that we are experienced team members, able to understand your needs and to speak the same language.

“ Our strength: a real and strong collaboration with our worldwide customers, to answer various and complex requirements.

**SAMES KREMLIN** is the only world-class powder electrostatic equipment manufacturer offering the whole range of solutions such as:

➤ Premium Quality

➤ Competitivity

- High Transfer Efficiency,
- Productivity increase,
- Reduced maintenance operations
- Reliability,
- TCO<sup>(1)</sup> reduced

➤ Any Process

- Manual solutions
- Automatic solutions
- Fast color changing solutions
- Robotic applicators
- Engineering customized solutions for both



It is also the guarantee for you to work with technicians that are able to lead you towards the best technical alternative and to offer you a reliable solution.

You surely can rely on **SAMES KREMLIN** to enable you to reach your efficiency goals in a sustainable manner.

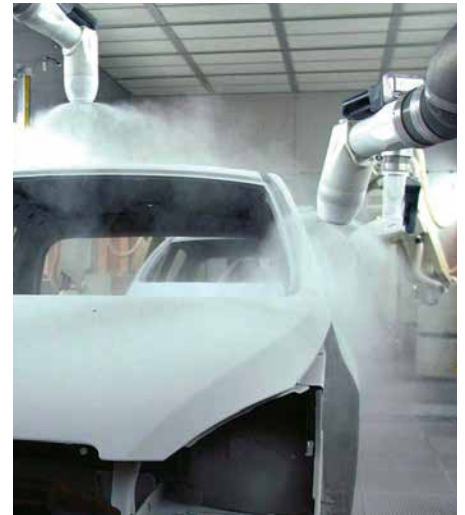
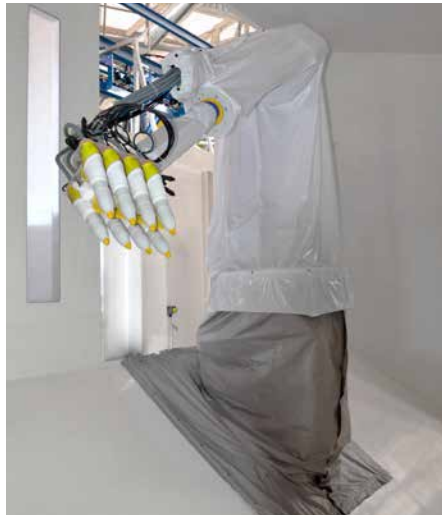
Improving your competitiveness and making your investments cost-effective is our commitment.

(1): total cost of ownership



# Improve your business

Leader in finishing solutions to protect and embellish materials, **SAMES KREMLIN** is your key partner to enhance your productivity, combined with an excellent finish quality.



**THE MOST ADVANCED  
TECHNOLOGIES**

**INNOVATIVE  
TURN-KEY OFFER**

**ENGAGED  
BEYOND YOUR NEEDS**

**R & D** = 48 people  
(20% of the workforce)

**Over** 60 active patents

**Electrostatic expertise**  
**Finishing Science**  
**Powder coating inventor**

**Key technical areas controlled**

- Finishing,
- Robotics,
- Mechanical,
- Automation,
- Fluid,
- Electrical, Electronics...

**Engineering** =  
200 people worldwide

**Analyze and anticipate your needs**

A global network of experts, close to you

**Support you**

- Culture of industrial and technical cooperation
- Services during the life of your installation

**Our commitments**  
Customer satisfaction through clear processes

## Customer service

**SAMES KREMLIN HAS WORKED OUT A COMPLETE OFFER OF SERVICES, ADAPTED TO ALL YOUR NEEDS:**

Advice, repair, servicing, adjustment or intervention by a qualified technician. What ever your request may be, **SAMES KREMLIN** Customer Service department, a team of 20 persons, is at your disposal to answer your needs within the shortest time.

### > ASSISTANCE AND TECHNICAL SUPPORT



**+33 (0)4 76 41 60 01**

In order to make the most from your installation, paint or powder, advice and expertise of specialists are essential. Made of practical, experienced members, **SAMES KREMLIN** customer support team will carry out a diagnosis of your installation and will provide you with a worthy technical assistance for the improvement or retrofit of your paint line.

Services and technical assistance contracts:

- Technical assistance on site
- Preventive maintenance
- Retrofit
- Audit and optimization of the process

### > REPAIR



A regular and professionally carried out maintenance or a retrofit of your equipment is the best way to guarantee his correct running. To this end, do not hesitate and contact one of our technicians:

- to have technical advice or technical assistance by phone
- to have one of your product repaired or controlled
- to carry out a retrofit

### > SPARE PARTS



Original spare parts guaranty the correct running of your equipment. We are there to deal with all your orders of spare parts throughout the world. Thus, our aim is to rapidly supply you and at the best price, with the wished part in order to guaranty an optimum and prolonged running of your paint or powder application equipment.

### > TRAINING



**SAMES KREMLIN** is registered as a training centre by the French Ministry of Employment. Training sessions that allow you learning the requisite knowledge to the use and the maintenance of your equipment are organised throughout the year. A catalogue can be obtained upon request. You will be then able to choose among the proposed selection of training courses, the type of training that meets your needs or production aims. These training sessions can be organised within your premises or in our training centre located in our headquarters in Meylan - FRANCE.



# Quality insurance

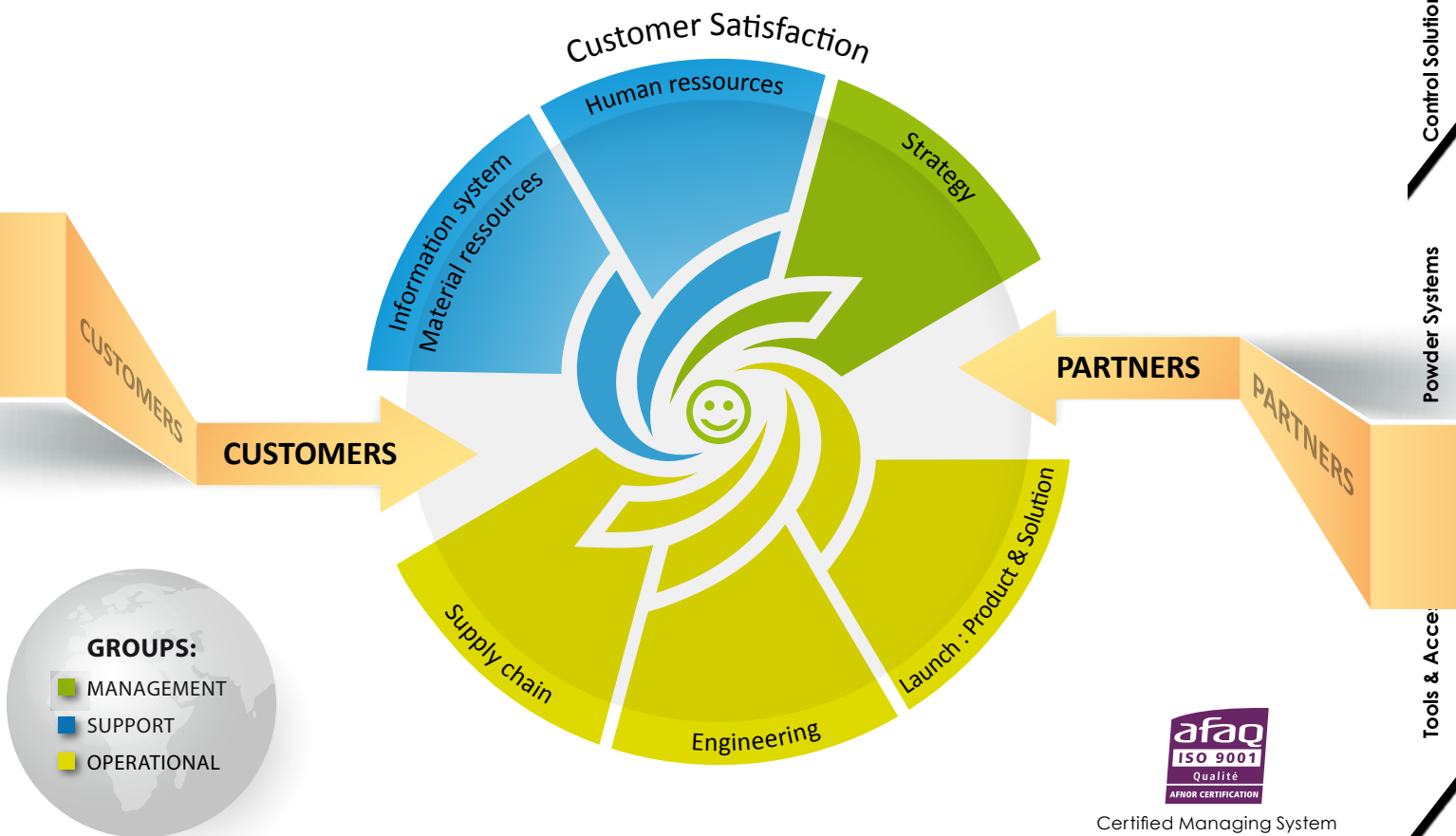
In conformity with the ISO9001 standard - issue 2008, the requisite procedures and registrations are mastered. The seriousness with which **SAMES KREMLIN'** quality policy is dealt ensures you an optimum quality at each stage of the production and of the assembly of the components.

Our products are in the scope of the following European directives:

- 2014/34/UE Explosive Atmospheres
- 2006/42/CE Machinery
- 2014/35/UE Low Voltage
- 2014/30/UE Electromagnetic Compatibility
- 2011/65/UE RoHS Restriction of Hazardous Substances in electrical and electronic equipment
- 2012/19/UE WEEE Waste Electrical and Electronic Equipment
- 1907/2006/CE REACH Registration, Evaluation, Authorization and Restriction of Chemicals.

A process mapping allows organizing all the stages while being very attentive to the various environments (customers, competition...), to the audits (inner and outer) and to the indicators linked to the defined aims.

## PROCESSES MAPPING



# Global presence

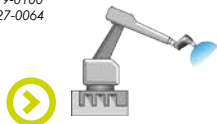
## 17 Locations



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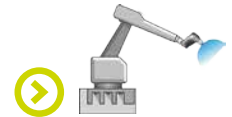
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 Office



Application Center



## Powder paint solutions

Whichever your process may be, there is always a well proven painting solution to carry out your application:

- Manual
- Automatic
- Robotic
- Quick color change

In close collaboration with our technical teams, a solution will be worked out to meet your requirements; our range allowing equipping any type of facility.

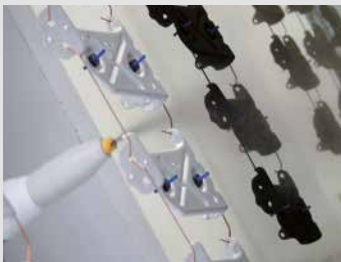
## Research & Innovation

**SAMES KREMLIN'** main activity is to increase the productivity of its customers by designing and manufacturing innovative electrostatic systems. Launching new products on to the market is the core of our organization.

Our know-how, our large investment in Research & Development as well as our reliability-proven equipment allow us proposing our customers integrated robotic solutions.

**SAMES KREMLIN** has been integrating its own technology for decades all around the world. Your efficiency is leading our solutions:

- **Improve excellent finishing quality:**
  - provides uniform film built
  - provides coverage and even thickness
- **Increase transfer efficiency:**
  - saves on paint
  - reduces booth residues
- **Provide superior wrap:**
  - reduces spray time
  - reduces the number of spray guns
- **Reduce the operating costs of coating and increase production capacity**



**POWDER PAINT SOLUTIONS**



**RESEARCH & INNOVATION**



**ENGINEERING PARTNERSHIP**



**CUSTOMER SERVICE**

## Engineering partnership

The **SAMES KREMLIN** engineering teams share with our customers the fruit of their experience and bring all of their expertise and availability. Each of our customers is guaranteed technical and commercial tracking in the running and development of their painting process, our staff are always available to provide rapid assistance and advice.

**SAMES KREMLIN** commits to the quality and reliability of its solutions and services, such as the improvement of:

- The performance (regularity and transfer rates of the equipment, output when changing colours, etc...)
- Compliance with safety and environmental rules
- Productivity (grouped colour batches, unhooking of hangers, etc...)
- Reduction of costs
- Automation of functions (detection of size, break between parts, automatic air blast of spray guns, proportional flow control, use of spray gun tables dedicated to families of products, etc...)
- Ergonomics of work stations
- Tracking and management of maintenance

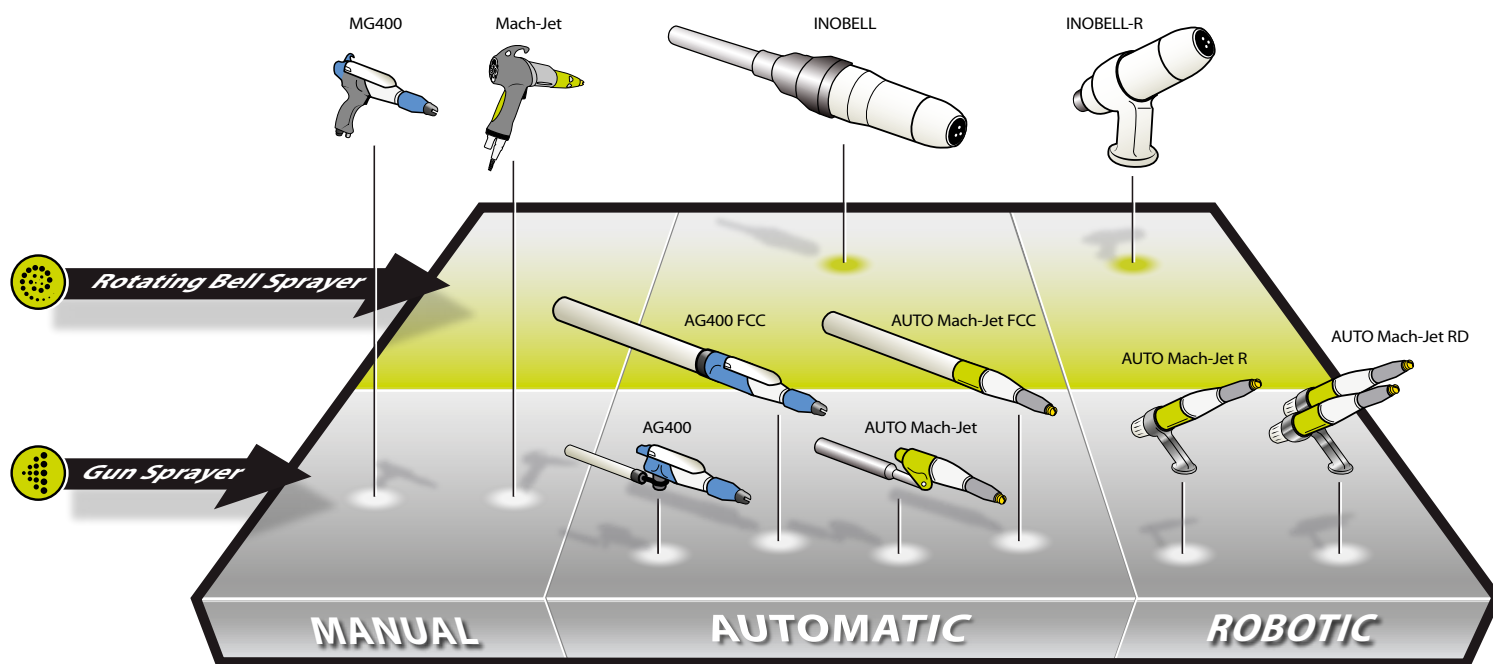
# Range of powder sprayers

THE **SAMES KREMLIN** POWDER ELECTROSTATIC RANGE IS MADE OF THREE TYPES OF SPRAYERS:

> **MANUAL GUN**, including **Mach-Jet & MG400** used most of the times for small batches or for touch up after or before an automatic system.

> **AUTOMATIC SPRAYER**, including **AUTO MACH-JET, AG400 & INOBELL** used to spray large series with high flow rate. Most of the times, several guns are installed vertically or horizontally.

> **ROBOTIC SPRAYER**, including **INOBELL-R** with high speed turbine for enhanced finishing quality and **AUTO MACH-JET R/RD** sprayer for general industry applications.



## WHEN USING GUN OR BELL ?

### Gun Sprayer

Very versatile, the fan spray favors penetration in recesses and folds. Target distance may be a factor.

- Good penetration and wrap around
- Complex shapes
- Used for touch up
- Automatic or manual
- High Transfer Efficiency

### Bell Sprayer





Designed for coating large flat surfaces, the bell can spray all kinds of powders with a film build accuracy of +/- 5 microns.

- Wraparound effect
- Wide pattern (up to 450mm)
- High flow (>200g/min up to 500g/min)
- Homogeneous thickness (+/-10%)
- Automatic or robotic
- High transfer efficiency








# Range of the powder sprayers



Manual

- Mach-Jet**  **CRN 457** control module
- e-Jet 2**  **Equipment VT, VT2, R, R2** (Mach-Jet + Trolley)
- e-Jet 2 NDT**  **Equipment CSV 230** (Mach-Jet + Trolley)
- MG400**  **GCU 400** control module

Automatic

- AUTO Mach-Jet**  **CRN 457** control module
- AUTO Mach-Jet FCC**  **CRN 457** control module
- INOPELL**  **TCR** control module
- AG400**  **GCU 400 & GCU 400L** control modules
- AG400 FCC**  **GCU 400 & GCU 400L** control modules

Robotic

- AUTO Mach-Jet-R**  **CRN 457** control module, **R** (Single) & **RD** (double) version
- INOPELL-R**  **TCR** control module

## SYMBOLS



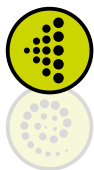
Gun Sprayer



Rotating Bell Sprayer

# Mach-Jet

Manual electrostatic spray gun




- > Easy to use
- > Increased efficiency
- > Enhanced ergonomics

**Mach-Jet** gun is used for manual application of powder coatings for general industry. Combined with the **CRN 457** control module and its exclusive «offset control» **DPCS** system\*, it ensures optimum charging of the powder.

The operator can easily select the program to suit the various forms of the parts directly from the gun, ensuring:

- perfect application quality,
- substantial economy of powder,
- time saving,
- comfort of use.

 Manual operation



660 g



80 kV  
110 µA



up to  
12 kg/h.



## FIELD OF APPLICATION

- Aluminium profiles
- Metallic furniture
- Cycles & Motorcycles
- Non destructive inspection of metals
- Wood industry
- Cylindrical and small parts
- Agricultural & construction equipment
- Automotive: wheels...



# Mach-Jet

## CUSTOMERS' BENEFITS

### Enhanced ergonomics

- Integrated controls on the gun DPCS system\*
- One of the best weight and balance ratios available = Less operator fatigue
- Grip & barrel adapted to painter's hand.
- Disconnection system for cables and powder hoses = Quick colour changes and very easy to clean.
- Rotation of powder hose = Flexible handle movement



### Increased efficiency

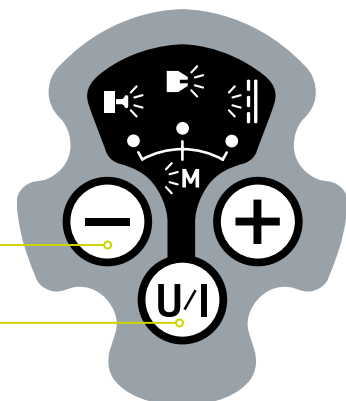
- Large choice of adapted nozzles for optimal application
- Very good abrasion resistance of nozzles
- Easy application of metallic powder paints
- Fast colour changing and cleaning

### Easy to use

The controls are accessible at the rear of the gun:

- Less time required to change settings during application:
  - Adjustment of the flow rate of the powder on the part as required with one hand
  - Choice of 4 electrical characteristics preset voltage (U) and current (I)

\* Exclusive **DPCS** system (Digital Pre-set Coating System)



# Technical Data

GUN	Mach-Jet
Weight carried by operator (g)	660
Length (mm)	305
Powder flow <sup>(1)</sup> (kg/h)	up to 12
Powder hose	Lg. 6m ø11 mm
Max voltage (kV)	80 (+5kV, -9kV)
Max current (µA)	110 (+/- 10)
CONTROL MODULE	CRN457
Air feeding pressure (bar)	7 (+/- 1)
Power supply	90/270 Vac - 50/60 Hz
Maxi power (VA)	60


(1): it depends on the type of powder hose

ATEX marking:

**Mach-Jet Gun:**

CE 0080 Ex II 2 D

EEx 2 mJ  
ISseP04ATEX119

 When configured according to #800000045  
For Electro. Fin. Appl. CL. II, Spray Matl.

**CRN457:**

CE 0080 Ex II (2) D

[EEx 2 mJ]  
ISseP04ATEX119





## SUITABLE FOR ALL POWDER APPLICATIONS

### 4 preset adjustments in memory



Application with **round spray** nozzle:

- Increases particles charge
- Better wraparound and higher transfer efficiency
- Very homogeneous pattern on complex or simple shaped parts.



Application adapted with **round or fan spray** nozzle:

- Re-coating
- Large thickness of powder (> 100 µm)
- Low conductive substrates (glass, wood,...).



Application with **fan spray** nozzle:

- Very good coverage, efficiency and flat parts
- Easy coating in deep recesses
- Very good penetration in complex parts.







Application adapted with **round or fan spray** nozzle:

- Suitable for metallic powders
- The voltage (kV) can be increased to improve the transfer efficiency.

These preset adjustments can be selected through the control module or through the gun

## LARGE SELECTION OF NOZZLES

Mach-Jet can cover all traditional applications and even more personalised requirements.

Type of nozzle	Description	Recommendations for use
 	ø 12 mm	Small parts, rework or pre-touch in hard to reach spots
	ø 16 mm and (supplied as standard) ø 16 mm HD <sup>(2)</sup>	All types of parts and coatings
	ø 20 mm, ø 25 mm and ø 20 mm HD <sup>(2)</sup>	Large surfaces
 	Narrow	Reworking and pre-touch
	Normal and Medium	Large variety of shapes of parts especially suited for job coaters
	Wide	Fences, welded joints and flat and large parts

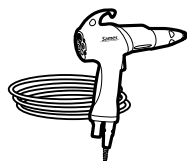
(2): High Durability, suitable for abrasive/aggressive powders except for enamel paint powder.



# Choose the gun

## MACH-JET GUN

with cable & hoses



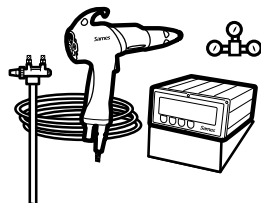
Description	Hoses length	Reference
Mach-Jet gun	6 m	1524463
	12 m	1524463-12
	18 m	1524463-18

supplied with:

- medium fan spray nozzle (white color)
- round spray nozzle, deflector dia. 16 mm

## MINI MACH-JET

equipment without trolley



Description	Hoses length	Reference
E. Mini Mach-Jet	6 m	910020539
	12 m	910020540

Supplied with:

- Mach-Jet Gun + CRN457 control module + Wall bracket + Powder hose ø11x15 mm + Pneumatic control CS 206 + Plunger CS 130

## OPTION NOZZLES

Round spray nozzle



Description	Reference
Round spray nozzle support	1525493SAV

Deflector

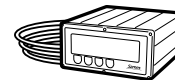


Description	Model	ø (mm)	Reference
Round spray Deflector	white	12	1411500
	white	16	1409259 <sup>(3)</sup>
	white	20	1409260
	white	25	1411993
Extended nozzle	150 mm	16	910006971
	300 mm	16	910006970
HD Round spray Deflector	Grey	16	900008026
	Blue	20	900008027

(3): Supplied with the Mach-Jet gun as standard

HD: High Durability, suitable for «abrasive/aggressive» powder except for enamel coating powder

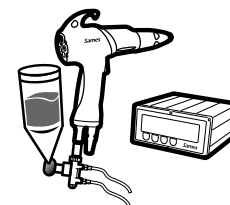
## CONTROL MODULE



Description	Reference
CRN 457	1523297
Wall fixing	822542

## MACH-LAB

equipment with tank powder cup



Description	Hoses length	Reference
E. Mach-Lab <sup>(1)</sup>	6 m	910006496
Mach-Cup <sup>(2)</sup>	6 m	910007106

(1): supplied with:

- Mach-Jet Gun + CRN457 control module + Mach-Cup

(2): Mach-Cup is formed by 0.5 liter hopper + air supply hoses + powder pump

Fan spray nozzle



Description	Reference
Fan spray nozzle support	1525492SAV

Deflector



Description	Model	Reference
Tip	narrow	grey 1311409
	normal	yellow 1315957
	medium <sup>(3)</sup>	white 1313519
	Wide	red 1311793

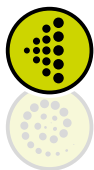


Extended nozzle	normal	150 mm	910004126
		300 mm	910004125

(3): Supplied with the Mach-Jet gun as standard

# e-Jet2

Manual coating equipment



e-Jet2 VT  
"Vibrating table"



e-Jet2 R  
"Fluidised hopper"

- > High performance
- > Enhanced comfort
- > Reliable equipment


Ergonomic, reliable and performing, the solution **e-Jet2** is the combination of the best technologies. It has been specially designed for companies looking to improve their powder coating application and the overall efficiency of the operator.

Available in two versions:

- Vibrating table (e-Jet2 VT or **VT2**), perfect for frequent colour changes.
- Fluidised hopper (e-Jet2 R or **R2**), ideal for medium and large scale production and/or for powder coatings less suited to the vibration technique.

e-Jet2 **VT2** or **R2** dedicated to dual operator



 Manual operation



≈ 40 kg



80 kV  
110 μA



up to  
12 kg/h.



**CUSTOMERS' BENEFITS**

**Enhanced comfort**



- Safe hanging of the gun
- Convenient double housing to place accessories on top
- Easy to read display and controls
- Removable support arm, easy color change

- Maintenance costs minimized
- Minimum number of wear parts
- Quick access to wear parts
- No tool to disassemble the metallic injector
- Enhanced pumping and application performances (low air)
- Enhanced color change performances

Vibrating table built-in **FAST-CLEAN** air blowing system

**Increased efficiency**

- Optimised time and quality of colour changeover:
  - Efficient and fast blowing system to rinse whole paint circuit: **FAST-CLEAN**

Accessibility of the connectors

Handy cable and hose support

2 large wheels & 2 directional wheels



- Easy cleaning of support arm for better colour change quality
- Powder pump CS130 without retention
- Air pumped at a regular flow rate for greater precision of application and a saving in the powder used

# Technical Data

TROLLEY	e-Jet2	
Powder flow <sup>(1)</sup> (kg/h)	12	
Air supply pressure (bar)	7 ±1	
Dimensions H x W x D (cm)	122 x 48 x 77	
Approximative weight (kg)	40	
Control module CRN457	e-Jet2 VT	e-Jet2 R
FLuidization-air, vibrator-air supply or fume extraction air-flow rate (Nm <sup>3</sup> /h)	12 max, of wich 0.1 for fluidization	12 max, of wich 6 for smoke aspiration
Powder «driving» air flow rate (Nm <sup>3</sup> /h)	2 to 6	3 to 6


ATEX marking:

**Mach-Jet Gun:**

CE 0080 Ex II 2 D

EEx 2 mJ

ISseP04ATEX119

 When configured according to #800000045

For Electro. Fin. Appl. CL. II. Spray Matt.

**CRN457:**

CE 0080 Ex II (2) D

[EEx 2 mJ]

ISseP04ATEX119



**CS130**

CE Ex II 3 D c T 85°C

(1): it depends on the type of powder hose

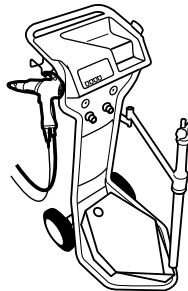
## Choose your equipment

### E-JET 2

manual powder coating equipment

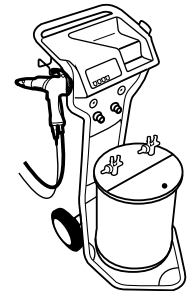
Description	N° of guns	Hoses length	Reference
e-Jet2 VT	1	6 m	910014683
		12 m	910014684
e-Jet2 VT2	2	6 m + 12 m	910015631

supplied with:  
Mach-Jet Gun + CRN457 control module + Trolley + FAST-CLEAN system (only with vibrating table) + powder hose ø11x15 mm + CS130 powder pump (2 pumps with e-Jet2 VT2 dual operator set)



Description	N° of guns	Hoses length	Reference
e-Jet2 R	1	6 m	910014685
		12 m	910014686
e-Jet2 R2	2	6 m + 12 m	910015632

supplied with:  
Mach-Jet Gun + CRN457 control module + Trolley + powder hose ø11x15 mm + CS130 powder pump (2 pumps with e-Jet2 R2 dual operator set)



### FAST CLEAN

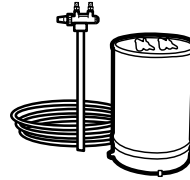
Description	Reference
Equipped Fast-Clean kit	910017496



# Components

## Hoppers

Description	Reference
Hopper for equipped e-Jet2	910014682
CSV 217	1504721
CSV600	752894

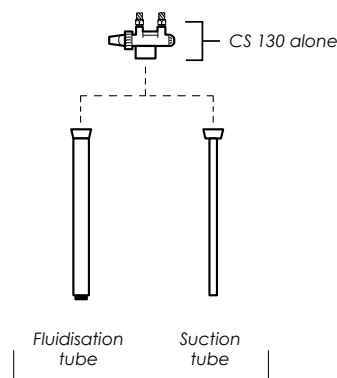


## Powder pumps

Description	Reference
CS130 alone - <b>POWDER</b>	910013775

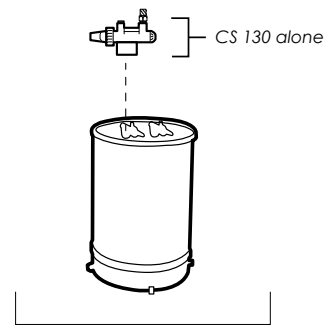


Fluidisation tube for e-Jet2 VT	910013651
Suction tube for e-Jet2 R	910008159



CS130 (POWDER)  
Powder transport function

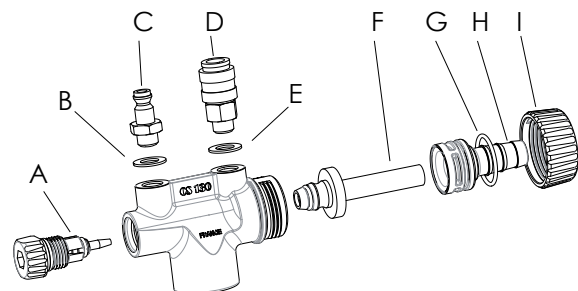
Description	Reference
CS130 alone - <b>AIR</b>	910014333



CS130 (AIR)  
Fume extraction

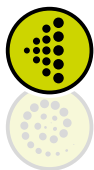
## Powder components CS130




Description	Item	Reference
Metallic air injector	A	910014564
Red washer 1/8	B	EU9000853
Quick release connector 1/8" BSP	C	EU9001083
Releasable connector 1/8" BSP	D	F6RAJR025
Blue washer 1/8	E	EU9000854
Venturi tube assembly	F - Grey Option white	910014388 910014390
O-ring-Black viton	G	J2FTDF273
Anti-static outlet tip	H	900008907
Connection nut	I	900008904



# e-Jet2 NDT

Manual dye penetrant inspection



-  Low & Regular flow
-  Optimal coverage
-  High Transfer Efficiency

**e-Jet2 NDT** is designed for a Non Destructive Testing configuration. With its compact size, the trolley remains very stable and easy to transport in all circumstances thanks to its gravity center lowered, to its large back wheels.

It is equipped with the **CSV 230** tank has a capacity of 15 litres. It permits high flow rates but also very low flow rates especially dedicated to the application for the field of non destructive inspection of metals. This is also the system that provides the best quality and regularity of the thickness coated.



## Technical Data


	CSV 230	e-Jet2 NDT
Capacity, total volume (liter)	15	
Capacity, useful volume (liter)	9.2	
Fluidization air pressure (bar)	1	
Air supply pressure (bar)		7 +/- 1
Dimensions H x W x D (cm)		120 x 48 x 77
Approximative weight (kg)		48
Air supply pressure (bar)		7 +/- 1
Consumption, NDT version (NI/min)		> 160 and < 220
Consumption, Powdering version (NI/min)		190

 Manual operation



 ≈ 48 kg

 80 kV  
110 μA

 up to 24 kg/h.



# e-Jet2 NDT

## CUSTOMERS' BENEFITS

- High transfer efficiency gun with stable pattern
- Very small and regular flow for developer application
- No puffing
- Additional control for increased flow rate
- 40 years of SAMES KREMLIN Proven Solutions with all French AEROSPACE OEM & SUBCONTRACTORS



## Choose your equipment

### E-JET2 CSV230

manual powder coating equipment  
pressure tank

Description	Version	Hoses length	Reference
e-Jet2 CSV230	NDT <sup>(1)</sup>	6 m	910020277
		12 m	910020277-12
e-Jet2 CSV230	Powder	6 m	910020595

supplied with:  
Mach-Jet Gun + CRN457 control module  
+ Trolley + CS230 tank with 3 possible uses:

- for High powder flow rate (hose ø9x13 mm)
- for Low powder flow rate (hose ø6x9 mm)
- for Non Destructive Testing (hose ø7x10 mm)

(1): e-Jet2 Non Destructive Testing version



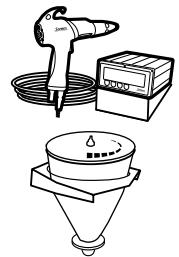
### MINI MACH-JET CSV230

equipment without trolley

Description	Version	Hoses length	Reference
Mini Mach-Jet CSV230	NDT <sup>(1)</sup>	6 m	910020460
		12 m	910020460-12

supplied with:  
Mach-Jet Gun + CRN457 control module  
+ CS230 tank with 3 possible uses

(1): Non Destructive Testing version



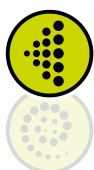





**eurotec**

# MG400

Manual electrostatic spray gun

**Easy powder by eurotec**



-  Easy to use
-  High performance and reliability
-  Economical

**MG400** gun is used for manual application of powder paints for general industry. Combined with the **GCU 400** controller and its exclusive "Total Energy Control" (**TEC**) system, it ensures optimum charging of the powder in all conditions.

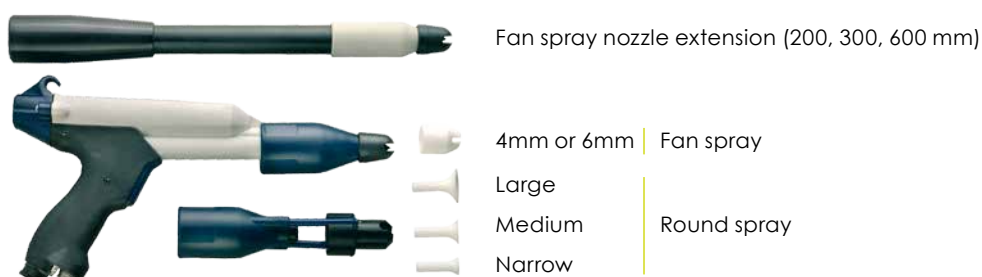
The **TEC** system automatically limits the current according to the distance from the part to be painted, thus ensuring perfect application quality and less product waste. Two functions that are factory programmed (TEC1 and TEC2) allow you to easily adjust your settings to suit your application parameters.


## FIELD OF APPLICATION


- Aluminium profiles
- Metallic furniture
- Cycles & Motorcycles
- Non destructive inspection of metals
- Wood industry
- Cylindrical and small parts
- Agricultural & construction equipment
- Automotive: wheels...





## NOZZLES PROVIDING MORE HOMOGENEOUS PATTERN





 Manual operation











 495 g

 85 kV  
50-100 μA

 up to  
12 kg/h.







## CUSTOMERS' BENEFITS

### Easy to use

- The operator learns very quickly and is very reluctant to change after using the unit.
- Superb penetrating capability, particularly in those difficult corners.
- Exceptional first pass efficiency, thanks to its optimized electrostatic charge.
- The operator won't get tired of it: ergonomic design, very convivial and lightweight.
- Disconnection system for cables and powder hose: quick colour changes and very easy to clean.

### Venturi pump

- Savings and reliability: the new and simpler venturi pump, made of fewer parts, is particularly wear resistant.
- Time saving: easy and fast to clean. Release the clipped venturi pump, pull out the pick-up tube, blow clean.
- To protect the equipment from abuse: the swinging arm and venture bracket move up and under the gun control unit, keeping it out of the way to allow the removal of the powder box during the colour change sequence.

### high performance and reliability

- Integrated generator power ensures good electrostatic efficiency.
- Clear and precise adjustment of all high voltage parameters via the digital display built into the GCU400 control module
- Operations on simple and very complex (cavity) parts are easy with the voltage adjustment= TEC 1.
- Metallic and hard to spray powders can be sprayed using the current adjustment = TEC 2
- Air supply onto deflectors inside the nozzle: no accumulation of powder





# Technical Data

GUN	MG400
Weight with cable and hose (g)	495
Length (mm)	330
Powder flow <sup>(1)</sup> (kg/h)	up to 12
Max voltage (kV)	85
Max current (µA) TEC 1	0 to 50
Max current (µA) TEC 2	0 to 100
CONTROL MODULE	GCU400
Main air supply pressure (bar)	7 (+/- 1)
Air consumption (Nm <sup>3</sup> /h)	10
Power supply	100/270 Vac - 50/60 Hz
Maxi power (VA)	45

(1): it depends on the type of powder hose

ATEX marking:

**MG400 Gun:**

CE 0080 Ex II 2 D

EEx 2 mJ  
Sira 03ATEX5416X

**GCU400**

CE 0080 Ex II (2) D

[EEx 2 mJ]  
Sira 03ATEX5416X

## DESCRIPTION OF THE GCU 400 CONTROL MODULE

The **GCU400** control module has the "Total Energy Control" electrostatic charging system (TEC). This permits the current to be automatically limited depending on the distance of the part, which optimises the electrostatic charge.

Simply press the control button to select either of the pre-set functions: **TEC1** and **TEC2**.

- **TEC1** (initial mode):

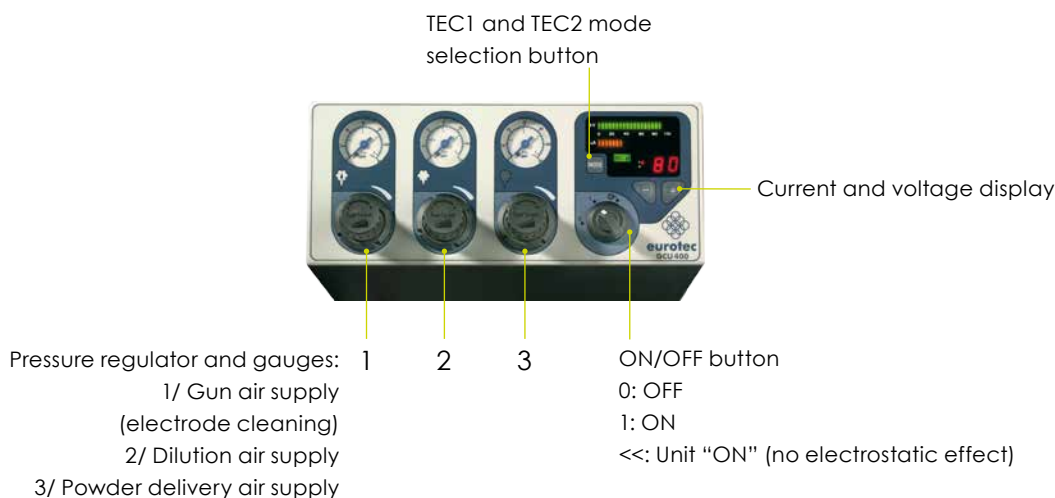
This operating mode has a maximum voltage setting (85 kV) and a current threshold of 50 µA. It is suitable for:

- the majority of applications (especially re-coating),
- most of the powders available.

- **TEC2:**

This function provides an operator setting of the output current up to a minimum threshold of 100 µA. This operating mode has been specially designed for:

- the application of metallic and hard to spray powders,
- the application onto complex shaped parts (cavities).

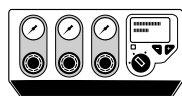


# Choose the gun



## MG400

Description	Reference
MG400 gun	EU73019001
supplied with:	
- 6mm fan spray nozzle, black	
- round spray nozzle, medium deflector	
- powder hose (5m) + low voltage cable	



## CONTROL MODULE

Description	Reference
GCU400	EU72024002

## POWDER HOSE



Description	Hoses length	Reference
Powder hose Ø12/17mm	per meter	EU9001220

## OPTION NOZZLES

### Round spray nozzle

Description	Reference
Round spray nozzle support	EU73016185

### Deflector

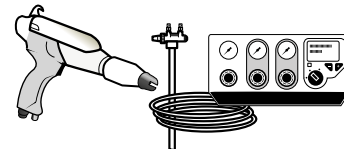


Description	Model	Reference
Round spray Deflector	Small	EU3016200
	Medium <sup>(2)</sup>	EU3016201
	Large	EU3016202

(2): Supplied with the MG400 gun as standard

## MINI MG400

equipment without trolley



Description	installation of pump	Reference
E. MINI MG400 <sup>(1)</sup>	for 50 liter hopper	EU75017013
	for vibrating table	EU75017012

(1): supplied with:

MG400 Gun + GCU400 control module + powder pump

### Fan spray nozzle

Description	Reference
Fan spray nozzle support	EU73016185

### Deflector



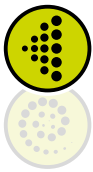
Description	Model	Reference
Tip	4 mm	EU3022019
	6 mm <sup>(2)</sup>	EU3019017
Extended nozzle	200 mm	EU73019190
	300 mm	EU73019191

(2): Supplied with the MG400 gun as standard



# MG400 ED MG400 EH




Manual coating equipment  
**Easy powder by eurotec**



MG400 EH  
"Fluidised hopper"



MG400 ED  
"Vibrating table"

-  Easy to use
-  Performances and Reliability
-  Reliable equipment

MG 400 system enables you to coat your products easily and efficiently: It's the handy and reliable equipment.

The powder is sprayed using a powder pump fitted with a venturi, a suction tube and a fluidising head. The powder is fluidised in the hopper or box before being transported via the venturi tube to the gun.


The trolley is designed to resist industrial conditions:

- Compact trolley fitted with 4 independent wheels;
- Optimised use of powder via:
  - the tilting of the vibrating table and the presence of a «high efficiency vibrator» to minimise powder packing
  - the storage capacity of the fluidised hopper (25 Kg ≈ 50 liters)



## Technical Data

Trolley			
Dimensions H x W x D (cm)	108 x 45 x 62		
Approximative weight (kg)	40		
GUN	MG400 ED	MG400 EH	
Air consumption maxi. (Nm <sup>3</sup> /h)	15	10	
Air supply pressure (bar)	7 ±1	7 ±1	

 Manual operation



≈ 40 kg



85 kV  
50-100 μA



up to  
12 kg/h.



# MG400 ED & MG400 EH

## CUSTOMERS' BENEFITS

### Easy to use

- The compact cover of the equipment means that it can be easily moved to different workshops or be used by customers.
- Powder pump built into the gun, also removable for an easier cleaning.

### Reliable equipment

- Vibrating table version: The vibrator prevents powder packing issues. Activated only when pressing the gun's trigger.
- Fluidised bed version: holds 25 kg of powder (one box), generally fitted on the chassis. The duct and fluidising support easily come off for cleaning.
- Emptying the box of powder: the box is tilted, so the pick-up tube reaches the very bottom, and sucks up all the material. May accept all kinds of box sizes up to 30 kg.

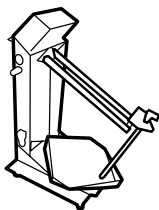
## Choose your equipment

### MG400 ED

Vibrating table

Description	N° of guns	Hoses length	Reference
MG400 ED	1	5 m	EU75009002

supplied with:  
 MG400 Gun + GCU400 control module  
 + Trolley + powder hose ø12x17 mm +  
 Powder pump



### MG400 EH

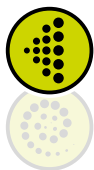
Fluidised hopper

Description	N° of guns	Hoses length	Reference
MG400 EH	1	5 m	EU75008002



# AUTO Mach-Jet

Automatic electrostatic powder coating gun

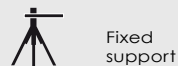
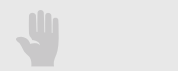


- > High transfer rate
- > Easy maintenance
- > Adaptation to industrial constraints
- > Optimal safety

**AUTO Mach-Jet** sprayer is designed for powder coating in general industry applications.

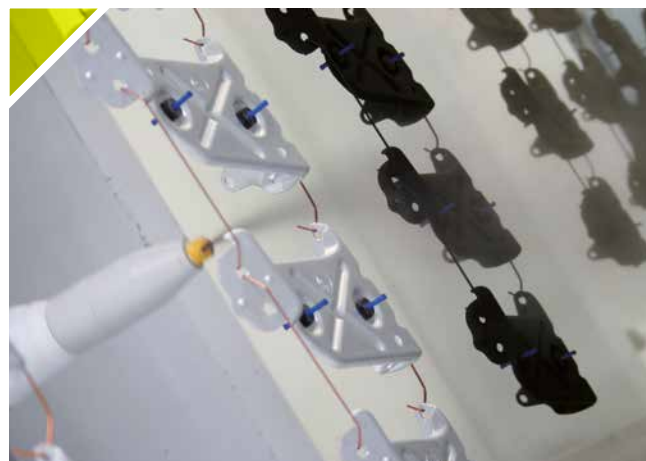
**AUTO Mach-Jet** combines high application performance, easy cleaning and simplicity of use to allow you to increase your productivity and change colours more quickly and efficiently.

It is generally used as a fixed station in a fast color change booth such as **PVV EasyDrive**. It can also be installed on a reciprocator in a **PVV EasyCompact** booth.



## FIELD OF APPLICATION

- Aluminium profiles
- Metallic furniture
- Cycles & Motorcycles
- Wood industry
- Cylindrical and small parts
- Agricultural & construction equipment
- Fences, Gates
- Automotive: wheels...





# AUTO Mach-Jet

## CUSTOMERS' BENEFITS

### High transfer rate

- Easy and accurate settings of voltage and current
- Excellent penetration on complex shaped
- Good wraparound effect

### Adaptation to industrial constraints

- Large selection of nozzles
- Assistance to manage batches of parts : 9 different setting presets can be stored without PLC
- Regulation of air supply to the powder pump for controlled powder thickness
- Standard kits including controllers and reciprocators (12 sprayers max)
- 5 preset electrical characteristics

## RANGE

The automatic spray gun is available in two models:

### AUTO Mach-Jet:

Equipped with a support arm (metal bar) onto which the Auto-Mach-Jet is attached: it can be changed or fitted quickly and easily to all existing booths. In this version, the assembly may also be fitted onto new installations.

### AUTO Mach-Jet FCC\*:

This version is dedicated to quick color change booth. Its profiled assembly means that it may be cleaned perfectly in a very short time. The rear casing of the spray gun is screwed onto the support arm. This diameter is constant along the entire length. It provides the most efficient colour change. The tubular arm is also used to channel the hoses and the electrical connections directly and tidily to the rear of the sprayer.

### Easy maintenance

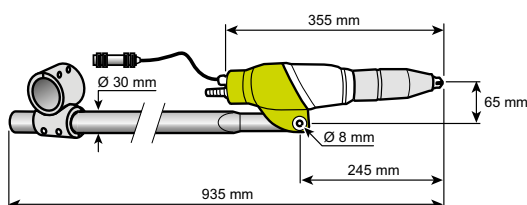
- Simple disassembly of sprayers
- Quick disconnect hose (option)
- Profiled design for easy cleaning through simple air blowing
- Nozzles are highly resistant to abrasion

### Optimal safety

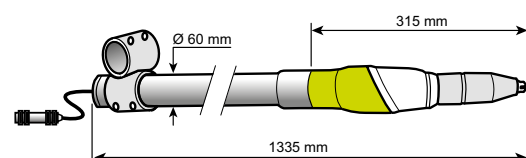
- Compliant with ATEX Directive and FM certified
- High impact resistance



\*FCC: Fast Colour Change



**AUTO Mach-Jet**  
for retrofit or new installation



**AUTO Mach-Jet FCC**  
for quick colour change booth

# Technical Data

GUN	AUTO Mach-Jet
Weight w/o hoses (g)	approx. 850
Powder flow <sup>(1)</sup> (kg/h)	up to 12
Low voltage cable to CRN457 (m)	18 / 30
Max voltage (kV)	95 (+5kV, -10kV)
Max current (µA)	110 (+/- 10)
CONTROL MODULE	CRN457
In a rack (2 modules on front face)	19" / 2U
Air feeding pressure (bar)	7 (+/- 1)
Max air flow (Nm <sup>3</sup> /h)	6
Power supply	90/270 Vac - 50/60 Hz
Maxi power (VA)	60


(1): it depends on the type of powder hose

ATEX and FM marking:

**Auto Mach-Jet & Auto Mach-JetFCC:**

CE 0080 Ex II 2 D

EEx 2 mJ  
ISSEP04ATEX119

 When configured according to #800000045  
For Electro. Fin. Appl. CL. II, Spray Matl.

**CRN457:**

CE 0080 Ex II (2) D

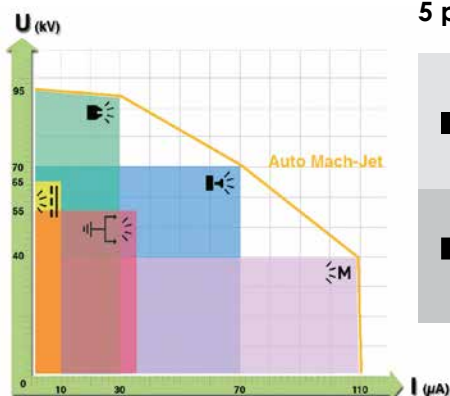
[EEx 2 mJ]  
ISSEP04ATEX119








**CS130:**

CE Ex II 3 D c T 85°C

## SUITABLE FOR ALL POWDER APPLICATIONS











### 5 preset adjustments in memory

-  Application with **round spray** nozzle:
  - Increases particles charge
  - Better wraparound and higher transfer efficiency
  - Very homogeneous pattern on complex or simple shaped parts.
-  Application with **fan spray** nozzle:
  - Very good coverage, efficiency and flat parts
  - Easy coating in deep recesses
  - Very good penetration in complex parts.
-  Application adapted with **round or fan spray** nozzle:
  - Re-coating
  - Large thickness of powder (> 100 µm)
  - Low conductive substrates (glass, wood,...).
-  Application adapted with **round or fan spray** nozzle:
  - Suitable for metallic powders
  - The voltage (kV) can be increased to improve the transfer efficiency.
-  Application with a fan spray nozzle:
  - Counter-electrode (in option)

## LARGE SELECTION OF NOZZLES

Mach-Jet can cover all traditional applications and even more personalised requirements.

Type of nozzle	Description	Recommendations for use
	 ø 12 mm	Small parts, rework or pre-touch in hard to reach spots
	 ø 16 mm and ø 16 mm HD <sup>(2)</sup>	All types of parts and coatings
	 ø 20 mm, ø 25 mm and ø 20 mm HD <sup>(2)</sup>	Large surfaces
	 Narrow	Reworking and pre-touch
	 Normal and Medium	Large variety of shapes of parts especially suited for job coaters
	 Wide	Fences, welded joints and flat and large parts

(2): High Durability, suitable for abrasive/aggressive powders except for enamel paint powder.

• Swivel nozzle



• Counter-electrode



The grounded counter-electrode captures virtually all of the free ions of the electrical field, thus avoiding Faraday cages and "orange peel" type finishes. The level of the finish is this considerably improved.

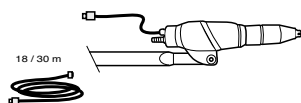
• Quick release connector



# Choose the gun

## AUTO MACH-JET

with cable & hoses

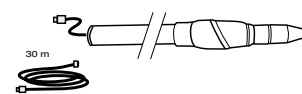


Description	LV cable length	Reference
AUTO Mach-Jet	18 m	1527340
	30 m	910000100

supplied with normal fan spray nozzle and arm ø30 mm, without fixing nut

## AUTO MACH-JET FCC

with cable & hoses



Description	LV cable length	Reference
AUTO Mach-Jet FCC	30 m	1527318

supplied with normal fan spray nozzle and arm ø30 mm, without fixing nut

## INTEGRATOR KITS

Description	supplied with	Reference
AUTO Mach-Jet (1527340) + CRN457 + Nut 50/30mm + powder hose dia. 11/15mm (12 m) +	CSV230 NDT	910021123
	CS130	1527386

NDT: Non Destructive Testing

Description	supplied with	Reference
AUTO Mach-Jet FCC + CRN457 + Nut 50/60mm + powder hose dia. 12/17mm (15 m) +	CSV230 NDT	910021300
	CS130	1527382

NDT: Non Destructive Testing

## PACKAGE WITH FRONT FACES

Description	Reference
x2 KIT AUTO Mach-Jet (1527386) + x1 front of x2 CRN457	910001001

Description	Reference
x2 KIT AUTO Mach-Jet FCC + x1 front of x2 CRN457	910001007

## ACCESSORIES

Description	use for	Reference
Support arm	Metal arm dia.30mm	1527291
	Tubular FCC dia.60mm	1411605
Fixing nut	dia.50/30 mm	749805
	dia.50/60 mm	1204441

Description	Reference	
CRN457 control module	1523297	
Cable for trigger control in remote control (5 meter)	910000092	
Front face in rack for	x1 CRN457	1526286
	x2 CRN457	1526284
Electric kit 24V (in a box)	910000129	
Electric kit 24V (for upgrade PVV booth)	910008195	

## OPTION

Round spray nozzle



Description	Reference
Round spray nozzle support	1525493SAV

Fan spray nozzle



Description	Reference
Fan spray nozzle support	1525492SAV

Deflector



Description	Model	ø (mm)	Reference
Round spray Deflector	white	12	1411500
	white	16	1409259
	white	20	1409260
	white	25	1411993
Extended nozzle	150 mm	16	910006971
	300 mm	16	910006970
HD Round spray Deflector	Grey	16	900008026
	Blue	20	900008027

Deflector



Description	Model	Reference	
Tip	narrow grey	1311409	
	normal yellow	1315957 (1)	
	medium white	1313519	
	Wide red	1311793	
Extended nozzle	normal	150 mm	910004126
		300 mm	910004125

(1): Supplied with the AUTO Mach-Jet or FCC gun as standard

Hoses

Description	Type	Reference
Powder hose	dia. 11x15 mm	U1FGBA092#
	dia. 12x17 mm	U1FGBA034#

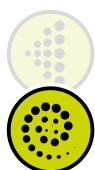
hose= in lots of 50 meters

Description	Reference
Complete powder hose connector	1527393
Powder connector (# = set 10 units)	1411501#



# INOHELL

Electrostatic rotating bell sprayer



- > High transfer rate
- > Easy maintenance
- > Easy integration
- > Excellent finishing quality

To meet the requirements of companies looking to improve paint savings, SAMES KREMLIN has designed **INOHELL**, the electrostatic powder bell, with high performance, excellent finishing quality and easy integration.

It allows the application of powder paint on all types of surfaces with a particular effectiveness on flat surfaces.



Fixed support



Vertical movement



3.6 kg



75 kV  
100 µA



up to  
24-30 kg/h.



up to  
8500 rpm



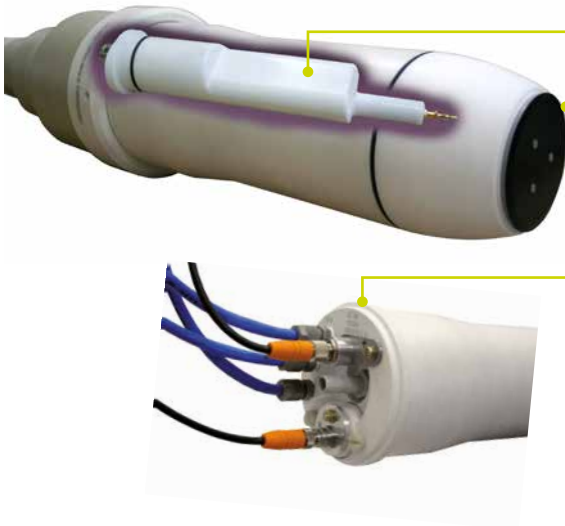
## FIELD OF APPLICATION

- Coil coating
- Application of flat conveyors
- Profiles
- Metallic furniture
- Metallic panels for suspended ceilings
- Radiators
- White goods
- Fences, gates
- Automotive: wheels...
- And more generally on all types of flat surfaces

# INOBELL

## CUSTOMERS' BENEFITS

### Easy maintenance & integration

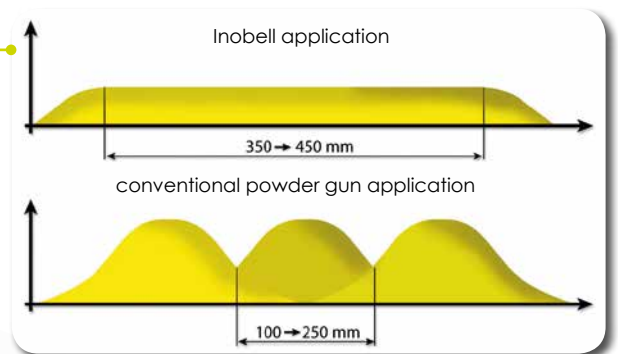


- Integrated high voltage unit: no high voltage cable
- Powder bell easily disassembled
- No plate assembly with reduced number of connections
- Single block design with low number of parts



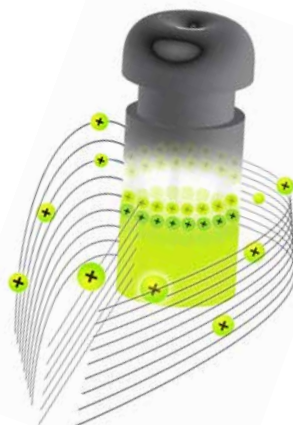
### Excellent finishing quality

- Adjustable air shroud: Allows a rapid and marked variation in cloud size. Control of the jet can adjust the width of the cloud being implemented, proportionally
- Excellent regularity of film build-up: The quality of finish meets the most stringent and tight D.O.I. (Distinctiveness of image).
- Speed detection for increased application control



### High transfer rate

- Strong electrostatic charging, up to 20% more transfer efficiency compared to conventional gun
- Flowrate of 1 INOBELL equivalent to 2 guns





# Technical Data

GUN	INOHELL
Weight w/o hoses (kg)	3.6
Powder flow <sup>(1)</sup> (kg/h)	up to 30
Low voltage cable to TCR (m)	15 or 30
Max voltage (kV)	75
Max current (µA)	100
Pre-set rotation speed (rpm)	7500 (Vmin = 6500 and Vmax = 8500)
Shaping air flow (NI/min)	0 - 80 (proportional from 0 to 100%)
Bearing protective air flow (NI/min)	60
Air supply turbine rotation (NI/min)	40 - 100
CONTROL MODULE	TCR
In a rack (2 modules on front face)	19" / 2U
Air feeding pressure (bar)	7 (+/- 1)
Max air consumption (NI/min)	350
Max air with high flow rate kit (NI/min)	380
Power supply	90/270 Vac - 50/60 Hz
Maxi power (VA)	90

(1): it depends on the type of powder hose

## GENERAL DESCRIPTION

- The **INOHELL** sprayer is equipped with a mechanical bearing turbine. It may have a fixed mounting due to its large impact or on a reciprocator.
- This sprayer is piloted by the **TCR** module (1). It manages the rotation speed of the turbine used to spray powder coatings at all times on the digital display on the front face. This module is equipped with a grounded cable, a plug for local command and two (2) connections to control the spray gun and a sensor to measure the speed of rotation.
- The powder supply is made thanks to a CS130 pump (3).

ATEX marking:

**INOHELL**

CE 0080 Ex II 2 D

EEx <350 mJ  
ISSeP09ATEX027X

**CS130**

CE Ex II 3 D c T 85°C

**CRN458**

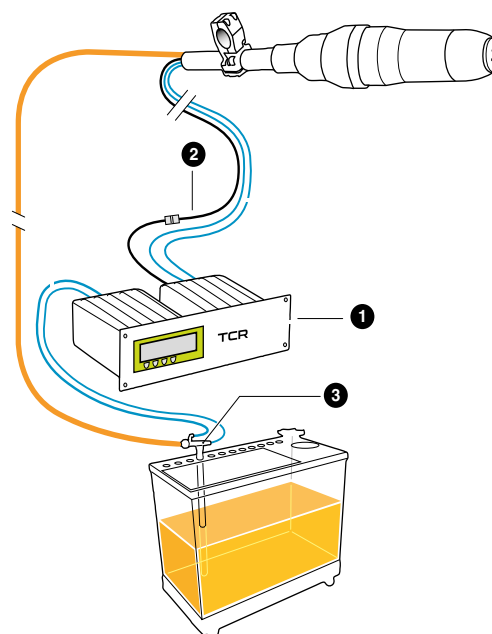
CE 0080 Ex II (2) D

[EEx <350mJ]  
ISSeP09ATEX027X

**Powder Turbine Supply**

CE 0080 Ex II (2) D

ISSeP09ATEX027X



- The powder is brought to high voltage by contact with the bell cup through an integrated high voltage unit into the sprayer. The low voltage is supplied through a specific cable (2) connected inside the INOBELL.

## CONTROL MODULE THAT CONTROLS EVERYTHING

- accessible and user friendly,
- adjustment of all functions on screen,
- simplified adjustment of powder flow rates,
- adjustment of air shroud (variable impact),
- turbine rotation is pre-set and controlled,
- 9 spray presets,
- 2 operating modes available:
  - local mode (screen and/or piloting by wire connected triggers),
  - remote mode (monitoring via a series connection),
- storing of parameters,
- easy to wire in,



- clear and visible user interface,
- easier to integrate:
  - Standard size 19" - 2U,
  - Complete unit ready to integrate,
  - No work required on the software,
  - simplified wiring between the module and the sprayer

# Choose the gun

## INOBELL EQUIPMENT

Description	hose length	Reference
E.INOBELL + CS130 + accessories	15 m	910020762

supplied with:  
 Arm + Fixing nut ø50/60 mm + a low voltage connection (15m) +  
 Powder hose ø12x17 mm + Air hoses + CS130 powder pump



## INTEGRATOR KIT

Description	hose length	Reference
INOBELL Kit	15 m	910008096

supplied with:  
 INOBELL equipment + TCR control module

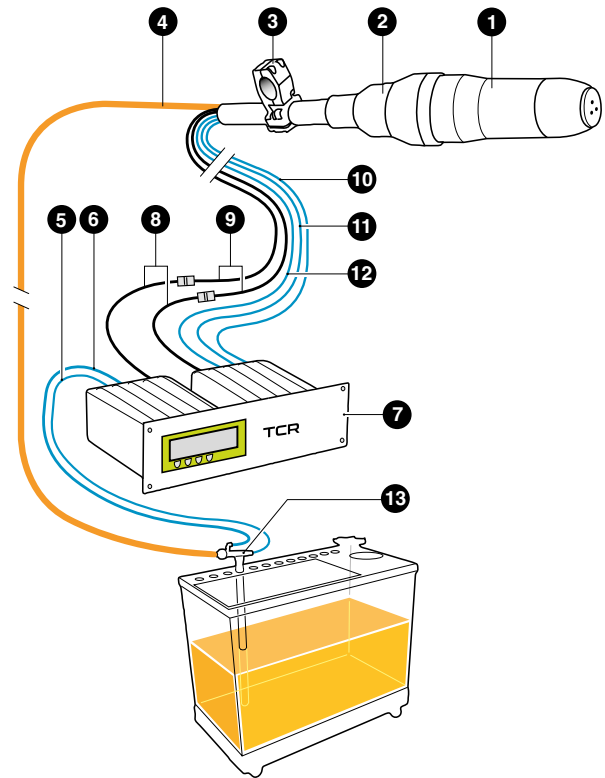
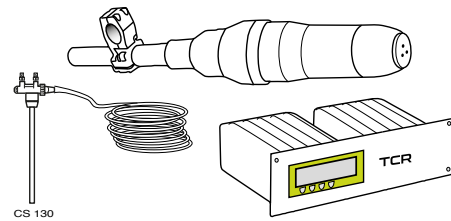
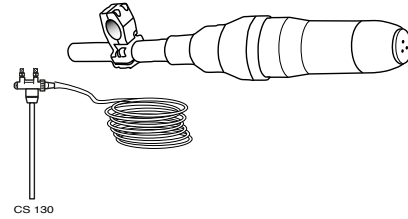
## COMPONENTS

Mark	Description	Reference
1	INOBELL sprayer alone	910007600
2	Special support arm length: 400 mm	910009357
	length: 900 mm	910009358
	length: 1500 mm	910009359
3	Nut ø50/50 mm	429104
4	Hose Ø 12/17 mm opaque grey (50m)	U1FGBA034#
option	Hose Ø 11/15 mm clear (50m)	U1FGBA092#
option	Hose Ø 13/18 mm green (1)	U1FGBA226
5	Injection air (Ø 6/8 mm) (2)	U1CBBT003
6	Dilution air (Ø 4/6 mm) (2)	U1CBBT001
7	TCR Control module	900005533
8	High voltage and speed sensor pilot cable , length. 2 x 2 m	910007567
9	Extensions TCR/Inobell	110000972
10	Operating air (Ø 5,5/8 mm) (1)	U1GLBT142
11	Shaping air (Ø 5,5/8 mm) (1)	U1GLBT142
12	Air for protecting bearings (Ø 5,5/8 mm) (1)	U1GLBT142
13	CS130 Powder pump alone and add ref 130001142 (union) + 130001143 + 1526399 (plunger)	910013775

(1): Minimum order of 50 meters; (2): Minimum order of 100 meters

## OPTION

Description	Reference
MCR Module	910004516
Sieving / Recycling control	110000652
Lighting security	900002796
High flow kit	910003361
CSV600 tank	752894
Simple powder detection kit for CSV600	910009684
Double powder detection kit for CSV600	910009703
CS206 air control panel	1502844



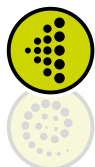
Tooling kit	910008097
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Automatic Gun by EUROTEC

# AG400

Automatic electrostatic powder coating gun

**Easy powder by eurotec**



-  Easy to use
-  Performances and Reliability
-  Economical

**AG 400 system** enables you to coat your products easily and efficiently: It's the handy and reliable equipment of note. With its dynamic profile, the new **AG 400 FCC** enables cleaning and blowing during color changes, the automatic sprayer is quickly cleaned and ready to be used for the next production.

Maintenance is fast and easy: the cables and powder hose connectors at the base of the grip are of the quick-disconnect type. It ensures a perfect penetration in the areas of parts with complex shapes and exceptional first pass efficiency. Thanks to its high electrostatic charge, the system will give the best coating results to customers.











## FIELD OF APPLICATION

- Aluminium profiles
- Metallic furniture
- Cycles & Motorcycles
- Wood industry
- Cylindrical and small parts
- Agricultural & construction equipment
- Automotive: wheels...



## NOZZLES PROVIDING MORE HOMOGENEOUS PATTERN



- 
-  Fixed support
-  Vertical movement
- 
- 
-  85 kV  
50-100 µA
-  up to  
12 kg/h.
- 
- 
- 

## CUSTOMERS' BENEFITS

### Adaptation to industrial constraints

- Nozzles with excellent distribution of the powder spray:
  - Adapted to all types of application
  - Compact, robust and lightweight
  - Avoids the powder build-up
- The profiled design of the spray gun makes cleaning very easy, perfectly adapted to colour changeovers.
- Superb penetrating capability, particularly in difficult corners and folds.
- Maintenance is fast and easy: the cables and powder hose connectors at the base of the grip are of the quick-disconnect type.

### Venturi pump

- Savings and reliability: the new and simpler venturi pump, with fewer parts, is particularly wear resistant.
- Time saving: easy and fast to clean. Release the clipped venturi pump, pull out the pick-up tube, blow clean.

## RANGE

The automatic spray gun is available in two models:

### AG400:

Equipped with a support arm onto which the AG400 is attached, this makes it can be fitted quickly and easily to all existing booths or in fixed station.

### AG400 FCC\*:

This version is dedicated to quick color change booth. Its profiled assembly means that it may be cleaned perfectly in a very short space of time. The rear casing of the spray gun is screwed onto the support arm constant along the entire length. The tubular arm is also used to channel the hoses and the electrical connections directly and tidily to the rear of the sprayer.

### Performances and Reliability

- Integrated generator power ensures good electrostatic efficiency.
- Clear and precise adjustment of all high voltage parameters via the digital display built into the control module.
- Operations on simple and very complex (cavity) parts are easy with the voltage adjustment= TEC 1.
- Metallic and hard to spray powders can be sprayed using the current adjustment = TEC 2
- Air supply onto deflectors inside the nozzle: no accumulation of powder



\*FCC: Fast Colour Change

# Technical Data

GUN	AG400 / AG400 FCC
Powder flow <sup>(1)</sup> (kg/h)	up to 12
Max voltage (kV)	85
Max current (µA) TEC 1	0 to 50
Max current (µA) TEC 2	0 to 100
CONTROL MODULE	GCU400
Main air supply pressure (bar)	7 (+/- 1)
Air consumption (Nm <sup>3</sup> /h)	10
Power supply	100/270 Vac - 50/60 Hz
Maxi power (VA)	45

(1): it depends on the type of powder hose

ATEX marking:

**AG400**

CE 0080 Ex II 2 D

EEx 2 mJ  
Sira03ATEX5416X

**GCU400**

CE 0080 Ex II (2) D

[EEx 2 mJ]  
Sira03ATEX5416X

**AG400 FCC**

CE 0080 Ex II 2 D

EEx 2 mJ  
Sira03ATEX5416X

## DESCRIPTION OF THE TEC SYSTEM «TOTAL ENERGY CONTROL»

The control module **GCU400** has the "Total Energy Control" electrostatic charging system (TEC). This permits the current to be automatically limited depending on the distance of the part, which optimises the electrostatic charge.

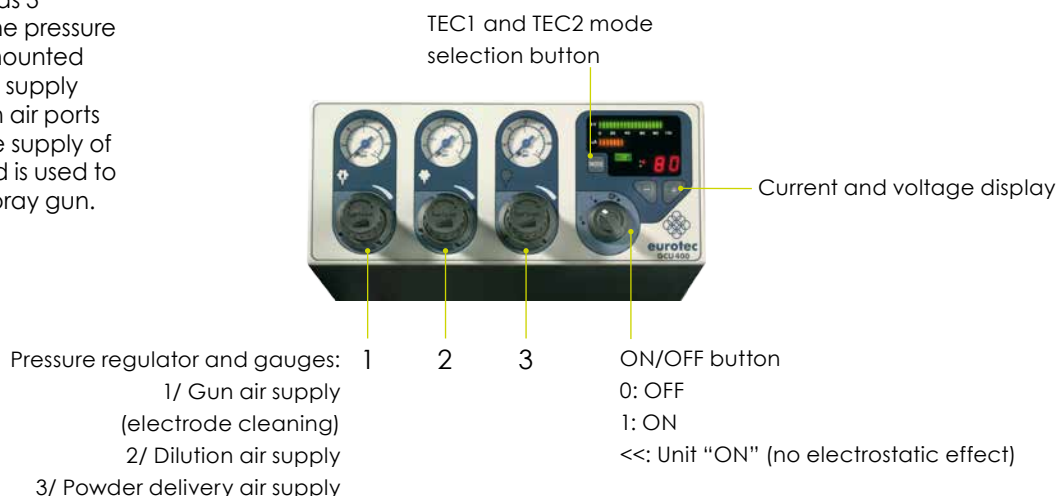
Simply press the control button to select either of the pre-set functions: **TEC1** and **TEC2**.

- **TEC1** (initial mode):  
This operating mode has a maximum voltage setting (85 kV) and a current threshold of 50 µA. It is suitable for:
  - the majority of applications (especially re-coating),
  - most of the powders available.

- **TEC2**:  
This function provides an operator setting of the output current up to a minimum threshold of 100 µA. This operating mode has been specially designed for:
  - the application of metallic and hard to spray powders,
  - the application onto complex shaped parts (cavities).

## DESCRIPTION OF THE CONTROL MODULE

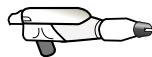
**GCU400** enables all the control functions necessary to spray and charge powder using the spray gun in autonomous way with manual settings. The unit has 3 regulated pneumatic outlets, the pressure regulators and gauges being mounted on the front panel. Two of these supply air to the venturi air and dilution air ports for pumping and controlling the supply of powder fed to the gun. The third is used to supply air to the nozzle of the spray gun.





# Choose the gun

## AG400



Description	Reference
AG400	EU73022002



Description	Reference
Support tube Dia. 30mm length: 1 m	EU73001022
Fixing nut Dia. 50x30mm	749805



Description	length	Reference
Powder Hose & LV Cable	10 meter	EU73022021

Description	Reference
GCU400 control module	EU72024002
Electric kit 24V (in a box)	910000129
Electric kit 24V (for upgrade PVV booth)	910008195

## INTEGRATOR KIT

Description	Reference
AG400 + GCU400 + Support tube + Powder hose & LV cable + Pump + Suction tube	EU75017009

## OPTION NOZZLES

### Round spray nozzle

Description	Reference
Round spray nozzle support	EU73016185



### Deflector

Description	Model	Reference
Round spray Deflector	Small	EU3016200
	Medium	EU3016201
	Large	EU3016202

## AG400 FCC



Description	Reference
AG400 FCC	910017405



Description	Reference
Support tube Dia. 60mm	1411605
Fixing nut Dia. 50x60mm	1204441
Plug for tube	1315630



Description	length	Reference
Powder Hose & LV Cable	10 meter	EU73022021

Description	Reference
GCU400 control module	EU72024002
Electric kit 24V (in a box)	910000129
Electric kit 24V (for upgrade PVV booth)	910008195

### Fan spray nozzle

Description	Reference
Fan spray nozzle support	EU73016185



### Deflector




Description	Model	Reference
Tip	4 mm <sup>(1)</sup>	EU3022019
	6 mm <sup>(1)</sup>	EU3019017
Extended nozzle	200 mm	EU73019190
	300 mm	EU73019191

(1): Supplied with the AG400 or AG400 FCC gun as standard

# AUTO Mach-Jet R/RD/RC

Robotic electrostatic powder coating gun



-  Productivity increase
-  Excellent finishing quality
-  Adaptation to industrial constraints

AUTO Mach-Jet-R/RD/RC is a robotic electrostatic with single (R) or dual head gun parallel (RD) or dual head convergent (RC) for the coating of all kind of surfaces.

It provides access to a performing range of solutions for all companies. It permits automatizing the paint process, allowing industrial companies to get benefits from robotics, with higher transfer efficiency and a «Class A finishing».

- 
- 
- 
-  Multi-axis
-  2-3 kg
-  95 kV  
110 μA
-  up to  
12-24 kg/h.
- 
- 
- 

## FIELD OF APPLICATION

- Aluminium profiles
- Metallic furniture
- Cycles & Motorcycles
- Wood industry
- Cylindrical and small parts
- Agricultural & construction equipment
- Fences, Gates
- Automotive: wheels...



# AUTO Mach-Jet-R/RD

## CUSTOMERS' BENEFITS

### Productivity increase

- Robot for flexible movement and the overall process controller to optimize the global efficiency
- Flexible management of any different parts / colours / size series

### Adaptation to industrial constraints

- Respond to the evolution of PRODUCTION CAPACITY and application constraints
- Master FINISHING QUALITY of your products through precise and controlled trajectory
- Maximize your productivity GAINS combining robotics and COATING application with electrostatic powder bell
- Improve COMPETITIVENESS of your business and access to NEW MARKETS

### Excellent finishing quality

- Coating with electrostatic charge consequently :
  - Increases transfer efficiency
  - Provides uniform film built
  - Provides coverage and even thickness
  - Reduces spray time
- Nice and repeatable spray

## SOLUTION FOR INTEGRATION

Description	Type	Reference
AUTO Mach-Jet R	Single head	910024416
AUTO Mach-Jet RD	Parallel twin head	910024417
AUTO Mach-Jet RC	Convergent twin head	910024418



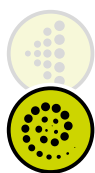
AUTO Mach-Jet R






AUTO Mach-Jet RD / RC

# INOBELL-R

Robotic electrostatic rotating bell sprayer



-  Productivity increase
-  Excellent finishing quality
-  Easy maintenance

**INOBELL-R** meets the most demanding criteria of finishing quality, ease of operation, robotic adaptability, electrical safety, reliability, and ease of maintainability.

It offers an unequaled finish: because it provides a very wide pattern, and a superior electrostatic charge. Its DOI (Distinctness Of Image) and smoothness performance levels have allowed to apply a consistent film build, and perfect smoothness.











Associating the spinning electrode (bell cup) and the counter-electrode ring, it provides an exceptional transfer efficiency; the counter-electrode also eliminates back-ionisation, also reducing faraday cage effects.



## FIELD OF APPLICATION

- Profiles
- Metallic furniture
- Metallic panels for suspended ceilings
- Radiators
- White goods
- Fences, gates
- Automotive: wheels...
- And more generally on all types of flat surfaces



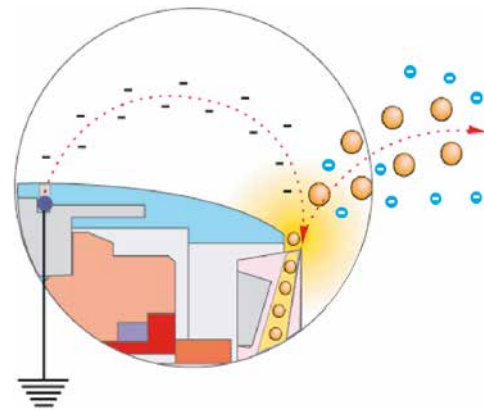
- 
- 
- 
-  Multi-axis
-  5 kg
- 
- 
-  75 kV  
100 µA
-  up to  
24-30 kg/h.
-  up to  
8500 rpm

# INOBELL-R

## ADVANTAGES OF THE ROTATING BELL

> The powder is supplied via the central tube and is rotated by the bell cup. It is electrically charged when it leaves the bell and heads towards the object to be coated in a very wide and enveloping spray. The powder is both electrically charged and sprayed by this flat shaped bell, that rotates at high speed. The bell itself acts as an electrode by bombarding the powder particles with ions, thus providing the powder with a high electrical charge.

- > The rotary bell cup associated to the high voltage ensures:
- A high level of productivity (paint flow of over 500g/min).
  - Homogeneous coating.
  - An adjustable spray paint pattern.
  - A maximum coverage of parts to be paint (the electrostatic wrap round effect permits a transfer of paint behind the part).
  - An economy of paint (the transfer efficiency is high, and can reach over 80%) thanks to the high transfer charge.



> The precise control of the coating thickness is made possible by the powder bell powder is economised.

## TECHNOLOGICAL INNOVATIONS

- Integrated high voltage unit (UHT165)

No high voltage cable:

- Less maintenance,
- Easy to install,
- Staff safety.



- Simplified design:

- Compact and ergonomic system,
- Access and wiring improved,
- Equipment simple to install,
- Number of parts reduced.



- All controls in a single module:

- storing of parameters,
- clear and visible user interface,
- accessible and user friendly,
- adjustment of all functions on screen,
- simplified adjustment of powder flow rates,
- adjustment of shaping air supply (variable impact),
- turbine rotation is pre-set and controlled,
- 9 spray presets.
- 2 operating modes available:
  - local mode (screen and/or piloting by wire connected triggers),
  - remote mode (monitoring via a series connection).

- Easier to integrate:

- standard 2U sized 19" Rack,
- Complete unit ready to integrate,
- no work required on the software,
- simplified wiring between the module and the sprayer

- New removable turbine cartridge: Integrated & variable shaping air (proportional adjustment on TCR module),

- Removable powder bell cup,
- Improved bearing protection,
- Improved motor efficiency.



- Flexible air shroud:

This enables a fast and marked variation of the size of impact. Controlling the pattern allows the width of the impact to be proportionally adjusted during application (from 300 to 450 mm).

- New speed measuring system:

- Greater precision in the application of the paint.



## INOBELL-R EQUIPMENT

Description	Reference
INOBELL-R + CS130 + TCR module + accessories	910011722

supplied with:  
 robotic support + low voltage connection (15m) + powder hose ø12x17 mm (15m) + air hoses (15m) + Black flexible sleeve (6m) + Powder pump CS130 + Plunger + TCR module



# FCR

## Control cabinet for powder coating systems



The standard FCR cabinet, used in conjunction with its various modules, controls the following functions:

- 12 sprays control devices switched on and off via a part detector and time-delay device.
- Electrical power supply module for SAMES KREMLIN control modules.
- Electrical and pneumatic supply units up to 24 control modules.
- Auxiliary air supply unit (for powder tank for example).
- Powder tank level detector.

## TECHNICAL CHARACTERISTICS

### DIMENSIONS

- Low version: 1200 mm (+ 100 mm for base)  
High version: 2000 mm (+ 100 mm for base)
- Width: 600 mm
- Depth: 600 mm
- IP 20 (IP54 optional) protection degree
- Weight when empty: 65 kg low version, 87.5 kg high version
- Power supply voltage: 230 VAC + earth, 50 Hz +/- 10 V,

single-phase or three-phase supply

### PNEUMATIC CHARACTERISTICS

A main air inlet to be installed on the outer right- or left-hand side of the FCR:

- Connection:  
Low version: 1/2" barbed fitting for air hose  
high version: 3/4" barbed fitting for air hose
- Inlet pressure: 7 bar +/-0.5 (according to standard NF ISO 8573-1)
- Maximum flow rate: 190 Nm<sup>3</sup>/h

Depends on the number of spray modules and whether or not the powder tank air supply is used (CR547: 6Nm<sup>3</sup>/h max, TCR: 20Nm<sup>3</sup>/h max, Auxiliary air consumption: 30 Nm<sup>3</sup>/h max.)

The FCR standard cabinet is specifically designed to supply and control power or liquid paint spraying operations in a ventilated booth.

It can accommodate the CRN457, REV800, MCR, TCR and VCR modules.

The FCR comes as a bare cabinet with a front panel for installing: standard 19" control units, an electrical power supply module and an internal air supply kit included as standard.

Two models are available:

- The FCR 12, a low version capable of controlling up to 12 powder spray guns.
- The FCR 24, an high version capable of controlling up to 24 powder spray guns.

Please contact SAMES KREMLIN for further information on the references.



### Electrical power supply module

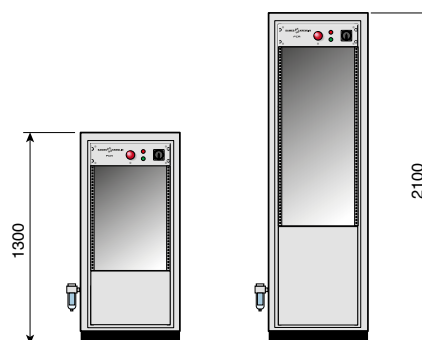
The main module is installed by default at the top of the cabinet, in front of the other modules.

- A miniature PLC is supplied as standard with the main control module to set the spray on/off time according to the part detector setting.

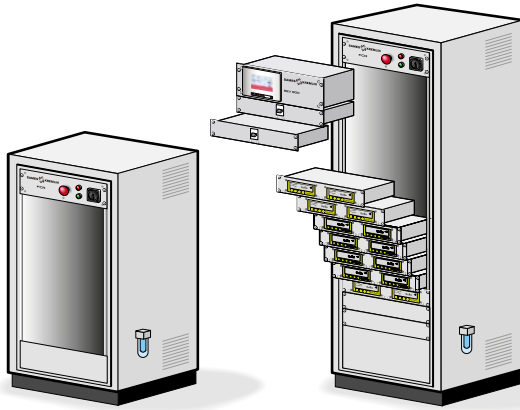
When no REV or MCR control module is installed, this single module can manage the spray on/off timers according to the detection function.

The default settings of the miniature PLC are as follows:

- Time before spraying starts after detection T1 = 05 s.
  - Time before spraying stops after detection T2 = 15 s.
- Values T1 and T2 can be adjusted from 0 to 99 s.



Synoptic installation of FCR system



Low version

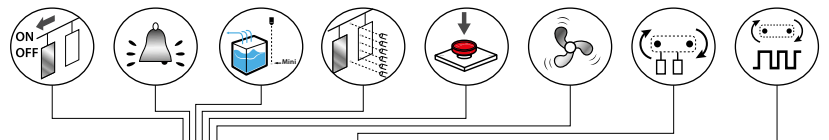
High version

Low version **FCR12** with 18 U slots allows to manage and supply up to 12 spraying modules and a maximum of 2 REV800 or x1 MCR/ 2 VCR axes maxi.

High version **FCR24** with 32 U slots allows to manage and supply up to 24 spraying modules and a maximum of 2 REV800 or 2 MCR/ 4 VCR axes maxi.

Maximum number of sprayer modules supported by one FCR cabinet:  
 8 TCR modules or  
 6 TCR modules + 6 CRN457 modules or  
 4 TCR modules + 12 CRN457 modules or  
 2 TCR modules + 20 CRN457 modules or  
 24 CRN457 modules

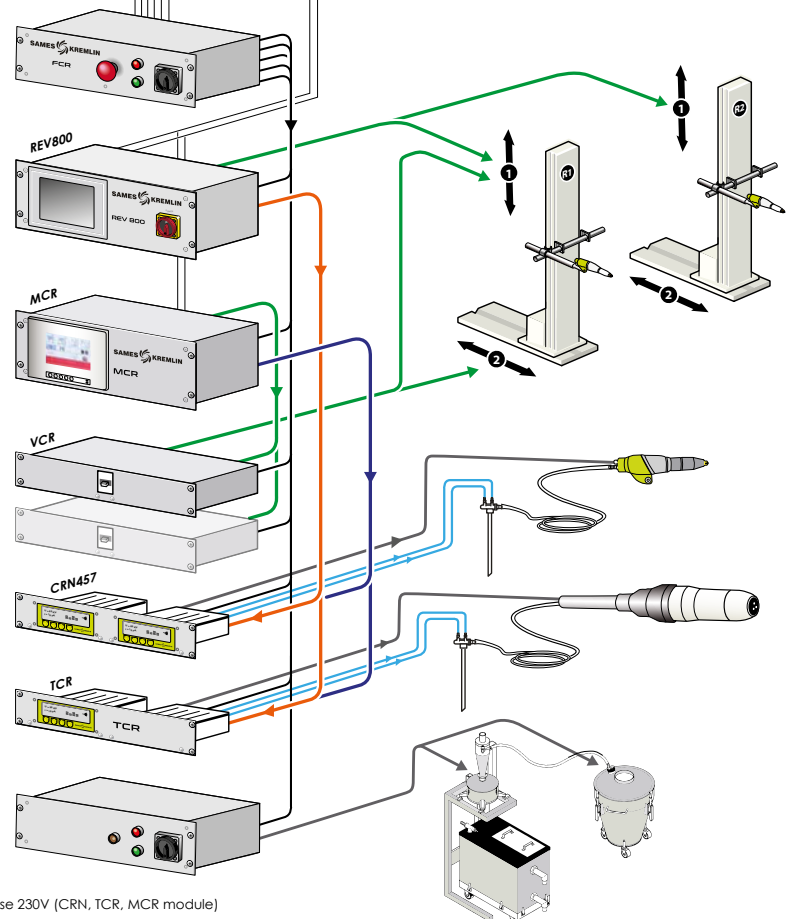
Inputs/Outputs installation:



Main functionalities:

<ul style="list-style-type: none"> <li>part detection by <b>barrier cell</b> (1 occultation) or <b>position sensor</b> + spray time delay device</li> </ul>	-	-	-	<ul style="list-style-type: none"> <li>12 triggers "simultaneous" used in absence of REV or MCR</li> </ul>
<ul style="list-style-type: none"> <li>part detection by <b>barrier cell</b> (up to 6 vertically occultations zone) or <b>position sensor</b> + spray time delay device</li> </ul>	<ul style="list-style-type: none"> <li>20 programs for <b>each robot</b>: 3 zones configurable vertical movement + trigger control</li> </ul>	<ul style="list-style-type: none"> <li>Speed control up to <b>2 reciprocators</b> on 1 vertical axis each</li> </ul>	-	<ul style="list-style-type: none"> <li>12 triggers "separate", <b>each robot</b> controlled up to 6 spray triggers</li> </ul>
<ul style="list-style-type: none"> <li>part detection by <b>barrier cell</b> (to realize precise applications following by height and width) or <b>position sensor</b> + spray time delay device</li> </ul>	<ul style="list-style-type: none"> <li>64 tables for <b>each robot</b>, control of: conveyor speed, robot speed, trigger, powder flow, high voltage, setting of the shroud air and turbine rotation for INOBELL.</li> </ul>	<ul style="list-style-type: none"> <li>Speed control up to <b>2 reciprocators</b> on 2 axis each</li> </ul>	<ul style="list-style-type: none"> <li>24 triggers "separate", <b>each robot</b> controlled up to 12 spray triggers</li> </ul>	-
-	-	<ul style="list-style-type: none"> <li>VCR conveyor module for RFV2000 ≤ 2 axis = x1 VCR &gt; 2 axis = x2 VCR</li> </ul>	-	-
<ul style="list-style-type: none"> <li>trigger-ON by a <b>serial link</b> or <b>connection</b> of 24V</li> </ul>	<ul style="list-style-type: none"> <li>99 different tables in local use</li> </ul>	-	<ul style="list-style-type: none"> <li>In local use, you have access to settings of powder flow, high voltage (U/I) and spray trigger</li> </ul>	-
<ul style="list-style-type: none"> <li>trigger-ON by a <b>serial link</b> or <b>connection</b> of 24V</li> </ul>	<ul style="list-style-type: none"> <li>9 different tables in local use</li> </ul>	-	<ul style="list-style-type: none"> <li>In local use, you have access to settings of powder flow, high voltage (U/I), rotation speed, shaping air and spray trigger</li> </ul>	-

- Optional modules:  
 1- reclaiming powder and sieving control  
 2- new powder control supply



- Electrical power supply - Three-phase 230V (VCR, REV module) and Single-phase 230V (CRN, TCR, MCR module)
- On-Off control of atomizer triggers (0-24V)
- Serial link On-Off control
- Electrical power supply for the motor, sensor and potentiometer robot
- Low voltage cable
- Dilution & injection air (CRN457 or CRN548) and Bearing protection + Rotation speed + Shaping air (TCR)

# REV800

Powder coating management



The REV 800 module is intended to drive an automatic powder electrostatic paint installation.

- Reciprocator motion type
- Light curtains parts detection
- Independent spray triggers
- Conveyor pulse control

## TECHNICAL DATA

Supply	REV800
Inlet voltage (V)	230 single
Inlet frequency (Hz)	47 - 63
Inlet current (A)	16
Supply of API (V)	24
Dimensions	
Weight (kg)	13,8
Height (U)	4
Width (inches)	19
Protection degree	
Rack version	IP54 (front panel) IP20 (rear panel)
Control screen	
Screen	7 inches LCD TNT
Display	resistive analog touch-sensitive screen, controlled by a finger, non-pointed object or glove.
Conditions of use	
Ambient temperature (°C)	< 40
Ambient humidity	< 85 % without condensation
Installation	<b>Not for use in hazardous location</b>

### It can operate:

- the "up & down" axis of one or two reciprocator(s) SAMES KREMLIN RFV 2000 type,
- spray guns activation and the input/output interfacing with the installation.

### The REV800 also manages the parts parameters required by the application via an integrated PLC:

- sweeping movement with parameters set for one to three zones: reversing points and speed change points,
- zone speeds adjustable from 0 to 60 m/min. stop/start running up to six spray guns per robot,
- management of ten memorized programmes (production runs for parts for painting).

### The REV800 module is interfaced with the installation to:

- detect the parts,
- detect external faults,
- detect that the booth is operating correctly: conveyor belt and ventilation,
- manage faults: signaling system and external output authorizing start up (example : conveyer belt),
- manage timeouts for the application between parts, between two robots and three spray gun configurations.



## CUSTOMERS' BENEFITS

**REV800 module allows the operator to run his installation extremely simply**

- Very user-friendly: learning the process is quick and intuitive - graphic icon display.
- System reliability: the system is managed by a programmable logic controller (PLC).
- Easy to use: the intuitive interface simplifies the selection of each menu to the maximum.
- Time saving: easy calibration of the high and low points and the robot axis. The parameter table choice can be made on line during production, without stopping the conveyor belt.
- Ergonomics: wide, easy to read and operate color touch-screen.

# REV800

## FUNCTIONS

The REV800 integrates the basic functions of an application process:

- 2 "up & down" type reciprocators - 1 axis
- 3 sweeping zones per reciprocator
- controls up to 6 sprayers per reciprocator
- 20 parts production runs per reciprocator

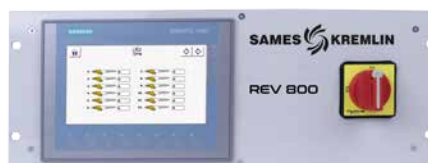
The 19 inch standard dimensions of the REV800 module allows easy integration into a SAMES KREMLIN modular cabinet and connection to the various SAMES KREMLIN spray gun control modules.

With the following functionalities, the REV800 module interfaces easily with an industrial application:

- parts detection (handles spraying and timed delays)
- external faults (recip stops, spraying stops)
- booth ventilation
- conveyor pulse
- conveyor stop
- E-stop
- external faults (warning, signals, other...)
- conveyor start authorization

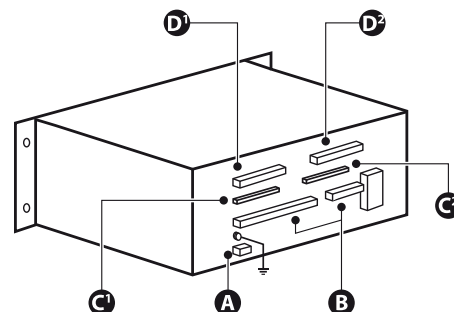
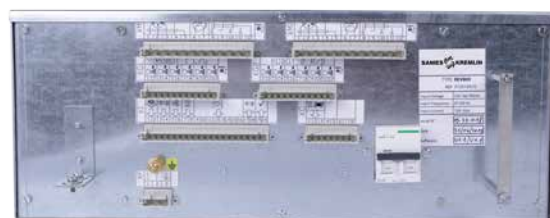
## CONTROL MODULE REV800

Description	Reference
REV800 RACK VERSION	910019970
SCREEN PROTECTION SHEET	110002029
CONNECTING CABLES <b>REV800 TO RFV2000</b>	910003807



## CONNEXIONS

Description	Mark	Function	mm2	Reference
Electrical supply	A		3G2.5	E4PCAL580
Inputs	B	Emergency stop	2x1	E2LAAB100
		Conveyor belt running	2x1	E2LAAB100
		Fan operating	2x1	E2LAAB100
		External faults	2x1	E2LAAB100
		Parts detection	3G0.75	E2LDAC075
Outputs	B	Conveyor belt autorisation	2x1	E2LAAB100
		Function OK	2x1	E2LAAB100
Spray gun control <sup>(1)</sup>	C1 & C2		2x1	E2LAAB100
Motor control	D1 & D2	Motor, lg = 30m	4G1.5	1411222
		Temperature sensor	2x1	1411223
		Potentiometer <sup>(2)</sup>	4G0.75	1409971



(1): cable by the metre necessary for one spray gun, the C1 & C2 connection can each run 6 triggers  
 (2): the potentiometer must be connected via a Zener barrier protection device which is a certified (POT31) electric system.  
 The Zener barrier is installed at the rear of the control module REV 800 on a rail provided for this purpose.  
 Part number of the cable connecting the Zener barrier to the REV 800: **1411224**  
 Part number of the cable of the potentiometer: **1409971**  
 Part number of the Zener barrier : **E6GPSR077AT**

# MCR

Powder coating management

The MCR module is intended to drive an automatic powder electrostatic paint installation.

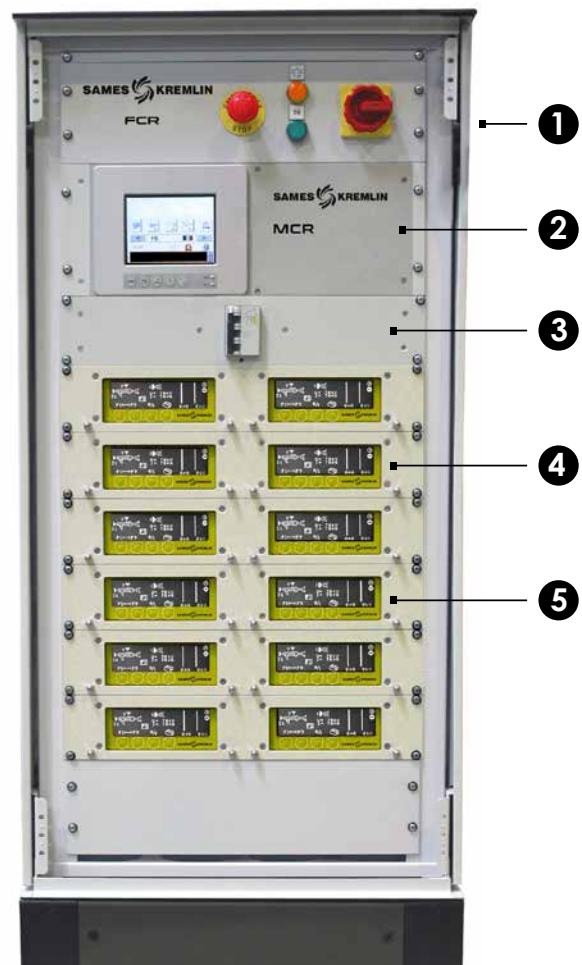
- Control of reciprocator movements
- Settings of powder application
- Parts detection
- Conveyor pulse control



The MCR control module (2) accurately supervises all the parameters of an automatic powder coating installation.

MCR is a 19-inch rack mounted product, designed to be integrated into the FCR modular cabinet (1). It manages application processes, from the simplest to the most complex, and can be associated to control modules such as:

- The VCR converter control reciprocator module (3) for managing the sweeping and positioning of the RFV2000 reciprocator.
- The TCR module (4) for the INOBELL sprayer controls (that manages the powder flow rates, the speed of rotation, high voltage, etc).
- The CRN457 module (5) for the Auto Mach-Jet sprayer controls.
- The interface with the customer installation to detect the part, authorise the conveyor operation, etc.





**CUSTOMERS' BENEFITS**

• **Versatile use:**

MCR manages simultaneously two types of different sprayers (INOPELL and AUTO Mach-Jet) in a single application table. Each sprayer may be configured independently and when the part to be coated is identified, the powder coating will be deposited precisely and regularly.

• **Preventive maintenance:**

A production summary counts the hours of operation of the spray guns and the reciprocators.

The alarm threshold settings will sound the warning when the maintenance time is reached, in order to check:

- the electrode of the AUTO Mach-Jet
- the powder supply
- the movements of the reciprocator

• **Time saving:**

MCR ensures the reciprocator (high and low points), with the equipment installed.

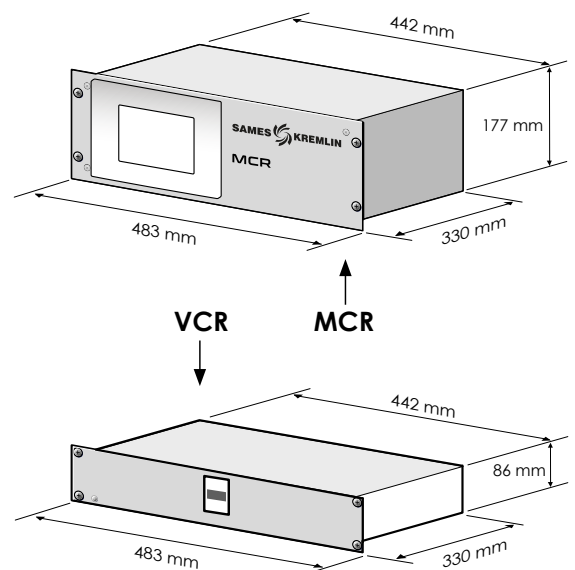
During production, it is possible to change the parameters, without stopping the conveyor. A corrective coefficient is also provided to adjust the parameters more quickly without modifying all parameters (e.g.: increase of the powder flow rate by 10% of all the spray guns instantaneously).

• **Easy to use:**

The MCR module allows the operator to simply drive the installation: PC control screens are simple and fast to use.

Supply	MCR	VCR variator module
Input voltage:	230 V single	230 V tri
Input frequency:	47 - 63 Hz	
Input current:	1 A	10 A
Ambient temperature	< 40°C	< 40°C
Ambient humidity without condensation	< 85%	< 85%
Installation zone:	<b>Not for use in hazardous location</b>	
<b>Digital outputs</b>		
Nominal / max. voltage	250/250 V AC	
Nominal / max. current	7A / 15A	
Maximum load	1750 VA	
Nominal charge	350 VA	
Stop power in DC1	30 / 110 / 220V: 7 / 0.25 / 0.12 A	
Min. switchable charge	300 mW (5V/5mA)	
<b>Digital inputs</b>		
Nominal input voltage	24VDC (min -3VDC max 30 VDC)	
Nominal input current	3mA min (18VDC) / 3.9mA (24VDC) / 4.5mA (30VDC)	
Lower level voltage	UL max < 5 V	
Upper level voltage	UH min > 15 V	
<b>Dimensions</b>		
Weight	10.8 kg	8.8 kg
Height:	4U	2U
Width:	19 inches	19 inches
Protection degree:	IP 20	IP 20
Screen:	5.6 inches, colour	

Technical Data



# Technical Data

## NUMEROUS FUNCTIONS IN THE POWDER COATING APPLICATION

The MCR control module manages the required parameters for a smart application of the powder onto the part to be coated.

Here are the numerous possibilities:

**1/** Manages up to **two SAMES KREMLIN RFV reciprocators**, the axes may be configured as follows:

- no reciprocator
- if the requirement is  $\leq 2$  axes = x1 VCR
  - 1 reciprocator with one axis (vertical sweeping)
  - 1 reciprocator with two axes (sweeping and gauge)
  - 2 reciprocators with one axis (vertical sweeping)
- if the requirement is  $> 2$  axes = x2 VCR
  - 1 reciprocator with one axis (sweeping or gauge) + 1 reciprocator with two axes
  - 2 reciprocators with two axes (sweeping and gauge)

**2/** Manages the ON/OFF command for up to 24 (FCR high Version) spray guns, only by serial link.

**3/** The ON/OFF control of the spraying is distributed over 3 plans per reciprocator (one timer delay per plane).

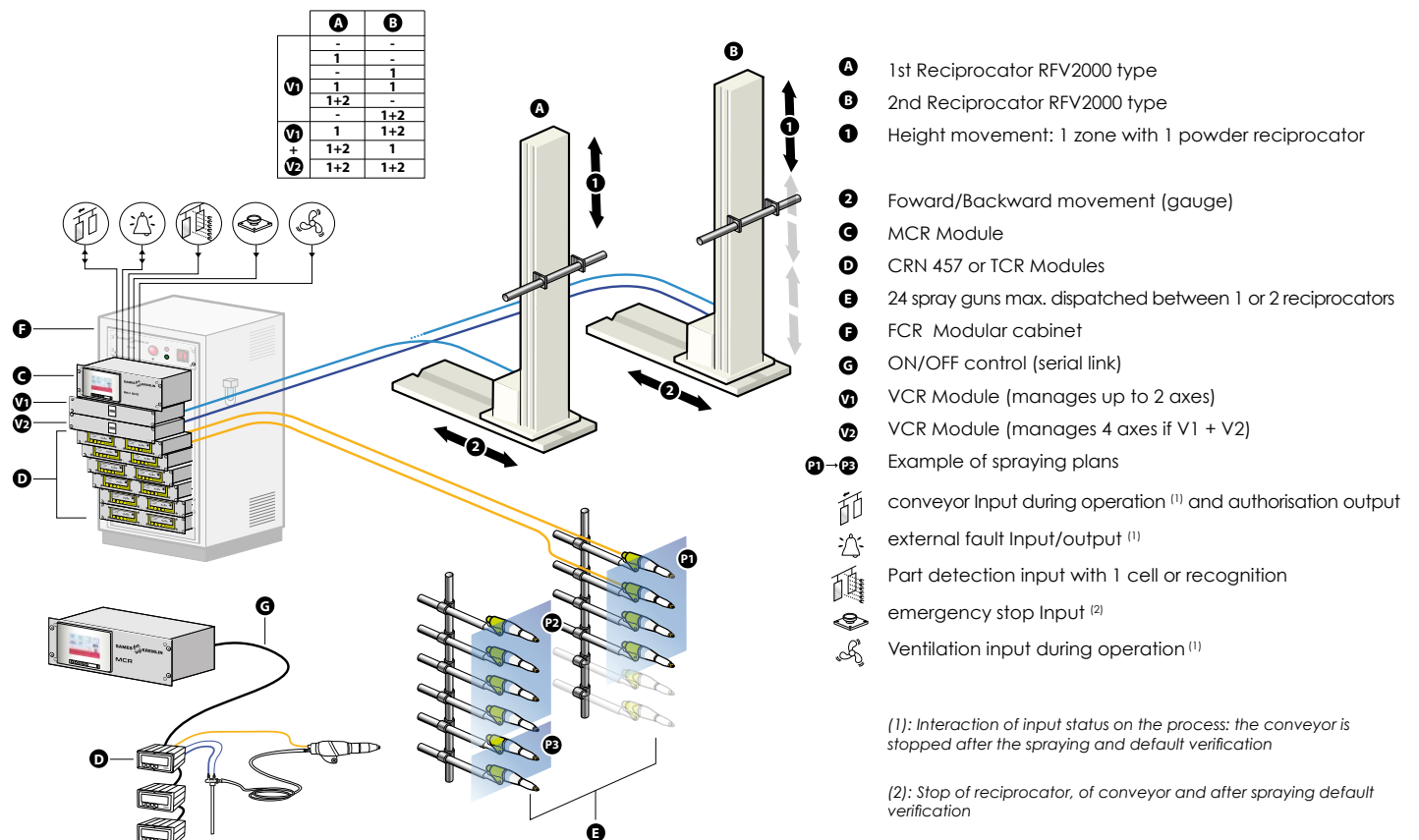
**4/** Manages up to 64 different parameter tables per reciprocator. The table contains all of the parameters for the movements, of spraying, high voltage and of detection and setting of the shaping air and turbine rotation for the INOBELL sprayer.

**5/** Possibility to launch in/out cycles on gauge and stroke in order to blow of all powder sprayer.

**6/** The module is interfaced with the customers' installation:

- Inputs:
  - detection on the height axis
  - cell <sup>(1)</sup> for recognition of parts
  - identification of parts on gauge axis
  - external fault input
  - ventilation input during operation
  - conveyor input during operation
  - Emergency stop input
- Outputs:
  - external fault output (signal or other)
  - authorisation output for conveyor belt operation

## INTEGRATION DIAGRAM



## CONTROL MODULE

Description	Reference
MCR RACK VERSION	910004516
VCR RACK VERSION <sup>(1)</sup>	910004517
Connector between the MCR and VCR modules	110000524

(1): for extension of existing FCR system with MCR module

## COMPARISON OF THE MAJOR FUNCTIONS OF THE REV 800 AND MCR MODULES

CHARACTERISTICS	REV 800	MCR
<b>GUN TABLES</b>		
Number of tables	20	64
Ref. values per reciprocator:		
number of sweeping zones	3	1
set point speed of zone	✓	✓
set point height of zone	✓	✓
set point gauge	-	✓
Set point of powder application per reciprocator:		
on/off trigger by zone	✓	✓ (1)
selection of sprayer	-	✓
air injection pump	-	✓
air dilution pump	-	✓
voltage	-	✓
current	-	✓
air shroud (INOCELL)	-	✓
turbine rotation (INOCELL)	-	✓
Number of guns max.	12	24
Trigger control	✓	-
Serial link control	-	✓

## CONTROL OF RECIPROCATOR MOVEMENTS

No reciprocator	-	✓
Height of 1 reciprocator	✓	✓
Height and gauge 1 reciprocator	-	✓
Height of 2 reciprocators	✓	✓
Height and gauge 2 reciprocators	-	✓
Operation with module VCR	-	✓
Speed from 5 to 25 m/min (powder)	✓	✓
Speed from 5 to 60 m/min (liquid)	✓	-

Characteristics	REV 800	MCR
<b>OTHER FUNCTIONS</b>		
Parts detection:		
by position (dry contact or cell)	✓	✓
by height and gauge	✓ (2)	✓
Conveyor speed data:		
Fixed value	✓	✓
Real value	✓	✓
Screen	Colour	Colour
Number of languages	5	14
Flip/Flop movement	Yes	No
(integrated into the table of spraying)		
Production summary ( reciprocators and sprayers):		
Hours of function	-	✓
Cleaning:		
Sprayer's interior blowing	-	✓
Sprayer's exterior blowing	-	✓

(1): Serial link only

(2): The configuration of the occultation zones of the cells barrier is not managed by the REV 800 module.

This setting is done by the programming software of the detection barrier. However it is necessary to copy this configuration in the following pictures when the barrier sensor is activated.

Up to 6 occultation zones (zone 1 to 6) can be defined for the cells barrier.

# RFV2000

Vertical and Horizontal movement system



## RANGE

The RFV reciprocator 2000 is intended to equip automatic installations for powder coating. The reciprocator complies with ATEX Directive.

➤ For **powder coating** applications, mechanism is in zone 22 to note that the regulation nevertheless considered that the equipment is approved, category = 2 instead of 3. It can lead to a combination of powder projectors such as:

- 4, 6, 8 or 10 projectors powder Auto Mach-Jet
- 2 or 4 INOBELL powder turbines

The RVF 2000 reciprocator is controlled by:

- a control module REV 800 or MCR
- PLC for a more complex automatic installation

## CUSTOMERS' BENEFITS

- Extremely simple construction and operation (very long service life).
- Stroke and speed adjustable remotely over a very wide range.
- Optimum safety: the reciprocator complies with ATEX Directive.
- Reduced maintenance: limited to cleaning the chains and transmission devices.
- No special prepared area (the robot can be positioned or displaced manually without effort).

## TECHNICAL DATA

Description	RFV 2000 for application of <b>powder paint</b>
Effective stroke – landmark A	1000 to 3000 depending on the version
Sweeping speed (m/minute) to 50 Hz	adjustable up to 25
Floor surface	0.55 x 0.70 m
Power motor (w)	375
Robot weight (kg)	approx 230
Single phase supply	220 V / 50-60 Hz
Eyebolts	∅ 28 mm

ATEX marking: **RFV2000 (powder paint)**  
 CE  II 3 D c T125°C  
 Technical file: RFV



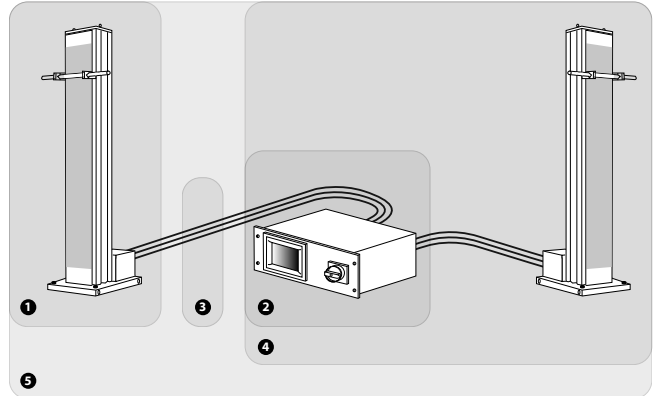
# RFV2000

## Mechanism of the robot «RFV 2000»

Description	Mark	Effective stroke (cm)	Reference
RFV 2000	1	200	910006929-200
powder paint		80 < xx0 < 340	910006929-xxx

XX0 = effective stroke in cm, ex: 280 cm

It is best to choose a standard mechanical robot (200 cm stroke), even if the stroke is greater than the height of the pieces to be painted, it can adapt to space constraints. Otherwise, the choice will be made either because of environmental stress. (ex : a cabin height of less than 3.4 m) or for heights to be painted over 2m.



- 1 = Zone 22 (RFV for powder paint)
- 2 = REV 800/MCR, out of ATEX area 0 1/2 and 22 area with sealed version box
- 3 = Electrical connections for 1 x RFV2000, **Ref. = 910003807 =** motor cable: 1 411 222 (4G1.5mm2) + cable temperature sensor: 1 411 223 (2x1mm2) + potentiometer cable: 1 409 971 (4G0.75mm2)
- 4 = REV 811 (RFV 2000 + REV 800)
- 5 = REV 821 (2 x RFV 2000 + REV 800)

## Mechanism of the robot «RFV 2000» + Control module REV 800

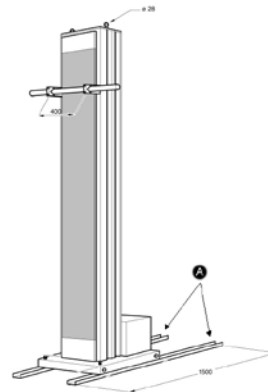
Description	Mark	Pilot of	RFV version	Effective stroke (cm)	Reference
REV 811	4	x1 RFV one axis	powder paint	200	910002373
REV 821	5	x2 RFV one axis	powder paint	200	910002374

The assembly includes the electrical control cables (approx. 30m) and the REV 800 (delivered as a rack version)

## COMPONENTS

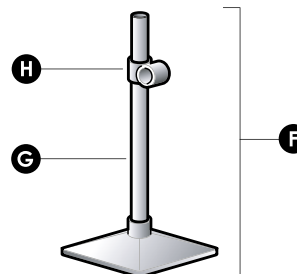
### Guide rail kit

Description	Mark	Lenght (mm)	Reference
2 guiding rails & fixing pins	A	1500	1525228



### Components for fixed spray

Description	Mark	Lenght (mm)	Reference
Rod (base + tube)	F	1500	459127
Tube only	G	1200	744097
Fixing nut	H	Ø50/30 mm	749805
		Ø50/50 mm	429104
		Ø50/60 mm	1204441



### Optional tray

Description	Lenght (mm)	Reference
Cable tray kit	Hose < 2000	1514325
(2 kits per reciprocator)	Hose > 2000	1525208



Paint know-how

Electrostatic Sprayers

Control Solutions & Peripherals

Powder Systems

Tools & Accessories



# Engineering solutions

**SAMES KREMLIN** develops its engineering solutions closely with their customers in order to meet their specific requirements:

Designed and developed for each individual case, they provide precise responses to the expectations of the most demanding users: reliability, quality of application and improvement of productivity are constantly aimed for.

The **SAMES KREMLIN** engineering teams share with our customers the fruit of their experience and bring their expertise and availability. The experience of the **SAMES KREMLIN**' staff comes from the most advanced technological sectors such as Automobile and Plastics processing industries. The skills acquired in these fields and the latest innovations allow our customers to benefit from the most advanced techniques in the field of electrostatic coating.

Quality, reliability, productivity and customer's care is what **SAMES KREMLIN** is deeply committed to.



# Engineering solutions

**SAMES KREMLIN** offers a **wide range** of automatic powder coating **system**:

## PVV EasyColor



**FOR INTEGRATED PRODUCTION & EASY PARTS:**

- Booth is modular:  
Designed to meet customer needs
- Access door for manual coating on simple parts
- Flat floor with hopper

## PVV EasyCompact



**FOR INTEGRATED PRODUCTION & INTENSIVE TOUCH-UP:**

- Booth is compact:  
Quick cleaning from outside
- 2 separated areas: Automatic & Manual
- Flat floor for 2 manual areas:  
side protection fences
- Separated air flow between manual and automatic areas

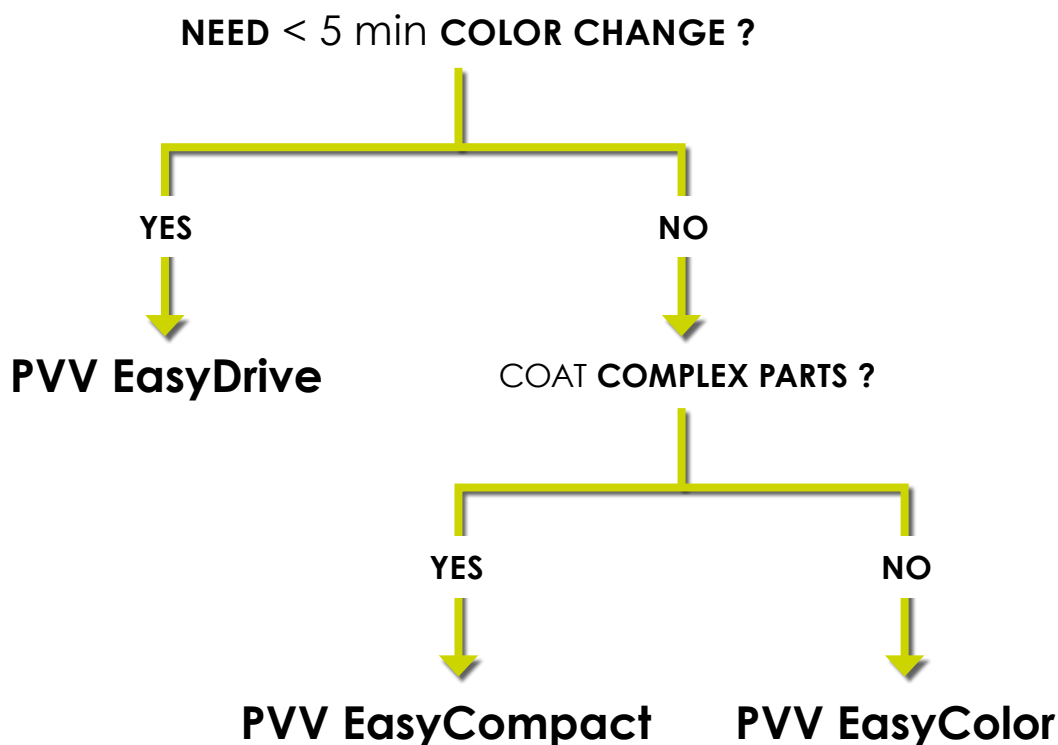
## PVV EasyDrive



**FOR RANDOM PRODUCTION & MANY COLOR CHANGES:**

- Booth is small:  
Quick cleaning from outside
- Booth is movable:  
Quick color change during the manual touch-up
- Sprayers are fixed: no reciprocator

**A solution** for each powder request:



# Powder Booths

**Booths** range incorporates many **shared features**:

## 1 Booth made from composite materials

- Honeycomb structure
- No powder build-up on walls
- Easy cleaning using compressed air
- Vertical downdraft air flow
  - No powder build-up on the bottom of the booth
  - Powder stays inside the booth during coating & cleaning



## 5 Parts detection

- Jig or cell detection
- Optimization of gun triggers
- Adapt distance between gun and part



## 4 Powder feed center

- From box or fluidized hopper
- Feeding up to 24 pumps
- Automatic pump & hoses cleaning
- Possible retrofit on existing line
- Reduced maintenance = no filter cartridge in the central unit and recovery of the powder lost in the general group.

## 8 Modular design to answer all needs

- Variable lengths and heights
- Number of sprayers and ventilation are sized depending on project





# Powder Booths

Paint know-how

Electrostatic Sprayers

Control Solutions & Peripherals

Powder Systems

Tools & Accessories

## 2

### Cyclone with filter

- Low noise filter box
- Sieve to recover the powder: Very efficient and durable, the perforated plate is fitted between the base of the cyclone and the sieve.

## 3

### Filter group

- It controls the quality of the air expelled either inside or outside of the workshop as required. Its anti-clogging control system checks the water column permanently. This method preserves good speeds inside the powder coating chamber, whilst ensuring long life for the filter cartridges.

## 6

### Quick color change

- A compressed air network automatically cleans :
  - Powder hoses to the sprayer
  - Sprayers bodies
  - Cyclone & sieve
  - Recycled powder circuit
- Lead from main control panel
- 15 min average



## 7

### Central control panel



- parameters displayed on large color screen
- spray table management
- flow rate variation according to part length
- total production management
- assistance for cleaning procedure and maintenance
- automatic identification of part size
- cell barriers management

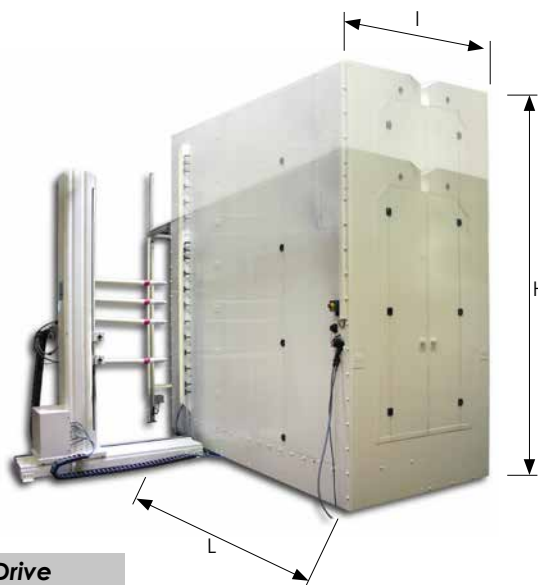
# Powder Booths

## Systems of powder installation

Allows your customers to increase their productivity by modernizing their automatic powder installation. All elements which compose **SAMES KREMLIN'** PVV booth are independently available. You will be able to integrate them on your customer's existing line or on brand new lines.

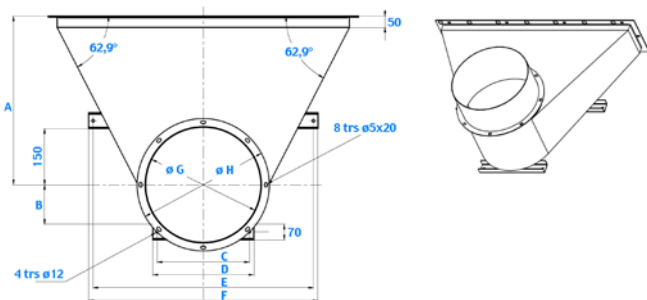
### 1 Booth

The booth range is proposed in different heights in standard, including the duct inlet box (see table), accessories (emergency stop...) and deflectors.



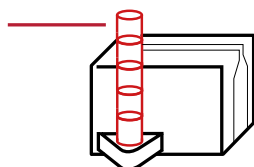
Booth dimensions		Easycompact		EasyColor	EasyDrive	
		Standard	Large		Standard	Large
Height H (mm)	Maxi.	4000	4000	4000	4000	4000
	Mini.	2500	2500	2500	2500	2500
Length L (mm)	Maxi.	3850	4450	6000	2500	2500
	Mini.	-	-	3000	-	-
Width I (mm)	Maxi.	1700	2100	2500	2000	2400
	Mini.	-	-	1200	-	-

### THE DUCT INLET BOX IS AVAILABLE IN 3 MODELS:



Mark	Duct inlet box		
	from 9500 to 12000 m <sup>3</sup> /h	13500 to 16500 m <sup>3</sup> /h	17000 to 22000 m <sup>3</sup> /h
A	830	750	700
B	135	175	215
C	410	410	540
D	450	450	580
E	900	980	1080
F	940	1020	1120
ø G	441 +/-1 int	511 +/-1 int	591 +/-1 int
ø H	518	588	678

Components allowing the building of ventilation tube between air inlet box and cyclone are available on request.

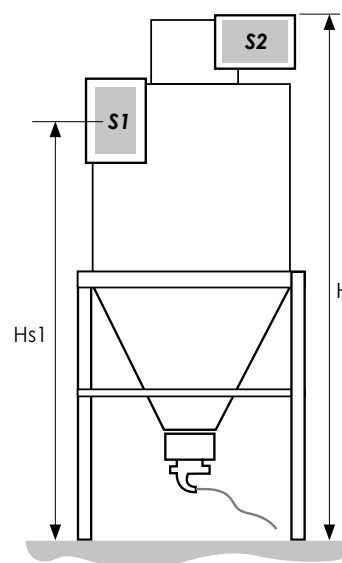




# Powder Booths

## 2 Extraction cyclone

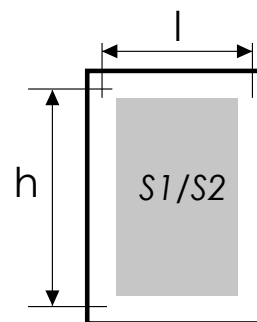
The cyclone/sieve set allows the recovery of powder overspray.  
The recycling system (sleeve valves) ensures the powder transfer from the sieve to the powder center.



This determines the output of the installation.  
Its form and diameter are calibrated to suit the context of the installation to guarantee very good separation performances. The built in sieving system is patented and combines fine filtration and high flow rate.

### TECHNICAL DATA OF CYCLONES:

	Air flow (m <sup>3</sup> /h)				
	9000	12 000	16 000	20 000	24 000
«S1» air input section l x h (mm)	244 x 494	300 x 600	330 x 750	350 x 800	360 x 800
«S2» air output section l x h (mm)	280 x 355	354 x 446	397 x 500	446 x 562	638 x 507
Height on frame H (mm)	3981	4432	4915	5970	6061
Hs1 Height (mm)	3793	4183	4620	5649	5710
Frame dimensions (mm)	1197 x 1197	1445 x 1445	1590 x 1590	1814 x 1814	1990 x 1990
Weight (frame included) (kg)	650	800	900	1000	1100



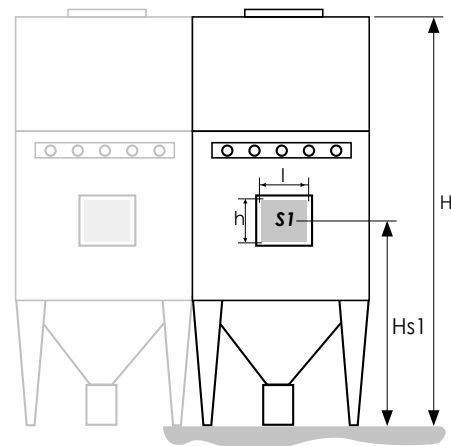
### TECHNICAL DATA OF THE POWDER SIEVE AND CONTROL MODULE:

Powder flow max. (pitch valve)	150 kg/h
Supply voltage	24 V - DC
Supply pressure	6 bar (87 psi) +/- 1 bar (14,5 psi)
Size of sieve screen	250 µm - 390 µm

# Powder Booths

## 3 Filtration groups

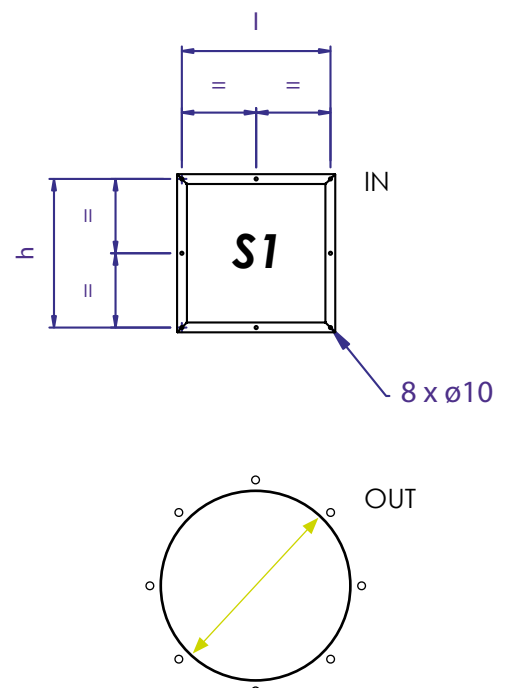
Ventilation boxes with compressed-air automatic cleaning, are especially designed for filtration and separation of powder paint. They guarantee a highly effective filtering.



Air flow provided by the filter box is comprised between 12 000 m<sup>3</sup>/h and 24 000 m<sup>3</sup>/h (to choose according to dimensions of the booth openings and the quantity of projected powder).

### GROUPS OF FILTRATION DATA:

	Air flow (m <sup>3</sup> /h)			
	12 000	16 000	20 000	24 000
Air inlet «S1» l x h (mm)	600 x 600	700 x 700	750 x 750	2x(600 x 600)
Air Outlet Øint. mm + (screws)	601 (14xM8)	711 (12xM8)	850 (16xM8)	850 (16xM8)
Height on frame H (mm)	4604	4704	4904	4704
Height Hs1 (mm)	2125	2225	2425	2225
Overall dimension (mm)	1820 x 1820	1820 x 2250	1820 x 2680	1820 x 3110
Filter surface (m <sup>2</sup> )	175	233	291	362
Fan rating (kW)	22	30	2 x 22	2 x 22
Static pressure (daPa)	393	404	430	401
Cartridge dimension (mm)	Ø325 - H=1200 mm			
Fan electrical power supply	400 V tri. / 50 Hz			
Electrovalve power supply	24 VDC			
Air pressure max.	6 bar			
Air consumption	600 l/min.			



Delivered with unclogging system (supply with 220 V single phase)

# Powder Booths

## 4 Powder feed centers

Two models available:

- 1/ Autonomous powder station with integrated filtering cartridges and control panel
- 2/ Powder station with no air exhauster but with a connexion to the main powder recovery ducting system.

With a simple and ergonomic design, powder feed center enables the transport of powder from a standard fluidized hopper or from a box (in option) to automatic guns (max. number of guns: 24). They are adapted to new containers such as big-bag, powder box, thus allowing an uninterrupted feeding of new powder.

**1** This powder station can be added to an existing installation in an autonomous way. It is controlled by an electropneumatic box integrated into the station. The PLC monitor makes easy the control of the installation so that the operator can follow his actions in real time: defects, stages of cleaning, operations to be carried out...

Powder fumes are recovered by the powder supply filtration center.



**2** Very compact powder feed center with no filter cartridge.

Powder fumes are collected by the main filter unit.



Sieving or box supplying into the powder feed centre (in option)

### TECHNICAL DATA:

Pneumatic	Powder feed centre	Control cabinet	Booth
Maxi air pressure (bar)	8	8	8
Mini air pressure (m)	6	6	6
Air consumption (m3/h)	17	< 160	-
Air flow of ventilation (m3/h)	2500		up to 25 500
Inlet fitting	3/4"		

Electric	Control cabinet
Tension (V 3-phase)	400
Power (kVA) - 50 Hz	5.5

	Standard <sup>(1)</sup> powderbox	Fluidised tank
Maxi Nb of plungers	14	24

Dimensions tank	Big	Medium	Small
Width (mm)	595	595	595
Length (mm)	9 00	620	425
Height (mm)	415	415	415
Useful volume (liter)	160	120	90

	Standard powerbox	Powder feed centre	Max Parts size (mm)	
Width maxi (mm)	280	1370	Std	XL
Length (mm)	380	1470	L : 800	L : 1200
Height (mm)	400	1720	H : from 1600 to 2500 <sup>(2)</sup>	
Useful vilume (liter)	40 to 50			

(1): Feeding from powder box is not recommended in certain applications requiring a good thickness regularity.

(2): The useful height of the parts depends on the height of the booth and on the position of part from the ground. Minimum heigh: 730 mm.

# Powder Booths

## 5 Parts detection

Jig or cell detection  
 Optimization of gun triggers  
 Adapt distance from gun to part



### PARTS SIZES TO COAT :

Parts sizes	EasyCompact & EasyDrive		EasyColor
	max. Width (mm)	Standard	800
	Large	1200	1600
max. height (mm)		2500 <sup>(1)</sup>	2500

(1): the height usable of parts depends on the height of the booth and the position of the part compared to the ground:

Maximum height = height booth - 700 mm

## 6 Sprayers blowing

When changing over colors, the **AUTO Mach-Jet** can be cleaned easily, automatically and quickly with an airblowing system.



The use of a «forward - backward» axis RFV2000 recip. is possible with the REV800 module control, only:

1. external blowing, up to 12 automatic sprayers
2. external blowing, up to 24 automatic sprayers

#### External blowing kit

12 automatic sprayers
24 automatic sprayers

The walls of the booth are already bored.

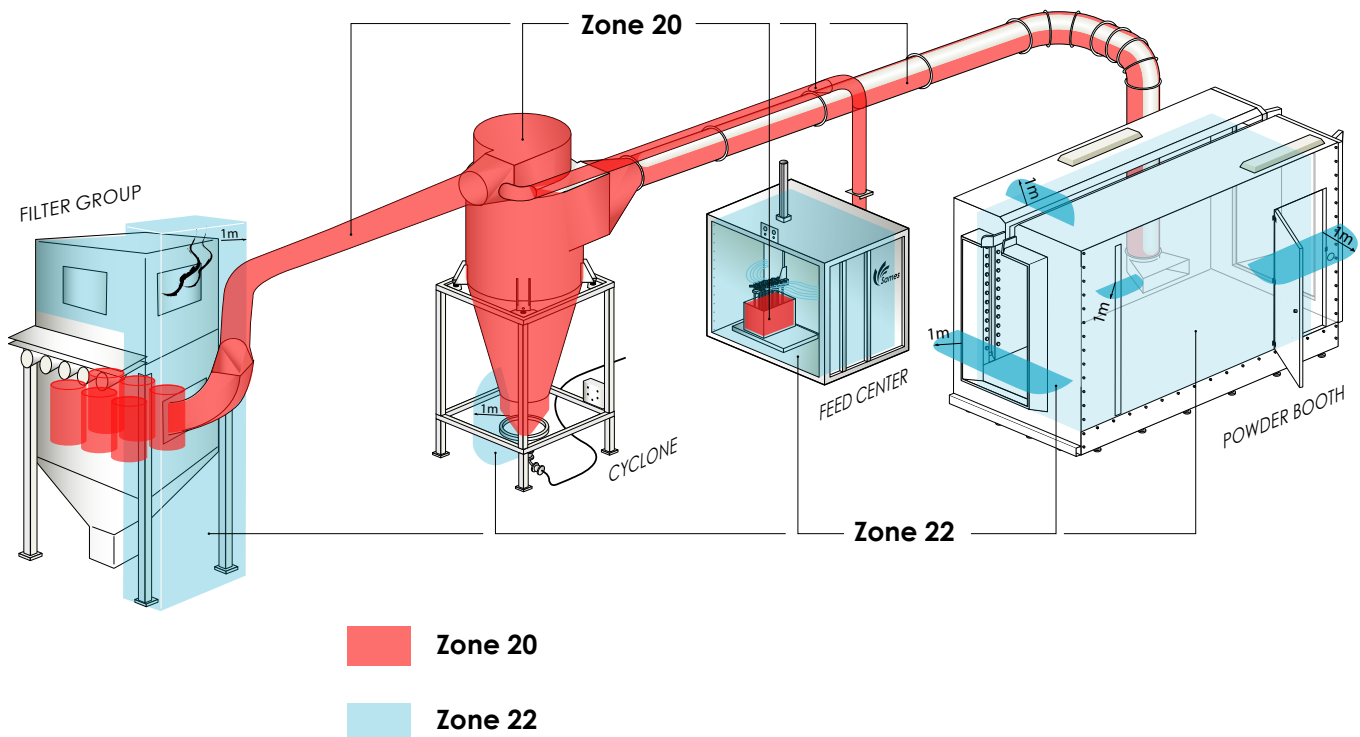
## Powder Booths

## ATEX zones to consider

According to 1999/92/EC Directive, the ATEX zones' definition is the responsibility of the user. For information, here is an installation diagram in accordance with EN12981 standard PVV EasyCompact system, contact **SAMES KREMLIN** for more information.

Zones are defined as follows:

- POWDER BOOTH:**  
**Zone 22** for the inner volume of the booth + **1 meter** around all openings.
- POWDER FEED CENTER:**  
**Zone 22** for the inner volume of the feed center.  
**Zone 20** for the inner volume of fluidised powder hopper.
- CYCLONE AND LINES:**  
**Zone 20**
- FILTER GROUP:**  
**Zone 20** for the inner volume after filters.  
**Zone 22** for the inner volume before filters + **1 meter** around and at the air exit, up to the ground.





## Quick color change booth

# PVV EasyColor

The **PVV Easycolor** booth is fully modular.

Its composite structure allows colors to be changed over very quickly (10 to 15 min).

The PVV Easycolor system ensures a finish that meets your expectations for industrial requirements.

- Manual and ventilated access to work stations
- Vertical ventilation
- Automatic cleaning function using a pressurised air system that carries out the cleaning:
  - venturi feed pumps.
  - powder hoses and inside of sprayers.
  - a reclaim powder hose.
- The external cleaning of the sprayers is carried out inside the booth
- Flat base that facilitates access for cleaning and maintenance operations
- The central powder supply unit PCE 2500 is fully automated
- The control cabinet with an internal PC equipped with a color touch screen
- Cyclone with integral sieve and filter preventing the powder from polymerisation
- It is possible to add a detector to check the size of the parts.



**FOR INTEGRATED PRODUCTION & EASY PARTS**

# PVV EasyCompact

Optimise your paint line and your production !

EasyCompact can be integrated quickly and easily into new or existing installations; its compact size means that it may be commissioned very quickly.

Its performances for changing over colors will increase your coating productivity significantly, as well as that of the rest of your production, provided that the stages prior to the booth (assembly of parts, surface treatment) and after the booth (hoven) allow it!

**The booth gives access to 2 manual rework stations, either BEFORE OR AFTER the automatic station.**

Changing over colors becomes quick and easy. The booth is cleaned from the outside, there is no need to go inside it once the manual and double doors have been closed.



## FOR INTEGRATED PRODUCTION & INTENSIVE TOUCH-UP

The air flow passes under the floor along the length of the booth through a central opening. This design permits a homogeneous flow inside the booth that satisfies the application and cleaning criteria.

The design of the booth, thanks to its flat floor in the manual zone and the internal separation deflectors, permits the operator to enter sufficiently inside the booth for more ergonomic and cleaner use in production. These deflectors are covered by a patent by **SAMES KREMLIN**, and can be oriented to facilitate cleaning from the outside of the booth.



The two manual powder coating stations and the output area are equipped with swing doors and permit, when closed, a reduction of the opened surfaces of the booth and therefore to increase the air speeds to limit the powder outputs during cleaning operations.



Quick color change booth

# PVV EasyDrive

Productivity, Economy, Compact Size and Ergonomics are the key words that sum up requirements in surface treatment business today.

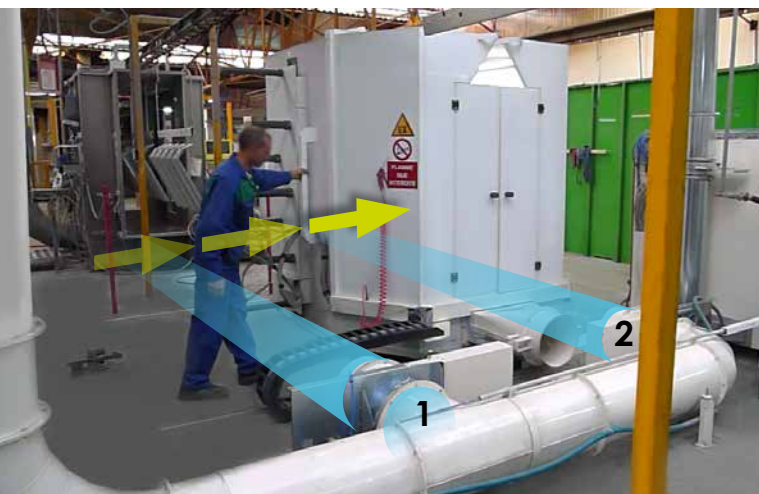
To meet these criteria and satisfy the most demanding customers, **SAMES KREMLIN** has developed **PVV EasyDrive**, our automatic powder-coating system, built around booth for fast color change.

This solution with fixed sprayers has been successful with integrated manufacturers in diverse application markets.

How to answer their specific requests ?

- More color changes
- Highly versatile parts to coat
- Less initial investment
- Recycle more powder
- Need for flexibility in coating modes

- Booth is movable by hand while achieving a touch-up in another manual booth, the automatic removable booth achieves a fast color change in the same time:  
--> **LESS THAN 5 MIN**



1: Booth removed of the production paint line  
2: Booth connected on the production paint line

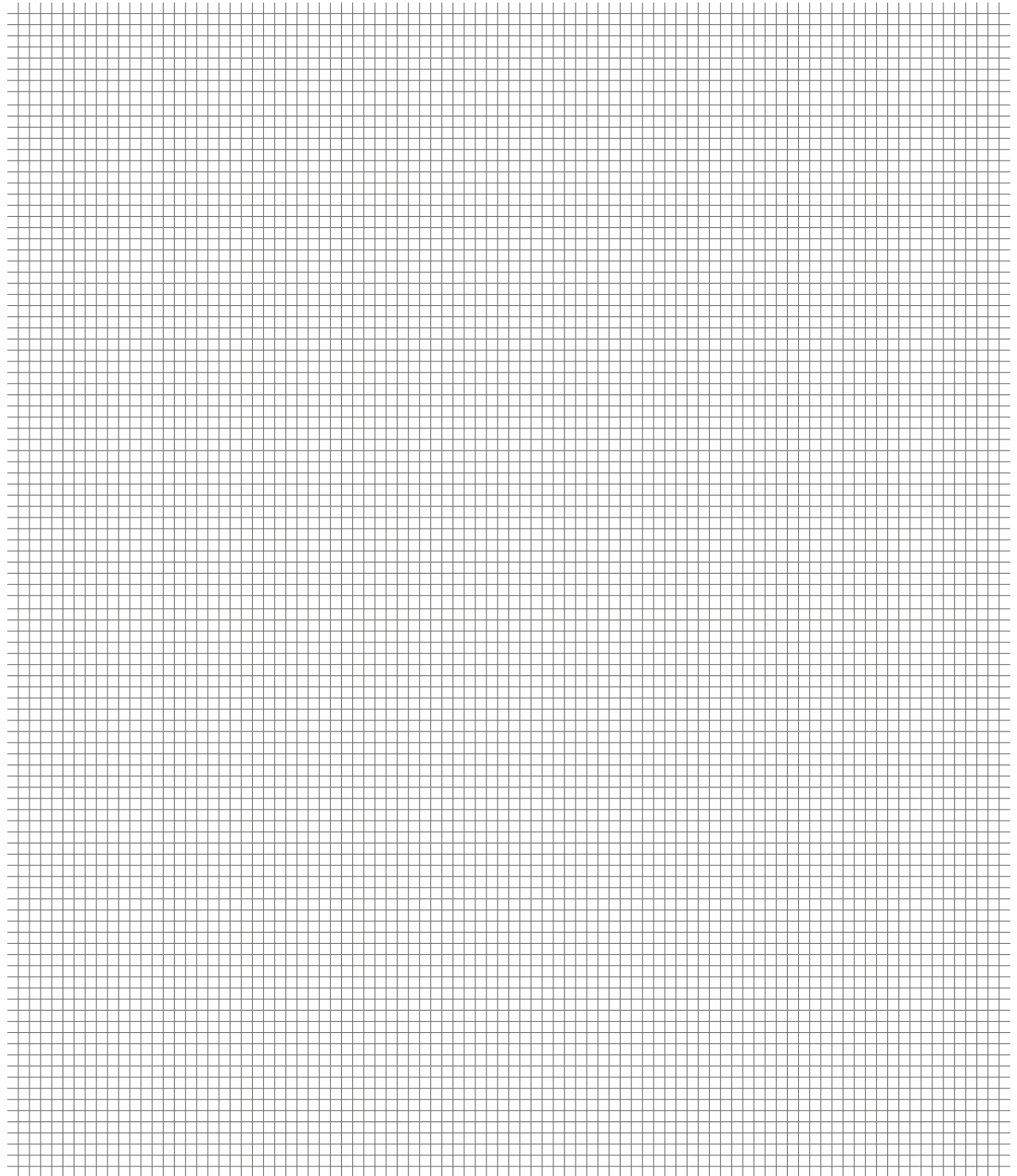
## FOR RANDOM PRODUCTION & MANY COLOR CHANGES

- Sprayers are fixed: no reciprocator
- Booth is hexagonal thus reducing sharp corners
- Booth is small : cleaning from outside
- Optimized ventilation exhaust

- Colour stickers on support tubes to ease distance setup between part and sprayers







Paint know-how

Electrostatic Sprayers

Control Solutions & Peripherals

Powder Systems

Tools & Accessories

# CS130


Feeding system for powder paint



Powder flow up to 24 kg/h.  
it depends on the type of powder hose

ATEX marking:

**CS130**

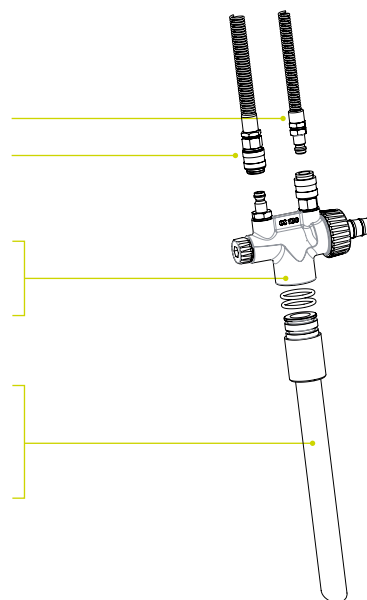
CE  II 3 D c T 85°C

## CUSTOMERS' BENEFITS

- Design without retention for optimal color changes.
- Strength of the body thanks to the clamping, no deformation.
- Easy to use, quick maintenance and no special tools required.
- Access to the ejector without removing the tip of the powder hose.
- Quick air coupling connectors with color-coding and keyed connection.
- Metal body and injector allowing solvent rinsing.
- The conductive output tip improves the evacuation of the triboelectric charges that may be generated.
- Quick clamping system with a uniform distribution regardless of the number of powder pumps.

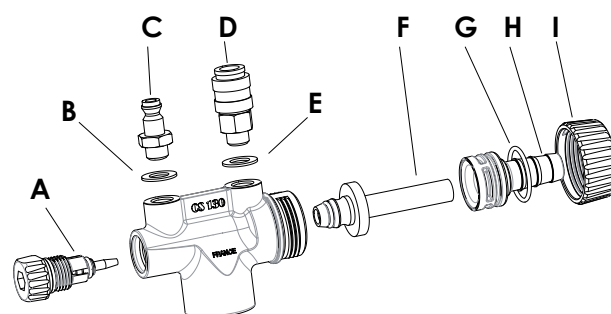
## Powder pumps

Description	Reference
Male union, dilution air dia.6mm	130001142
Female union, injection air dia.8mm	130001143
↓	
CS130 alone - <b>POWDER VERSION</b> (injection & dilution)	910013775
CS130 alone - <b>AIR VERSION</b> (injection air)	910014333
↓	
Plunger tube	<b>for tanks</b> 910008159
	<b>for CSV600</b> 1526399
	<b>for PVV booth only</b> 910014627

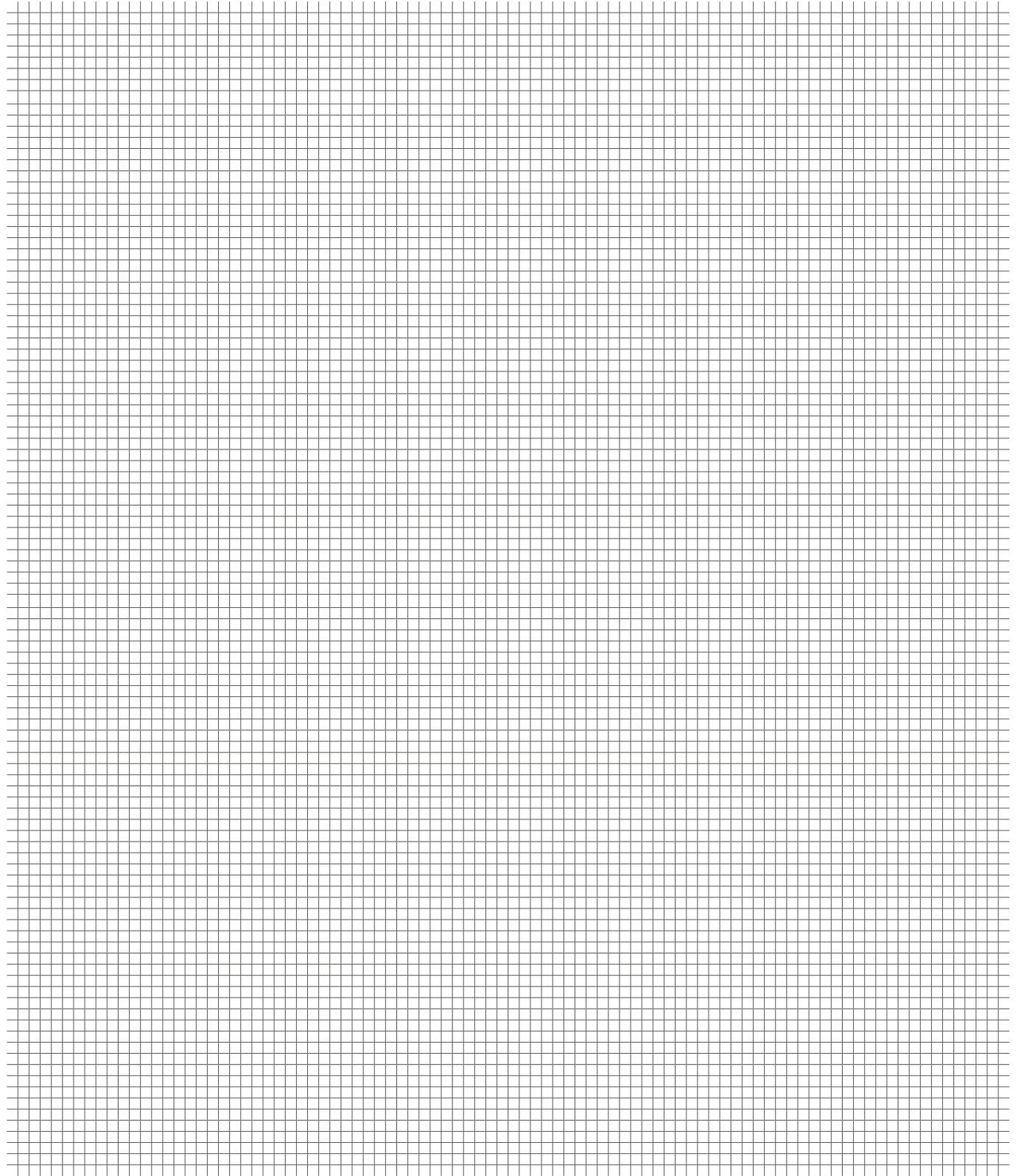


## Powder components CS130

Description	Item	Reference
Metallic air injector	A	910014564
Red washer 1/8	B	EU9000853
Quick release connector 1/8" BSP	C	EU9001083
Releasable connector 1/8" BSP	D	F6RAJR025
Blue washer 1/8	E	EU9000854
Venturi tube assembly	F - Grey	910014388
	Option white	910014390
O-ring-Black viton	G	J2FTDF273
Anti-static outlet tip	H	900008907
Connection nut	I	900008904







# CSV600

Powder distribution hopper



The CSV 600 powder distribution hopper is designed to supply powder to the SAMES KREMLIN range of automatic powder spray guns, mainly the AUTOMach-Jet and INOBELL spray guns in all automatic electrostatic powder coating systems.

The CSV 600 hopper can operate either solely with new powder, or with a mixture of new powder and powder collected from a recycling circuit. In this case it is designed to be fitted with a complete sieving system for the recycled powder.

## Technical Data

	CSV 600	Recycling hopper	
Weight (without equipment) (kg)	50		
Length (mm)	810		
Width (mm)	410		
Height (mm)	700		460
Effective volume (litres)	120 (or approx. 60 kg of fluidised powder)		
Max. number of plungers (CS 130)	12		
Pneumatic supply	CSV 600	Fume extraction venturi	
System air supply pressure (bar)	5 (75 psi)		
Settings air pressure (bar)	0.5 to 1		1
Air consumption (Nm <sup>3</sup> /h)	12 to 15		5 to 7
Connection	CSV 600	Mini cyclone	Recycling hopper
Fluidisation hose supply (mm)	ø 6/8		ø 6/8
Powder supply hose (mm)		ø 19 / 25	
Fumes extraction venturi Pump supply (mm)	ø 6/8		
Recycling hopper powder Pump supply (mm)		ø 6/8	
Connection	Level detector		
Supply voltage (V AC/DC)	20 - 250		
Holding output current (mA AC)	350 (+50 °C(+122 °F))		
(mA DC)	100		
Maximum output current (mA)	5		
Residual current	< 2.5 mA / 250 V AC		
	< 1.3 mA / 110 V AC		
	< 0.8 mA / 24 V DC		
Switching frequency	25 Hz AC / 30 Hz DC		
Ambient temperature (°C)	-25 to +80 (+176 °F)		
Protection degree	IP 65		

# CSV600

## Complementary equipment

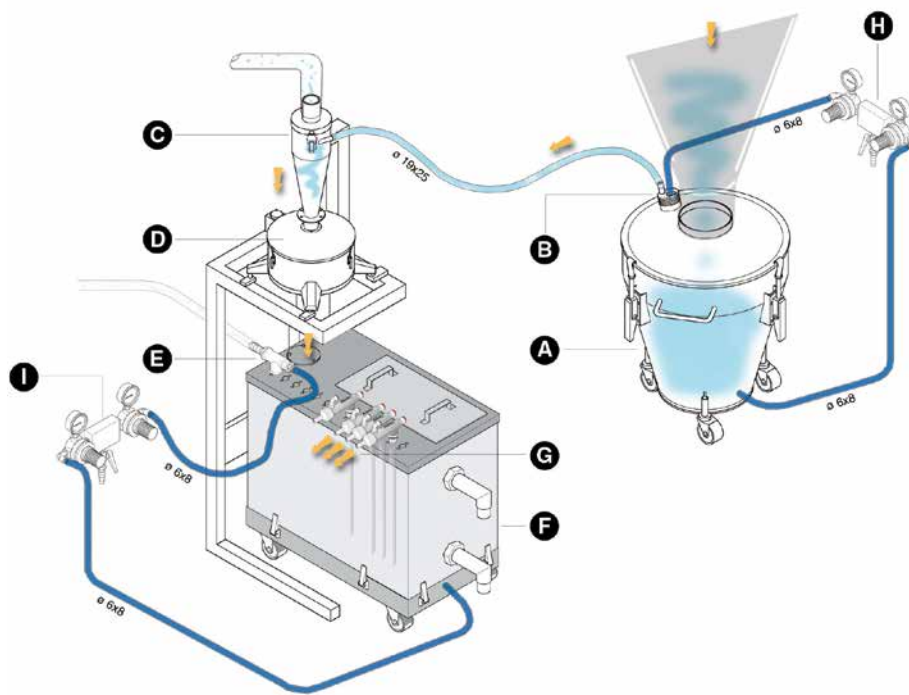
### POWDER RECYCLING EQUIPMENT WITH VIBRATING SIEVE AND RECYCLING HOPPER

The recycling hopper (A) is supplied with compressed air (H) pneumatic control via the porous base. The air current rising from this base fluidises the powder in the hopper.

A pump is fitted to the hopper cover (B) to transport the powder to the mini cyclone (C) on the sieve.

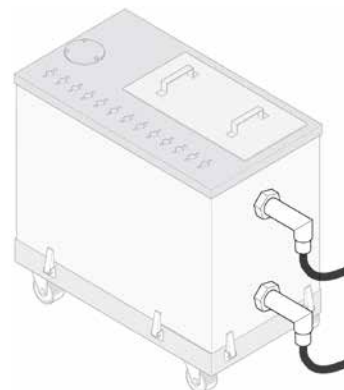
The sieve (D), fixed onto the mobile support by rubber mounts, is moved by a vibrator (see wiring diagram on next page). The powder recycled by the mini cyclone (C) enters the sieving machine (D) through a flexible sleeve.

This powder leaves the sieve after passing through a screen (400 µm as standard) and is collected in the CSV 600 hopper (F) to be sent to the powder spray guns with the CS130 pump (G).



### HIGH AND LOW POWDER LEVEL DETECTORS

E.g.: in the case of new powder supply, either a timer is used when filling (alarm) with low level detection or a single detector for the upper level.

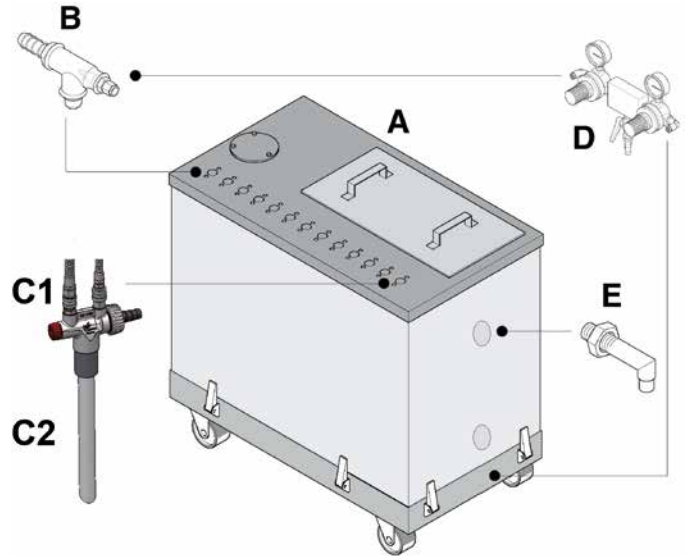


# Choose your system

## POWDER HOPPER AND PUMP

Description	Mark	Reference
Hopper CSV 600 (120 L.)	A	752894
Fume extraction pump	B	455455 <sup>(1)</sup>
CS130 Powder pump alone	C1	910013775 <sup>(2)</sup>
Plunger tube	C2	1526399
CS 206	D	1502844 <sup>(3)</sup>
Simple powder detection kit	E	910009684 <sup>(4)</sup>
Double powder detection kit	E	910009703 <sup>(4)</sup>

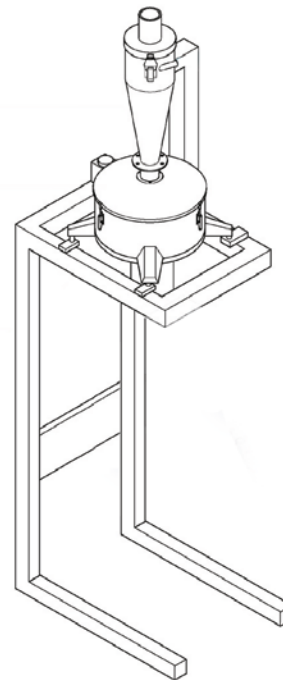
(1): this supply is part of the hopper CSV600.  
 (2): this supply is not part of the hopper CSV600. Depending on how it is used, the number of pick-up required is to be defined on the order.  
 (3): this pneumatic control CS206 feeds the fluidisation of the hopper CSV600 and the air injection of the fume extraction pump.  
 (4): this kit includes a detector



## POWDER RECYCLING AND SIEVING SYSTEM

Description	Minicyclone	Hopper <sup>(5)</sup>	Reference
Siever 1501 + support +			910020090 <sup>(6)</sup>
	1 input		910020079 <sup>(6)</sup>
	2 input		910020091 <sup>(6)</sup>
	1 input +	1	910020088 <sup>(6)+(7)</sup>
	2 input +	1	910020094 <sup>(6)+(7)</sup>

(5): recycling hopper 1601 with cyclone  
 (6): the assemblies are supplied with the cables & air hoses  
 (7): the powder pump (ref : F4SPDR019) that integrates the recycling hopper as well as the pneumatic control (ref: 1502844) are supplied with this package.



# Choose your system

## POWDER SIEVING AND RECYCLING SYSTEM COMPONENTS

Description	Mark	Reference
Sieve 1501	F	150000076AT
Sieve stand (adapted CSV 600 only)	G	V4TTPR063
Recycling hopper 1601	H	F4SSTV018
Powder pump for recycling hopper	I	F4SPDR019
Mini cyclone 1 input	J	V5DETL006
Mini cyclone 2 inputs	J	V5DETL007 <sup>(8)</sup>
Pneumatic hopper control	-	1502844 <sup>(9)</sup>

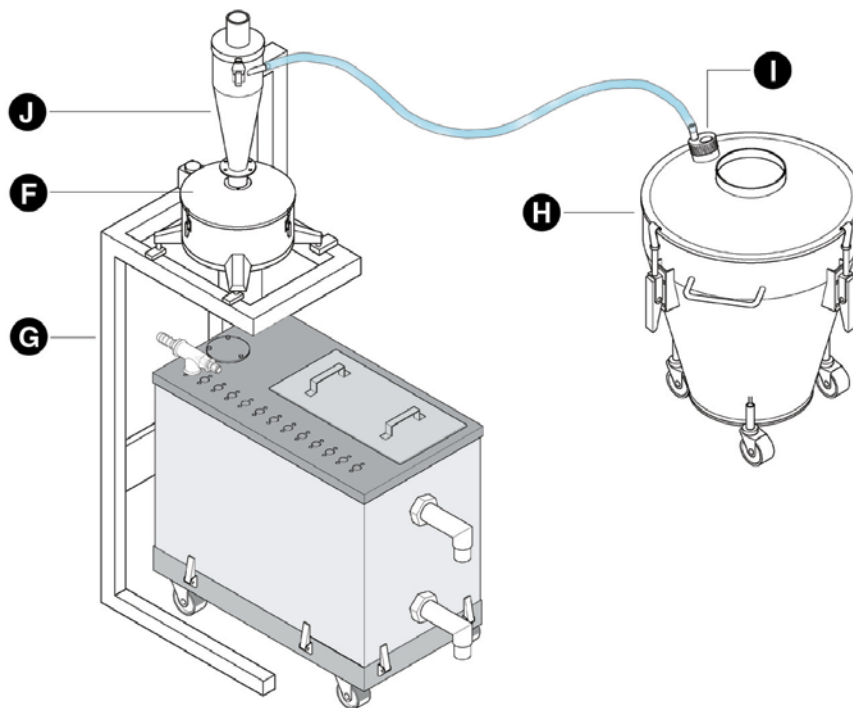
(8): a second input allows the CSV 600 to be fed with another new or recycled powder.

(9): this pneumatic control is used to supply the fluidisation air to the recycling hopper and to supply the powder pump to transport the powder to the mini cyclone.

## POWDER RECYCLING AND SIEVING SYSTEM

Description	Passage of powder	Reference
Sieve synthetic screen (µm)	125	V5TTPR013
	160	V5TTPR029
	200	V5TTPR033
	250	V5TTPR014
	400 <sup>(10)</sup>	V5TTPR015

(10): standard screen, comes with Mark F





# MODUPOWDER

Powder color change block



- > Lightweight design
- > Easy maintenance
- > Flexible assembly

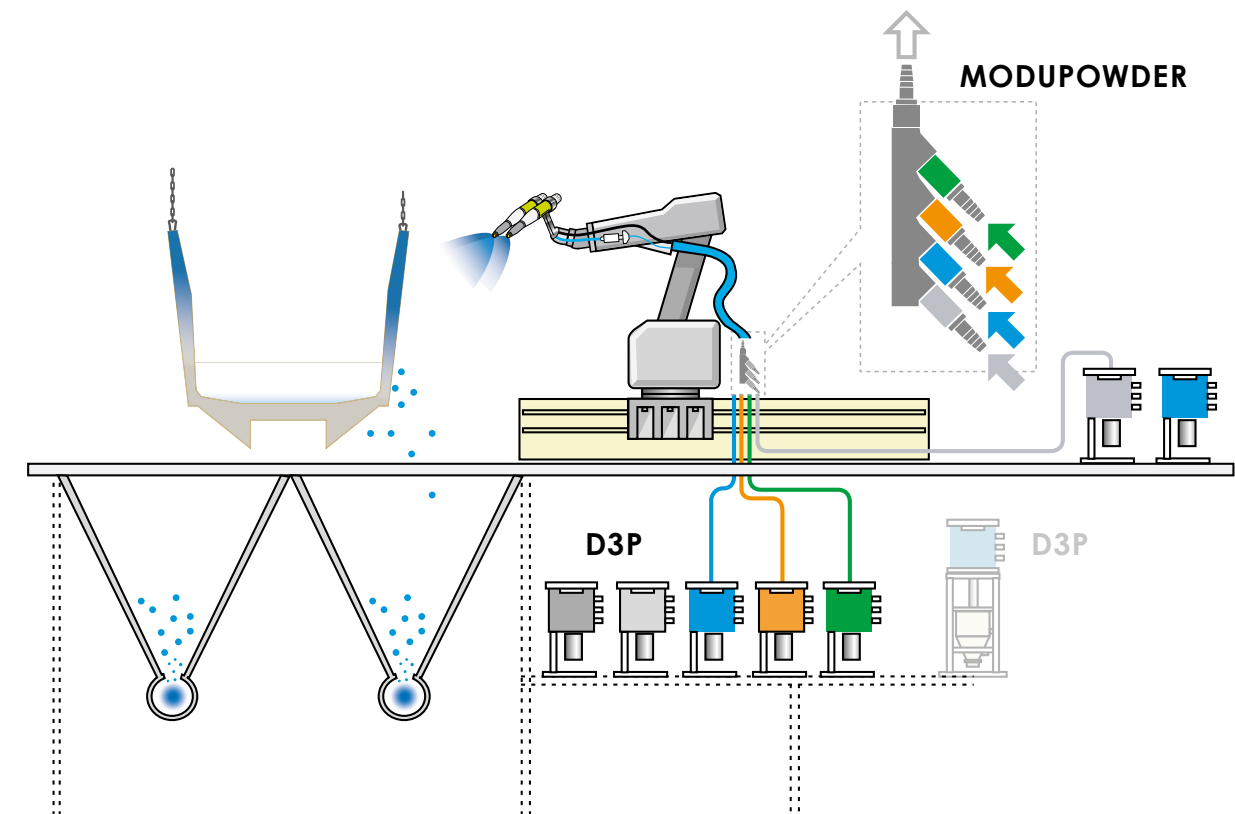
**Modupowder** is a stackable color changer. It supplies powder to the applicator. A cleaning cycle must be completed with each color change.

It is typically installed as close to the applicator as possible, in order to minimize powder loss during color change, and to reduce color change time.

Compact and modular by design, it allows to stack elements as needed (1 powder module per color).

## ROBOTIC DESIGN

## Layout



# MODUPOWDER

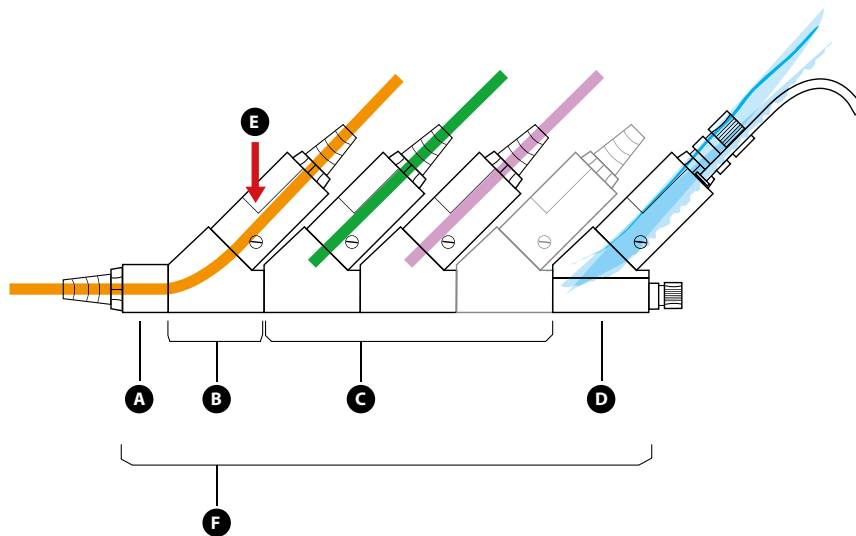
## OPERATION

MODUPOWDER IS MADE OF:

- One blow off module, for the general blow off, including a pinch-valve and air controls (**D**)
- One outlet module (**A**) also instrumental with the general blow off,
- One or more powder color module(s) (**B**)

THE SEQUENCE IS AS FOLLOWS:

- 1: Spraying color 1; all **C** modules are closed (**C**), as well as **D** module. Open module 1 (**E**)
- 2: At end of color 1, module **E** is closed
- 3: Blow off of circuit. Open module **D**.
- 4: Start again with next color.



## MODUPOWDER BLOCK

Description	Mark	# of colors	Reference
Outlet module	A		1 511 690
Color module	B	1	1 511 691
Blow-off module	D		1 511 685
Modupowder stacks <sup>(1)</sup>	F	2	1 517 986
		3	1 514 794
		4	1 511 683
		5	1 525272

(1): Stacks are assemblies of different numbers of color modules, kept together by 2 rods the length of which changes in function of the # of colors.

# HVP500

Measuring device  
High voltage probe



- EASY TO READ DISPLAY: 4 1/2" digit display
- PORTABLE: Protected by a foam lined aluminum case
- FACTORY CALIBRATED: HVP500 is calibrated to NIST standards



**HVP500** is a precision high voltage probe designed to measure DC voltages up to 100 KV.

**HVP500** consists of a removable probe containing high voltage resistors and a 4 1/2" digit display.

The probe resistors are very high resistance to minimize loading of the high voltage being measured.

The removable probe screws into the hand-held base and comes with 2 removable tips - including a ball and a cone.

This portable hand-held unit comes in a foam lined aluminum case that is lockable.



Description	Reference
HVP 500	220000326

## TECHNICAL DATA

Description	Reference
Voltage	0 to ± 100 KV
Accuracy	± 0.1%
Resistance	10 G ohm ± 5%
Stability	100 ppm/ °C
Weight	1 lbs. 11 oz.

**Not for use in hazardous location.**

# AS100

Powder fluidity measuring equipment



- > Instant and accurate result
- > Easy and ready to use
- > Reference equipment for powder development laboratories

## USE

The powder is placed in suspension in the porous-bottomed cylinder, by means of a controlled air flow. Successively the height of fluidised powder bed is measured, in the fluidised state (H1), then the height at rest (H0) and the weight (P) of the fluidised powder that flows 30 s through the calibrated opening. It is thus possible to define a "projectability" factor, a characteristic of the powder:

$$R = P \times ( H1 / H0 )$$

For information, for epoxy powders with a density between 1.3 and 1.6, experience shows that results in function of R are as follows:

R	Rating
> 140	Very good
120 to 140	Good
80 to 120	limited
< 80	Poor

**Warning:**  
 the operator must collect a sample of paint so as to control it in a non hazardous location.

The AS100 fluidimeter demonstrates this behaviour and indicates immediately whether a powder is suitable for spraying purposes. It is a valuable aid in product quality control for both powder paint manufacturers and other laboratories. This is the first electrostatic powder coating apparatus to be covered by a registered French standard (T 30 A doc 396).

## PERFORMANCE

- Accurate and quick measurement of the fluidity and of the ability of the powder to be fluidized
- Compact

## PRODUCTIVITY

- Helps determine the powder spraying parameters
- Quality management of powder batches

## SUSTAINABILITY

- Easy to clean
- Saves time for the comissioning of new powder paint facilities and/or new colors in the process

## AS100

Description	Reference
Fluidimeter AS100	451195

## TECHNICAL DATA

Description	Reference
Min. feed pressure (bar)	1
Maximum air flow (l/h)	500
Air inlet connector	fluted ø4 mm
Weight (kg)	5

# Operators accessories

## 1 Coverall anti-static

Size "S" to "XXL". Grey.  
Extremely sturdy, recommended for liquid paint.  
Contamination limited, reduced risk of electrostatic charge accumulation.



## 2 Hat, grey (one size)



## 4 Dust mask



Meets European standard EN-149-2001, class FFP2. Provides protection only from wearer from mechanically and hermally produced particulates.

May be used to protect against concentrations up to 10 times the Average Exposure Value (AEV), Belgium upper limit (VLB).

## 3 Coverboots (one size)

## 5 Anti-solvent mask



Complies with European standard EN 405:2001. Protection against most vapours/gases and particles such as:

- Inorganic vapours and acid gas, up to 1000 ppm or 10 x VME/VLB, taking the lowest of the 2.
- Particles up to 50 x VME/VLB



## Operators accessories

**6** **Gloves - Nitrile rubber (one size)**

Provide protection against numerous chemicals such as alcohols, aromatic and chlorinated solvents (within the provisions of the chemical resistance chart).  
Complies with European 89/686/CEE Directive.

**7** **Light protection coverall (one size)**

Woven paper overall very sturdy. The use of overalls is recommended to protect against micro-particles, splashing and spray dust, depending on the degree of toxicity of the products and working conditions .  
Complies with European EN 13982/1 and EN 13034 standards.  
Certified types 5 and 6.



N°	Reference
1	(S) W5GMAS059
	(M) W5GMAS060
	(L) W5GMAS061
	(XL) W5GMAS062
	(XXL) W5GMAS063
2	W5GMAS070
3	W5GMAS071# (x10 qt)
4	W5GMAS018 (x10 qt)
5	W5GMAS035
6	W5GGAM039
7	W5GMAS024

N°1: Anti-static work-suit, size S, M, L, XL, XXL

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