

Automatic powder coating gun







Training -Sales



CONTENTS

:: MACH - JET	
Introduction	3
• Gun	4 - 7
Controller	8 - 9
:: Gun reliability	10
:: Customer benefits	11
:: Characteristics	
Technologies	12
• Nozzles	13
Controller	14 - 24
High Voltage	25
:: References	26 - 27



Introduction Reliability

Benefits

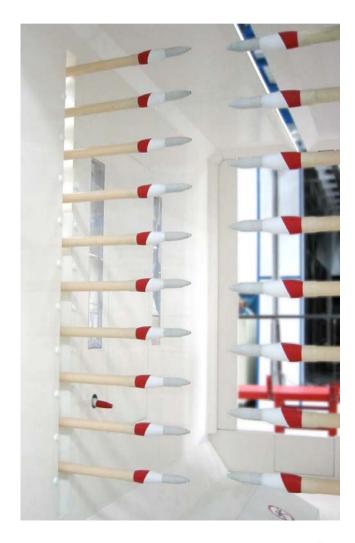
Characteristics

References

The new gun is called the Auto Mach-jet. Of the same technology as the handgun, this applicator too, is controlled from the CRN 457 controller:

Reliability
Time saving
Robustness
Comfort of use
Transfer efficiency

are the features offered by the Auto Mach-Jet. The installation of Auto Mach-jet systems is easy and affords our customers the best application results.





Introduction Reliability Benefits Characteristics

Gun - 1/4

Controller

Auto-Mach-Jet comes in two versions:





References

Auto-Mach-Jet FCC*



(*) FCC = Fast Colour Change – Version for fast color changes



Introduction
Gun - 2/4
Controller

Reliability Benefits Characteristics References

Auto-Mach-Jet:

Mounted on a metal rod, it permits easy and quick replacement in all existing systems, and obviously adapts easily to new systems.

Installing the gun on the arm avoids unwanted loosenings of bolts.



Dépt. Mktg / CB / AK / 5.10.2004 Page: 5





Auto-Mach-Jet FCC*:

This is a version specially designed for quick color change booths. Its design allows a perfect cleaning, in the shortest period of time. The gun's back body is screwed on the support tube. The same diameter along its whole length helps enhance the efficiency of the cleaning at time of color change. The tube helps routing the supply hose and LV connecting cable easily and cleanly to the rear of the gun. By which, the operator may easily access his connections from outside the booth.



(*) FCC = Fast Colour Change.





New: Powder connector

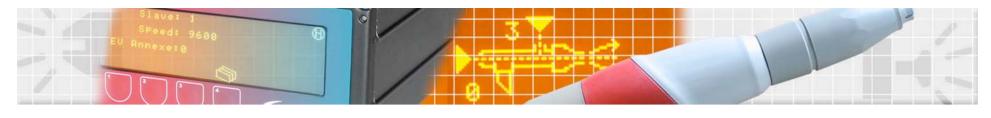
:: The « FCC » version on its 60mm Dia. holder arm features a quick disconnection of the powder tube (optional):

Characteristics

References

- Reduces maintenance downtime
- If needed, permits quick exchange of powder tubes





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Introduction

Reliability

Benefits

Characteristics

References

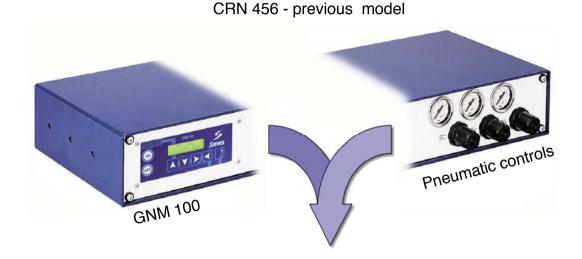
Gun
Controller 1/2

New: electric and pneumatic controls are packaged in one smaller, new, user-friendly module

New CRN 457 module is very user-friendly.

Thanks to its large screen, handling is easy through graphic icons which are visual and understandable everywhere. Risks of misuse are considerably reduced and learning time is very short (very intuitive system)

= USER FRIENDLY = SIMPLICITY



CRN 457 - new generation



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- **Introduction** Reliability Benefits Characteristics References

Gun

Controller 2/2

The CRN 457 may be installed in three different ways:

- 1 Connected directly to the Mach-Jet gun
- 2 Local mode wiring: parameters are accessible on screen, and trigger control is automatic (for instance: REV600)
- 3 Remote mode wiring: Serial link with another control system







Introduction Reliability

Gun

Benefits

Characteristics

References

Applicator design for the best results

Use Reliability **Safety**



The quick-disconnect fitting on the powder hose, outside of the support arm, facilitates hose maintenance or color changes (optional).

 for all applications adapted to all kinds of different powders Metallic powders compatible · robust, very light weight and super efficient • Do not build up powder This document is the property of SAMES Technologies and can not be duplicated or copied without written authorization. Not binding document.

Comfort of utilisation:

- Robust gun and support arm
- Easy to clean assembly
- Q-D on powder hose, FCC version only
- Use of an easy to remove counter-electrode
- New controller
- Personalized adjustment of electrical Characteristics

- = Reliability
- = Time saviour and productivity enhancer
- = For quick color changes, and easy cleaning
- = Saves time when alternate coating methods are needed
- = Very simple adjustment of settings

Optimal electrostatic charge regardless of the type of powder and of parts shapes

Best safety:

- Meets new European norms requirements EN50050: 2001
- CE, ATEX

Adapts to industrial constraints:

- Easy coating with metallics (standard nozzles)
- New nozzles have a superior air-powder mix pattern
- Consistancy
- Nozzles offer an enhanced resistance to abrasion Applicator's shapes are designed to facilitate exterior cleaning



Characteristics Technologies

References

Nozzles

Controller in local mode

Auto-Mach-Jet Gun

Weight (w/o hoses): Approx. 850 g

Powder flow (hose ø12): Up to; 30 kg/h (65lbs/h) LV cable CRN to gun: 18 m, 30 m(FCC)

Max HV output:

95 kV

Max current output:

110 µA

CRN 457 Controller

Dimensions

in rack: 19" / 2U two controllers

per rack

Pneumatics

Max. Inlet pressure:

Min. inlet pressure:

Max air flow:

10 bar (150 psi)

5,5 bar (82,5 psi)

8 Nm3/h (4.71 cfm)

Electrical

Max voltage output:

Max current output:

Electrical supply:

Single phase:

Max power:

Sealing rating:

40 V rms

110 mA rms

90 through 270 V

60 Hz

60 VA





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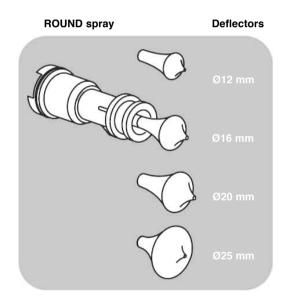
Characteristics

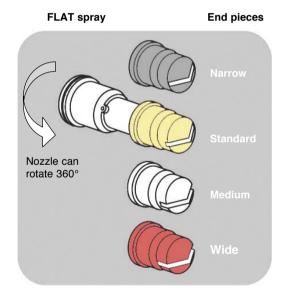
References

Nozzles

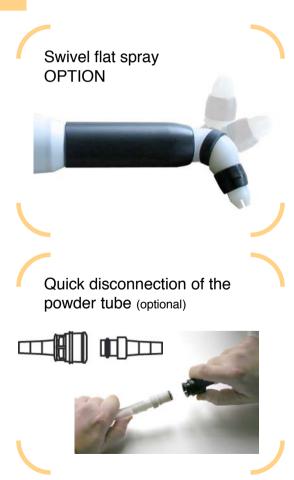
Controller in local mode High Voltage

:: New nozzles, with homogeneous patterns:





Auto Mach-Jet comes with flat spray nozzle and standard flat end piece. All others flat end-pieces, round spray and deflectors are optional.



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Characteristics

References

Nozzles

Controller in local mode 1/11

High Voltage

:: The CRN 457 is the same size as the GNM: Compact and convivial

In local mode, controls the following functions:

- A choice of 9 pre-set application packages
- powder flow adjustment , via :
 Injection air = 31 air flow settings + 1 neutral
 Dilution air = 7 air flow settings + 1 neutral
- A choice of 5 pre-set packages of U & I settings
- Personnal adjustment of the 5 (U & I) settings
- Manual stop of the applicator operation during production, with possibility of settings changes
- History of faults
- Screen adjustment (contrast, ...)







Twin controllers to 1 Rack (2U)

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Characteristics

References



Controller in local mode 2/11



Screens are identified with a letter displayed top right of the screen =





Once powered up, either in local or in remote modes, the main menu screen "H "comes on.

It permits to set up the communication parameters.

Then, six screens from **A** to **H** are accessible by the operator when the CRN457 is configurated in **LOCAL** mode:

- **A** = Adjustment of the powder flow, and selection of a pre-set U/I combo
- **B** = Adjustment of the dilution air, and selection of a pre-set U/I combo
- C = Manual adjustments (U/I)
- **E** = History of faults (only if a fault occurs)
- **F** = Screen adjustment (contrast)
- **H** = For information only, Remote mode menu
- When in **Remote** mode, the keyboard is disabled (The CRN 457 is driven by PLC)

Characteristics

References





Controller in local mode 3/11

High voltage







2 The front keyboard has 4 keys.

They are identified with an icon located above each of them.

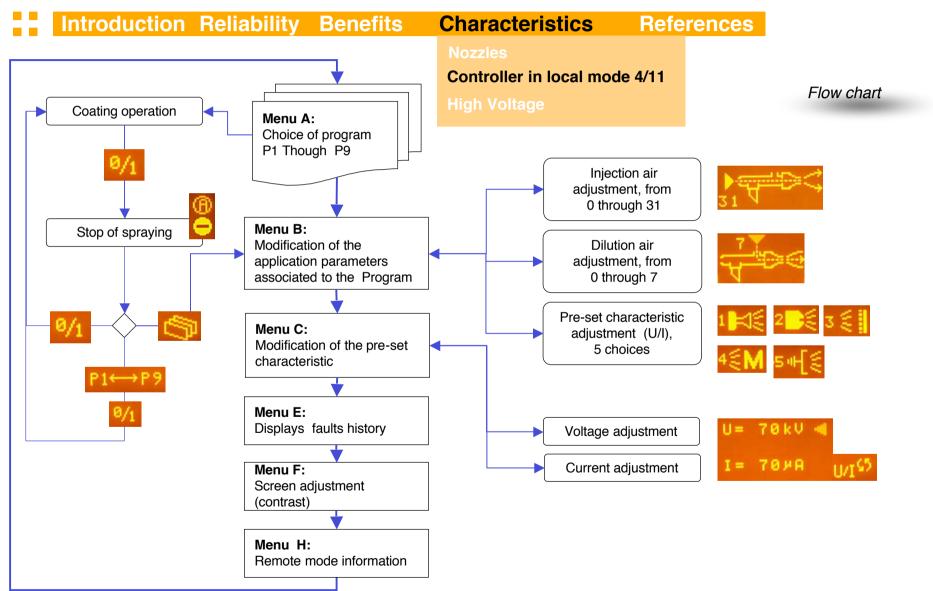
- 3.
- This display shows the status of changed functions, with keys from zone 2 ex: On screen « **A** », the program is the n°9 with following parameters:
 - powder flow: 0 for the injection air and 3 for dillution air.
 - an high voltage pre-set feature dedicated for metalic powders

When the gun is triggered, a flashing logo (arrow) displays HV in zone 1(here, not activated).

4

This displays a bar graph indicating voltage and current values during coating operations.





Dépt. Mktg / CB / AK / 5.10.2004 Page: 17

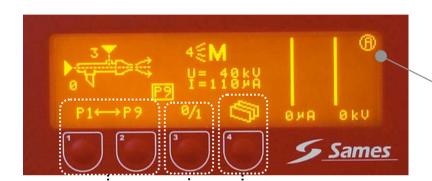


Characteristics

References

Controller in local mode 5/11

Screen « A », choice of one of 9 pre set coating packages.



>This zone permits to choose between 9 preselected programs, each with their own coating set-ups (powder flow, electrical settings), for different batches of parts.



Choice of pre-programmed coating selections inferior to 9



Choice of pre-programmed coating selections superior to 1 > During coating, (HV is on and powder is flowing), pushing this key permits to de-activate manually the operation of the applicator connected to the CRN457.

the screen displays:



Then, one can modify the parameters entered into programs 1 through 9. Pushing the key, reactivates the applicator within the selected coating program.

> Push this key to access the next menu.



• Pushing the key maintains the selection of program (P1 à P9) and accesses the next menu « B ».

Dépt. Mktg / CB / AK / 5.10.2004 Page: 18



Characteristics

References

Nozzles

Controller in local mode 6/11

High Voltage



Screen« B » = Shows your own settings in one of the preselected programs (P1 to P9) Injection and dilution air and selection of a preset (U/I) package.

The venturi powder pump settings are independent and included in the powder flow.

> This zone permits to change the entered adjustments, from key No 3:



- for programs No 1 et 2: decrementation of the rev.
- for program No 3: decrementation of U/I characteristics



- For programs No 1 et 2: incrementation of the rev.
- For program No 3: incrementation of U/I characteristics

- > This key permits to select one of 3 programs:
- 1° Adjust the Injection air between 0 and 31
- 2° Adjust the Dilution air between 0 and 7
- 3° Choose one pre-set (U/I) package: 5 choices
- Pushing this key brings up an arrow which indicates the settting to change



- > Push this key to go to the next menu.
- Pushing this key permits to validate parameters. The U/I characteristic remains unchanged and one accesses the next menu « C ».

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Page: 19



Characteristics

References

Nozzles

Controller in local mode 7/11

High Voltage



Screen« C », displays your personal settings of HV and current, from the package selected from menu « B ».

>This key is to change HV or current:



HV or current setting goes down when the flashing cursor is in front of the parameter to change.



HV or current setting goes up when the flashing cursor is in front of the parameter to change . When changing values, a hand appears next to U or I.

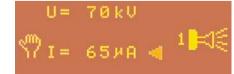
If reinstating the original value, the hand goes away.



> This key to select (U ou I)
For modification =



The screen displays:



> Push this key to go to the next menu.



 Pushing this key permits to validate parameters, and access the next menu « E », in case of a history of faults or « F », if none. This document is the property of SAMES Technologic

Characteristics

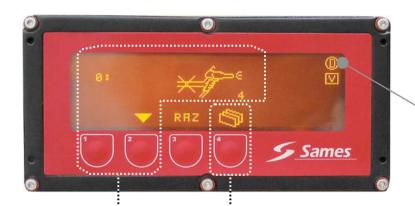
References

Nozzles

Controller in local mode 8/11

High Voltage

Screen « E », displays the history of faults.



> This zone displays the history of faults. The screen shows the last of the occurred faults, with on its left an aging level which commences with « 0 ».

Pushing the keys:



Displays faults from the most recent to the oldest.



Displays faults from the oldest to the most recent .

>Push this key to go to the next menu.



When there are no faults logged in , screen « E » does not come on. When a fault is logged in, HV and powder flow are deactivated. A screen displays which fault happened. The operator must validate with key « 3 » to acknowledge his reading.



Characteristics

References

Nozzles

Controller in local mode 9/11

High Voltage

Screen « F », Screen adjustment (contrast)

> This zone permits to modify the contrast on screen.

Pushing the keys results in:



Reducing the contrast, the screen gets clearer



Augmenting the contrast, the screen gets darker

- > This zone permits to change the colors on screen
- pushing this key results in reversing colors on the display



either orange over a black background or black over an orange background



or



- > Push this key to go to the next menu
- Pushing the key validates the settings and accesses the next menu "H".



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Characteristics

References

Nozzles

Controller in local mode 10/11

High Voltage

Slave: 1
Speed: 9600
EV Annexe: 0

Sames

Screen « H », information on the remote mode

> When wired for remote control , this zone displays information on the communication parameters originally entered.

Slave No « Slave: 1 by default or + »

Transmission speed: « Speed: 9600 by default and + or - »

Additional (annexe) solenoid air valve in use ,when the spray trigger is actuated :

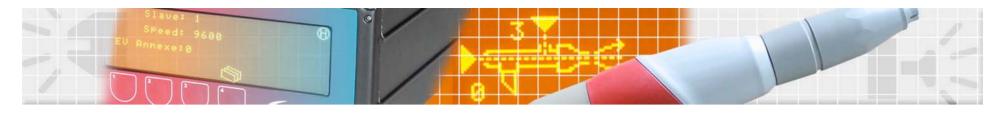
« EV Annexe: 0 by default or 1 »

> Push this key to go to the next menu.



 Pushing this key from menu « H » goes to menu « A ».

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:: Back plate:

Introduction Reliability Benefits

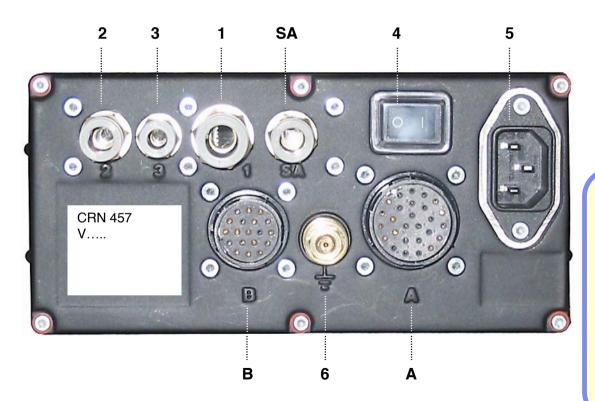
Characteristics

References

Nozzles

Controller in local mode 11/11

High Voltag



- 1 = air inlet (inlet ø8/10 mm)
- 2 = injection air (outlet ø6/8mm)
- 3 = dilution air (outlet ø4/6mm)
- 4 = On/Off switch
- 5 = power switch (90 to 270V ac)
- 6 = ground terminal
- SA = Auxiliary air (outlet)
- Vibrating table: air to vibrator, and suction tube fluidisation
- hopper: fluidisation and fumes extraction
- A = LV connection to handgun
- B = connection port RS485 (to PLC)

Dépt. Mktg / CB / AK / 5.10.2004 Page: 24



Characteristics

References

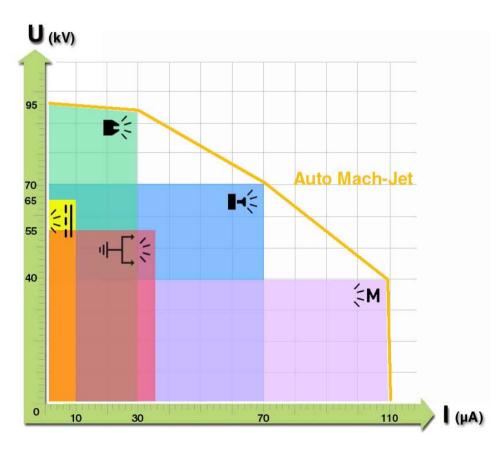
:: Mapping of the electrical performances of SAMES equipment:

Technologies

Nozzles

Controller in local mode

High Voltage



K	 Coating with round nozzle: Increases particles charge Better wrap-around and higher transfer efficiency Very homogeneous pattern on complex or simple shaped parts
B \$	Coating with fan nozzle: Very good coverage and efficiency on flat parts Easy coating in hollows Very good penetration in complex parts
\(\exists\)	 Other applications for round or fan nozzle: Re-coating High thickness of powder (> 100 μm) Coating of low conductive parts (glass, wood,)
ξM	 •Additional feature ;coating with round or fan spray nozzle: • Metallic powder
忙 \$	Special feature with fan spray nozzle: Counter electrode

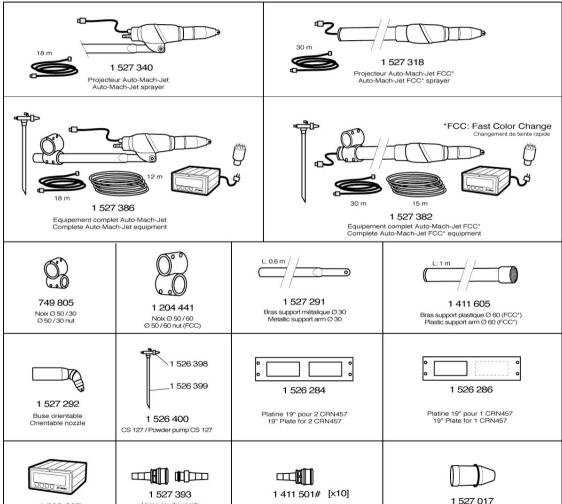
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Contre électrode

Powder hose Counter electrode

Introduction Reliability Benefits Characteristics

Characteristics References The Mach-jet line Contacts



Round spray nozzle / Buse jet rond				
1 525 493				
×	:1	x10		
Ø 12 mm 🕖 1	411 500	1 411 500#		
Ø 16 mm 👽 1	409 259	1 409 259#		
Ø 20 mm 0 1	409 260	1 409 260#		
Ø 25 mm 0 1	411 993	1 411 993#		

Fan spray nozzle / Buse jet plat				
1 525 492				
	x1	x10		
Etroit Narrow	1 311 409	1 311 409#		
Std 🕥	Nous consulter	Consult us		
med	1 313 519	1 313 519#		
Large Wide	1 311 793	1 311 793#		

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1 523 297

Module de cmde CRN 457 CRN 457 control module Union poudre rapide

Fast connector





Introduction

Reliability

Benefits

Characteristics

References

The Mach-jet line

Contacts

All part numbers for ordering purposes are available from the SAMES Sales Department and from the Marketing & Communication Department.

For any inquiry, please contact:

• Sales Department: + 33 4 76 41 60 91

• Marketing & Communication Department: + 33 4 76 41 61 09

• Web site: www.sames.com

• Web Contact: info@sames.com

• User manual number: 6366



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