Sames

Catalog 2016

Robotic Finishing Sprayers

The Finishing Experts

Editor's note

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

We constantly improve our performances as far 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 catalogue the equipments 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 team is at your disposal to answer your questions.

Enjoy your reading.

Table of contents

PRODUCTS RANGE

CHAPTERS

SYMBOLS

- One-component material
- Two-components material
- Solvent based paint
- Water based paint
- Electrical charge by direct contact (internal charge)
- Electrical charge by external electrodes (EXT)

A strong identity at your disposal

In over than 65 years of experiences, SAMES Technologies has built up a unique know-how in lots of 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.

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 to enable you to reach your efficiency goals in a durable manner.

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

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

Sames Paint Application Center

This approach mainly comes in the following points:

- High Quality
- Competitivity
  - High TE,
  - High Flow & speed,
  - Productivity increase,
  - Reliability,
  - TCO(1) reduced
- Any Process
  - 1K/2K material
  - Solvent & Water based material
  - Medium & High solid contents
  - 3wet process
  - Exterior & Interior robotic
  - Stop & go or Conveyor

(1): total cost of ownership

Improve your business

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

THE MOST ADVANCED TECHNOLOGIES

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

Over 60 active patents

Electrostatic expertise
Finishing Science
Powder coating inventor

INNOVATIVE TURN-KEY OFFER

Key technical areas controlled

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

Engineering = 200 people worldwide

ENGAGED BEYOND YOUR NEEDS

Analyze and anticipate your needs

A global network of experts, close to you

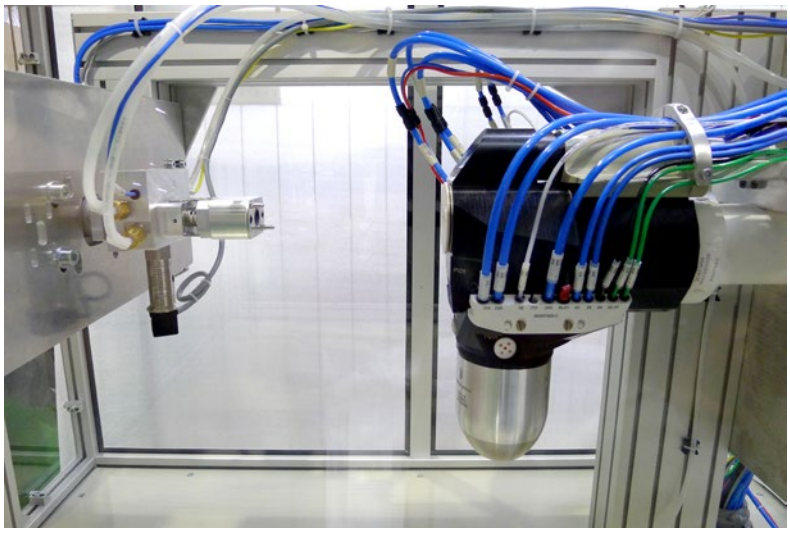
Support you

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

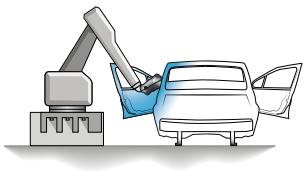
Our commitments
Customer satisfaction through clear processes

Atomizer designer

For **35 years**, SAMES designs and manufactures thousands of atomizers for Automotive industry. This legacy gathered a huge know-how about electrostatic effects, rotating bell speeds, high voltage management, robotic integration.



All these **technologies** led to the **7th range** of rotating atomizers composed of ***best sellers PPH 707*** and **Accubell 709 Evo**.



New UHT improves transfer efficiency for interior application

New 2016

The **UHT 157**i (ref : **910016744**) has been developed for the **INTERIORS APPLICATION**.

The **MAIN BENEFIT** is a higher transfer efficiency with maximum high voltage effect. With the auto-retrigger function, **no** high voltage **defaults** means **no** production **line stops**.

The UHT 157i follows these specifications:

- 60kV/200µA maximum is enough for interior electrostatic application
- **Shorter length** to optimize the low voltage cable reliability on severe robot trajectories

Compatible only with GNM 200 v5.92 (ref : 1517071)

Quality insurance

In conformity with the ISO9001 standard - issue 2008, the requisite procedures and registrations are mastered. The seriousness with which SAMES' 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:

- 94/9/CE Explosive Atmospheres
- 2006/42/CE Machinery
- 2006/95/CE Low Voltage
- 2004/108/CE Electromagnetic Compatibility
- 97/23/CE Pressure Equipment
- 2011/65/UE RoHS

Restriction of Hazardous Substances in electrical and electronic equipment

- 2012/16/UE WEEE

Waste Electrical and Electronic Equipment

- 1907/2006/CE REACH

Registration, Evaluation, Authorization and Restriction of Chemicals

Some european directives will be revised during 2016, *contact us.*

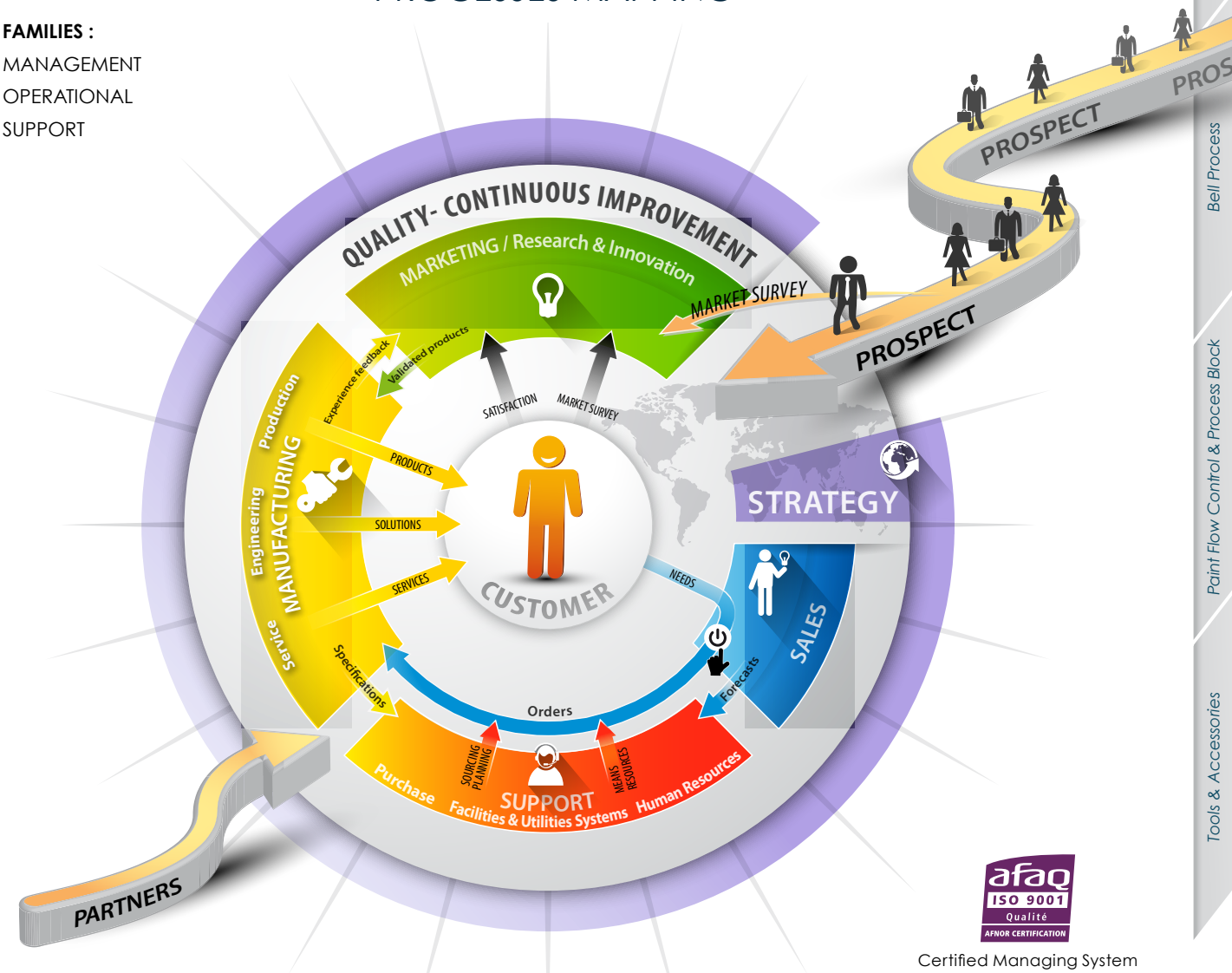
A process mapping allows organizing all the stages while being very attentive to the various environments (customers, competition...), to the audits (inner and outer) and to the indicators linked to the defined aims.

" OUR ATOMIZERS ARE CERTIFIED ATEX FOR ZONE 1, THE HIGHEST SAFETY REGULATION THAT YOU COULD ENCOUNTER "

PROCESSES MAPPING

FAMILIES :

- MANAGEMENT
- OPERATIONAL
- SUPPORT



afaq ISO 9001 Qualité AFNOR CERTIFICATION
Certified Managing System

Global presence

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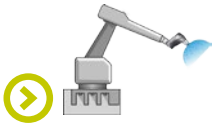

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Subsidiary

Paint Application Center

Liquid paint solutions

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

- Solvent based paint
- Water based paint
- 2-component paint
- Metallic paint

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

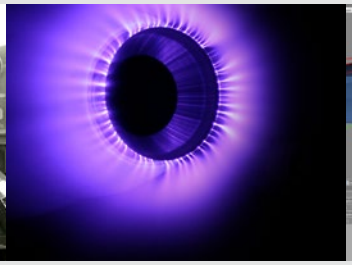
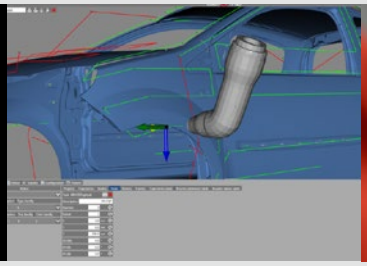
Research & Innovation

SAMES' 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.

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

SAMES integrates its own technology for decades all around the world. Your efficiency is leading our solutions:

- **Improvement of the transfer efficiency**
- **Minimization of paint losses**
- **Optimization of paint processes**
- **Sustainable paint process**
- **Solve color matching issues**
- **Install complete painting solutions everywhere you neede**
- **Increase production capacity**
- **Improve finishing quality**


LIQUID PAINT SOLUTIONS | **RESEARCH & INNOVATION** | **ENGINEERING PARTNERSHIP** | **CUSTOMER SERVICE**

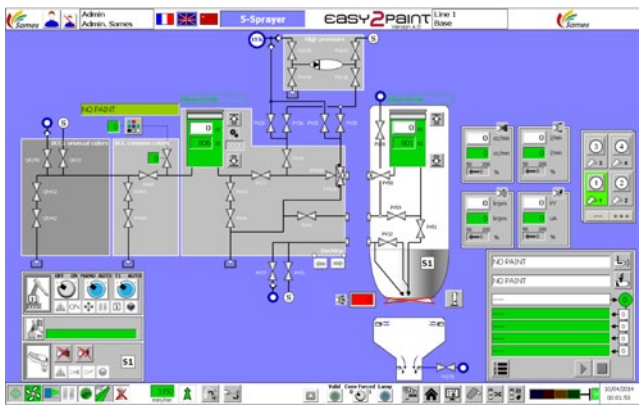
Engineering partnership

Thanks to high-tech equipment and a dedicated program, our specialists model your project in 3 dimensions and virtually conduct the realisation of robotic paths. The validation of the process on the screen presents you with obvious advantages: test of the most efficient paths as well as a precious time saving for the technicians for the adjustment and the final assembly on the production site.

SAMES masters the design and the running of its automatic functions with **EASY2PAINT** suite software.

- 25 years of experience
- High flexibility and adaptability for the control of the parameters
- Accuracy of the adjustments

EASY2PAINT is a concept that gathers the most advanced and proven techniques in terms of supervision, communication and decentralized intelligence, and simulation of application. It is a user-friendly tool that enables the operator to visualize the functions of the process as well as the interfaces with the environment.



Customer service

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

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

> ASSISTANCE AND TECHNICAL SUPPORT

In order to make the most from your installation, paint or powder, advice and expertise of specialists are essential. Made of practical, experienced men, SAMES customer support team will carry out a diagnostic 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 carried out professionally, maintenance or a retrofit of your equipment, is the best way to guaranty the correct running of your equipment. 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 Technologies is registered as a training centre by the French Ministry of Employment. Training cessions 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 cessions can be organised within your premises or in our training centre located in our headquarters in Meylan.

Robotic configurations

The automotive industry is continuously evolving. It also demands constant improvements of its processes. Today's trend is an ever increasing personalization of the vehicles, which is carried out by paying more attention to details, both inside and outside of the car bodies.

If the flexibility demand exists, the quality demand is itself also strong. Going robotic solves the equation allying quality and flexibility. During the process, which differs from one finishing technique to another, the paint robots are installed to carry out the application of the successive necessary product coats (primer, base, clear).

The kinematics, the control of the parameters and the adjustment are extremely accurate in order to cope with production and quality requirements.

SAMES INTEGRATES ANY ROBOTIC CONFIGURATION REQUIRED FOR YOUR PROCESS

Integration approach for the paint application

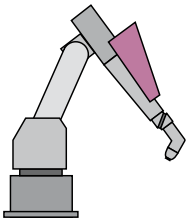
The constant research for productivity and the increasing automation of the painting process thanks to robotics, lead the development of the paint application technique. This evolution of the technique leads up to increasing speeds while using the flexibility of the robots; one thus improves the paint application performances, the speed of execution and the paint quantity being used.

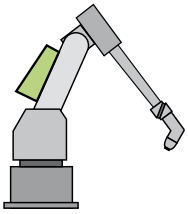
For all these reasons, SAMES "**Range 7**" allows you accessing to most high-tech robotic technologies in the field of automotive paint application.

The complete process of the paint line will be defined with respect to the different application requirements (interior or exterior) of carbody or Tiers one.

> CHOICES OF PAINT APPLICATION SOLUTIONS:

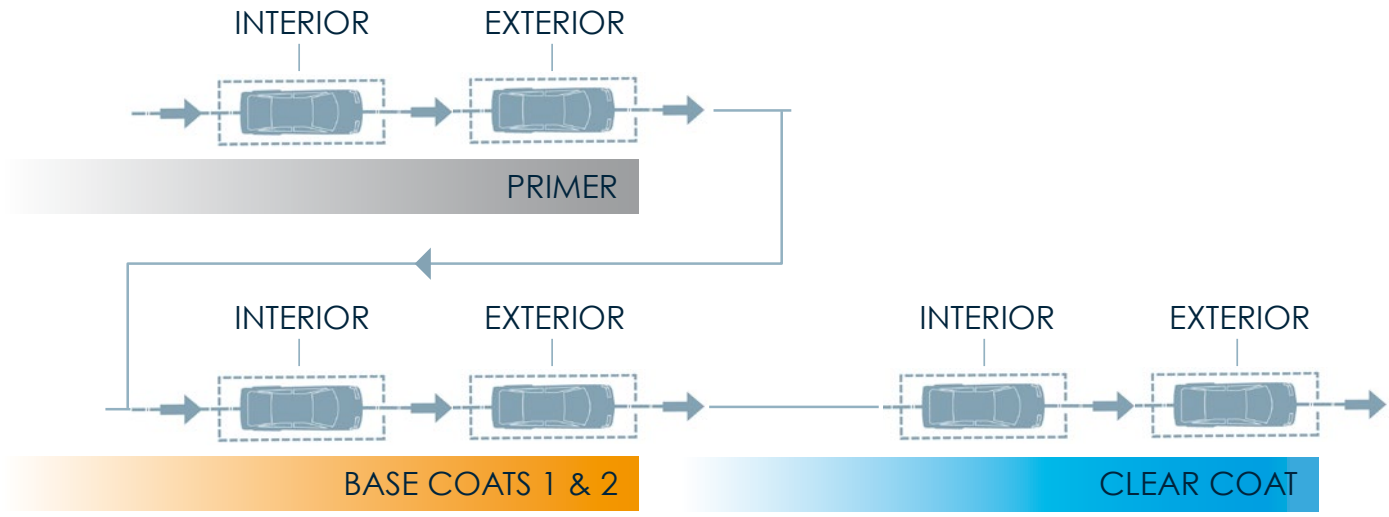
Type of recommended robot



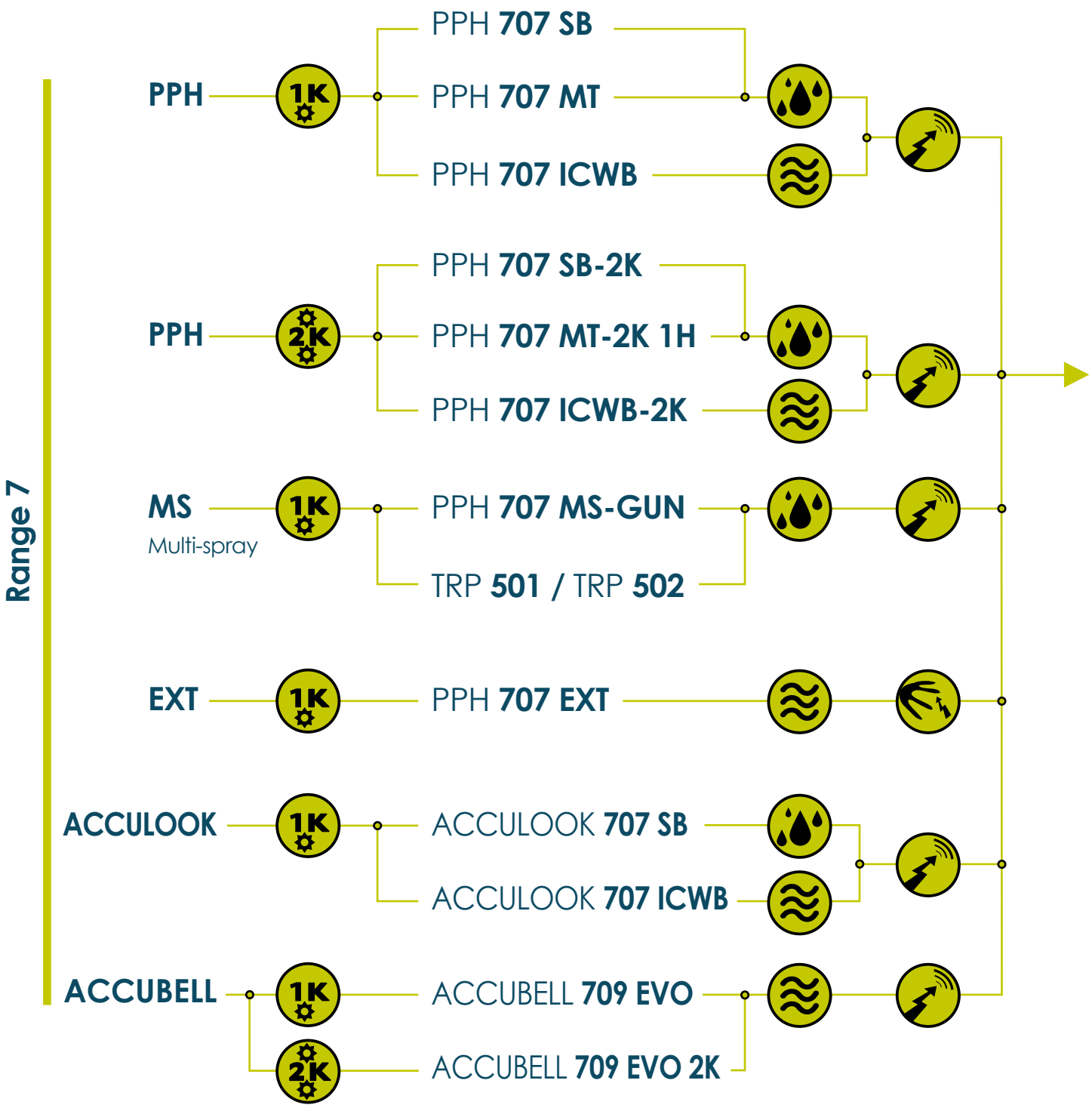


Application area	Paint	Electrostatic solution	Process Arm	Slim Arm
Interior	Solvent based	PPH 707-SB, 707-MS, TRP	✓	✓
	Water based	ACCUBELL 709 EVO	-	✓
Exterior	Solvent based	PPH 707-SB, 707-MS, 707-MT	✓	✓
		TRP 501/502	✓	in the case of additional or special colours
	Water based	ACCUBELL 709 EVO	-	✓
		PPH 707-EXT	✓	✓

> THE ABOVE MENTIONED ELECTROSTATIC SOLUTIONS CAN BE THEN INSTALLED INTO THE PROCESS OF A STANDARD LINE:



The whole of range



1K One-component paint

2K Two-components paint

Solvent based paint

Water based paint

Electrical charge by direct contact (internal charge)

Electrical charge by external electrodes (EXT)

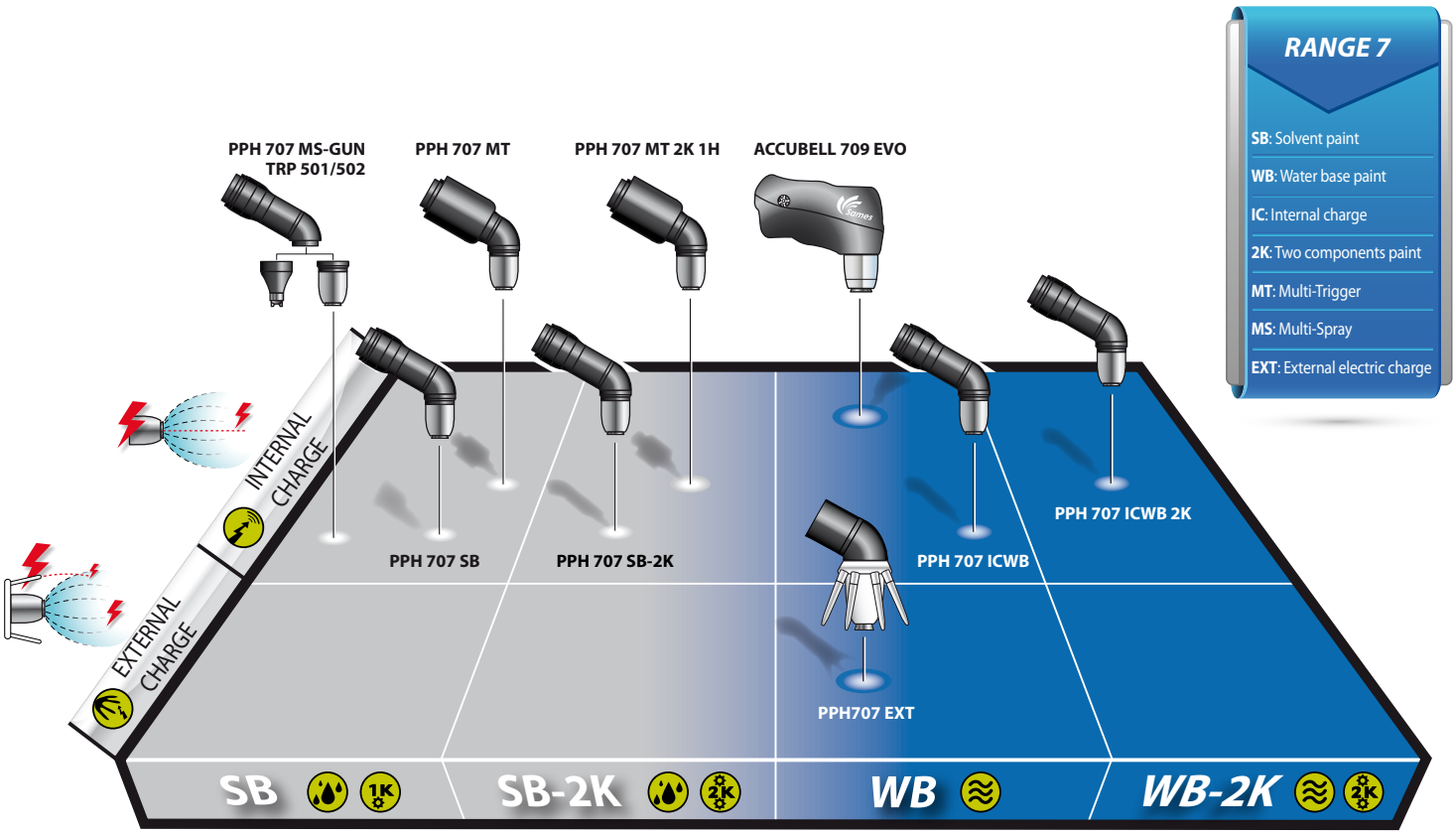
Range of the liquid sprayers

PRESENTATION OF OUR RANGE

The Sames product line «**Range 7**» is very complete; it comprises two types of family:

- The first one is named **PPH707**, dedicated to the electrostatic application of paint with continuous supply.
- The second one is named **ACCUBELL®**, dedicated to the internal charge application of water based paint with a canister inside the atomizer.

EASY TO MAINTAIN:
Consistency of the design of Range 7, 80% components are common
SIMPLICITY:
Bell and air shroud technologies adaptable to all the sprayers
RELIABILITY:
Long life components, 100% tested
SAFETY:
ATEX Zone 1 certified



THE RANGE 7 IS WELL RECOGNIZED FOR ITS:

- Finishing quality
- High Performance
- Flexibility

Range of the liquid sprayers

THE PERFORMANCES OF THE AUTOMOTIVE PAINT MARKET

> **HI-TE** is the technology of air shroud **that allows variable patterns when spraying is in progress**, while guarantying the sturdiness of the pattern range, for a stable industrial process. Numerous advantages are linked to this like the improvement of the transfer efficiency, colour match, application with high robot speeds, for a better finishing quality, etc. HI-TE enables the combination of the highest application quality together with unequalled transfer efficiency.

Hi-TE

> **HI-TE** combines itself with the entire existing range of Sames bells, ex: 50-mm bell coupled to the air shroud named **EC50 HI-TE PSW**.
PSW = Primer Super Wide
(Technology -> Wide robotic pattern)

EC50 Hi-TE PSW

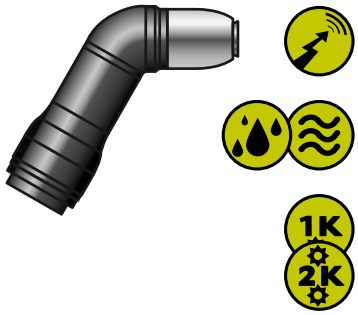
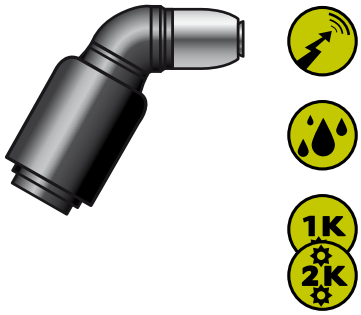
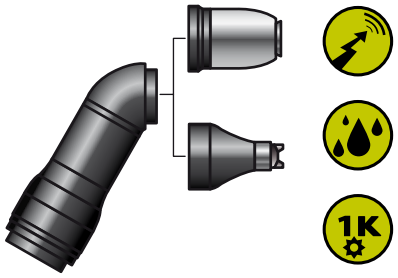
This combination brings the highest possible transfer efficiency in the field of industrial paint application, with the best finishing quality.

HI-TE IS COMPATIBLE WITH ALL THE SPRAYERS OF RANGE 7 FOR WHICH THE MAIN ADVANTAGES ARE:

- Excellent Colour match
- Regular and stable pattern for the whole range of variations of the paint spray
- Approved for high robot speeds
- More paint savings
- Shaping nose narrower and streamlined (at the level of air outlets) reducing pollution when spraying
- Magnetic bell and linked advantages, easy maintenance

Range of the liquid sprayers

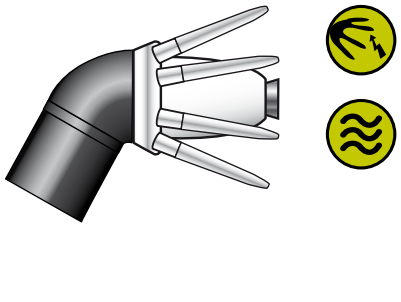
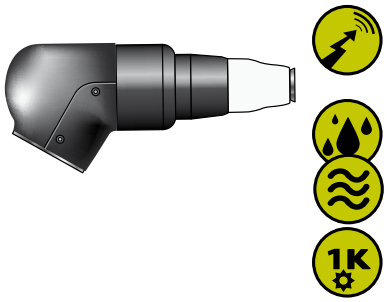
CONFIGURATIONS OF THE « RANGE 7 »

	PPH 707 SB/SB-2K (Internal charge) **PPH 707 ICWB/ICWB-2K**	**PPH 707 MT/MT-2K 1H** (2K mixed in the head)	**PPH 707 MS-GUN** (Multispray)
			
Paint	**1k or 2k solvent based**	**1 or 2-K solvent based**	**Solvent based**
High voltage	Electrical charge by direct contact (internal charge)	Electrical charge by direct contact (internal charge)	Electrical charge by direct contact (internal charge)
Process	1K = Primer/Base/Clearcoat or 2K = Clearcoat	Clearcoat	Primer/Base/Clearcoat
Applications	• **Interior** of the car bodies • Exterior of the car bodies • Large surfaces • **Bumpers**	• Exterior of the car bodies • Large surfaces • **Bumpers**	• **Bumpers** • **Interior** of the car bodies • Exterior of the car bodies • Large surfaces
Bells	EC35, EC50, EX65, EX80	EC35, EC50, EX65, EX80	EC35, EC50, EX65
Air shroud type:	• Vortex «EC35» • Pairs of combined air holes : EC50 Hi-TE PSW EC50 Hi-TE CSW EX65 Hi-TE EX80 Hi-TE BSW	• Vortex «EC35» • Pairs of combined air holes : EC50 Hi-TE PSW EC50 Hi-TE CSW EX65 Hi-TE EX80 Hi-TE BSW	• Vortex «EC35 and EC65» • Pairs of combined air holes : EC50 Hi-TE PSW EC50 Hi-TE CSW EX65 Hi-TE
Turbine	HVT (P/N 1 525 849)	HVT (P/N 1 525 849)	HVT (P/N 1 525 849)
Injector	1.8 mm or Specific for 2K	1.8 mm or Specific for 2K	1.8 mm
Bend	60° (P/N 910 003 414) or Specific for 2K	60° Specific for 2K	60° - Bell (P/N 910 003 414) or specific for gun
Microvalves	Standard (1 507 375) or Specific for 2K	Standard (P/N 1 507 375) or Specific for 2K	Standard (P/N 1 507 375)
Nanovalves	Standard (1 510 004)	Standard (P/N 1 510 004)	Standard (P/N 1 510 004)
Base plate	(P/N 910003409) product fittings in 4/6mm	(P/N 910003409) product fittings in 4/6mm	(P/N 910003409) product fittings in 4/6mm
high voltage unit for SB & SB 2K	UHT 157 (100kV/200µA) (P/N 910 002 870) UHT 157i (60kV/200µA) (P/N 910 016 744)	UHT 157 (100kV/200µA) (P/N 910 002 870) UHT 157i (60kV/200µA) (P/N 910 016 744)	UHT 157 (100kV/200µA) (P/N 910 002 870)
high voltage unit for ICWB & ICWB-2K	UHT 288 (100kV/500µA) (P/N 910 002 864)		

***SB**: SOLVENT BASED PAINT*
***WB**: WATER BASED PAINT*
***IC**: INTERNAL CHARGE*
***EXT**: EXTERNAL CHARGE*
***MT**: MULTI TRIGGERS*
***1H**: ONE HARDENER*
***1K**: ONE-COMPONENT PAINT*
***2K**: TWO-COMPONENT PAINT*
***MS**: MULTI-SPRAY*

Range of the liquid sprayers

CONFIGURATIONS OF THE « RANGE 7 »

	PPH 707 EXT (External charge)	**ACCULOOK 707 SB & ICWB** (Internal charge)	**ACCUBELL 709 EVO** (interbal charge)
			
Paint	**Water based**	**Solvent based or Water based**	**Solvent based or Water based**
High voltage	Electrical charge by external electrodes	Electrical charge by direct contact (internal charge)	Electrical charge by direct contact (internal charge)
Process	Primer/Base	Primer/Base/Clearcoat	Primer/Base/Clearcoat
Applications	• **Exterior** of the car bodies • Large surfaces	**SAME AS ACCUBELL 708 (SAME TCP)** • **Exterior** of the car bodies • Large surfaces • Bumpers	• Interior • Exterior • Large surfaces • Bumpers
Bells	EX65 EXT	EC35, EC50, EX65, EX80	EC35, EC50, EX65, EX80
Air shroud type:	• Pairs of combined air holes : EX65 Hi-TE EXT	• Vortex «EC35» • Pairs of combined air holes : EC50 Hi-TE PSW EC50 Hi-TE CSW EX65 Hi-TE EX80 Hi-TE BSW	• Vortex «EC35» • Pairs of combined air holes : EC50 Hi-TE PSW EC50 Hi-TE CSW EX65 Hi-TE EX80 Hi-TE BSW
Turbine	HVT (P/N 1 525 849)	HVT (P/N 1 525 849)	HVT (P/N 1 525 849)
Injector	1.8 mm	1.8 mm	1.8 mm
Bend	60°	60°	60°
Microvalves	Standard (P/N 1 507 375)	Standard (P/N 1 507 375)	Standard (P/N 1 507 375)
Nanovalves	Standard (P/N 1 510 004)	Standard (P/N 1 510 004)	Standard (P/N 1 510 004)
Base plate	(P/N 910003409) product fittings in 4/6mm		
high voltage unit	UHT 330 (85kV/500µA) (P/N 910 007 139)	UHT 157 (100kV/200µA) (P/N 910 002 870)	UHT 157w (90kV/200µA) (P/N 910 011 910) UHT 157i (60kV/200µA) (P/N 910 016 744)

PPH 707 SB

Robotic sprayer for solvent based paint equipped with high speed rotary bell

- High performance bell atomizer
- High reliability for Automotive paintshop
- Easy to maintain

> 3 MΩ.cm

full robot compatibility

up to 1.5 m/sec.

7 kg

up to 1000cm²/min

Dual Shaping air

Magnetic Bellcup

Up to 100 kV

Up to 70 000 rpm

PPH 707-SB is a sprayer dedicated to the electrostatic application with internal charge of solvent based paint.
It is equipped with the high speed turbine (HVT) with magnetic bell. "SB" index means that this type of sprayer is dedicated to solvent based paint application. The high speed allows a high rotation (up to 85 000 rpm):

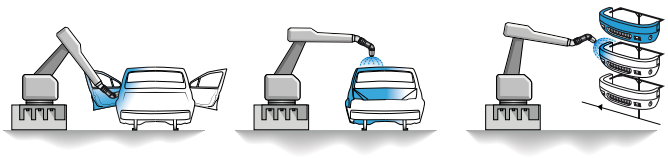
- better atomization fineness,
- high paint flow

The level of finishing quality proposed by the PPH 707-SB guaranties a high quality. This tool will meet your requirements in terms of:

- spraying (primer, base, 2nd base, clear ...)
- application aspect
- transfer efficiency (control of the V.O.C.)
- reliability and simplification of the maintenance operations
- product saving

FIELD OF APPLICATION

PPH 707-SB is dedicated to the Automotive Industry and Tier 1 for solvent based application.



Primer	✓	✓	✓
Base	✓	✓	✓
Clearcoat	✓	✓	✓

PPH 707-SB can be built-in into any type of multi-axis robot.

PPH 707 SB

CUSTOMERS' BENEFITS

High Performance

- High rotating speed
- High voltage unit
- Hi-TE dual shaping air
- Dual circuit for fast color change

Flexibility

- Full Bell/Bell process:
  Primer, Basecoat 1, Basecoat 2, Primer
- Wide or narrow pattern
- Light weight for any painting robots

High Reliability

- Long life HVU (High Voltage Unit)
- 2.5 million cycles life of valves
- Titanium bellcup for longer life
- 7 years/30 000h. warranty* turbine

** Whichever is the sooner*

Easy to Maintain

- Magnetic bellcup fastening system
- Quick disconnect
- Easy access to valves, fittings
- Specific body design preventing & dust or droplet
- No calibration tool required

Safety

- Smart integrated HVU:
  fast energy discharge preventing any spark
- Remote bell monitoring device
- ATEX zone 1

Technical Data

Weight	PPH 707-SB
Spare atomizer, without cable or hose	7 kg

Pneumatic supply	PPH 707-SB
Nano-valve drive air pressure	8 bar mini (120psi) - 10 bar max. (150psi)
Magnetic turbine bearing air pressure	5 mini (75psi) - 7 bar max. (105psi) from 130 to 180 L/min
Shaping air pressure	6 bar (90psi) recommended on manifold
Micro air pressure	0.5 mini (7,5psi) at 1 bar maxi. (15psi) from 20 L/min to 40 L/min
Drive air consumption	10 Nl/min.
Magnetic turbine bearing air consumption	125 Nl/min.
Shaping air 1 and air 2 consumption (with respect to air shroud and bell being used)	From 100 to 600 Nl/min.
Turbine rotation air consumption	From 100 to 700 Nl/min.(1)
Safeguard air quantity	25 litres at 6 bar (90 psi)

(1): with respect to sprayed flow and rotation speed

Product supply	PPH 707-SB
Standard product supply pressure	6 (90psi) to 8 bar (120psi)
Maximum product pressure	10 bar (150psi)
Paint flow (depending on paint type)	30 to 1000 cc/min.(2) maxi.
Viscosity scale (for minimum results)	20 to 40 seconds FORD #4 Cup
Paint resistivity (with coil)	> 3 MΩ.cm
Paint resistivity (without coil)	> 10 MΩ.cm

(2): with a product density < 1.1 gr/cm3 and/or of the combination bell and air shroud being used

Performances	HVT
Rotation speed	15 to 85 000 rpm (upon diameter of bell cup used)
Application speed	up to 1500 mm/sec

Color change	PPH 707-SB
Paint consumption	25 cm^3 (paint circuit) & 25 cm^3 (pump circuit)
Rinsing product consumption	300 cm^3 (not included rinsing box)
Standard process time	10 sec (with REVERSE FLUSH)
Optimized process time	5 sec (with REVERSE FLUSH on circuit 1 & 2)

Same Color (head rinsing + bell cup)	PPH 707-SB
Time	6 sec.
Rinsing product consumption	50 cm^3

High Voltage	UHT 157	UHT 157i
Voltage maxi.	100 kV	60 kV
Current maxi.	200 µA	200 µA

ATEX marking:

PPH 707 SB:

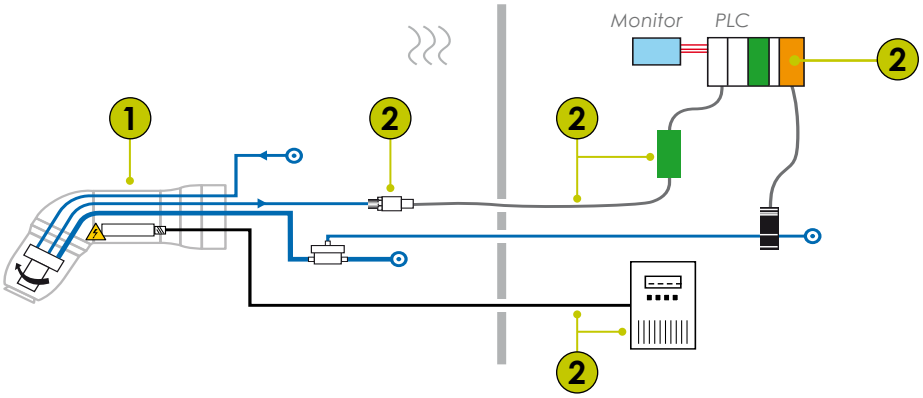
CE 0080 Ex II 2 G
EEx > 350 mJ
ISSeP05ATEX032X

GNM 200(3):

CE 0080 Ex II (2) GD
[EEx > 350 mJ]
ISSeP05ATEX032X
ISSeP06ATEX032X
ISSeP07ATEX001X

(3): This control module allows piloting the UHT 157. It is a device that is part of the configuration of the certified equipment and that contributes to its good working. It has to be installed into a non explosive area.

Build your Atomizer



1 Mark 1	REFERENCE ATOMIZER			
	PPH 707-SB			PPH 707 ICWB
	with Microphone with Coil	with Microphone without Coil circuit	with Fiber Optic	with Microphone
Atomizer	**910004013***	**910017984***	**910004013FO***	**910005907**
Body	910003414SAV	910003414SAV	910003414FOSAV	910003414SAV
Microvalve type	1507375	1507375	1507375	1507375
Nanovalve type	1510004	1510004	1510004	1510004
High speed turbine	1525849	1525849	1525849	1525849
High Voltage Unit UHT 157 / UHT 157i	910002870 / 910016744	910002870 / 910016744	910002870 / 910016744	
High Voltage Unit UHT 288				**910002864**
2 Mark 2				
Control module GNM200, Low voltage connection 8m (Ref: 910004015), Microphone or Optical fibre sensor				
F/V converter				
Electric kit - 230 V	**910005297***	**910005297***	**910003874***	**910014614**
Electric kit - 110 V	**910016210**	**910016210**		**910016209**
Speed control module				
Electric kit - 230 V	**910005298**	**910005298**	**910003875**	**910006062**
Electric kit - 110 V				**910019422**

*: with UHT 157i, add «INT» on the reference number (exmple: 910004013INT for PPH 707-SB with UHT 157i or 910004013FO becomes 910004013INTFO

- **Not included :**
  - **Bellow and Air Shroud (refer to page 54)**
  - **Robot wrist adapters (contact SAMES)**

PPH 707 MT

Robotic sprayer for solvent based paint equipped with **multi trigger technology**

- Minimum color change loss
- Compact design
- 7th range quality

> 3 MΩ.cm

full robot compatibility

up to 1.2 m/sec.

9.2 kg

up to 1000cm²/min

Dual Shaping air

Magnetic Bellcup

Up to 100 kV

Up to 70 000 rpm

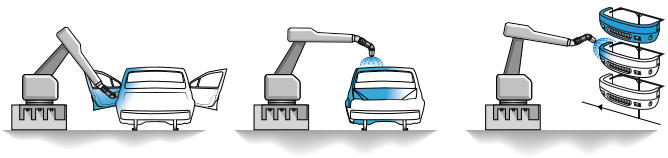
Multi trigger technology means that the color change block is integrated inside this atomizer's body.

1 super high runner and **5 high runner colors** have very low lost of paint and solvent during color change.

It means also a high speed color change.

FIELD OF APPLICATION

Whichever the product, the operating modes may be:



Primer	-	✓	✓
Base	-	-	-
Clearcoat	-	✓	✓

PPH 707 MT can be built-in into any type of multi-axis robot.

PPH 707 MT

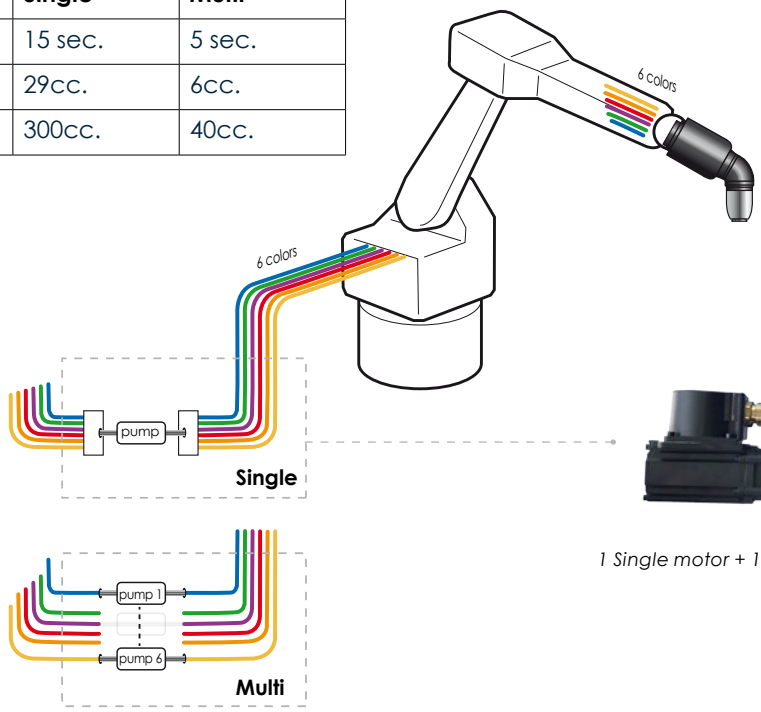
CUSTOMERS' BENEFITS

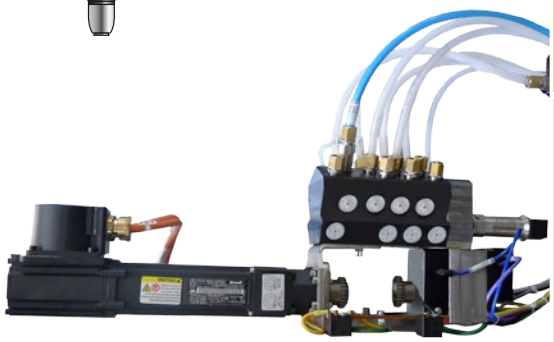
Minimum Material Loss

- Less paint & solvent loss
  5 high runners at 5cc.
  1 super high runner at 1cc.

- Single or Multi easy rinsing pump process

	Single	Multi
Color change time	15 sec.	5 sec.
Paint loss	29cc.	6cc.
Solvent loss	300cc.	40cc.





1 Single motor + 1 easy rinsing pump + 1 block color changer

Flexibility

- Easy to upgrade PPH707 SB to PPH707 MT:
  same TCP & Head
- Coil option for low resistivity or metallic material
- Available 2K version, color change performances: 5 high runners + 1 hardener, 7 sec./8cc. paint & 65cc. solvent loss

Safety

- Smart integrated HVU:
  fast energy discharge preventing any spark
- Remote bell monitoring device
- ATEX zone 1

High Reliability

- 7 years/30 000h. warranty* turbine
- Long life HVU (High Voltage Unit)
- Titanium bellcup for longer life
- 2.5 million cycles life of valves

** Whichever is the sooner*

Technical Data

Weight	PPH 707 MT
Spare atomizer, without cable or hose	9.2 kg (with coil) - 8.8 kg (without coil)

Pneumatic supply	PPH 707 MT
Nano-valve drive air pressure	8 bar mini (120psi) - 10 bar max. (150psi)
Magnetic turbine bearing air pressure	5 mini (75psi) - 7 bar max. (105psi) from 130 to 180 L/min
Shaping air pressure	6 bar (90psi) recommended on manifold
Micro air pressure	0.5 mini (7,5psi) at 1 bar maxi. (15psi) from 20 L/min to 40 L/min
Drive air consumption	10 Nl/min.
Magnetic turbine bearing air consumption	125 Nl/min.
Shaping air 1 and air 2 consumption (with respect to air shroud and bell being used)	From 100 to 600 Nl/min.
Turbine rotation air consumption	From 100 to 700 Nl/min.(1)
Safeguard air quantity	25 litres at 6 bar (90 psi)

(1): with respect to sprayed flow and rotation speed

Product supply	PPH 707 MT
Standard product supply pressure	6 (90psi) to 8 bar (120psi)
Maximum product pressure	10 bar (150psi)
Paint flow (depending on paint type)	30 to 1000 cc/min.(2) maxi.
Viscosity scale (for minimum results)	20 to 40 seconds FORD #4 Cup
Paint resistivity (with coil)	> 3 MΩ.cm
Paint resistivity (without coil)	> 10 MΩ.cm

(2): with a product density < 1.1 gr/cm3 and/or of the combination bell and air shroud being used

Performances	HVT	
Rotation speed	15 to 85 000 rpm (upon diameter of bell cup used)	
Application speed	up to 1200 mm/sec	
Color change	**Single pump group**	**Multi pump group**
Paint loss per color - with coil	29 cm^3	6 cm^3
Paint loss per color - without coil	39 cm^3	16 cm^3
Solvent loss per color - with coil	300 cm^3	40 cm^3
Solvent loss per color - without coil	330 cm^3	40 cm^3
Process time - with coil	15 sec	5 sec
Process time - without coil	15 sec	5 sec
High Voltage	**UHT 157**	
Voltage maxi.	100 kV	
Current maxi.	200 µA	

ATEX marking:

PPH 707 MT:

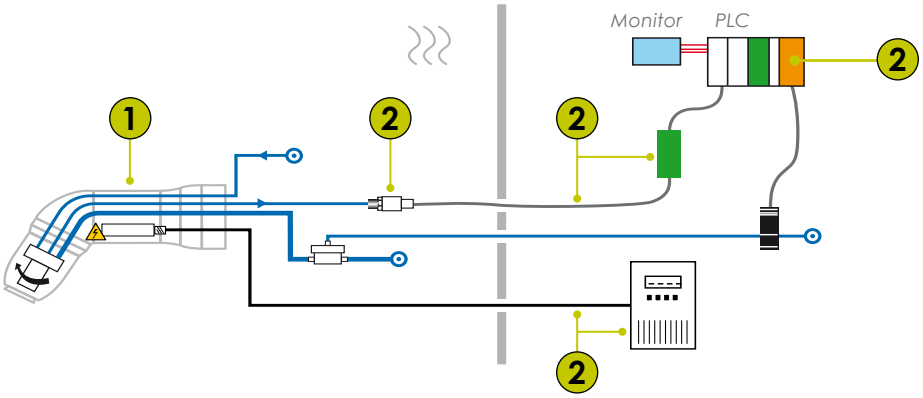
CE 0080 Ex II 2 G
EEx > 350 mJ
ISSeP05ATEX032X

GNM 200(3):

CE 0080 Ex II (2) GD
[EEx > 350 mJ]
ISSeP05ATEX032X
ISSeP06ATEX032X
ISSeP07ATEX001X

(3): This control module allows piloting the UHT 157. It is a device that is part of the configuration of the certified equipment and that contributes to its good working. It has to be installed into a non explosive area.

Build your Atomizer



1 Mark 1	REFERENCE ATOMIZER PPH 707 MT	
	with Microphone with Coil	with Microphone without Coil circuit
Atomizer	**910010372**	**910010373**
Body	910003414SAV	910003414SAV
Microvalve type	1507375	1507375
Nanovalve type	1510004	1510004
High speed turbine	1525849	1525849
Rear support	910010102	910010104
High Voltage Unit UHT 157	910002870	910002870

2 Mark 2

Control module GNM200,
Low voltage connection 8m (Ref: 910004015),
Microphone or Optical fibre sensor

F/V converter		
Electric kit - 230 V	**910005297**	**910005297**
Electric kit - 110 V	**910016210**	**910016210**

Speed control module		
Electric kit - 230 V	**910005298**	**910005298**
Electric kit - 110 V	-	-

- **Not included :**
  - **Bellow and Air Shroud (refer to page 54)**
  - **Robot wrist adapters (contact SAMES)**

PPH 707 SB-2K

Robotic sprayer for two-component solvent-based paints equipped with high speed rotary bell

- Low material loss
- High reliability
- Easy to maintain

> 3 MΩ.cm

full robot compatibility

up to 1.5 m/sec.

7.15 kg

up to 1000cm²/min

Dual Shaping air

Magnetic Bellcup

Up to 100 kV

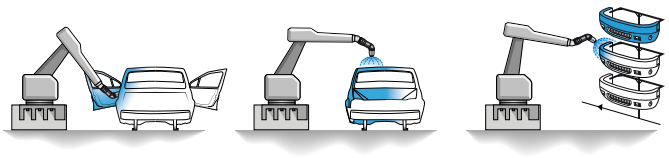
Up to 70 000 rpm

PPH 707 SB-2K is a sprayer dedicated to the electrostatic application with internal charge of 2 components liquid paints.

It is equipped with the static mixer located just before the bellcup injector, which helps to reduce the mixed paint volume to only 2cc.

FIELD OF APPLICATION

Whichever the product, the operating modes may be:



Primer	-	✓	✓
Base	-	-	-
Clearcoat	✓	✓	✓

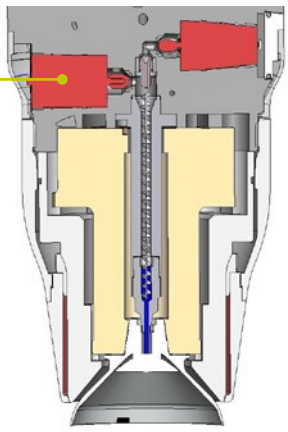
PPH 707 SB-2K can be built-in into any type of multi-axis robot.

PPH 707 SB-2K

CUSTOMERS' BENEFITS

Low Material Loss

- Static mixer into the head
- Valve close to mixer
- Mixed paint volume = 2cc. only



High Reliability

- Microvalves with bellow available for hardener supply circuit: **ref 910010850**
- Long life HVU (High Voltage Unit)
- 7 years/30 000h. warranty* turbine
- Titanium bellcup for longer life
- 2.5 million cycles life of valves

** Whichever is the sooner*

Easy to Maintain

- Easy tear down parts in contact on hardener
- No mixed material in Robot's arm
- No mixed product can return back in the circuit

Flexibility

- Compatible to every solvent based 2K coating
- Easy to upgrade PPH 707 SB to 2K:
  same TCP and body
- Available 2K Multi Trigger version, color change performances:
5 high runners + 1 hardener, 7 sec./8cc. paint and 65 cc. solvent loss

Safety

- Smart integrated HVU:
  fast energy discharge preventing any spark
- Remote bell monitoring device
- ATEX zone 1

Technical Data

Weight	PPH 707 SB-2K
Spare atomizer, without cable or hose	7.15 kg

Pneumatic supply	PPH 707 SB-2K
Nano-valve drive air pressure	8 bar mini (120psi) - 10 bar max. (150psi)
Magnetic turbine bearing air pressure	5 mini (75psi) - 7 bar max. (105psi) from 130 to 180 L/min
Shaping air pressure	6 bar (90psi) recommended on manifold
Micro air pressure	0.5 mini (7,5psi) at 1 bar maxi. (15psi) from 20 L/min to 40 L/min
Drive air consumption	10 Nl/min.
Magnetic turbine bearing air consumption	125 Nl/min.
Shaping air 1 and air 2 consumption (with respect to air shroud and bell being used)	From 100 to 600 Nl/min.
Turbine rotation air consumption	From 100 to 700 Nl/min.(1)
Safeguard air quantity	25 litres at 6 bar (90 psi)

(1): with respect to sprayed flow and rotation speed

Product supply	PPH 707 SB-2K
Standard product supply pressure	6 (90psi) to 8 bar (120psi)
Maximum product pressure	10 bar (150psi)
Paint flow (depending on paint type)	30 to 1000 cc/min.(2) maxi.
Viscosity scale (for minimum results)	20 to 40 seconds FORD #4 Cup
Paint resistivity (with coil)	> 3 MΩ.cm

(2): with a product density < 1.1 gr/cm3 and/or of the combination bell and air shroud being used

Performances	HVT
Rotation speed	15 to 85 000 rpm (upon diameter of bell cup used)
Application speed	up to 1500 mm/sec
Color change	**PPH 707 SB-2K**
Paint consumption	25 cm^3 (paint circuit) & 25 cm^3 (pump circuit)
Rinsing product consumption	300 cm^3 (not included rinsing box)
Standard process time	10 sec (with REVERSE FLUSH)
Optimized process time	5 sec (with REVERSE FLUSH on circuit 1 & 2)
Same Color (head rinsing + bell cup)	**PPH 707 SB-2K**
Time	6 sec.
Rinsing product consumption	50 cm^3

High Voltage	UHT 157	UHT 157i
Voltage maxi.	100 kV	60 kV
Current maxi.	200 µA	200 µA

ATEX marking:

PPH 707 SB-2K:

CE 0080 Ex II 2 G

EEx > 350 mJ

ISSeP05ATEX032X

GNM 200(3):

CE 0080 Ex II (2) GD

[EEx > 350 mJ]

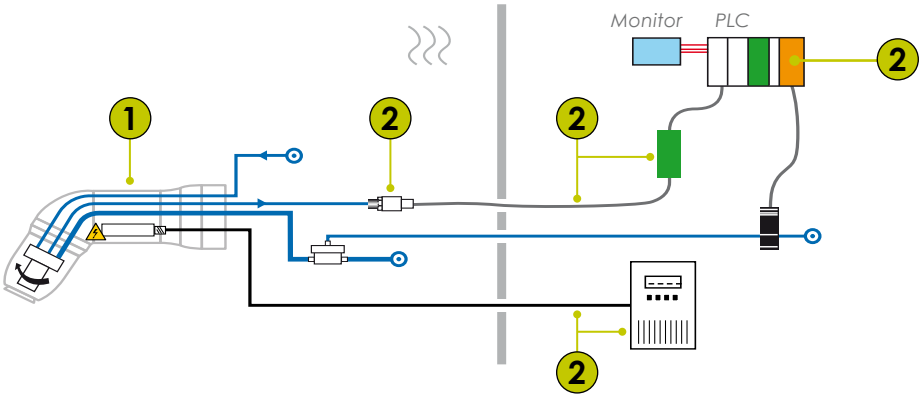
ISSeP05ATEX032X

ISSeP06ATEX032X

ISSeP07ATEX001X

(3): This control module allows piloting the UHT 157. It is a device that is part of the configuration of the certified equipment and that contributes to its good working. It has to be installed into a non explosive area.

Build your Atomizer



1 Mark 1	REFERENCE ATOMIZER		
	PPH 707 SB-2K		PPH 707 ICWB-2K
	with Microphone	with Fiber Optic	with Microphone
Atomizer	**910008335***	**910008335FO***	**910016139**
Body	910005570SAV	910005570FO	910016141SAV
Microvalve type	1507375	1507375	1507375
Nanovalve type	1510004	1510004	1510004
High speed turbine	1525849	1525849	1525849
High Voltage Unit UHT 157 / UHT 157i	910002870 / 910016744	910002870 / 910016744	
High Voltage Unit UHT 288			**910002864**

2 Mark 2

Control module GNM200,
Low voltage connection 8m (Ref: 910004015),
Microphone or Optical fibre sensor

F/V converter			
Electric kit - 230 V	**910005297***	**910003874***	**910014614**
Electric kit - 110 V	**910016210***		**910016209**

Speed control module			
Electric kit - 230 V	**910005298**	**910003875**	**910006062**
Electric kit - 110 V			**910019422**

*: with UHT 157i, add «INT» on the reference number (exmple: 910004013INT for PPH 707-SB with UHT 157i or 910004013FO becomes 910004013INTFO

- **Not included :**
  - **Bellow and Air Shroud (refer to page 54)**
  - **Robot wrist adapters (contact SAMES)**

PPH 707 MT-2K 1H

Robotic sprayer two-component solvent-based paints equipped with **multi trigger technology**

- Minimum color change loss
- Compact design
- Easy to maintain

> 3 MΩ.cm

full robot compatibility

up to 1.2 m/sec.

8.83 to 9.2 kg

up to 1000cm²/min

Dual Shaping air

Magnetic Bellcup

Up to 100 kV

Up to 70 000 rpm

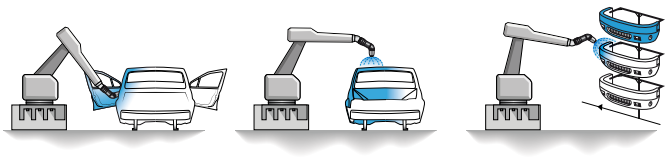
PPH 707 MT-2K 1H (one hardener) is a sprayer dedicated to the electrostatic application with internal charge of 2 components liquid paints.
This atomizer is the best solution for colored 2K primer or clear coat: low paintlost and fast color change.

It is equipped with:
- a static mixer located just before the bellcup injector.
- a color change bloc inside the atomizer for:

1 super high runner and **5 high runner colors**

FIELD OF APPLICATION

Whichever the product, the operating modes may be:



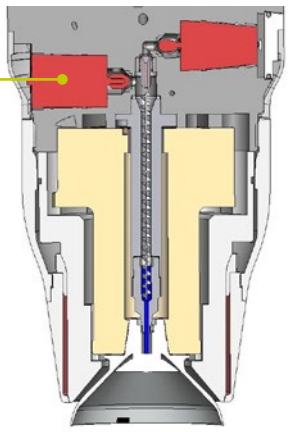
Primer	-	✓	✓
Base	-	-	-
Clearcoat	-	✓	✓

PPH 707 MT-2K 1H can be built-in into any type of multi-axis robot.

PPH 707 MT-2K 1H

Low Material Loss

- Static mixer into the head
- Valve close to mixer
- Mixed paint volume = 2cc. only
- Same performances as PPH707 MT



High Reliability

- Microvalves with bellow available for hardener supply circuit: **ref 910010850**
- Long life HVU (High Voltage Unit)
- 7 years/30 000h. warranty* turbine
- Titanium bellcup for longer life
- 2.5 million cycles life of valves

** Whichever is the sooner*

Easy to Maintain

- Easy tear down parts in contact on hardener
- No mixed material in Robot's arm
- No mixed product can return back in the circuit

Flexibility

- Easy to upgrade PPH707 MT to MT-2K: same TCP & Read
- Coil option for low resistivity or metallic material

Safety

- Smart integrated HVU: fast energy discharge preventing any spark
- Remote bell monitoring device
- ATEX zone 1

Technical Data

Weight	PPH 707 MT-2K 1H
Spare atomizer, without cable or hose	9.22 kg (with coil) 8.83 kg (without coil)

Pneumatic supply	PPH 707 MT-2K 1H
Nano-valve drive air pressure	8 bar mini (120psi) - 10 bar max. (150psi)
Magnetic turbine bearing air pressure	5 mini (75psi) - 7 bar max. (105psi) from 130 to 180 L/min
Shaping air pressure	6 bar (90psi) recommended on manifold
Micro air pressure	0.5 mini (7,5psi) at 1 bar maxi. (15psi) from 20 L/min to 40 L/min
Drive air consumption	10 Nl/min.
Magnetic turbine bearing air consumption	125 Nl/min.
Shaping air 1 and air 2 consumption (with respect to air shroud and bell being used)	From 100 to 600 Nl/min.
Turbine rotation air consumption	From 100 to 700 Nl/min.(1)
Safeguard air quantity	25 litres at 6 bar (90 psi)

(1): with respect to sprayed flow and rotation speed

Product supply	PPH 707 MT-2K 1H
Standard product supply pressure	6 (90psi) to 8 bar (120psi)
Maximum product pressure	10 bar (150psi)
Paint flow (depending on paint type)	30 to 1000 cc/min.(2) maxi.
Viscosity scale (for minimum results)	20 to 40 seconds FORD #4 Cup
Paint resistivity (with coil)	> 3 MΩ.cm
Paint resistivity (without coil)	> 10 MΩ.cm

(2): with a product density < 1.1 gr/cm3 and/or of the combination bell and air shroud being used

Performances	HVT	
Rotation speed	15 to 85 000 rpm (upon diameter of bell cup used)	
Application speed	up to 1200 mm/sec	
Color change	**Single pump group**	**Multi pump group**
Paint loss per color - with coil	31 cm^3 + 2 cm^3 (loss of hardener)	8 cm^3 + 2 cm^3 (loss of hardener)
Paint loss per color - without coil	41 cm^3 + 2 cm^3 (loss of hardener)	18 cm^3 + 2 cm^3 (loss of hardener)
Solvent loss per color - with coil	355 cm^3	65 cm^3
Solvent loss per color - without coil	385 cm^3	80 cm^3
Process time - with coil	17 sec	7 sec
Process time - without coil	17 sec	7 sec
High Voltage	**UHT 157**	
Voltage maxi.	100 kV	
Current maxi.	200 µA	

ATEX marking:

PPH 707 MT-2K 1H:

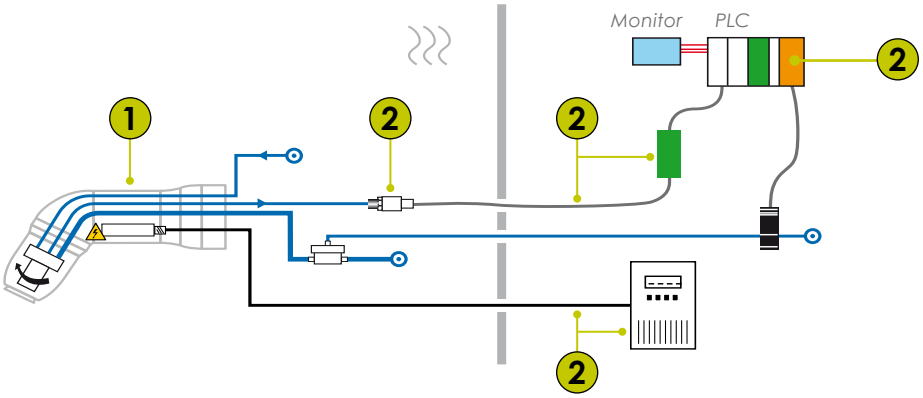
CE 0080 Ex II 2 G
EEx > 350 mJ
ISSeP05ATEX032X

GNM 200(3):

CE 0080 Ex II (2) GD
[EEx > 350 mJ]
ISSeP05ATEX032X
ISSeP06ATEX032X
ISSeP07ATEX001X

(3): This control module allows piloting the UHT 157. It is a device that is part of the configuration of the certified equipment and that contributes to its good working. It has to be installed into a non explosive area.

Build your Atomizer



1 Mark 1

	REFERENCE ATOMIZER PPH 707 MT-2K 1H		
	with Microphone with Coil	with Microphone without Coil circuit	with Fiber optic without Coil
Atomizer	**910010374**	**910010375**	**910010375FO**
Body	910005570SAV	910005570SAV	910005570FO
Microvalve type	1507375	1507375	1507375
Nanovalve type	1510004	1510004	1510004
High speed turbine	1525849	1525849	1525849
Rear support	910010102	910010104	910010104
High Voltage Unit UHT 157	910002870	910002870	910002870

2 Mark 2

Control module GNM200 (Ref: 1517071),
Low voltage connection 8m (Ref: 910004015),
Microphone or Optical fibre sensor

F/V converter			
Electric kit - 230 V	**910005297**	**910005297**	**910003874**
Electric kit - 110 V	**910016210**	**910016210**	**-**

Speed control module			
Electric kit - 230 V	**910005298**	**910005298**	**910003875**
Electric kit - 110 V	-	**-**	**-**

- **Not included :**
  - **Bellow and Air Shroud (refer to page 54)**
  - **Robot wrist adapters (contact SAMES)**

TRP501 & TRP502

Electro pneumatic robotic gun

- High performance gun atomizer
- High reliability for Automotive paintshop
- Easy to maintain

> 1 MΩ.cm (solvent paint)

full robot compatibility

up to 1.5 m/sec.

4.7 - 5.5 kg

up to 1000cm²/min

Up to 100 kV

TRP gun is used for the application of **water or solvent based paints**. The additional advantage of the TRP is to enable the application at **very high flow** (up to 1200 cm3/min with certain configurations) while combining the **pneumatic** and **electrostatic** effects.

The TRP gun is light, compact and has much **flexibility of use**. Its simple and robust design makes it **extremely reliable**.

For more than 35 years, **TRP gun** has been the reference in the world of automotive finishing, often copied but never equalled.

FIELD OF APPLICATION

- Car body interiors
- Door cut-ins
- Rocker panels
- Penetration in hollow body (dead areas...)
- Any type of openings (ventilation louvers on bumpers...)
- Metallic base coat:
2nd base coat with Bell/Gun process
- Bumper

TRP501 & TRP502

CUSTOMERS' BENEFITS

High Performance

The transfer efficiency is high; it is doubled compared to a conventional gun application (30% to 60% depending on the shape of the part, the paint being used and the working adjustments).

Easy-to-use:

The adjustments of all the gun parameters (product flow, paint spray, product opening control) are remotely controlled, manually or by a PLC.

New Capability improvement

Available on 2 sets of TRP 501/502, the Heavy Duty Kit let your robotic gun last longer.
The newly piston makes the guns able to trigger thousands of time per day.

Kit Heavy Duty TRP: P/N 910019437

RANGE

TRP 501 sprayer is equipped with a gun on which can be assembled either a fan or round (Vortex effect) spray nozzle:

The fan spray is equipped with a metal injector to guaranty a steadfast spraying quality in the long run (few wear). The injector diameter is of 1.5 mm and comes in several versions.

The round spray comes in four calibres:
- calibre ø8 mm = standard
- calibre ø6, 12 and 20 mm = as an option

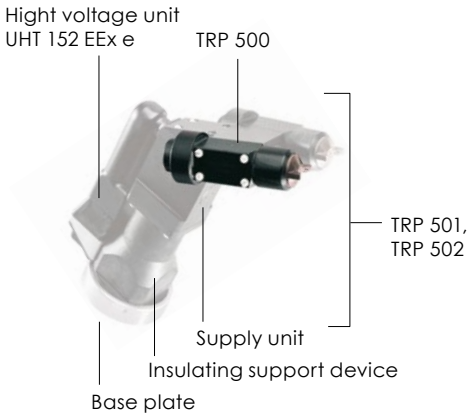
TRP 502 sprayer is equipped with two fan spray guns. The converging patterns are directed at the part as one pattern, and are supplied and piloted simultaneously.
TRP 502 versions provide twice the paint flow offered by TRP 501 versions.

The gun is assembled onto a support allowing two tilting angles.

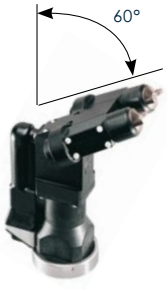
The paint supply of both **TRP 501 & 502** sprayers comes in several versions:

- With or without modular-built product regulator,
- With simple dump (SP) of the paint circuit (one paint circuit inlet),
- or with double dump (DP) of the paint circuit (two paint circuit inlets).

With TRP 502 version, the air and product supplies are shared by both spraying heads.



This set is composed of a supply unit on which is assembled a support device allowing orientating the TRP 500 with respect to the robot arm (60° or 90°). An insulating support device thus maintain this whole set to the quick disconnect base plate. The supply unit is equipped with one or two product inlets, a product dump/rinsing outlet, a high voltage inlet and air inlets (needle drive, dump, spraying airs).



TRP 502

TRP 502

Technical Data

Weight	TRP 501	TRP 502
Spare atomizer, without cable or hose	4.7 kg	5.5 kg

Pneumatic supply	TRP 501 - TRP 502
Maxi. air pressure	6 bar (90 psi)
Maxi. Product pressure	6 bar (90 psi)
Drive standard pressure	5 bar (75 psi)
Product opening response time	25 msec (for information only)
Product cut response time	30 msec (for information only)

Product supply	TRP 501 - TRP 502
Standard product supply pressure	6 (90psi) to 8 bar (120psi)
Maximum product pressure	10 bar (150psi)
Viscosity scale (for minimum results)	14 to 60 seconds FORD #4 Cup
Paint resistivity (solvent based paint)	> 3 MΩ.cm
Paint resistivity (water based paint)	> a few kΩ.cm

Spraying	Round spray	Fan spray (TRP 501)	Fan spray (TRP 502)
Spray pattern width (mm) for information only	100 to 400	100 to 500	660
Airs total flow (Nm^3/h)	7 - 27	7 - 40	14 - 80
Paint flow (cc/min)	from 100 to 500	from 100 to 800	from 200 to 1200
High Voltage	**UHT 152 EEx e**		
Voltage maxi.	100 kV		
Current maxi.	200 µA		

ATEX marking:

TRP501 / TRP502:

CE 0080 Ex II 2 G
EEx > 350 mJ
ISSeP05ATEX032X

GNM 200(1):

CE 0080 Ex II (2) GD
[EEx > 350 mJ]
ISSeP05ATEX032X
ISSeP06ATEX032X
ISSeP07ATEX001X

(1): This control module allows piloting the UHT 152. It is a device that is part of the configuration of the certified equipment and that contributes to its good working. It has to be installed into a non explosive area.

> For the application of solvent based paints of which resistivity is > to 1 MΩ.cm, all the conductive parts have to be grounded (product tank, pressurised tank, moduclean, metal fittings, etc...). In order to minimize the leakage current into the paint circuit, it is recommended to use small diameter hosing (ex: ø4x8 mm) and of 5-meter length maximum between the sprayer and the metal fitting or grounded bulk-head union.

> For the application of water based paints that are non-flammable or hard to set fire to, (resistivity of a few kΩ.cm), the paint supply has to be electrically insulated (product tank, pressurised tank, moduclean, metal fittings, etc...). Do provide for all the necessary safeties to avoid any electrical shocks to the operator.

Please, consult Sames for more information.

Essential to the interiors
The rinsing box is used to clean and dry the exterior of the sprayer that is exposed to dirt and to recycle the rinsing product.
The rinsing box is available as an option (Please, consult Sames for more information).

Build your Atomizer

SPRAYER

TRP 501/502 unit single or double product circuit

Description	Regulator	Angle adapter	Reference
TRP 501 SP AR QD	Yes	60°	1 521 595
		90°	1 518 921
TRP 501 SP SR QD	No	60°	910 019 845*
		90°	910 002 320
TRP 502 SP AR QD	Yes	60°	910 002 319
		90°	910 002 317
TRP 502 SP SR QD	No	60°	910 019 846*
		90°	910 002 318

SP: single dump circuit, AR: with regulator,
SR: without regulator, QD: quick-disconnect base-plate
*: Heavy duty version with piston

SPRAYING HEAD

TRP 500 alone

Description	Restrictor (ø mm)	Injector (ø mm)	Reference
TRP 500 JP	1.4	1.5	910019888*
TRP 500 JR	1.2	8	910019848*
TRP 500 JR	1.2	12	910019850*

JP: flat spray, JR: round spray, *: Heavy duty version with piston

ACCESSORIES: MEASURE «TEST AIRCAPS»

The air caps permit to measure the pressure (bar) of the air plenum (fan air and centre air) at the level of the gun head. This measure is very important to define the shape of the pattern (spray symmetry, width…).

Description	Material	Reference
JP Cap (same as JP cap 436 939)	Brass	437 257(1)
JP Cap (same as JP cap 422 513)	Brass	423 753(2)

(1): standard pattern, (2): wide pattern

OPTION NOZZLES AND AIRCAPS

Fan spray nozzle

Description	Injector (ø mm)	Reference
Nozzle JP single circuit	1.1	730 355
injector INOX	1.2	755 287
	1.5	439 058
Nozzle JP single circuit	1.2	428 375(3)
Complete nozzle INOX	1.5	429 064 (3)
Nozzle JP double circuit	1.5	752 055

(3): The flat spray nozzle is all stainless steel material – cast in one piece.

Aircap - Fan spray

Description	Material	ø (mm)	Reference
aircap JP - standard	Plastic		436 939
aircap JP - wide pattern	Plastic		422 513
aircap JP - standard	Brass		733 957
aircap JP - wide pattern	Brass		Consult Sames
aircap JP - **stainless nozzle**	Brass	1.2	428 376
	Brass	1.5	429 063

Round spray nozzle (VORTEX)

Description	Injector (ø mm)	Reference
Nozzle without injector		752 983
Injector JR	6	455 234#
	8	455 235#
	12	455 236#

#: set of 5

Aircap - Round spray

Description	Material	ø (mm)	Reference
aircap JR	Plastic	6	430 804
		8	430 540
		12	430 179

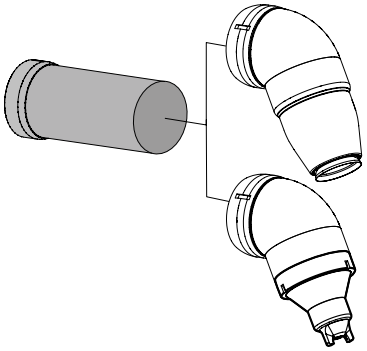
Nuts

Description	Reference
Nut for nozzle JP	745 066
Nut for nozzle JR	749 982

PPH 707 MS-GUN

Robotic multi-process gun sprayer for solvent based paint

- Ideal for the validations of Bell/Gun on site
- Easy to switch process



1K

> 3 MΩ.cm

full robot compatibility

up to 1.5 m/sec.

6 kg

up to 1000cm²/min

Up to 100 kV

PPH 707-MS-GUN with manual tool change «multi-process» is mainly dedicated to Tier 1 paint lines. This allows switching quickly from a **gun** to a **bell process** and vice versa for solvent based paint application.

FIELD OF APPLICATION

A MULTIPURPOSE TOOL:

This tool, belonging to Range 7 sprayers (PPH 707 SB), is composed of a common body integrating an high voltage cascade (UHT 157), the product and air circuits and is ended by a quick fixation nut on which can be fixed a sprayer head of bell type (PPH 707 SB) or a single-head gun.

Example: the application of a second base coat is generally carried out with an electrostatic gun but can also be carried out with a bell (paint saving).

AN UPGRADABLE SPRAYING SYSTEM:

MULTISPRAY makes the spraying process evolution easier, the same tool switching easily from a gun to a bell configuration. PPH 707 MS-GUN allows validating «all electrostatic» and «bell for 2nd base coat» processes, with the aim of optimizing paint consumption. Mass production on a paint line can start with an electro-pneumatic gun, and then the operator can adapt a bell to carry out trials with the aim of changing the 2nd base coat application process. It can easily come back to the gun configuration and resume production up to the final application with bell; thus without disassembling the common body from the robot which does not change.

A NEW SUPER VORTEX NOZZLE:

Research for the manual gun NANOGUN led SAMES to design a new nozzle able to enhance finishing performance. She is also available for robots on MS-Gun sprayer. Round pattern allows less rotating movements of the atomizer, so less wear of robot wrist, high voltage cable and paint hoses.

MS-GUN FOR ACCUBELL 709 EVO:

This gun head can be fixed on ACCUBELL 709 EVO body for waterborne paint. This option gun head can replace the turbine, air shroud and bell cup.

Reference number is: 910006902

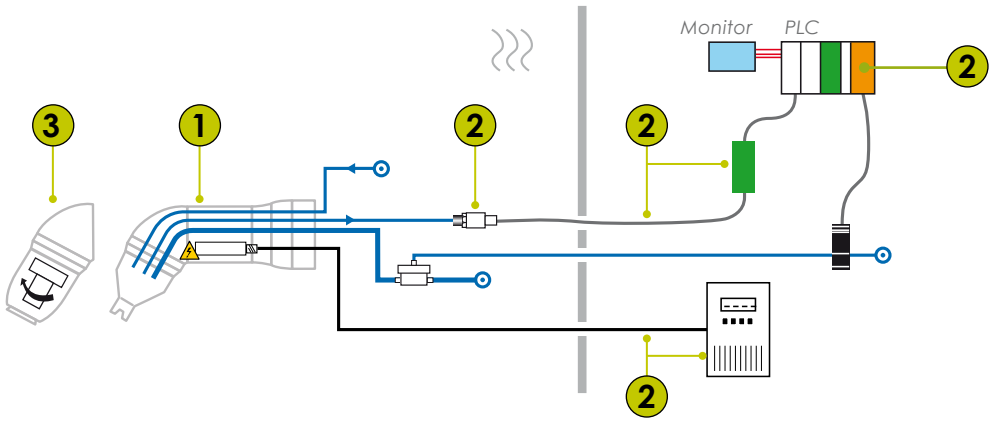
PPH 707 MS-GUN

CUSTOMERS' BENEFITS

Flexibility

- Validation of all the processes from outside the line by using only one set
- Reduction of the time necessary to the validation of the new shapes, paints and colors
- Reduction of the time for assembly/disassembly of configurations
- Use of only one equipment; reduction of the number of spare parts and maintenance costs

BUILD YOUR ATOMIZER



1 Mark 1

REFERENCE ATOMIZER PPH 707 MS-GUN	with Microphone with Coil
Atomizer	**910006755**
Body	910003414SAV
Microvalve type	1507375
Nanovalve type	1510004
High Voltage Unit UHT 157	910002870

2 Mark 2

Control module GNM200,
Low voltage connection 8m (Ref: 910004015),
Microphone or Optical fibre sensor

F/V converter	
Electric kit - 230 V	**910005297**
Electric kit - 110 V	**910016210**

Speed control module	
Electric kit - 230 V	**910005298**
Electric kit - 110 V	-

- **Not included :**
  - **Bellow and Air Shroud (refer to page 54)**
  - **Robot wrist adapters (contact SAMES)**

3 Mark 4

Description	Reference
Complete elbow assembly	**910004455SAV**

ATEX marking:

PPH 707 MS-GUN:

CE 0080 Ex II 2 G
EEx > 350 mJ
ISSeP05ATEX032X

PPH 707 EXT

Robotic sprayer for waterbased paint with external electric charge

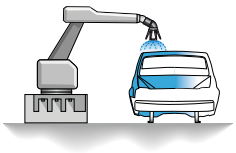
- High finishing quality
- High transfer efficiency
- Easy to integrate

- a few kΩ.cm water based paint
- full robot compatibility
- up to 0.9 m/sec.
- 7 kg
- up to 700cm²/min
- Dual Shaping air
- Magnetic Bellcup
- Up to 85 kV
- Up to 70 000 rpm

PPH 707 EXT external charge sprayer is dedicated to the application of waterbased materials. The performances of atomitzer and **components** are the **same** than the **PPH 707 SB** (dedicated to solvent paints); it is the benchmark in the area of automotive finishing with external charge thanks to its Hi-TE technology.

FIELD OF APPLICATION

Whichever the product, the operating modes may be:



Primer	✓
Base	✓
Clearcoat	-

PPH 707 EXT can be built-in into any type of multi-axis robot.

PPH 707 EXT

CUSTOMERS' BENEFITS

High Performance

- High rotating speed
- High voltage unit
- Hi-TE dual shaping air
- Dual circuit for fast color change

Flexibility

- Easy integrate waterborne process
- Wide or narrow pattern
- Bell/Bell quality
- Light weight for any painting robots

High Reliability

- Long life HVU (High Voltage Unit)
- 7 years/30 000h. warranty* turbine
- Titanium bellcup for longer life
- 2.5 million cycles life of valves

** Whichever is the sooner*

Easy to Maintain

- Magnetic bellcup fastening system
- Equipped with the new spraying system

Dual Pin technology, it's reduces extremely contamination.

- Quick disconnect
- Easy access to valves, fittings
- Specific body design preventing & dust or droplet
- No calibration tool required

Technological focus

- Dual pin: low contamination innovation

Safety

- Smart integrated HVU:
  fast energy discharge preventing any spark
- Remote bell monitoring device
- ATEX zone 1

Technical Data

Weight	PPH 707 EXT
Spare atomizer, without cable or hose	7 kg

Pneumatic supply	PPH 707 EXT
Nano-valve drive air pressure	8 bar mini (120psi) - 10 bar max. (150psi)
Magnetic turbine bearing air pressure	5 mini (75psi) - 7 bar max. (105psi) from 130 to 180 L/min
Shaping air pressure	6 bar (90psi) recommended on manifold
Micro air pressure	0.5 mini (7,5psi) at 1 bar maxi. (15psi) from 20 L/min to 40 L/min
Drive air consumption	10 Nl/min.
Magnetic turbine bearing air consumption	125 Nl/min.
Shaping air consumption (with respect to air shroud and bell being used)	From 100 to 600 Nl/min.
Turbine rotation air consumption	From 100 to 700 Nl/min.(1)
Safeguard air quantity	25 litres at 6 bar (90 psi)

(1): with respect to sprayed flow and rotation speed

Product supply	PPH 707 EXT
Standard product supply pressure	6 (90psi) to 8 bar (120psi)
Maximum product pressure	10 bar (150psi)
Paint flow (depending on paint type)	30 to 700 cc/min.(2) maxi.
Viscosity scale (for minimum results)	20 to 40 seconds FORD #4 Cup

(2): with a product density < 1.1 gr/cm3 and/or of the combination bell and air shroud being used

Performances	HVT
Rotation speed	15 to 70 000 rpm (upon diameter of bell cup used)
Application speed	up to 900 mm/sec
Color change	**PPH 707 EXT**
Paint consumption	25 cm^3 (paint circuit) & 25 cm^3 (pump circuit)
Rinsing product consumption	300 cm^3 (not included rinsing box)
Standard process time	10 sec (with REVERSE FLUSH)
Optimized process time	5 sec (with REVERSE FLUSH on circuit 1 & 2)
Same Color (head rinsing + bell cup)	**PPH 707 EXT**
Time	6 sec.
Rinsing product consumption	50 cm^3
High Voltage	**UHT 330 EEx e**
Voltage maxi.	85 kV
Current maxi.	500 µA

ATEX marking:

PPH 707 EXT:

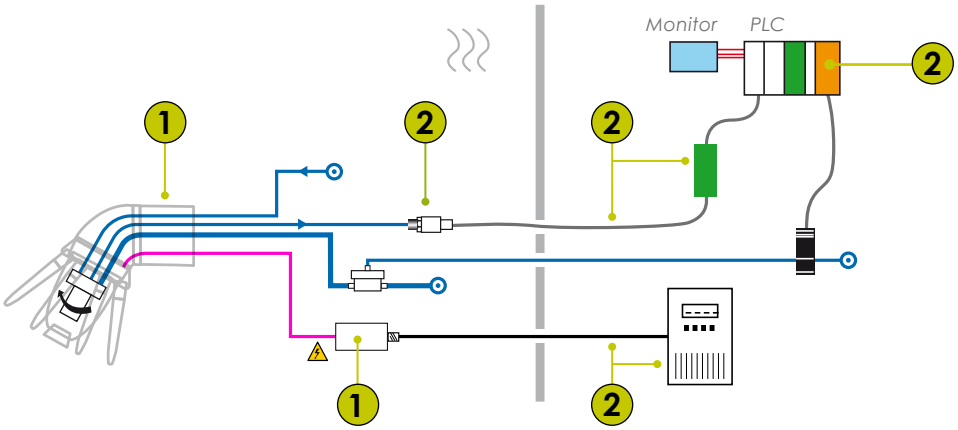
CE 0080 Ex II 2 G
EEx > 350 mJ
ISSeP06ATEX032X

GNM 200(3):

CE 0080 Ex II (2) GD
[EEx > 350 mJ]
ISSeP05ATEX032X
ISSeP06ATEX032X
ISSeP07ATEX001X

(3): This control module allows piloting the UHT 330. It is a device that is part of the configuration of the certified equipment and that contributes to its good working. It has to be installed into a non explosive area.

Build your Atomizer



1 Mark 1	REFERENCE ATOMIZER PPH 707 EXT
	with Microphone
Atomizer	**910118954**
Body	910008734
Microvalve type	1507375
Nanovalve type	1510004
High speed turbine	1525849
High Voltage connection (9m)	910008742
High Voltage Unit UHT 330	**910007139**

2 Mark 2

Control module GNM200,
Low voltage connection 8m (Ref: 910004015),
Microphone or Optical fibre sensor

F/V converter	
Electric kit - 230 V	**910014614**
Electric kit - 110 V	**910016209**

Speed control module	
Electric kit - 230 V	**910006062**
Electric kit - 110 V	**910009422**

- **Not included :**
  - **Bellow and Air Shroud (refer to page 54)**
  - **Robot wrist adapters (contact SAMES)**

ACCULOOK 707 SB & ACCULOOK 707 ICWB

Robotic sprayer for solvent or water based paint equipped with high speed rotary bell

- Ideal for the validations on Laboratory
- Flexible mounting sprayer

> 3 MΩ.cm or a few kΩ.cm

full robot compatibility

up to 1.2 m/sec.

8,9 kg SB
7,9 kg ICWB

up to 1000cm²/min

Dual Shaping air

Magnetic Bellcup

Up to 100 kV

Up to 70 000 rpm

ACCULOOK 707 SB is an atomizer with electrostatic internal charge dedicated to the application of the **solvent based paints**.

ACCULOOK 707 ICWB is for **water based paints**. ICWB means: internal charge water borne paint

The components of the **ACCULOOK** atomizer are **identical** to the ones of the **PPH707 SB**: turbine, beelcup, air shroud, high unit voltage.

The rear body is designed to fix to a robot but it can be easily modified to fix this atomizer to a machine or a reciprocator for paint laboratories.

Flexibility

- Performances and components similar to PPH 707-SB atomizer
- Total compatibility with the spraying heads of the Range 7

Technical Data

Weight	ACCULOOK 707 SB	ACCULOOK 707 ICWB
Spare atomizer, without cable or hose	8.9 kg	7.9 kg

Pneumatic supply	ACCULOOK 707 SB	ACCULOOK 707 ICWB
Nano-valve drive air pressure	8 bar mini (120psi) - 10 bar max. (150psi)	
Magnetic turbine bearing air pressure	5 mini (75psi) - 7 bar max. (105psi) from 130 to 180 L/min	
Shaping air pressure	6 bar (90psi) recommended on manifold	
Micro air pressure	0.5 mini (7,5psi) at 1 bar maxi. (15psi) from 20 L/min to 40 L/min	
Drive air consumption	10 Nl/min.	
Magnetic turbine bearing air consumption	125 Nl/min.	
Shaping air 1 and air 2 consumption (with respect to air shroud and bell being used)	From 100 to 600 Nl/min.	
Turbine rotation air consumption	From 100 to 700 Nl/min.(1)	
Safeguard air quantity	25 litres at 6 bar (90 psi)	

(1): with respect to sprayed flow and rotation speed

Product supply	ACCULOOK 707 SB	ACCULOOK 707 ICWB
Standard product supply pressure	6 (90psi) to 8 bar (120psi)	
Maximum product pressure	10 bar (150psi)	
Paint flow (depending on paint type)	30 to 1000 cc/min.(2) maxi.	
Viscosity scale (for minimum results)	20 to 40 seconds FORD #4 Cup	
Paint resistivity (solvant or water based paint)	> 3 MΩ.cm	a few kΩ.cm

(2): with a product density < 1.1 gr/cm3 and/or of the combination bell and air shroud being used

Performances	HVT	
Rotation speed	15 to 70 000 rpm (upon diameter of bell cup used)	
Application speed	up to 1200 mm/sec	
High Voltage	**UHT 157**	**UHT 288**
Voltage maxi.	100 kV	100 kV
Current maxi.	200 µA	500 µA

ATEX marking:

ACCULOOK 707 SB:
CE 0080 Ex II 2 G
EEx > 350 mJ
ISSeP05ATEX032X

ACCULOOK 707 ICWB:
CE 0080 Ex II 2 G
EEx > 350 mJ
ISSeP06ATEX032X

GNM 200(3):
CE 0080 Ex II (2) GD
[EEx > 350 mJ]
ISSeP05ATEX032X
ISSeP06ATEX032X
ISSeP07ATEX001X

(3): This control module allows piloting the UHT 157 or 288. It is a device that is part of the configuration of the certified equipment and that contributes to its good working. It has to be installed into a non explosive area.

Build your Atomizer

	REFERENCE ATOMIZER	
	ACCULOOK 707 SB with Microphone	ACCULOOK 707 ICWB with Microphone
Atomizer	**910005952**	**910007732**
Body	910005624SAV	910005624SAV
Microvalve type	1507375	1507375
Nanovalve type	1510004	1510004
High speed turbine	1525849	1525849
High Voltage Unit	910002870 (UHT 157)	910002864 (UHT 288)

• Not included :
- Bellow and Air Shroud (refer to page 54)
- Robot wrist adapters (contact SAMES)

ACCUBELL 709 EVO

Robotic sprayer for water based paint with internal electric charge

- Compact atomizer for all application
- Fast color change
- Low paint loss

ACCUBELL® 709 EVO can be built-in into any type of multi-axis robot.

- a few kΩ.cm waterbased
- full robot compatibility
- up to 1 m/sec.
- 15 kg
- up to 1000cm²/min
- Dual Shaping air
- Magnetic Bellcup
- Up to 90 kV
- Up to 70 000 rpm
- Paint flow accuracy +/- 1cc/min
- Color change 0-13cc loss 12 sec.

ACCUBELL® system is improving again performances and efficiency to a class-leading level for **water based paint** application with **internal charge**.

ACCUBELL® 709 EVO is a compact internal charge bell atomizer with a docking station fixed on the booth wall. Compared to previous generation of ACCUBELL® system, this atomizer still includes an insulated paint reservoir that allows:

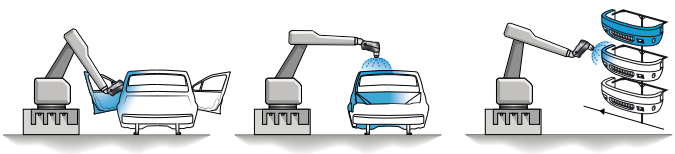
- loading the exact necessary paint quantity,
- applying the high voltage to the paint in the best efficiency technology internal charge,
- controlling with highest accuracy the paint flow rate
- freeing the robot arm from paint hoses.

During the gap between parts, the atomizer is connected to a filling station called «Docking» to transfer the necessary amount of paint for the next part or batch:

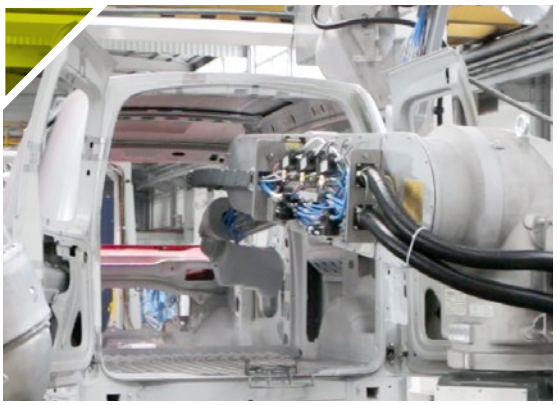
- Infinite choice of colours,
- Fast color change,
- Only one 800cm³ reservoir,
- Maintenance outside the booth
- No risk for paint during transfer

FIELD OF APPLICATION

Whichever the product, the operating modes may be:



Primer	✓	✓	✓
Base	✓	✓	✓
Clearcoat	-	-	-



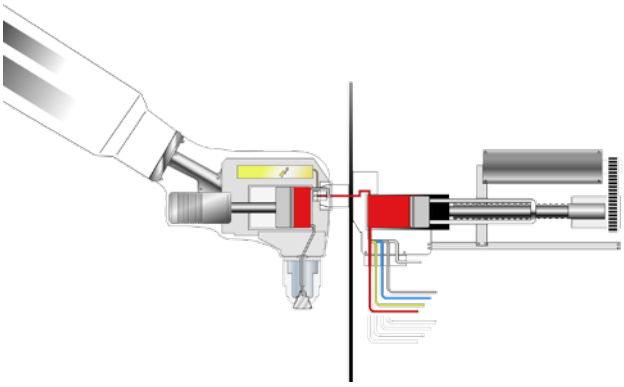
ACCUBELL 709 EVO

CUSTOMERS' BENEFITS

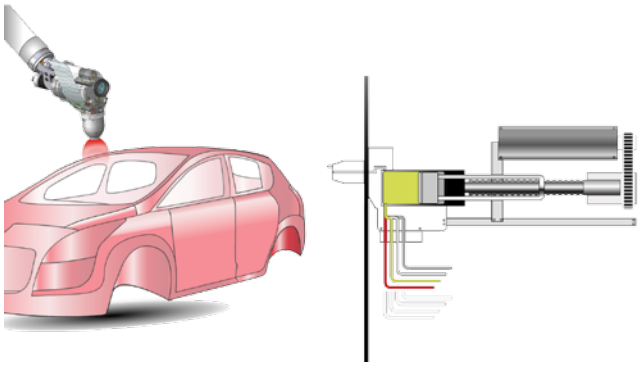
Fast color change

- During EVO painting, next color is filling the transfer tank

First phase:
a transfer tank, located in the docking station, fast fills with the exact amount of paint, into the tank of the atomizer



Second phase:
The atomizer sprays, while the transfer tank is preparing the next colour



- Transfer filling station: compatible with every existing paint circulating supply
- Color change block outside the booth
- 12 sec. color change
- Minimum paint loss:
  0cc for same color
  13cc for different color
- High accurate paint flow rate +/- 1cc/min equals -2% consumption vs gear pump.

Accubell 709 EVO is a compact internal charge bell with a docking station fixed on the booth wall.

Flexibility

This solution improves waterborne applications:

- Compact design for every type of application
- The internal charge atomizer gives a strong pattern, compatible with any tip speed, up to 1,000 mm/s
- Available Gun version (cf PPH MS-GUN)
- Available 2K version (contact SAMES)
- The internal charge bell repels the overspray, dramatically reducing contamination and the cleaning down time
- Double circuit for additional SB paint

Technical Data

Weight	ACCUBELL 709 EVO
Spare atomizer, without cable or hose	14 kg

Pneumatic supply	ACCUBELL 709 EVO
Nano-valve drive air pressure	8 bar mini (120psi) - 10 bar max. (150psi)
Magnetic turbine bearing air pressure	5 mini (75psi) - 7 bar max. (105psi) from 130 to 180 L/min
Shaping air pressure	6 bar (90psi) recommended on manifold
Micro air pressure	0.5 mini (7,5psi) at 1 bar maxi. (15psi) from 20 L/min to 40 L/min
Drive air consumption	10 Nl/min.
Magnetic turbine bearing air consumption	125 Nl/min.
Shaping air consumption (with respect to air shroud and bell being used)	From 200 to 850 Nl/min.
Turbine rotation air consumption	From 100 to 700 Nl/min.(1)
Safeguard air quantity	25 litres at 6 bar (90 psi)

(1): with respect to sprayed flow and rotation speed

Product supply	ACCUBELL 709 EVO
Standard product supply pressure	6 (90psi) to 8 bar (120psi)
Maximum product pressure	10 bar (150psi)
Paint flow (depending on paint type)	50 to 800 cc/min.(2) maxi.
Viscosity scale (for minimum results)	20 to 50 seconds FORD #4 Cup

(2): with a product density < 1.1 gr/cm3 and/or of the combination bell and air shroud being used

Performances	HVT
Rotation speed	15 to 85 000 rpm (upon diameter of bell cup used)
Application speed	up to 1000 mm/sec
Color change (head rinsing + bellcup)	**ACCUBELL 709 EVO**
Paint consumption	12 cm^3
Rinsing product consumption (3)	250 - 350 cm^3
Color change time	9.5 sec. + 1 sec. for 166 cm^3
Total colorchange time	14.5 sec. for 800 cm^3 filled
Refilling paint tank	**ACCUBELL 709 EVO**
Paint loss	0 cc
time	< 10 sec.

High Voltage	UHT 157 w	UHT 157 i
Voltage maxi.	90 kV	60 kV
Current maxi.	200 µA	200 µA

(3): standard cleaning cycle, depending on paint properties & solvent efficiency

ATEX marking:

ACCUBELL 709 EVO:

CE 0080 Ex II 2 G

EEx > 350 mJ
ISSeP05ATEX032X

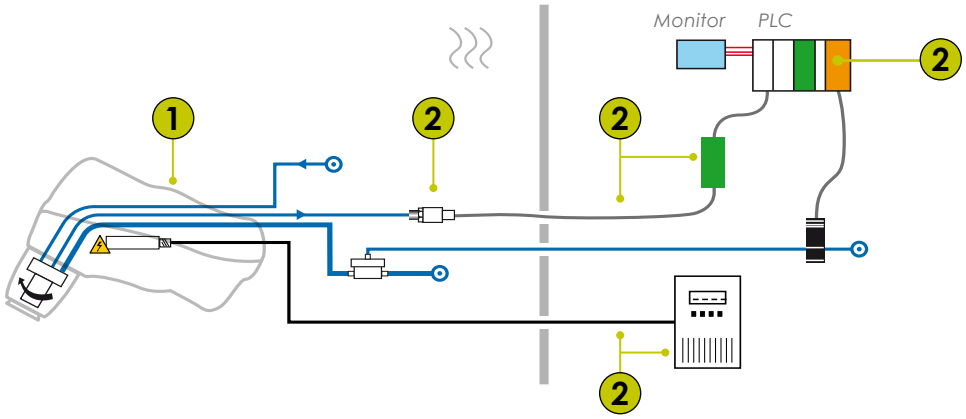
GNM 200(4):

CE 0080 Ex II (2) GD

[EEx > 350 mJ]
ISSeP05ATEX032X
ISSeP06ATEX032X
ISSeP07ATEX001X

(4): This control module allows piloting the UHT 157 W. It is a device that is part of the configuration of the certified equipment and that contributes to its good working. It has to be installed into a non explosive area.

Build your Atomizer



1 Mark 1

	REFERENCE ATOMIZER ACCUBELL 709 EVO	
	with Microphone	with Fiber Optic
Atomizer	**910010908***	**910010908FO***
Head assembly	910010900SAV	910010900FOSAV
Body	910010901SAV	910010901SAV
Wrist - Quick disconnect	910010899SAV	910010899SAV
Microvalve type	1507375	1507375
Nanovalve type	1510004	1510004
Moto	1523259-080	1523259-080
High speed turbine	1525849	1525849
High Voltage Unit UHT 157 / UHT 157**i**	910011910 / 910016744	910011910 / 910016744

2 Mark 2

Control module GNM200,
Low voltage connection 8m (Ref: 910004015),
Microphone or Optical fibre sensor

F/V converter		
Electric kit - 230 V	please contact us	please contact us
Electric kit - 110 V		

Speed control module		
Electric kit - 230 V	please contact us	please contact us
Electric kit - 110 V		

*: with UHT 157i, add «INT» on the reference number
(exmple: 910004013INT for PPH 707-SB with UHT 157i or 910004013FO becomes 910004013INTFO

- **Not included :**
  - **Bellow and Air Shroud (refer to page 54)**
  - **Robot wrist adapters (contact SAMES)**

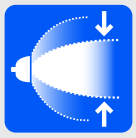
Range of bells & Air shrouds

For 35 years, Sames is focusing the design of bell cup and air shrouds on Finishing performances: improving atomization, pattern control and transfer efficiency. Being the latest part in contact with paint, the Bell cup is the key of your finishing performances.
Manufactured with the highest precision techniques used for Aeronautic and Aerospace industry, the bell cup is so well balanced that it can rotate to 100 000 rpm with its high speed turbine (HVT).

The interior shape of these cups have been carefully validated for each paint layer, and Sames equipments are used with every paint supplier in the world. Our Paint lab are available to validate your complete paint process with our latest equipments.

Uniform & stable pattern for the whole variation range of paint spraying

Highest transfer efficiency reduction by more than 30% of product losses



variable patterns during spraying proess, while guarantying the sturdiness of the pattern range with swift transitions

Working more quickly up to 1m/sec

The insurance of the best finishing quality, color-match index IV, the highest

FIELD OF APPLICATION

Four different diameters are available: ø35, 50, 65 and 80 mm enabling to reach the target application result. Sprayer bells are easily swaped thanks to a simple tool. «EC» range distinguishes itself by a tulip-shape bell; the "EX" shape, for Exponential, is now also available with 80mm cup.
Each bell is thus combined to an air shroud with Vortex effect or with the **HI -TE technology (High Transfer Efficiency)**.

EC35 perfectly meets the application requirements of car body interiors (cut-ins…).
In Tier 1, this small diameter, enables a thorough penetration of recesses as the spray pattern is narrowed; for primer, base or clear application.

EC50 is ideal for the car body exteriors in primer, base in 1st coat and clear. In Tier 1, it meets the requirements in primer, base and clear.

EX65 works well for bumper, in particular to base coats and more precisely to an improved colour- match with Bell/Bell process. Combined to External charge PPH 707 EXT, this bell suits to basecoat exterior carbody application.

EX80 is exclusively dedicated to exterior car bodies, in particular to base coats and more precisely to an improved colour- match with Bell/Bell process.

EC 35 Hi-TE NW

EC 50 Hi-TE NW

EC 50 Hi-TE PSW

EC 50 Hi-TE CSW

EX 65 Hi-TE

EX 80 Hi-TE BSW

VX: Vortex air
Hi-TE: Vortex air + Straight air
PSW: Primer Super Wide

BSW: Basecoat Super Wide
CSW: Clearcoat Super Wide
EXT: for External electric charge

NW: Narrow Wide

Range of bells & air shrouds

CUSTOMERS' BENEFITS

Performances:

- High transfer efficiency with Hi-TE
- Technology of mixing straight and vortex airs
- Two technologies of air-shroud:

NW for flexible pattern from 100 to 300mm;
SW for super wide pattern 400-500mm

- Less shaping air consumption compared to competition
- All paints: High solid solvent or waterborne paint, 1K or 2K
- All applications: Primer, Base, Clear
- High voltage gives benefits for transfer efficiency and quality: homogeneous spray, wrap around effect, stable application.

Easy to use:

- Unique design of magnetic bell cup
- Smooth surface easy to clean
- Automatic bell cleaning machine available

Application:

Hi-TE nw

Narrow pattern

On the edges and the small surfaces = Less paint outside the target

very swift transition

Wide pattern

On wide surfaces = Reduction of spraying times

Hi-TE ....SW

Super Wide pattern

On wide surfaces = Reduction of spraying times

Widened front profile of the bell, optimized for a better atomization.

Narrow front face, reducing pollution while spraying.

A shroud composed of pairs of combined airs on a similar diameter.

PATENTED

EX65

PATENTED

EC50

Range of bells & air shrouds

BELL CUP SYSTEM

Atomizer equiped with **INTERNAL CHARGE**

Description		Bell Material	Reference
EC 35 Hi-TE NW	1 - system		**910020612**
	2 - Shaping air		910020606
	3 - Bell cup	Aluminium	910000636
	1 - system		**910020613**
	2 - Shaping air		910020606
	3 - Bell cup	Titanium	910011188
EC 50 Hi-TE NW	1 - system		**910020610**
	2 - Shaping air		910020605
	3 - Bell cup	Aluminium	910003159
	1 - system		**910020611**
	2 - Shaping air		910020605
	3 - Bell cup	Titanium	910008756
EC 50 Hi-TE PSW	system		**910015776**
	Shaping air		910015761
	Bell cup	Aluminium	910003159
	system		**910015777**
	Shaping air		910015761
	Bell cup	Titanium	910008756
EC 50 Hi-TE CSW	system		**910015780**
	Shaping air		910015763
	Bell cup	Aluminium	910003159
	system		**910015783**
	Shaping air		910015763
	Bell cup	Titanium	910008756
EX 65 Hi-TE	system		**910008511**
	Shaping air		910008535
	Bell cup	Aluminium	910004615
	system		**910010196**
	Shaping air		910008535
	Bell cup	Titanium	910009383
EX 80 Hi-TE BSW	system		**910014659**
	Shaping air		910013214
	Bell cup	Titanium	910012705

PSW: Primer Super Wide, BSW: Basecoat Super Wide
CSW: Clearcoat Super Wide,
VX: Vortex air, Hi-TE: Vortex air + Straight air
EXT: for External electric charge

Atomizer equiped with **EXTERNAL CHARGE**

Description		Bell Material	Reference
EX 65 Hi-TE EXT	system **BELL SERRATED**		
	Shaping air		910013133
	Bell cup	Aluminium	910004615
	system **BELL NOT SERRATED**		
	Shaping air		910013133
	Bell cup	Aluminium	910008549

Choose your bell

CHARACTERISTICS

	EC35 Hi-TE NW EC50 Hi-TE NW	EC50 Hi-TE PSW EC50 Hi-TE CSW	EX65 Hi-TE	EX80 Hi-TE BSW
Robot speed	up to 1200 mm/sec.			
Paint flow	100 to 600 cc/min	200 to 750 cc/min	100 to 350 cc/min	150 to 850 cc/min
Impact diameter	100 to 300 mm	300 to 500 mm	300 to 350 mm	300 to 500 mm
recommended for	• Optimized for coating narrow surfaces and difficult recesses	• CSW (Clear coat Super Wide) for the clear coat application • PSW (Primer Super Wide) version is recommended for the primer application	• Optimized for the BELL/BELL process • High performance on color-match • Very useful for metal base application	• BSW (Base coat Super Wide) version is recommended for the Base coat application

The values of parameters given below are indicative

PARTS TO BE PAINTED

	Type of paints	Hi-TE Technologies Internal charge	 External charge
Exteriors **(Large surfaces, hoods, roofs, wings, doors ...)**	Primer	**EC50 Hi-TE PSW**	**EX65 Hi-TE EXT**
	Basecoat 1	**EX80 Hi-TE BSW**	**EX65 Hi-TE EXT**
	Basecoat 2	**EX80 Hi-TE BSW**	**EX65 Hi-TE EXT**
	Clearcoat	**EC50 Hi-TE CSW**	-
Interiors **(Cut-ins, rocker panels, motors ...)**	Primer	**EC35 Hi-TE NW**	-
	Basecoat 1		-
	Clearcoat		-
Bumpers	Primer	**EC50 Hi-TE NW**	-
	Basecoat 1		-
	Basecoat 2	**EX65 Hi-TE**	-
	Clearcoat	**EC50 Hi-TE NW**	-

The technologies are only for advise, paint tests could conclude to alternate solution

Immersion washer for bell cups and shaping air assemblies

The washer is designed to clean the bell cups and shaping air shrouds of all SAMES atomizer.

- Save cleaning time
- Easy to use
- Compact design

This device allows a swift and thorough cleaning of the air shrouds and bells. Its use is easy and guaranties a complete and perfect cleaning in a minimum of time.
Ergonomic, this device has been designed to simplify its use.
The machine allows cleaning in masked time up to twelve air shrouds and bells.
Compact and assembled on casters, this set perfectly fit into your maintenance hall.

CUSTOMERS' BENEFITS

Easy to use

- It provides thorough cleaning, in concurrent time, for up to twelve bell cups or air shrouds, arranged in pairs.
It requires only standard compressed air and solvent.

- The automatic system protects the health of the operators:
• no risk of solvent inhalation that are noxious with prolonged exposures.
• no risk of injury during handling for a manual cleaning.

- Longer service life of maintained bells and air shrouds.
Possible re-use of the rinsing product that is filtered for several cycles.

Compact design

- With its compact, light and movable design, this set is easily moved on its casters. The wash' up is not noisy; it requires only a minimum maintenance and its use has been simplified at its maximum, only two buttons: switch on/off and washing time setting.

Save cleaning time

- Important capacity with the possibility of cleaning simultaneously up to twelve bells (possible combination of bells of different diameters) or twelve air shrouds.

- Cleaning in masked time during production to have permanently clean bells and air shrouds at your disposal.

Immersion washer

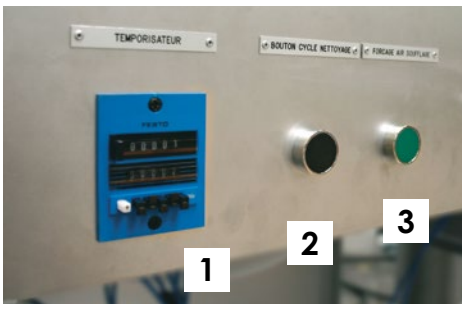
WORKING PRINCIPLE

This device is composed of:

- A frame holding a stainless steel tank to place the shrouds.
- An on/off press-button that ensures the general cut of the system.
- A timer **(1)** that sets the cleaning cycle time.
- A press-button **(2)** to start the cycle.
- A control **(3)** to force blowing air.
- A gauge that gives the air flow pressure.
- A dump valve to dump the solvent.

Once having assembled the shrouds and bells on to their dedicated support and placed the support set in its housing at the bottom of the bath, fill in the tank with solvent to completely cover the bells and shrouds (approx. 25 litres). Set the cleaning time thanks to a timer (from 0 to 120 min) with respect to the level of dirtiness of the shrouds. After immersing the shrouds within the cleaning solution, batches of pressurised air and solvent are sprayed upon shrouds surfaces and within the holes. The action of the pressurised air and solvent sprays triggered in turn allow an unclogging and efficacious elimination of paint deposits.

Once this operation is over, a dump valve allows emptying the solvent from the tank. Possibility of re-using the solvent thanks to two filters which ensure a constant cleanness of the bath.



Holder set for bells

Holder set for air shrouds

REFERENCES

Description	Capacity and Type	Reference
Immersion washer		910001851SAV
Holder assembly for	magnetic bell cups	910004800
	shaping air assemblies	910004815

Both holder sets are not included in the machine, contact-us

TECHNICAL DATA

Dimensions: H x L x D	1120 x 980 x 470 mm
Net weight:	approx. 100 kg
Capacity:	up to 12 shrouds (assembled by pair) or 12 bells (assembled by pair) washed simultaneously
Average cleaning time:	80 min (from 30 to 120 min)
Air supply:	standard air network at 6 bar (90psi), quick coupling 1/2''G
Electrical supply:	220 V (50/60 Hz)
Standards to be met:	Installation and use instructions are mentioned within our User's Guide

ATEX marking:

CE Ex II 2 G c T6

Technical file:
Automatic cleaning machine
for bells and air shrouds

Rinsing Box

Automatic cleaning system of the spray head

Sames «rinsing box» allows the automatic cleaning of the pollution outside the atomizer, drying this latter, and then draining the used material during rinsing as well as the wastes from eliminated paints. It is specially designed for atomizers like ACCUBELL and PPH models, that can be equipped with all the existing types of bells : ø35 mm, ø50 mm, ø65 mm or ø80mm.

The system thus allows a thorough cleaning at the level of the atomizer tip.

This tool perfectly fits into paint lines to optimize the quality of application, the maintenance process and the cleaning cycles.

CUSTOMERS' BENEFITS

Production increase

- This system guaranties a working time increase of the atomizers between manual cleaning phases: stopping for an operator's intervention is no longer required and the line can go on producing for a longer time. With respect to both applied paint and process, the operator synchronizes the rinsing cycles of the working atomizer.

Reduced maintenance

- With an automatic cleaning of the spraying head, production stops necessary to the interventions are drastically reduced; the cleaning quality is better ensured.
- It allows reclaiming all the materials used for cleaning. Customers can thus pride themselves on protecting the environment from polluting materials avoiding for instance the wastes into the gratings.

This function is optional

- An air/material separator has to be installed. With a cyclonic effect, this separator is located between the box output and the venturi, thus creating an aspiration. This allows separating the air flow from the liquid materials that are then reclaimed into a dump collector.

Rinsing Box

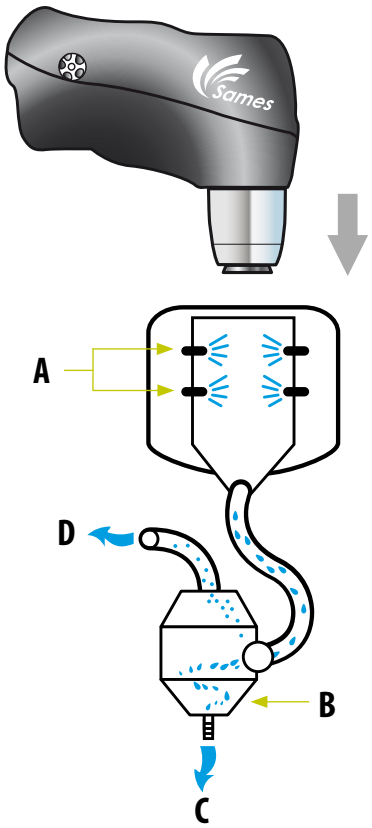
DESCRIPTION OF THE SYSTEM

The whole unit is assembled onto a frame within the booth and has to be absolutely placed into a ventilated area. There are numerous usages of the box:

1 – Automatic cleaning of the shroud nozzle as well as the bell in order to avoid dirt build up due to the overspray that then generates spraying of grains.

2 – Drying of the outer part of the atomizer

3 – Reclaim of the rinsing material.



A: Rinsing and blowing discs
B: Air/material separator (option)
C: Material flows towards a collector (separation rate between B and D superior to 90%)
D: Air flow exhaust towards the venturi

TECHNICAL DATA

Supplies	Recommended pressure	Recommended flow
Air rinsing disc	6 bar (90psi) ± 0.5 bar (7,5psi)	200 at 400 Nl/min.
Material rinsing disc	6 bar (90psi) ± 0.5 bar (7,5psi)	2000 cc/min.
Air blowing disc	6 bar (90psi) ± 0.5 bar (7,5psi)	350 Nl/min.
Air Venturi	6 bar (90psi)	700 at 800 Nl/min.

ATEX marking:

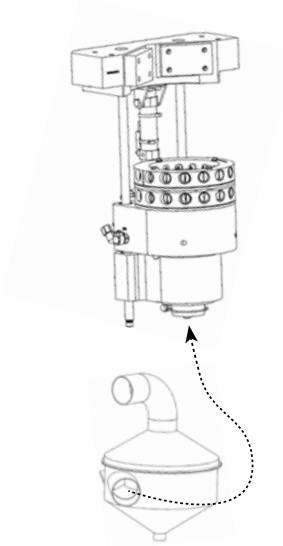
CE Ex II 2 G Ex ia IIC T5
II 2 G c T5

Type: BDR
Dossier technique: BDR

RINSING BOX

Description	Type of bell	Reference
Rinsing box	35mm	910016391
	50 mm	910015675
	65 mm	910016392
	80 mm	910016393

Description	Reference
Air/material separator (option)	900002487



The separator has to be fixed horizontally and lower than the rinsing box, do provide for a correct down-flow slope and avoid all the low points. Place the venturi (ref: 900002578) at the nearest of the cover outlet, and for a maximum efficiency, the connection sheath (ø63.5 mm, ref: F6TCAL044, lg: 1metre) between the box and the separator has to be the shortest as possible.

Microphone

The microphone sensor is designed for the reading of the turbine rotation speeds of all the SAMES sprayers.

The principle of rotation speed reading is acoustic-based. An air arrives at the level of the bell; it is guided by a groove and directed at each turbine revolution to create a pressure variation that flows up to the sensor. This signal is then converted into electrical variations in order to adjust the bell rotation speed.

POSSIBLE UNIT CONFIGURATIONS

There are two possible uses to regulate the bell rotation speed.

- Either thanks to a speed regulation card (diagram 1) allowing then acting on the transducer to drive the turbine rotation air;
- Or by converting the sensor frequency into voltage towards a PLC (diagram 2). The minimal air hose length (Out) to the sensor is of 4.5 m with a requisite air pressure comprised between 1.9 and 3 bar. For an extension of this hose, increase the sensor inlet pressure by 0.4 bar per 30 cm. The maximal recommended length is of 8 m.

M : microphone sensor
B : air super-charger
VP : transducer
In : air inlet inside the sprayer
Out :air outlet towards the micro sensor
AR : turbine rotation air
AL : supply card
SC : speed regulation card
MO : monitor
CFU : frequency/voltage converter
PLC : programmable logic controller
MA : combined equipment, installation in non-explosive area
BZ : Zener isolation device

diagram 1

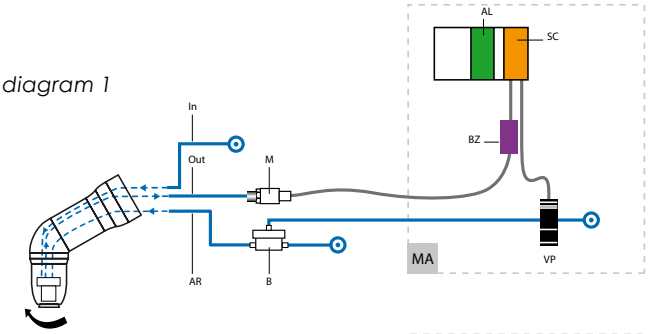
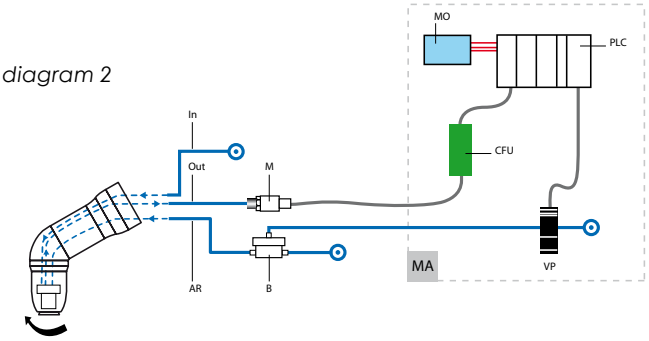


diagram 2



CUSTOMERS' BENEFITS

Longer service life

- Pneumatic hose through the robot arm and not through a cable (torsion, numerous movements ...)

Simple and reliable

- The connecting components are not sensitive to the dirt (paint)
- Pneumatic signal not influenced by electrostatic phenomena or CEM (electromagnetic compatibility)
- 100% compatible use with high voltage (breakdown, creeping ...)

Optical fibre

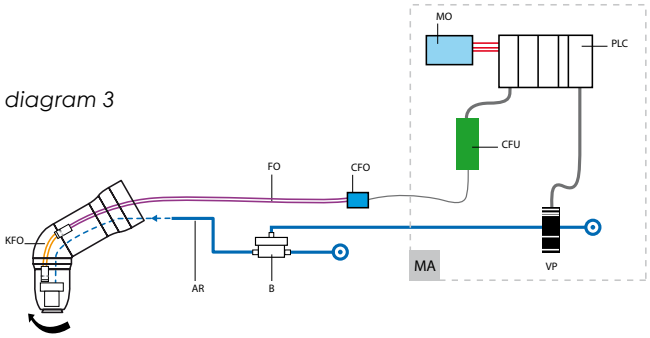
The turbine rotation speed reading system can also be carried out by optical fibre. This solution is possible with the new range 7 of SAMES sprayers.

The reading of the turbine rotation speed is made thanks to a **fibre optics** principle. An «optical fibre Kit» unit (refer to *diagram 3*, **KFO**) includes the sprayer elbow.

One of both fibres emits a continuous luminous signal that reflects itself on the turbine shaft in a discontinuous signal of which frequency gives the rotation speed (2 luminous pulses/turbine revolution). This discontinuous signal is transmitted by the second fibre towards the optoelectronic converter (refer to *diagram 3*, **CFO**), thanks to an optical fibre kit of 8-m long (refer to *diagram 3*, **FO**). The electrical-pulse signal at converter outlet is recovered and analysed by the converter system Frequency/Voltage (**CFU**).

At a 65000 rpm rotation speed, the frequency will be at 2.16 kHz.

diagram 3

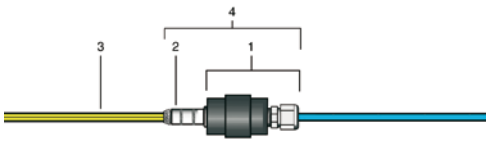


KFO: Optical fibre kit
FO: Fibre kit (8-m long)
CFO: Optical fibre sensor (converter)
B: air super-charger
VP: transducer
AR: turbine rotation air
MO: monitor
CFU: frequency/voltage converter
PLC: programmable logic controller
MA: combined equipment, installation in non-explosive area

MICROPHONE SENSOR

Description	Mark	Type	Reference
Assembled microphone sensor	1	Europe	851 488(A)
		US	459 881(B)
3-contact plug	2	EU/US	E4P TFS 195
Electrical cable (2 x 0.34mm2)	3	EU/US	E2H AAB 034
Microphone sensor plug + cable + fixation support	4	EU/US	1 522 885(C)

(A): air connection for an ext. ø6 hose (ref: F6R PUK 316) - 1/8'' BSP
(B): air connection for a ø1/4 hose (ref: F6R PUQ 210) - 1/8 NPT
(C): cable length = 20 metres and delivered with the 2 types of pneumatic fittings



ATEX marking:

Microphone

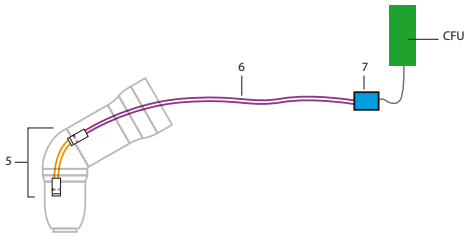
CE Ex II (2)/2 GD
EEx SYST (ia IIB T4 - T135°C)
INERIS05ATEX007X

F/T converter

CE 0080 Ex II (2) GD [Ex ia] IIC [Ex iaD]
INERIS 04ATEX0086

OPTICAL FIBRE

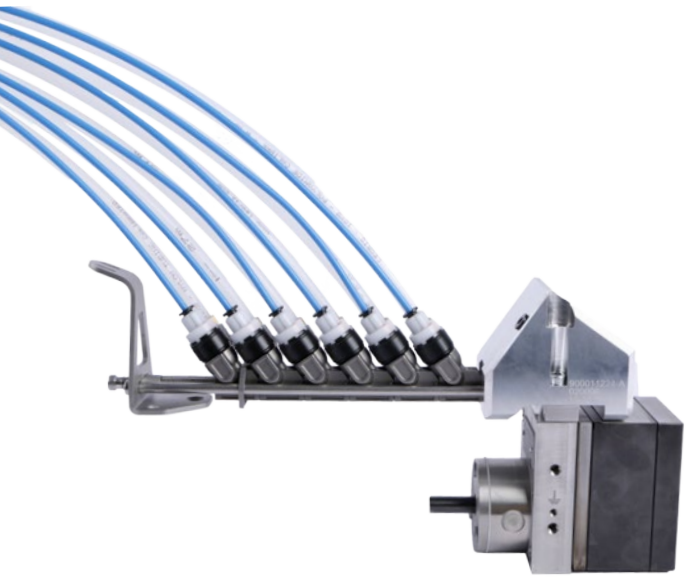
Description	Mark	Type	Reference
Optical fibre kit in the elbow	5	PPH 707-SB elbow	910 005 173
8-m fibre kit	6		910 005 172
Optical fibre sensor	7		110 000 846AT



SPEED REGULATOR

Description	Mark	Use	Reference
Freq/voltage converter	CFU	HVT	1 525 628
Transducer	VP		R3V VPR 230
DP50 3/8 Air booster	B		220000331
Speed regulation card	SC	HVT (BSC100)	220 000 010

PAM: turbine (45K rpm) used with the ACCUBELL 608 atomizer



UPside CCV

Color change block

- Lightweight design
- Easy maintenance
- Flexible assembly

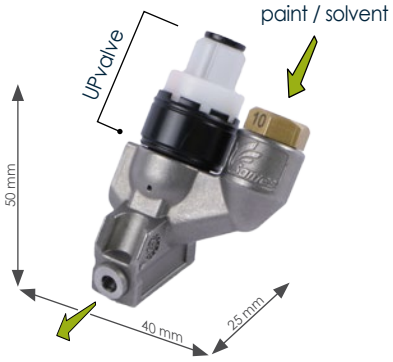
UPside CCV is the universal robotic color change block. The compact and modular design gives several solutions to integrate on robot arms.

Innovations are in every parts: stainless steel modules, **new UPvalve**, compact fittings, oriented hoses for easy integration, integrated regulator.

PATENTED

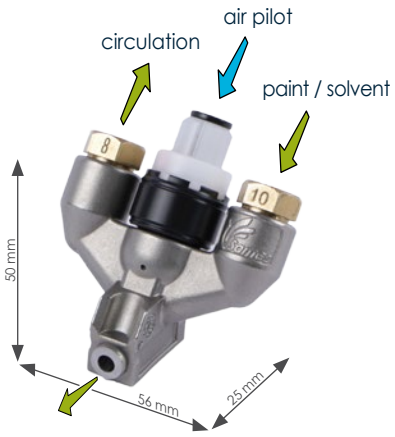
2 MODULES:

UPside CCV without return



Based on microvalve technology, UPvalve has its air pilot fitting included on its TOP.

UPside CCV with return



This module is more compact than market CCV.

FIELD OF APPLICATION

- Car body interiors
- Door cut-ins
- Rocker panels
- Penetration in hollow body (dead areas...)
- Any type of openings (ventilation louvers on bumpers...)
- Metallic base coat: 2nd base coat with Bell/Gun process
- Bumper

MATERIAL HANDLED

TECHNICAL DATA

Weight	
Upside CCV with return equipped with 1 valve & 2 ø8/10 fittings	101 g
Upside CCV without return equipped with 1 valve & 1 ø 8/10 fitting	78 g
Air pressure	
Valve pilot	6 bar (90 psi) - 10 bar (150 psi)
Paint	
Orifice diameter	ø 4 mm
Operating pressure	0 bar (0 psi) to 20 bar (3000 psi)
Viscosity solvented paints	20 to 50 seconds - FORD cup#4
Viscosity waterborne paints	200 mPa.s at $250s^{-1}$
Body material	Stainless Steel

Applicable Tubing

ØI.D x ØO.D.
3 x 6
4 x 6
5 x 8
6 x 8
7 x 10
8 x 10

For fractional dimension of hose, contact us

ATEX marking:
UP SIDE CCV:
CE Ex II 2 G c T4

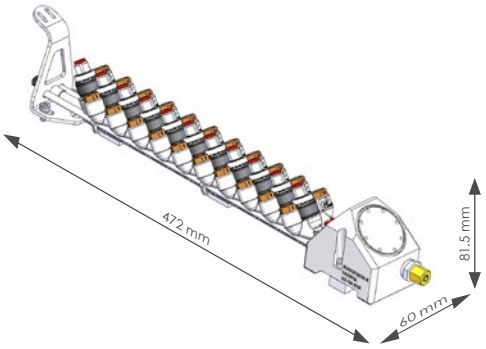
Customers' benefits

Robotic design

- Lightweight design:
78g per color including fitting (52% lighter)
- Compact size: 30% less volume
- Oriented fittings:
reduces space requirement
- Robust design:
metal-in-metal fittings and valve seats

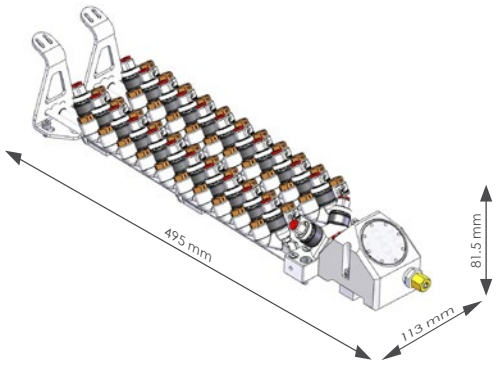
In line [12 COLORS]

One line, each module equals one color



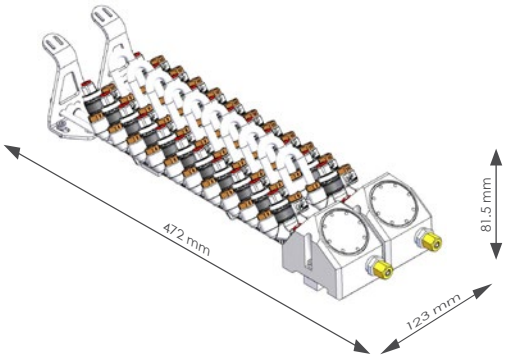
Switch [24 COLORS]

For low paint loss and compactness choose «SWITCH» module minimizing paint volume. Recommended if more than 12 colors.

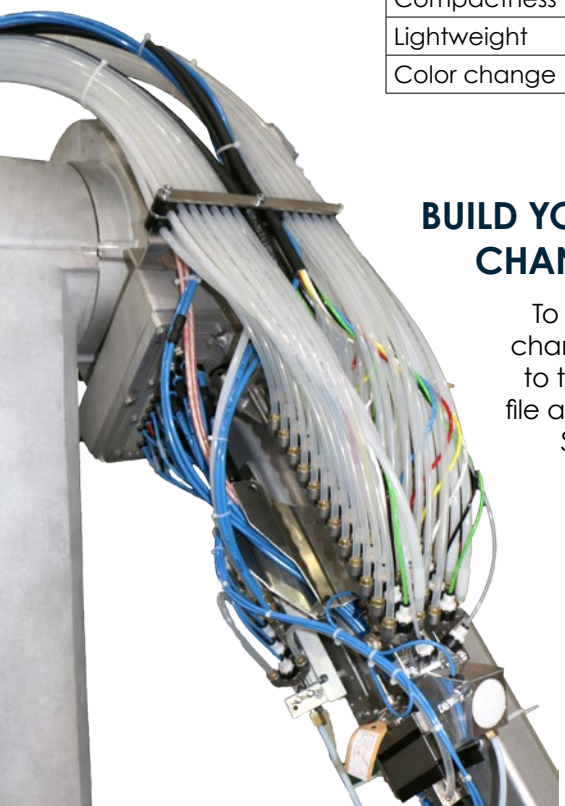


Double circuit [12 COLORS]

During painting with 1st circuit, the 2nd one prepares the next color for a very fast color change combined with PPH707 double circuit.



COMPARISON	In Line	Switch	Double circuit
Compactness	+	+ + +	+ +
Lightweight	+ + +	+ +	+ +
Color change	+	+ +	+ + +



BUILD YOUR COLOR CHANGE BLOCK

To build your color change block, refer to the configurator file available at your SAMES contact.

Easy to use

- Plug & use modules, including fittings
- Direct access:
all fittings and valves located on one side
- Easy to clean CCV + Regulator + Pump:
low solvent consumption
- Dedicated tool kit

Flexibility

- One color = One module
- Adapts to every robot arm
- Included recirculation feature
- Remote or integrated regulator
- Backward or forward rinsing direction

Reverse Flush

Solution for optimization of the paint line rinsing system

Reverse Flush is a block that **allows dumping and rinsing** the material supply system without going through the sprayer.

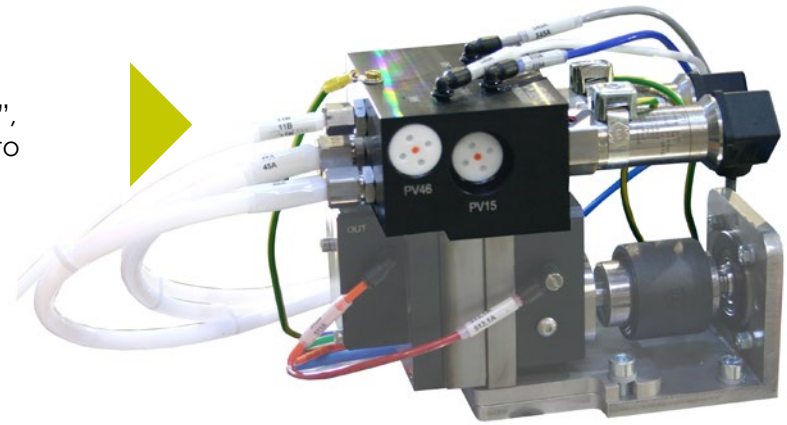
Reverse Flush comes in 2 versions, reomte and built-in; it can be installed within all the paint unit configurations: It will depend on the distance between the pump and the sprayer.

REMOTE REVERSE FLUSH BLOCK

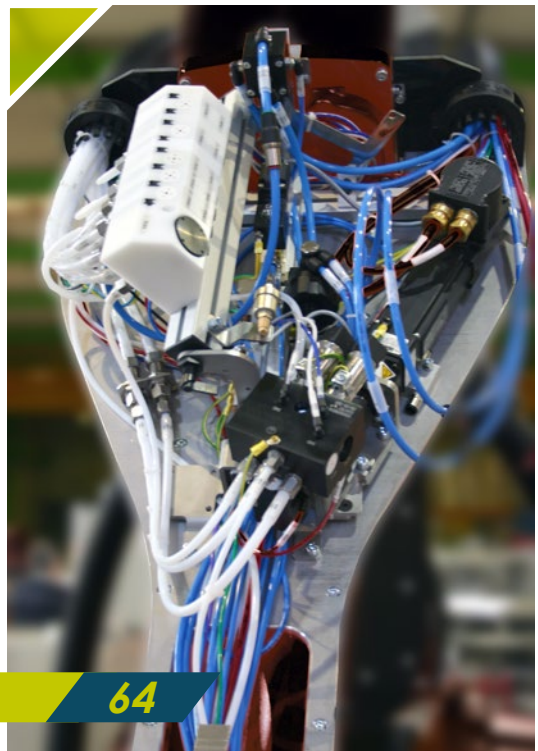
When the pump is to be placed far away from the sprayer (distance > to 1.5 m) as in the case of the « Slim Arm » on which no pump can be assembled, then the so-called "remote" reverse flush block is used and is ideally placed at a distance comprised between 1 to 1.5 m from the sprayer.

BUILT-IN REVERSE FLUSH BLOCK

When the pump is placed close to the sprayer (distance < to 1.5 m) as in the case of the "Process Arm", then the reverse flush block is directly assembled onto the pump. The reverse flush block called "built-in" is used. This configuration is optimal with a simplified installation.



Process arm



- DECREASE OF RINSING TIME AND COLOR CHANGING TIME
- RINSING MATERIAL SAVING
- PAINT SAVING
- PRODUCTIVITY INCREASE
- UPDATING OF EXISTING INSTALLATION
- REDUCED BULK OF THE EQUIPMENT
- REINFORCED SAFETY

Reverse Flush

CUSTOMERS' BENEFITS

High Performance

- The dump hose always remains clean and dry, thus high voltage return is not possible = reinforced safety
- The pump is kept apart from the material circuit, thus rinsing is easier and is carried out in masked time:
More over, pump and sprayer rinsing can be carried out independently = Cycle time decrease and solvent saving.
- The block is close to the sprayer thus allowing a smaller product hose diameter (Dia.: 4 mm instead of 5mm) = Paint saving.
- The pump priming with circuit 2 during the end of the spraying of circuit 1 becomes possible = Cycle time decrease and color change time decreased.
- When the paint circuit is equipped with long lengths of hosing, the block can be placed any where on the paint circuit to cut the circuit, thus allowing dissociating the rinsing of both parts = Optimization of rinsing times.

EXAMPLES OF INSTALLATIONS THAT HAVE BEEN ASSEMBLED:

The Reverse Flush block can be installed with any type of sprayer in internal charge version (solvent based paints) or external charge (water based paints), single or dual circuit, equipped with:
• a trigger valve and
• a dump valve
Ex: PPH 707-SB, PPH 707-MS-GUN, ...

1 **Single circuit** sprayer: pump placed at 1.5 m from sprayer => **Built-in Reverse Flush** block: The reverse flush allows decreasing the cycle time from 18 to 15 sec; i.e.: **16% saving on color change time.**

2 **Single circuit** sprayer: pump placed at 5 m from sprayer => **Remote Reverse Flush** block: The reverse flush allows decreasing the cycle time from 29 to 21 sec; i.e.: **27% saving on color change time.**

3 **Double circuit** sprayer: pump placed at 1.5 m from sprayer => **Built-in Reverse Flush** block: The reverse flush allows decreasing the cycle time from 14.5 to 5 sec; i.e. **62 % saving on color change time !**

4 **Double circuit** sprayer: pump placed at 5 m from sprayer => **Remote Reverse Flush** block: The reverse flush allows decreasing the cycle time from 26 to 7 sec; i.e.: **80 % saving on color change time !**

Note: These values depend on the characteristics of the installation (hose diameters, type of material...)

CHARACTERISTICS

Working pressure	Pressure
Rinsing material (bar)	5.5 (82,5psi) - 6 (90psi)
Rinsing air (bar)	5.5 (82,5psi) - 6 (90psi)
Material supply (bar)	5.5 (82,5psi) - 6 (90psi)

CE Ex II 2 G c T6
Type: REVERSE FLUSH
Technical file: BLOC PV

REFERENCES

Description	Version	Reference
Reverse Flush Block	Remote	910 007 340(1)
	Built-in	910 007 773(2)

(1): The four fittings are included into the remote reverse flush block
(2): The four fittings are not included into the block reference: Please, consult SAMES

Fast Clean Gear pump

Flow management

The gear pump is used for the supply of liquid paints, either solvent or water based, for all SAMES automatic sprayers.

- Accurate dosing
- Compact design
- Fast clean technology

RANGE

This type of pump comes in 3 capacities defined by the number of cm3 per revolution:

- 3 cm3 / rev
- 6 cm3 / rev
- 10 cm3 / rev

These different capacities allow covering a flow bracket from 0.5 to 80 L/hour.

The choice is made with respect to the target flow and the rotation speed bracket. It is recommended to run at less than 80 rpm.

The gear pump ensures a paint **flow** that is proportional to its rotation speed. Its use ensures a **regular** and **accurate** flow. The pump has to be supplied with a material at 0.5 bar pressure. In the case of a distribution system, the material pressure regulator is to be connected before the pump, whereas a flow meter is always connected after the pump. Upstream pressure facilitates priming but also ensures the flow corresponding to the capacity and speed of the pump.

TECHNICAL DATA

FCG pump

CAPACITY		3 cc	6 cc	10 cc
Dimensions (mm)	Length	173	183	197
	Height	85	85	85
	Width	60	60	60
Weight (kg)		1.91	2.1	2.88
Max. pressure		15 bar		
Rotation speed (RPM)		10 to 80		
Accuracy in normal conditions[1]		± 2 %		
Pilot air supply (mm)		Ø2.7 x 4		

(1): 30-80 rpm, rinsing viscosity 25 sec. DIN4, ΔP ± 2 bar

ATEX marking:

F.C.G. 3cc or F.C.G. 6cc or F.C.G. 10cc,

CE Ex II 2 G c T4

Technical file: Gear pump

Fast Clean Gear Pump

CUSTOMERS' BENEFITS

Long life pump

- Low wearing parts
- Stainless steel ADLC
- Cleaning helps to lubricate rotating parts

Efficient cleaning process

- Fast clean of every rotating parts
- Shunt block rinse gears (teeth and axles)

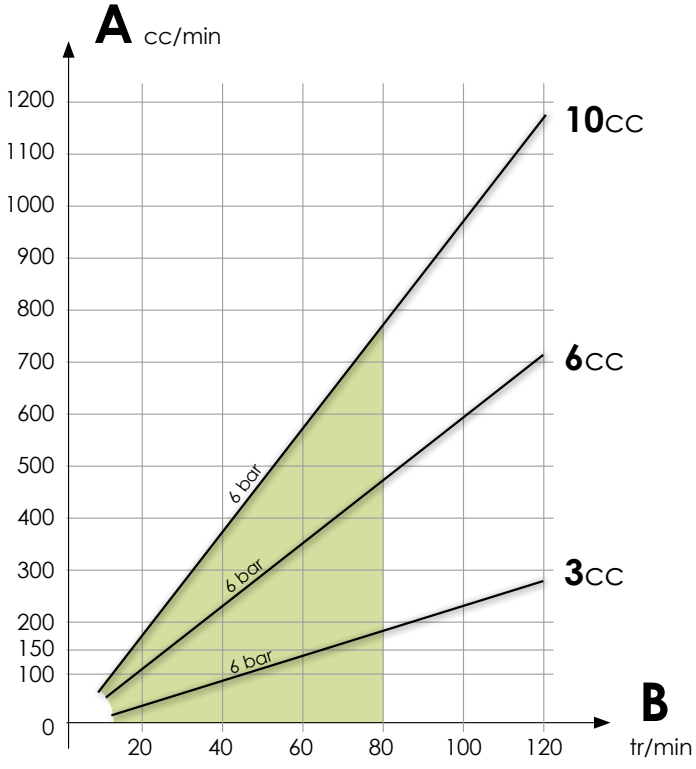
Compatibility

- Can replace Easy Rinsing Pump:
  - same interface with motor
  - same interface with regulators
- UPvalve for shunt block

Robust design

- Long know-how gearpump design
- Rotation locked to the motor by a pin, ceramic surface reinforced

TYPE OF PUMP SELECTION

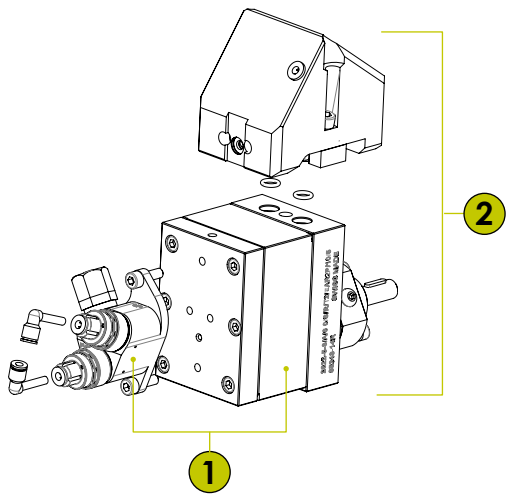


A: Material flow in cc/min
B: Pump rotation speed in rpm
The curve indicates the flow of the pump with a back-pressure from 0 to 6 and from 6 to 10 bar.
One must not select a pump of which flow would be too close to the minimum or maximum speed, but close to 80 rpm.

■ = *recommanded working zone*

Fast Clean Gear Pump

Description	Mark	Capacity (cm^3/rev)	Reference
Pump with Shunt Block	1	3	910020406
		6	910020407
		10	910020408
Pump equipped with regulator UPside	2	3	270000317
		6	270000086
		10	910019071



Description	Reference
Fitting 4/6 - G 1/4''	910 007 346
Fitting 5/8 - G 1/4''	910 007 347

2K Gear pump

Flow management

The gear pump is used for the supply of liquid paints, either solvent or water based, for all SAMES automatic sprayers.

- Isocyanate specific design
- Accurate dosing
- Compact design

RANGE

This type of pump comes in 6 capacities defined by the number of cm3 per revolution:

- 0.3 cm3 / rev
- 0.6 cm3 / rev
- 1.2 cm3 / rev
- 2.4 cm3 / rev
- 6 cm3 / rev
- 10 cm3 / rev

The choice is made with respect to the target flow and the rotation speed bracket. It is recommended to run between 30 and 80 rpm.

CUSTOMERS' BENEFITS

Long life pump

- Low wearing parts
- Stainless steel ADLC

Robust design

- Long know-how gearpump design
- Rotation locked to the motor by a pin, ceramic surface reinforced

TECHNICAL DATA

2K gear pump

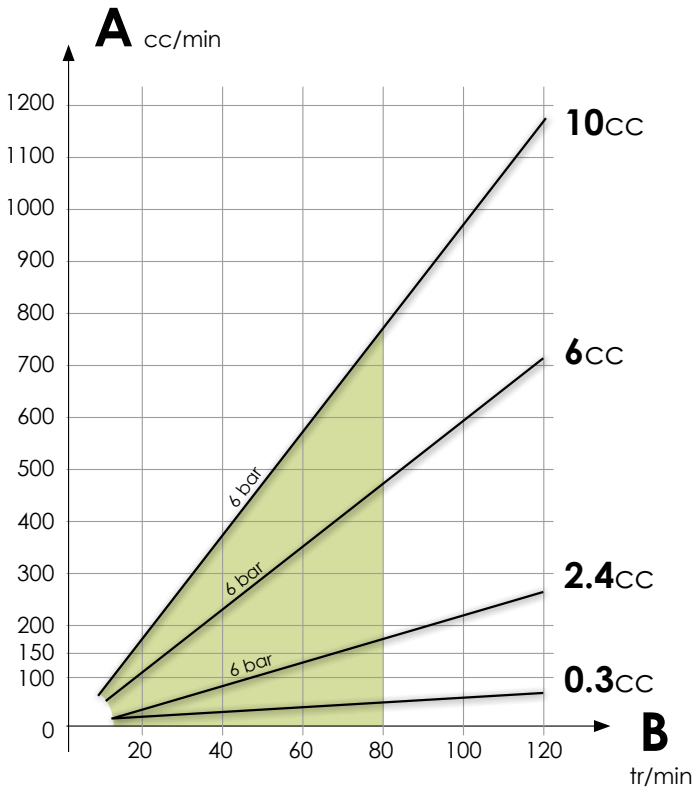
CAPACITY		0.3 cc	0.6 cc	1.2 cc	2.4 cc	6 cc	10 cc
Dimensions (mm)	Length	130	136	130	136	147	189
	Height	85	85	85	85	85	85
	Width	46	46	61	61	61	61
Weight (kg)		1.33	1.39	1.91	2.1	2.52	3
Max. pressure		15 bar					
Rotation speed (RPM)		30 to 80					
Accuracy in normal conditions[1]		± 2 %					

(1): 30-80 rpm, rinsing viscosity 25 sec. DIN4, ΔP ± 2 bar
Use only PTFE hoses

ATEX marking:
2K ADLC 0.3cc or 0.6cc or 1.2cc or 2.4cc or 6cc or 10cc
CE Ex II 2 G c T4
Technical file: Gear pump

2K Gear Pump

TYPE OF PUMP SELECTION



A: Material flow in cc/min
B: Pump rotation speed in rpm
The curve indicates the flow of the pump with a back-pressure from 0 to 6 and from 6 to 10 bar.
One must not select a pump of which flow would be too close to the minimum or maximum speed, but close to 80 rpm.

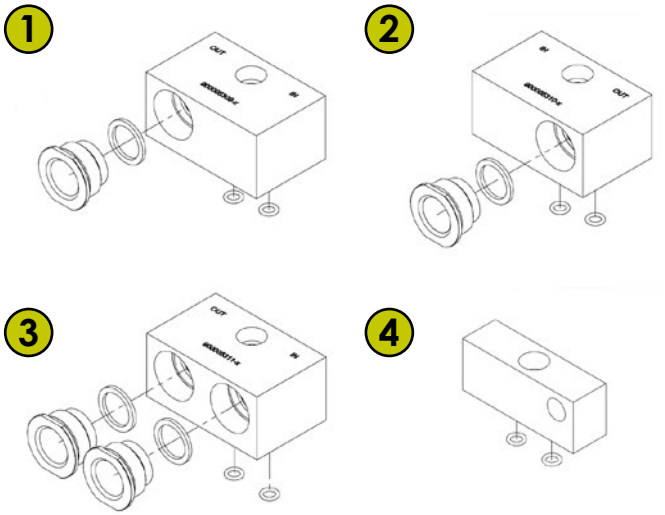
■ *= recommanded working zone*

2K Gear Pump

Description	Capacity (cm^3/rev)	Reference
Pump only	0.3	270000071
	0.6	270000072
	1.2	270000068
	2.4	270000069
	6	270000070
	10	270000067

Connecting Flanges

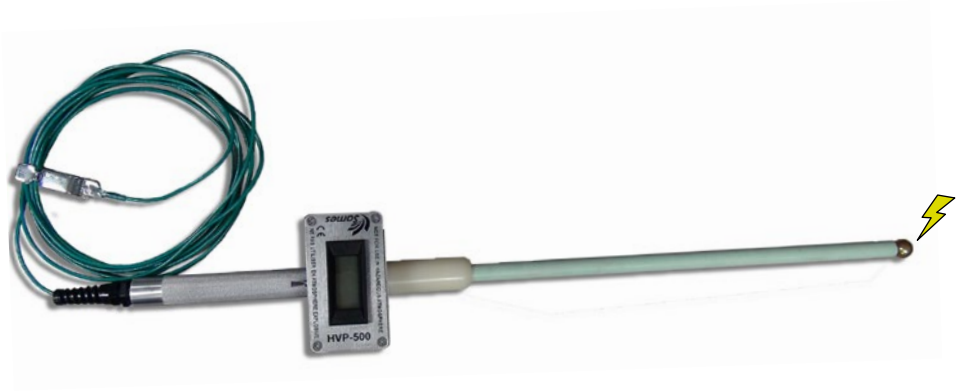
Description	Mark	Reference
1 Pressure switch flange	1	910007407
1 Pressure switch reverse flange	2	910007408
2 Pressure switch flange	3	910007409
Fitting fixing flange	4	910008031



BELL CUP MANUFACTURED WITH THE HIGHEST PRECISION TECHNIQUES USED FOR AERONAUTIC AND AEROSPACE INDUSTRIES

HVP 500

Measuring device
High voltage probe



- EASY TO READ DISPLAY: 4 1/2" digit display
- PORTABLE: Proected 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 ips, 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.

It has to be used only in NON EXplosive ATmospheres.

AP 1000

Measuring device
Resistivohmeter

This device is equipped with:

- A metallic box, an open cover, a control plate on which are displayed:

> A reading of the measure on 3 separate scales.

> The red, black or blue colour buttons allow choosing the measure scale adapted and corresponding to a resistivity bracket of the measured paint.

- A second measure, connected to the box thanks to a cable, resists to the usual solvents. When the device is not used, the probe is placed into a housing of the box.

USE

The AP 1000 resistivohmeter is specially designed to measure with accuracy and quickly the resistivity of the paints and clears applied by electrostatics.
This process works with any paints provided that their thinner incorporated before use gives these paints certain qualities making their spraying easier. The resistivity factor is of major importance. This device is of precious help to the paint optimization laboratories, to sub-suppliers control departments or to users of paints applied by electrostatics.

Descrition	Reference
AP 1000	910 005 790

Resistivity measure contained between
0.5 MΩ.cm and 1000 MΩ.cm

Beware: The operator must take a paint sample and carry out the measures in a non NON EXplosive ATmospheres.

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

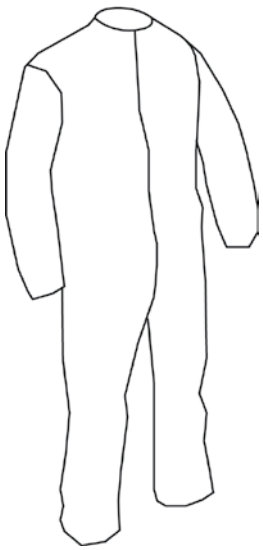
Operators accessories

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).
Meet the dispositions of European directive 89/686/CEE.

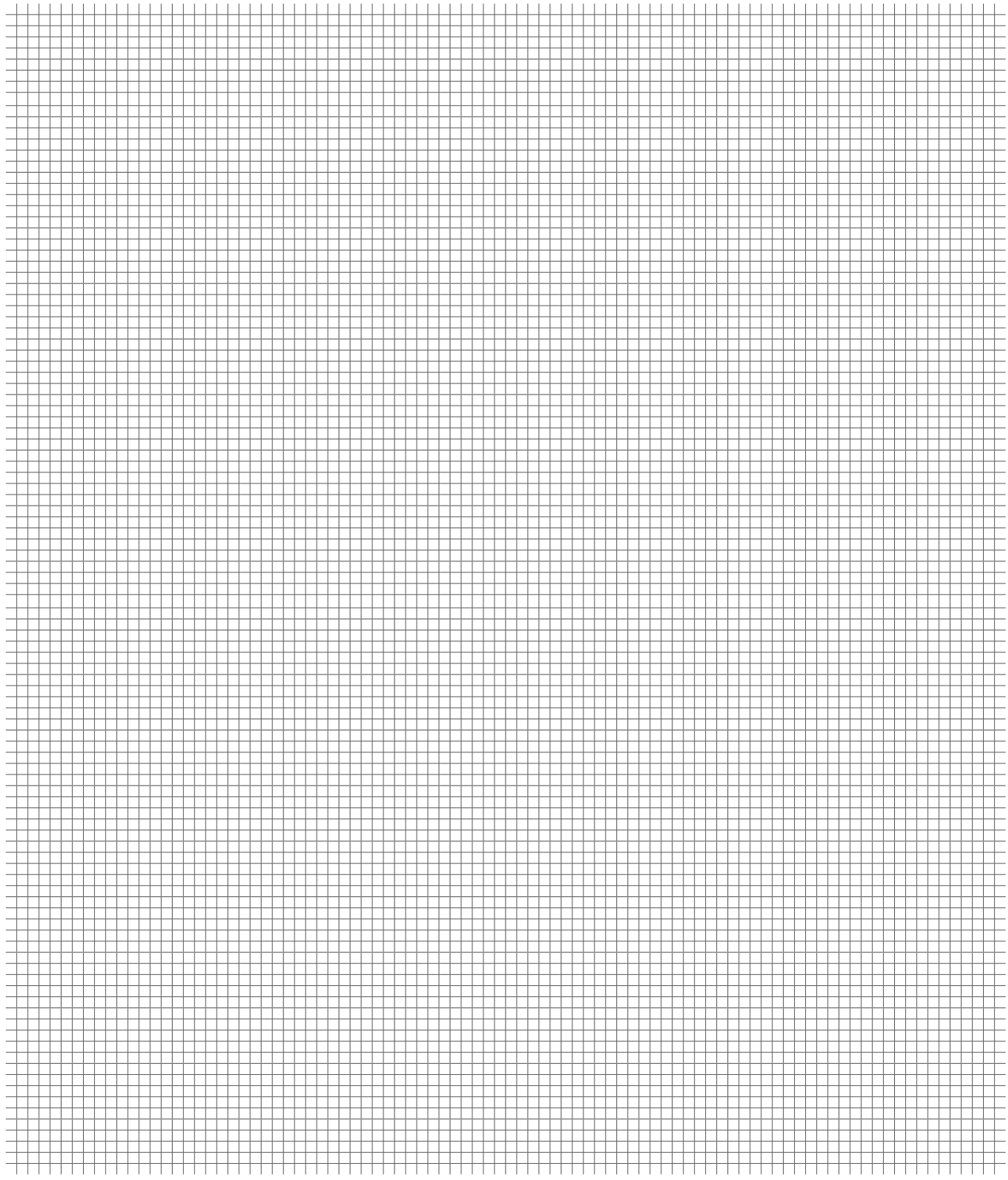
7 Light protection coverall (one size)

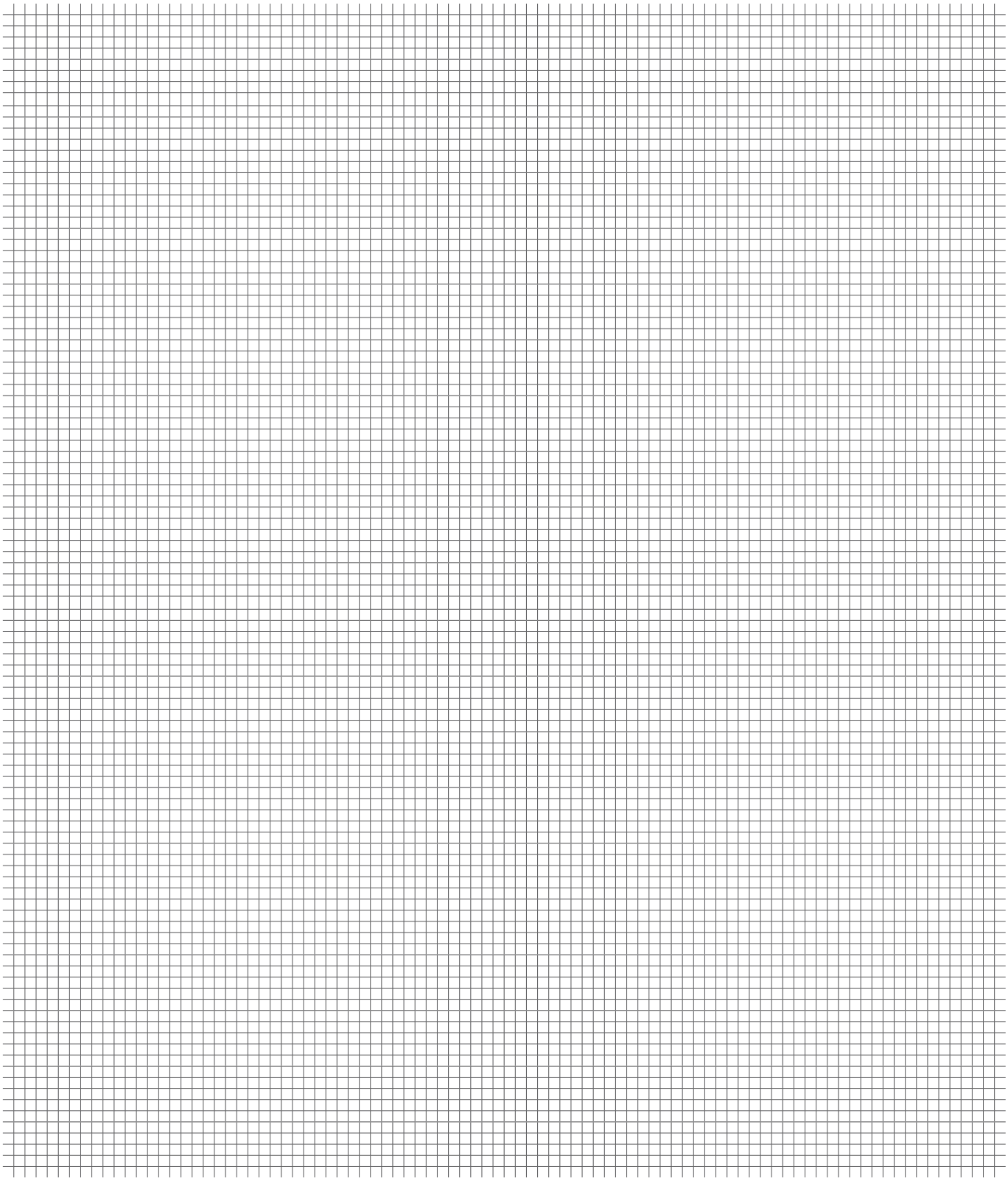
Woven paper overall very sturdy. The use of overalls is recommended to protect against micro-particles, splashing and spray dust, depending on the degree of toxicity of the products and working conditions .
Complies with European standards EN 13982/1 and EN 13034.
Certified types 5 and 6.



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*





HIGHLIGHT YOUR DIFFERENCE

The Robotic color change block

UPside CCV

- Lightweight design
- Easy maintenance
- Flexible assembly

Discover UPside CCV

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