nanoBELL

High-efficiency compact Sprayer dedicated to light payload robots

Nanobell is a compact, lightweight (3.3 kg) and sturdy sprayer. It meets the expectations of manufacturers of small and average plastic parts, of the wood industry and of manufacturers of metal parts. With Nanobell they all have access to an applicator which can significantly increase their paint savings, while improving the quality of their production. The Nanobell robotic sprayer can spray, (according configuration) solvent paints, water-borne paints, mono or multi-components paints.

CUSTOMER BENEFITS

▶ Fast and Easy integration

> Time savings for commissioning and mounting,
> Solution adaptable to many low payload robots.

▶ High transfer efficiency thanks to Hi-TE

> Hi-TE spraying technology permits to get significant paint savings,
> Improved productivity of the paint lines,
> Paint spray dynamically adjustable, which permits a better control of pattern.

▶ Quality of application

> Better finishing,
> Perfect regularity of the thickness of the film build.

▶ Easy care and maintenance

> Each component of Nanobell can be reached and dismantled quickly,
> Easy and inexpensive operating in production.

▶ Compliance with environmental standards

> Using Nanobell contributes to set the paint installation in conformity with VOC standards in force.

APPLICATION SCOPE

Nanobell is designed for multi-axis robotic in the general industry.
It allows the application of paints and varnishes such as:

- Solvent-based (low and high resistivity),
- Solvent-based metallic,
- Water-based,
- Multi-components.

Its light weight (3.3 kg) allows a mounting on small robots and easily replacing guns on existing facilities. This enables significant paint savings for the customer.

Metal:

Any type of part, any kind of surface.

Plastics:

Screen frame, bumpers, 2 wheels parts, phone frame, rear view mirror, ...

Wood:

Door frame, window frame, chair, ...

Glass:

Fragrance bottle, any glass bottle, ...

HIGHER TRANSFER EFFICIENCY

Significant paint savings

- The rotary bell cup technology allows a higher transfer efficiency, from 20 to 50% superior to an electrostatic or conventional spray gun.
- The variation of pattern while spraying permits to get:

> A narrow pattern on the edges and small surfaces = Less paint outside the target
> A large impact on the large surfaces = reduced time application.

- The Hi-TE spraying technology on Nanobell provides an excellent spray control, allowing in some cases very high transfer efficiency (> 90%).

The bell cup associated with high voltage guarantees

- a high level of productivity,
- an homogeneous spraying,
- a regular spray pattern,
- an optimal recovery of the parts to coat, the wraparound effect allowing painting up to the rear side of the pieces.

Control of V.O.C.

Switching to a rotary atomizer technology can reduce drastically the quantities of VOC released into the atmosphere by reducing the quantity of paint needed for the application. The increase of transfer efficiency helps a paint facility to meet the VOC regulation.

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HIGH APPLICATION QUALITY

Hi-TE technology combines a very thin atomization of the paint droplets and a sharp control of the thickness applied. Quality of finishing meets the most severe criteria of surface tension and DOI (Distinctness Of Image).

Flexibility of use

The combined air shroud Hi-TE enables a very fast and very marked variation of size of impact. Through better control of the spray, it is possible to adjust the width of impact during application on a proportional basis. Variable impact over a wide range = 135 mm to 450 mm

- Only one air setting on the EC50 Hi-TE shroud: easy operating and fast adjustment of application.

Hi-TE
SPRAY TECHNOLOGY

ERGONOMICS & MAINTENANCE FACILITY

Flexibility

Exclusively developed for robotics application, the compact design of Nanobell facilitates its operation on complex trajectories or on difficult angles.

Adaptability

Its light weight (3.3 kg) allows mounting on small sizes robots commonly used in industry.

Ergonomic mounting

The LV cable and hoses go through a flexible sheath fixed on the rear of the sprayer; it protects the bundle hoses and ensures to keep them clean and safe.

Easy maintenance

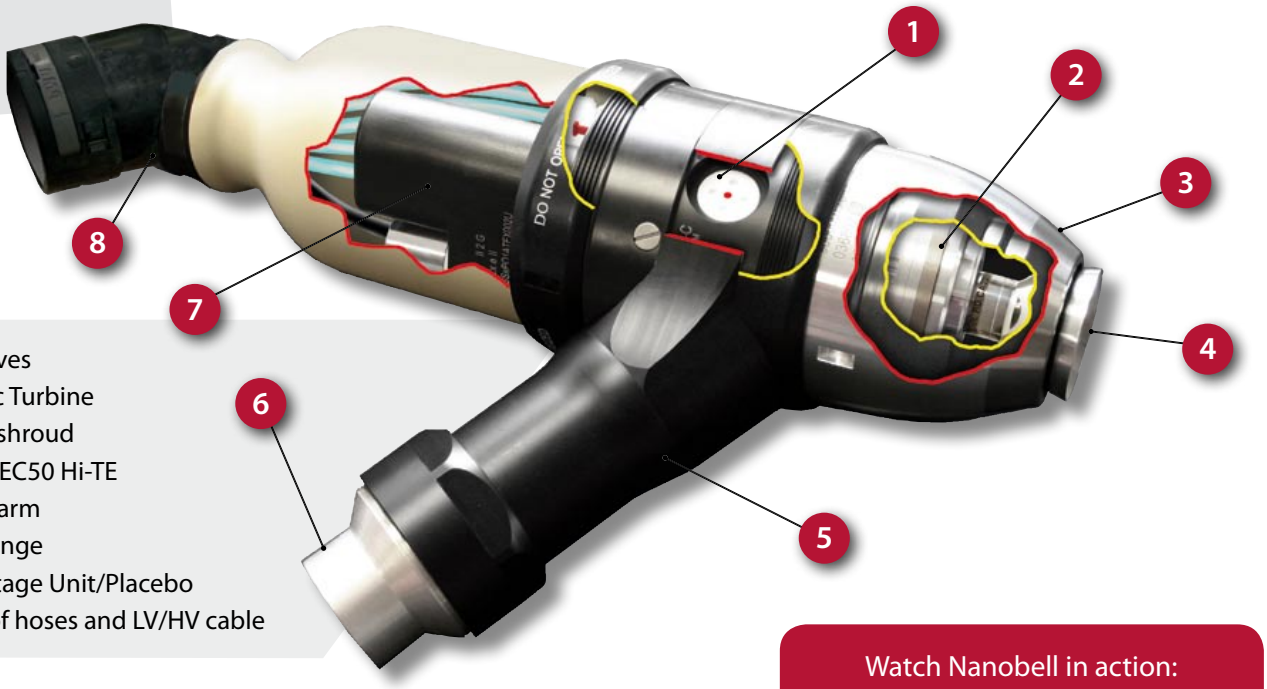
- The bell cup is removed easily from the rotor thanks to a simple tool without removing the shrouds. A positioning cylinder helps re-mounting the bell, with the magnetic effect.
- Easy access to micro-valve and to plugs.
- The components are disassembled and cleaned quickly easily.

Long life

The air bearing technology used in the magnetic turbine allows rotation without mechanical friction, eliminating any risk of wear.

Sames

PERFECT INTEGRATION OF COMPONENTS



1 - Microvalves
2 - Magnetic Turbine
3 - Hi-TE air shroud
4 – Bell cup EC50 Hi-TE
5 - Support arm
6 - Robot flange
7 - High Voltage Unit/Placebo
8 - Output of hoses and LV/HV cable

Watch Nanobell in action:
www.sames.com/nanobell

TECHNICAL SPECIFICATIONS

Paint supply	
Maximum paint pressure:	10 bar (150 psi)
Paint Flow:	30 to 750 cc/min.
	according type of paint
Viscosity range (FORD n°4) :	20 to 50 seconds

Pneumatic supply	
Operating pressure:	6 to 10 bar max. (90 to 150 psi)
Magnetic bearing air pressure:	6 to 10 bar max. 85 Nl/min.
	(90 to 150 psi)
Air shroud pressure:	6 bar constant
Micro air pressure:	1,9 to 3 bar constant
Operating consumption:	10 Nl/min.
Bearing air consumption:	125 Nl/min.
Air shroud consumption:	0 to 600 Nl/min. (depending skirt)
Turbine air consumption:	190 to 700 Nl/min.
Rotation speed:	15 to 45 K-rpm charge

Nanobell weight (without hoses): 3,3 kg

Solvent-based paint	**High Voltage Unit**
Resistivity **≥ 6 MΩ.cm** ---------->	UHT158 (70 kV/100 microamp) (Integrated HV unit)
	CE 0080 (EX) II2G
	EEx> 350 mJ
	ISSeP05ATEX032X

Resistivity **> 0,5 MΩ.cm** ----------> UHT187 (70 kV/200 microamp)
Equipment going through the ATEX certification

Water-based paint (non-flammable or hardly flammable paint)
Resistivity (some kΩ.cm) -----> UHT287 (70 kV/500 microamp)
Equipment going through the ATEX certification

Your SAMES expert distributor

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