



# Nanobell 803 ST SB HR

Sprayer series 8

Instruction manual

**DRT7164**

B - 2022/09

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### Maintenance program

An annual maintenance program (including or not the consumables to be replaced during each intervention) can be considered with the partnership of Sames. It is associated with a preventive maintenance plan established during a first audit visit which details the control points necessary to guarantee the performance of the installed equipment.

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## 1. Health and Safety Instructions

This manual contains links to the following user manuals:

- [see DRT7127](#) for the user manual of Hi-TE NW bell cups/outer cover.
- [see DRT7128](#) for the user manual of T8 turbine.
- [see DRT6453](#) for the user manual of Nano5 valve.
- [see DRT7166](#) for the user manual of HVU810 high voltage unit.
- [see DRT6190](#) for the user manual of microphone.
- [see DRT7122](#) for the user manual of GNM 300 control module.
- [see DRT6364](#) the user manual of the electric systems

### 1.1. Configuration of certified equipment

These user manuals define the configuration of certified equipment.

### 1.2. Marking on the atomizer

The equipment is designed according to the ATEX 2014/34/EU and SI 2016 No. 1107 Directives, it is of category 2 type C-L according to EN50176 §5.1, and is intended for use in zone 1.

Sames, Meylan - France  
 Nanobell 803  
 (C) (E) 0080 UK CA 2503  
 Ex II 2 G T6  
 350 mJ < E < 2J  
 Type C-L EN 50176  
 INERIS 20ATEX0035X  
 CML 21UKEX9798X

P/N: \*

(Serial number)

**Note:** the first 2 digits correspond to the year of manufacture.

The X symbol placed behind the EU/UK type examination certification indicates that:

- when a "di/dt safety" fault appears any movement likely to reduce the safe distance must be stopped (stop moving the sprayer and stop the conveyor transporting the parts to be sprayed) before the fault reset is authorised.

\* Nanobell 803 ST SB HR ATEX /UKCA configurations

<p><b>Nanobell 803 ST SB HR - P/N: 910029588</b>                  Equipped body assembly - P/N: 910029581                  Turbine T8 - P/N: 910026052                  Quick disconnect plate - P/N: 910029585                  Rear support - P/N: 910029586</p>	<p><b>Nanobell 803 ST                  SB HR                  P/N:                  (*)</b></p>	<p><b>High voltage unit HVU810                  P/N: 910028548</b></p>	<p><b>GNM 300                  P/N:                  910024028</b></p>
<p><b>X</b></p>	<p><b>910029588</b></p>	<p><b>X</b></p>	<p><b>X</b></p>

### 1.3. Meaning of pictograms

				
Warning electricity	Warning Automatic start-up	Warning Hot surfaces	Warning Explosive material	General warning sign
				
Warning High pressure	Warning Crushing of hands	Warning for explosive atmospheres	Warning: Flammable material	Warning: Corrosive substance
				
Warning: Toxic material	Warning Harmful products	No access for people with active implanted cardiac devices	Wear ear protection	Wear a face shield
				
Wear respiratory protection	Wear safety footwear	Wear protective clothing	Wear protective gloves	Wear head protection
				
Opaque eye protection must be worn	General mandatory action sign	Connect an earth terminal to the ground	Refer to Instruction manual	

### 1.4. Precautions for Use

This document contains information that all operators should be aware of and understand before using the **Nanobell 803 ST SB HR**. This information highlights situations that could result in serious damage and indicates the precautions that should be taken to avoid them.



**Before any use of the Nanobell 803 ST SB HR equipment, check that all operators:**



- have previously be trained by the company Sames, or by their distributors registered by them for this purpose.



- have read and understood the user manual and all rules for installation and operation, as laid out below.

**It is the responsibility of the operators' workshop manager to ensure these two points and it is also his responsibility to make sure that all operators have read and understood the user manuals for any peripheral electrical equipment present in the spraying area.**

### 1.5. Warnings



**It is imperative that anyone wearing a pacemaker does not use the equipment and does not enter the projection area. High voltage can cause the pacemaker to malfunction.**



**This equipment may be dangerous if not used, disassembled and reassembled in accordance with the rules specified in this manual and any applicable European Standard or national safety regulations.**



**Equipment performance is only guaranteed if original spare parts distributed by Sames are used.**



**In order to ensure optimum assembly, spare parts should be stored at a temperature close to their operating temperature. If not, a sufficient waiting time must be observed before installation, so that all parts are assembled at the same temperature.**



This equipment must only be used in spraying locations according to standard EN 50176 (§ 5.4 and 5.7). To reduce health, fire and explosion risks, this equipment must only be used in well ventilated areas. The efficiency of the ventilation system must be verified on a daily basis.

**Only appropriate explosion-proof electrical equipment must be used in the explosive atmospheres generated by the spraying process.**

Before carrying out any cleaning or general work on atomizers in the spraying area, the high-voltage generator must be switched off and the HV atomizer circuit must be discharged to ground.

Never point the pressurized coating product or the compressed air towards persons or animals.

Suitable measures must be taken to prevent the presence of energy potential (liquid, air pressure or electrical) in the equipment during downtimes and/or periods when the equipment is not being used.

The operator must wear shoes according to standard EN ISO 20344 and the insulation resistance measured must not exceed 100 MΩ.

The protective clothes, including gloves, must conform to standard EN 1149-5 and the insulation resistance measured must not exceed 100 MΩ.

The use of individual protective means can limit the risks caused by contact and/or inhaling of toxic products, gases, vapors, mist and dust likely to be generated by the equipment when it is in use. The operator must follow the manufacturer's instructions for the coating product.

Electrostatic spraying equipment must be serviced regularly in accordance with the information and instructions given by **Sames**.

**It is strictly prohibited to stick adhesive tape on the atomizer body.**

Cleaning operations must be carried out either in authorized areas equipped with a mechanical ventilation system, or using cleaning liquids with a flash point at least 5°C higher than the ambient temperature.

Only metal containers may be used for cleaning liquids, and they must be safely grounded.

Inside the booth it is forbidden to use naked flames, glowing objects or devices likely to produce sparks. It is also forbidden to store flammable products, or recipients that have contained them, in the vicinity of the booth.

The surrounding area must be kept clear and clean.



The use of very high voltage increases the risk of sparks. Sames atomizers and high-voltage electrostatic generators are designed to minimise this risk. Although the HV electrode is the only accessible part, a safety distance of X mm (see tables [see § 3.3 page 26](#)) must be observed between the HV parts of the atomizer and all grounded parts.

In addition, a careful check must be made to ensure that any conducting or semi-conducting part closer than 2.5 m to the atomizer is correctly grounded.

If it is not, electrical charges capable of causing sparks could build up on it. Operating personnel must wear anti-static shoes and gloves to avoid this risk.

Each substrate must have a ground resistance of less than or equal to 1 M $\Omega$  (measurement voltage of at least 500V). This must be checked regularly.

All conducting enclosures of electrical equipment and conducting components in explosive atmospheres must be grounded by connecting them to the grounding terminal.

Finally, for the same reasons, the spraying area must have an anti-static floor, such as concrete, metal duckboard, etc. It is essential to provide sufficient ventilation in the spraying booths to avoid the build up of inflammable vapors.

The correct operation of the overcurrent protection (di/dt) must be verified daily. This verification must be carried out **in a non-explosive atmosphere**, by placing a ground wire near the atomizer electrode with the atomizer switched on (the operator must be grounded): the control module must switch to the fault state.

The associated equipment must be located outside hazardous areas, and its operation must be interlocked with that of the booth extraction fan. The correct operation of the servocontrol system must be verified once a week. A warning sign must be placed in full view near the spraying area.

Excessive turbine speed can result in serious damage to the turbine and loss of connection between the bell cup and turbine, presenting a risk to persons and equipment. The maximum operating speed specified in this manual must not be exceeded ([see § 3.2 page 24](#)).

1.5.1. Regulatory tests to be carried out on the equipment according to standard EN 50176  
The tests must be carried out on the spraying equipment. The tests must be carried out by competent personnel and include the tests described below (see § 6.3 table 3 in standard EN 50176).

Type of test	Requirements
The fixed inflammable coating liquid material electrostatic coating must be tested to ensure it is safe for workers.	In this context, and particularly for the disconnection threshold, the overload current $I_{\bar{u}}$ and the minimum voltage $U_{min}$ must be defined and documented in relation to the operational and local conditions (see also § 5.2.2 in standard EN50176).
Forced ventilation effectiveness (air extraction systems)	See §5.4.4 in standard EN50176
The safe high voltage disconnection must be tested for operation under controlled voltage and under constant voltage.	See 5.2.2 and 5.2.2.1 in standard EN50176. The disconnection threshold $I_{\bar{u}}$ must be defined and documented in relation to the operational and local conditions. It must be tested if the high voltage is disconnected and if there is an unacceptable increase in the operating current $I_b$ and if the disconnection threshold $I_{\bar{u}}$ is reached. In this context, the disconnection threshold $I_{\bar{u}}$ defined during the initial test must be checked. A disconnection threshold $I_{\bar{u}}$ that may increase the possibility of dangerous discharges or electrical flashovers between the parts under high voltage and the grounded parts if the safe distance falls below its permitted value is not permitted.
3G category devices	See 5.2.2 and 5.2.2.1 in standard EN50176
2G category devices	See 5.2.2, 5.2.2.1 and 6.4 in standard EN50176
For the operation at constant current, the safe disconnection of the high voltage electricity supply must be tested.	See 5.2.2 and 5.2.2.2 in standard EN50176. The disconnection threshold $U_{min}$ must be defined and documented in relation to the operational and local conditions. Checks must be carried out to ensure that the high voltage is disconnected if the high voltage falls unacceptably below the disconnection threshold $U_{min}$ . In this context, the disconnection threshold $U_{min}$ defined during the initial test must be checked. A disconnection threshold $U_{min}$ that may increase the possibility of dangerous discharges or electrical flashovers between the parts under high voltage and the grounded parts if the safe distance falls below its permitted value is not permitted.
3G category devices	See 5.2.2 and 5.2.2.2 in standard EN50176

Type of test	Requirements
2G category devices	See 5.2.2, 5.2.2.2 and 6.4 in standard EN50176
Protection against discharge energy which is too high	See 5.2.3, 5.8.2 and 5.8.3 in standard EN50176
Protection against cleaning product inflammation	See 5.2.4.in standard EN50176
Effectiveness of the protection measures against direct contact	See 5.5.2, 5.5.6 and 5.8.5 in standard EN50176
Effectiveness of the earthing measures	See 5.7 in standard EN50176
Slaving / protection against inputs	See 5.5.2 in standard EN50176
Effectiveness of the local fire extinguishing system	See 5.2.5 in standard EN50176 In addition to the location's protection system, local fire extinguishing systems (fixed and dedicated to the object) must provide effective protection for the dangerous zone located between the output from the coating material and the part to be processed. It must be proven for each individual case that the roles of the local fire extinguishing systems and the location's protection systems may be satisfied by a single extinguishing system.
conducting parts of the coating material's supply system	See 5.8.1 in standard EN50176
Minimum distance in the air	See 5.5.7 and 5.8.5 in standard EN50176
Other tests	According to standard EN 12215:2004.

These tests must be carried out periodically The following maximum intervals between tests are recommended (see § 7.2.3 table 4 in standard EN 50176).

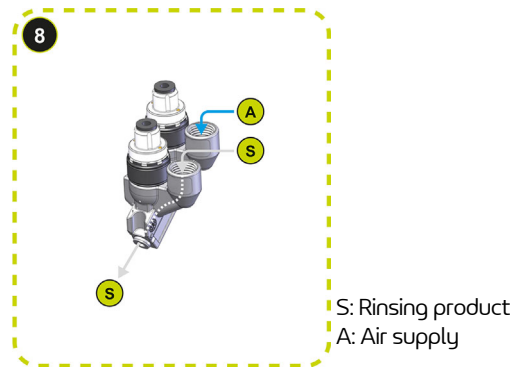
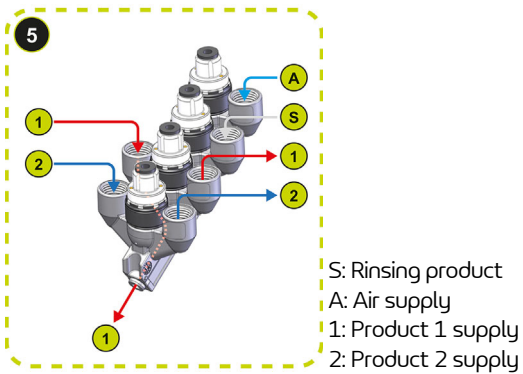
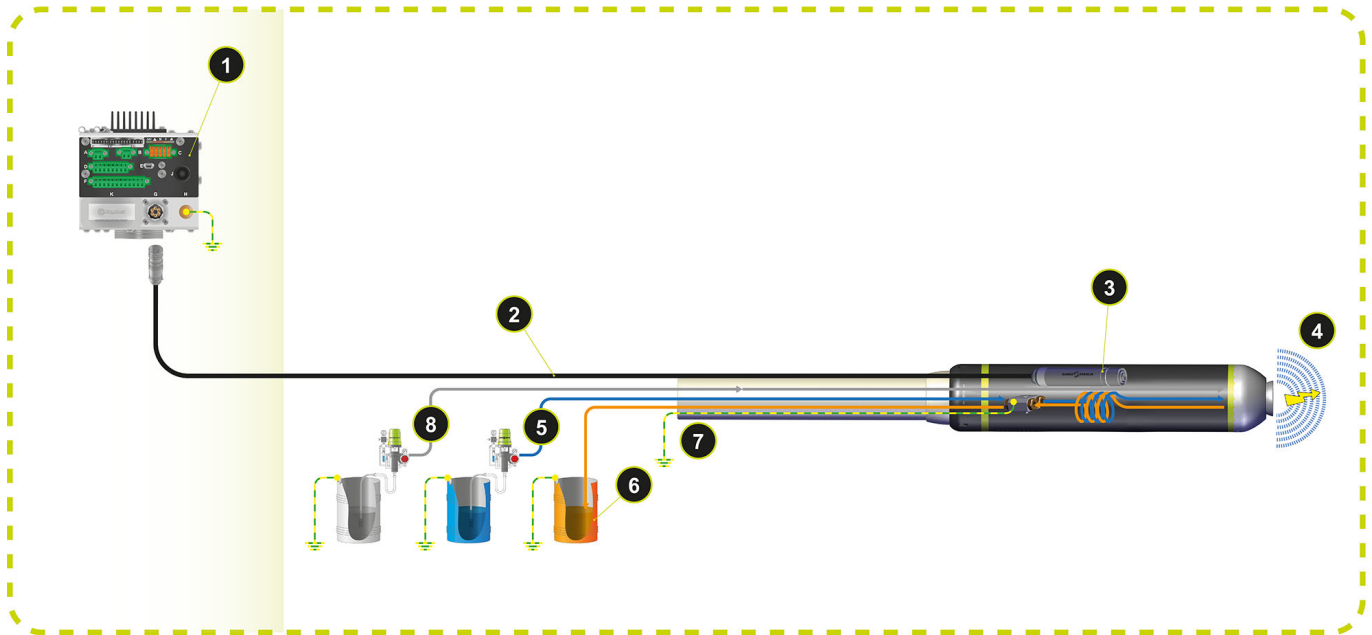
Reference	Test frequency
Complete installation safety test in relation to workers	12 months
Forced ventilation effectiveness	in continuous
Disconnection in the event of an overload current	after each start-up
Low voltage disconnection	after each start-up
Discharge energy	weekly
Protection against cleaning product inflammation	before each cleaning
Protection against direct contact	weekly
Earthing measures	weekly
Protection against inputs	weekly
Site's fire extinguishing system	before each cleaning
Conducting parts of the coating material's supply system	weekly
Minimum distance in the air	weekly
Other tests	in accordance with standard EN 12215:2004

1.5.2. Installation rules

**Nanobell 803 ST SB HR** for application of solvent-based paints with resistivity  $\geq 6M\Omega.cm$ :



The installation of any system that does not comply with the rules specified above and below is strictly prohibited.



All the conductive parts must be connected to the ground potential (metallic fittings of the Upside, gear pump, etc...).

Paint resistivity $\geq 6 \text{ M}\Omega\cdot\text{cm}$	
1	GNM 300 control module (out of the ATEX zone)
2	Low voltage connection
3	HVU810 High voltage unit
4	Safety distance (area around the atomizer head from the parts with high voltage, outer cover, bell cup, etc...)
5	Paint supply connected to ground potential
6	Dump return line connected to the ground potential
7	Fittings paint / rinsing and dump return connected to ground potential
8	Air and rinsing product supplies connected to ground potential

## 1.6. Important Recommendations

### 1.6.1. Limits of use

Our sprayers are designed for liquid coating material

Whether for spraying or for interior or exterior cleaning, do not use a material composed of chlorine, or with a pH lower than 4 or higher than 12.

The durability of the equipment can be affected by exposure time, temperature, concentration, frequency of interventions. **Sames** will not be able to take in guarantee an equipment whose degradation is accelerated in the cited cases.

In case of doubt about the properties of the material, please consult us before any use to check the perennial compatibility of our equipment. Please contact our experts, for the spraying of chemical materials, who will check the physico-chemical compatibility

### 1.6.2. Paint resistivity

Atomizer **Nanobell 803 ST SB HR** is designed for use with solvent-based liquid paints with a resistivity  $\geq 6 \text{ M}\Omega\cdot\text{cm}$  as measures with resistivity meter AP 1000 (P/N 910005790). For lower values, contact **Sames**.



**It is imperative to ground the bulkhead union of the paint circuit inside the body of the NANOBELL 803 ST SB HR.**



**The product supply as well as the purge line must be grounded**



**The rinsing solvent line of bell cup (32) must be grounded at a sufficient distance from the sprayer to limit the leakage current.**

### 1.6.3. Compressed air quality

The air must be filtered to a level that will guarantee a long life time and prevent any pollution during painting.

The filter must be installed as close to the installation as possible. The filter cartridges must be changed regularly to ensure that the air is clean.

Teflon tape or glue should not be used between the filter and the bearing as glue residue or pieces of Teflon may block the small holes of the air bearing and cause turbine failure.

The inside of hoses supplying air to the atomizer and the ports of the quick-disconnect plate must be clean and free of any traces of paint, solvent or other foreign matter.

The guarantee does not cover faults caused by unclean, unfiltered bearing air resulting from non-compliance with the previous recommendations.



**Air that is not properly filtered can clog the bearing and cause the turbine to malfunction. In particular, filtration must be installed to prevent particles larger than  $0.1 \mu\text{m}$  from reaching the bearing.**



**The guarantee does not cover damage caused by foreign matter (paint, solvent or other foreign matter) entering the air circuits of atomizer Nanobell 803 ST SB HR.**

#### 1.6.4. Product quality

The paint must be filtered to prevent any damage to the atomizer.  
The maximum permissible particle size in the atomizer is 200 µm.

#### 1.6.5. Bearing safety

The compressed air connection to the air bearing must be made directly via the supply circuit (without using an isolating valve). A sudden cutoff of the air supply may cause partial damage to the turbine air bearing, possibly resulting in system shutdown.

In addition, a 25-liter air reserve should be available so that the turbine brakes gradually if the main air supply is cut off suddenly.



**The guarantee does not cover faults that occur if the turbine is operated with insufficient bearing air pressure.**

#### 1.6.6. Locking

Do not atomize the product if the bell cup is not rotating at a speed of at least 15,000 rpm. At lower speeds, paint or solvent may enter the turbine, bearing and control circuits. Opening the head valve, the injector rinsing valve and the bell cup exterior rinsing valve must therefore be prohibited when the bell cup is not rotating. Only qualified personnel are authorized to by-pass this locking system for flow rate checks.



**If the turbine is not already operating, wait, after starting it up, until the bell cup reaches at least 15,000 rpm before opening the head valve. The recommended minimum waiting time is 2 seconds.**

#### 1.6.7. Shaping air

Do not atomize the product until the guiding air rate is at least 80 NI/min. If it is less, a feedback of atomized product may occur, possibly fouling the outer cover and the inside surface of the inner shaping air shroud) and resulting in faulty application.

#### 1.6.8. High voltage

If atomizer **Nanobell 803 ST SB HR** is not operating for a prolonged period (conveyor shutdown, unpainted objects, slack periods, etc.), switch off the high-voltage supply to prevent air ionization.



**Rinsing cycles (bell cup exterior and injector) must be performed after previously cutting off the high-voltage supply.**

#### 1.6.9. Maximum speed

Excessive turbine speed can result in serious damage to the turbine and loss of connection between the bell cup and turbine, presenting a risk to persons and equipment. The speed must not exceed 65,000 rpm.



**The guarantee does not cover damage resulting from a rotation speed greater than 65,000 rpm.**

#### 1.6.10. Vibrations

If the sprayer vibrates abnormally, it usually means that the rotating parts are unbalanced. If one of these situations occurs, it is essential to correct it. Excessive unbalance can damage the turbine and lead to malfunction or even loss of the bell cup/turbine connection, causing a risk to people and equipment.



**The guarantee does not cover damage caused by imbalance of rotating parts.**

#### 1.6.11. Bell cup/ turbine assembling

The bell cup must be correctly mounted on the turbine, a clacking sound must be heard; the two cylinders must fit together without any foreign objects between them. If the assembly is incorrect, the connection may be lost and the bell cup may be ejected while it is still rotating, causing a risk to persons and material.

#### 1.6.12. O-ring seals

Use the seals recommended in this manual. For solvent-based products, seals in contact with the product must be chemically inert seals resistant to swelling or chemical attack. The correct operation of atomizer **Nanobell 803 ST SB HR** is only guaranteed if used with seals of sizes and materials in compliance with those specified in this manual.



**The correct functioning of the equipment is guaranteed only with the use of original spare parts distributed by Sames.**

#### 1.6.13. Ventilation

Do not begin applying paint with atomizer **Nanobell 803 ST SB HR** before starting up the ventilation system in the spraying booth. If the ventilation is cut, toxic substances such as organic solvents or ozone may remain in the spraying booth, resulting in a risk of fire, poisoning or irritation.

#### 1.6.14. Residual pressure

Before all maintenance or repair operations, remove paint and solvent from the atomizer, switch off the high voltage power supply and cut the paint, solvent and air supplies, then release residual pressure in each supply system. Residual pressure may lead to component damage and expose personnel to serious injuries. Paint or solvent dispersion may also lead to poisoning or irritation.

#### 1.6.15. Safety devices

When implementing atomizer **Nanobell 803 ST SB HR**, it is important to provide for safety devices allowing immediate cutoff of paint, solvent, air and HV power supplies in the event of a problem.

- Detection of control system faults.
- Detection of high voltage surges associated with the **Sames** HV generator.
- Detection of air pressure drops.
- Detection of ventilation failure.
- Detection of fire.
- Detection of human presence.
- Detection of turbine rotation speed faults.

Failure to install safety devices could result in a risk of fire, expose the personnel to serious injury and damage the equipment.



**The electrostatic projection systems must be equipped with an automatic fire extinguishing system (according to § 5.2.5 in standard EN 50176).**

#### 1.6.16. Mechanical collision

The guarantee does not cover damage resulting from the operating environment (for example: collision with the robot).

#### 1.6.17. Ambient temperature

The atomizer is designed to normally operate at an ambient temperature comprised between 0°C and + 40°C. For optimal application quality, operation at an ambient temperature of between +15°C and + 28°C is recommended. The storage temperature must never exceed +60°C.

#### 1.6.18. Sound level

The sound pressure level generated by the sprayer is less than 70 dBA at the workstation, under the specified conditions of use.

##### **Measuring conditions:**

The equipment was put into operation at maximum characteristics, the measurements were carried out at the operator's station of the paint test booth n°3 (closed glass booth) of the "R&I" laboratory at the **Sames** site in Meylan, France.

##### **Measuring method:**

The weighted equivalent sound pressure level (70 dBA) is in LEQ value, measured over observation periods of at least 30 seconds.

#### 1.6.19. Special maintenance measures

All access to the booth near the atomizer must be controlled during atomizer operation by active devices ([see § 1.6.15 page 19](#)) designed to interrupt operation in case of personnel intrusion.

However, for maintenance purposes, these devices can be implemented with a view to allowing certain operations and inspections (by personnel trained and certified by **Sames**).

In all cases, turbine rotation with a bell cup will be prohibited when personnel are present nearby.

### 1.7. Guarantee

Under the guarantee, which applies only to the buyer, **Sames** agrees to repair operating faults resulting from a design fault, materials or manufacture, under the conditions set out below.

The guarantee claim must define the exact nature of the fault concerned, in writing.

The **Sames** guarantee only covers equipment that has been serviced and cleaned according to standard procedures and our own instructions, that has been fitted with parts approved by **Sames** or that has not been modified by the customer.

More precisely, the guarantee does not cover damage resulting from:

- the customer's negligence or inattention,
- incorrect use,
- failure to follow procedures,
- use of a control system not designed by **Sames** or a **Sames** control system modified by a third party without written permission from an authorized **Sames** technical agent,
- accidents such as: collision with external objects, or similar events,
- flooding, earthquake, fire or similar events,
- inadequately filtered bearing air (solid particles more than 0.1 µm in diameter),
- inadequately filtered paint and solvent,
- use of seals not complying with **Sames** recommendations,
- starting up turbine rotation without minimum bearing air pressure (5 bar),
- exceeding the maximum speed of 65,000 rpm under load,
- starting up rotating parts that are unbalanced (dry paint on bell cup / rotor or damaged bell cups),
- pollution of air circuits by fluids or substances other than air.

The **Sames** sprayer type **Nanobell 803 ST SB HR** and its air turbine are covered by a 12 months guarantee for use in two 8-hour shifts under normal conditions of use (5000 H).

The guarantee does not apply to wearing parts such as atomizing bell cups, diaphragms, seals, etc.

The guarantee will take effect from the date of the first start-up or of the provisional acceptance report.

Under no circumstances, either in the context of this guarantee or in other contexts, will **Sames** be held responsible for physical injury or intangible damage, damage to brand image and loss of production resulting directly from its products.

## 2. Description

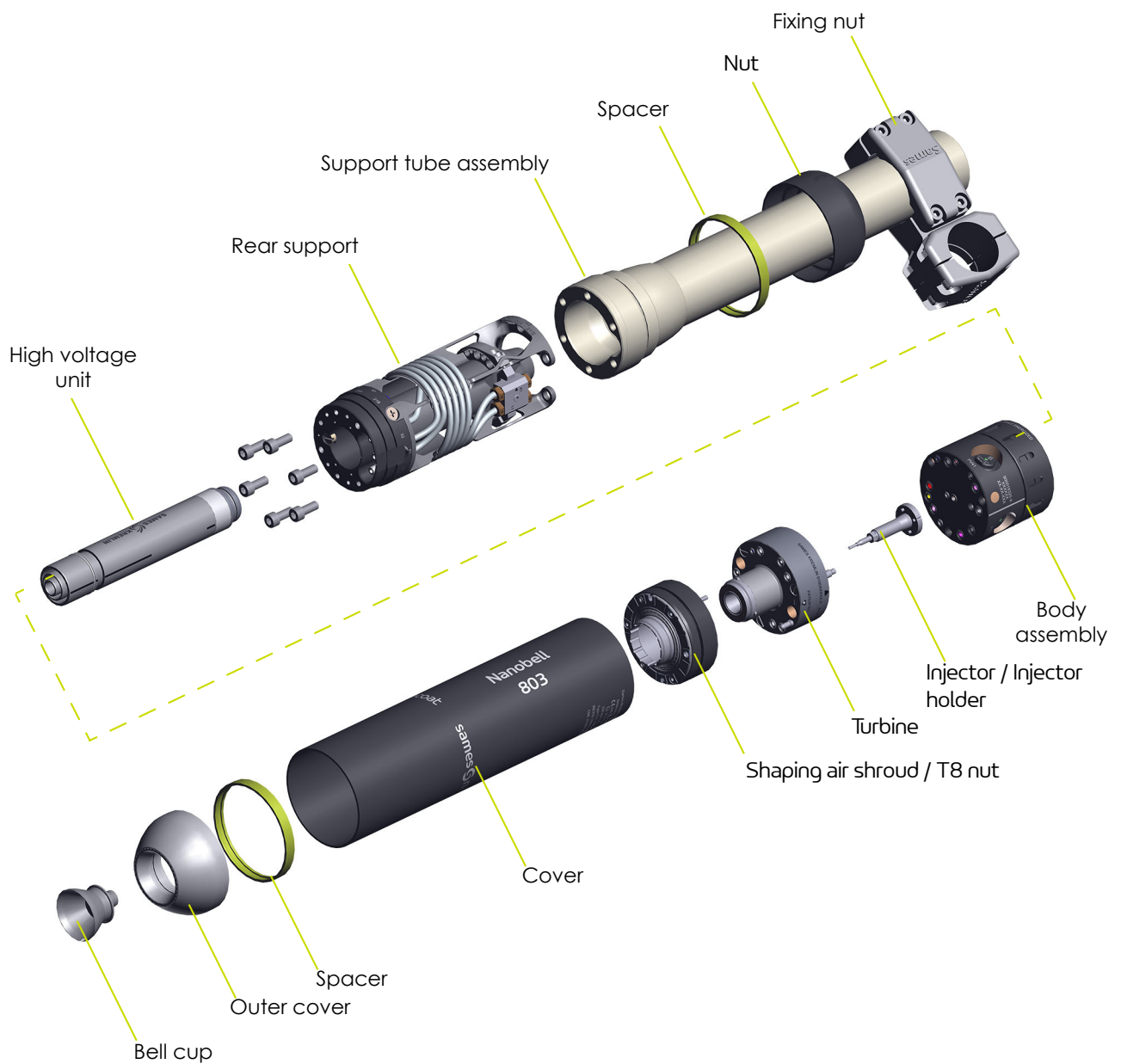
### 2.1. General

The **Nanobell 803 ST SB HR** is a rotary bell cup sprayer for the application of single and multi-component solvent-based paints. Operating in automatic spraying environments, its design makes this sprayer simple, heavy-duty, and easy to maintain.

The **Nanobell 803 ST SB HR** is modular and can be mounted on robots for its robotic versions, or on reciprocators for its version with support tube.

Equipped with a high-speed T8 air turbine, the **Nanobell 803 ST SB HR** sprayer can spray at up to 65,000 rpm. The **Nanobell 803 ST SB HR** sprayer improves production quality while making significant paint savings. Its design and carefully engineered tools make maintenance quick and easy.

### Main parts:

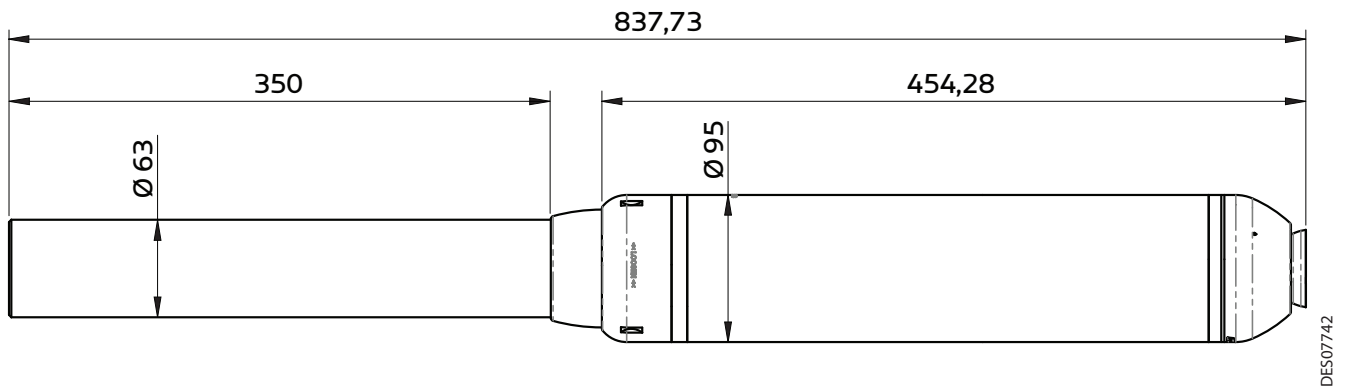


## 2.2. Function of the parts

Parts	Function
Bell cup	It atomizes all types of paint into particles thanks to the rotation of the turbine. It is selected according to the type of product used.
Shaping air assembly (Outer cover / Shaping air shroud)	These parts control the size and pattern diameter and transfer the particles to the parts to be painted. They protect internal components and allow easy cleaning.
Turbine	The rotation of the bell cup is produced by a pneumatic motor. Spraying results from the centrifugal forces generated by the rotation of the bell cup. The higher the rotational speed, the smaller the size of the sprayed particles.
Injector / Injector holder	The injector transfers products to the bell cup. The holder retains the injector and allows it to be rinsed.
Body assembly	The body assembly houses all the fluid circuits, the Nano5 air and solvent product valves, the injector holder assembly and the high voltage.
Nano5	Air-operated, normally closed 2-way valves that perform various operations: paint supply, paint rinsing, external bell cup rinsing, injector rinsing.
Quick-disconnect plate	Provides a sealed interface for the passage of fluids and air, preventing contamination. Allows quick installation and removal of the atomizer during production.
Nut	Connects the body to the quick disconnect plate
Rear support	Maintains the quick disconnect plate and the coils. It houses the high-voltage unit, the low-voltage connection and the coil connection block.
Coil connection block	Allows the grounding of the hoses of circuits 11 and 41 on the wrist of the robot. Avoids over-voltages that can cause holes in the hoses.
Coil	The coils extend the paint circuit and maintain the potential inside the bell cup when spraying conductive paints. In addition, due to their shape, they cut the electrical conducting field lines resulting from the orientation of paint particles.
“HVU810” high voltage unit	Receives a low voltage supply that it converts into high voltage for charging the atomized paint particles; these are attracted to the surface to be painted, which has a ground connection.
Support tube	Allows to install the sprayer on a reciprocator robot.

### 3. Technical characteristics

#### 3.1. Dimensions (mm)



### 3.2. Operating characteristics

Weight	
	Nanobell 803 ST SB HR without cable or hose
	4 kg
Voltage	
	Maximum operating voltage
	80 kV
	Maximum operating current
	100 $\mu$ A
Speed	
	Recommended rotation speed
	From 10 to 65 K rpm
Paint	
	Flow rate
	30 to 800 cm <sup>3</sup> /min max. (depending on paint)
	Normal supply pressure
	6 to 8 bar
	Maximum pressure
	10 bar
	Viscosity
	20 to 40 seconds - FORD cup n° 4
	Viscosity
	20 to 45 seconds - AFNOR cup n° 4
	Resistivity
	$\geq 6 \text{ M}\Omega \cdot \text{cm}^*$
Air pressure	
	Nano5 pilot
	5 bar min. - 7 bar max.
	Bearing air
	5 bar min. - 7 bar max. (value taken at body input)
	Shaping air
	6 bar max.
	Microphone air
	0.5 to 1 bar constant (1 bar by default)
Compressed Air quality	
<b>Filtered air (bearing air) must be dry and free of oil and dust as per DIN ISO 8573-1</b>	
	Maximum particle size of solid contaminant (Bearing air)
	Class 0 i.e $\varnothing 0,1 \mu\text{m}$
	Maximum particle size of solid contaminant (Turbine rotation)
	Class 1 i.e $\varnothing 1 \mu\text{m}$
	Maximum particle of solid contaminants (Others)
	Class 3 i.e $\varnothing 5 \mu\text{m}$
	Maximum concentration of oil
	Class 1 i.e $0,01 \text{ mg} / \text{m}_0^3$ **
	Maximum concentration of solid contaminants
	$1 \text{ mg} / \text{m}_0^3$ *
Air consumption	
	Pilot
	10 NL/min.
	Bearing air
	130 NL/min. min.
	Shaping air
	200 to 900 NL/min.
	Turbine
	<a href="#">see DRT7128</a>

\* measured with the Resistance Meter AP 1000 (P/N: 910005790). For values below 6 M $\Omega$ .cm or close to the limits, please contact Sames

\*\*m<sub>0</sub><sup>3</sup> values given for a temperature of 20 °C (68°F) and an atmospheric pressure of 1013 mbar.

**Dew point:**

The values below are given as an indication.

The tests were carried out with a typical waterborne paint with a viscosity of 145 mPa.s at 1000 s<sup>-1</sup> and a density of 1.05 g/cm<sup>3</sup> and a turbine input air temperature of 20 °C.

In the case of a compressed air class close to the requested dew point values, tests will have to be carried out to check if an air heater should be installed on the turbine power air supply (21A and 21B).

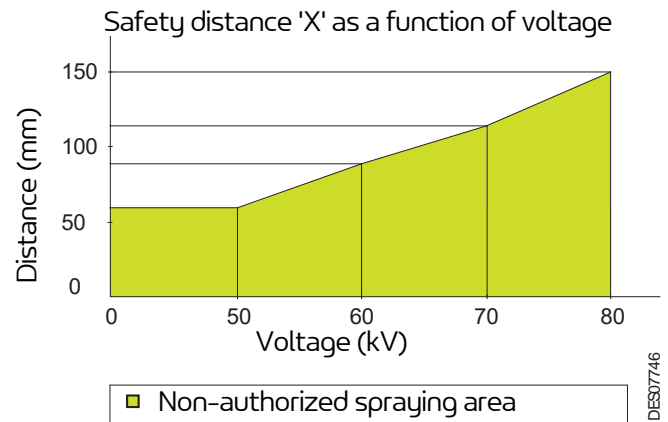
Bell cup diameter (mm)	Product flow rate (cm <sup>3</sup> /min)	Turbine rotation (Krpm)	Required Dew point at atmospheric pressure (°C)	Required dew point equivalent to 6 bar relative (°C)
<b>50 and lower</b>	200	40	7	36
		65	-5	20
	400	40	5	37
		65	-10	14
	600	40	3	35
		65	-12	11
<b>65</b>	200	40	2	30
		65	-13	10
	400	40	-1	26
		65	-15	7
	600	40	-3	23
		65	-20	0

**3.3. Safety characteristics**

**Nanobell 803 ST SB HR with HVU810:**

**Authorised spraying distance**

Voltage (kV)	Distance (mm)
0	60
50	
60	85
70	115
80	150



**Protection against high energy discharges (§ 5.2.3 Standard EN 50176)**

After the high voltage is disconnected, the discharge time for all the parts under voltage up to a discharge energy lower than 350 mJ is **1 s** for **Nanobell 803 ST SB HR**.

**Protection against ignition of flammable cleaning products (§ 5.2.4 Standard EN 50176)**

If inflammable cleaning products are used, the discharge time for all the parts under voltage up to a discharge energy lower than 0.24 mJ is **5 s** for **Nanobell 803 ST SB HR**.

### 3.4. Operating principle

#### 3.4.1. Turbine

[see DRT7128](#)

The turbine is equipped with an air bearing that separates the drive shaft and the impeller from the main body of the turbine. Thus no friction between the individual components is possible, which ensures a long service life of the components and allows high rotation speeds.

The air directed onto the turbine blades enables the rotation or braking of the turbine.

The spraying of the product is achieved by the centrifugal forces created by the rotation of the bell cup. The higher the speed of rotation, the smaller the size of the sprayed particles.

#### 3.4.2. Rotation speed measurement with microphone

The rotation speed is measured acoustically. Air is supplied between the rear flange and the shaft. Each bell cup rotation, air passes through a groove machined on the shaft. This variation in pressure generates a signal whose frequency is proportional to the rotation speed and which is returned to the microphone through the turbine (via the atomizer body). The microphone ([see DRT6190](#)) converts this signal into electrical pulses that are in turn transmitted to a control board or a frequency/Voltage converter.

The microphone and the turbine speed control module BSC 300 are the certified electrical system (Microphone+BSC300) ([see DRT6364](#)).

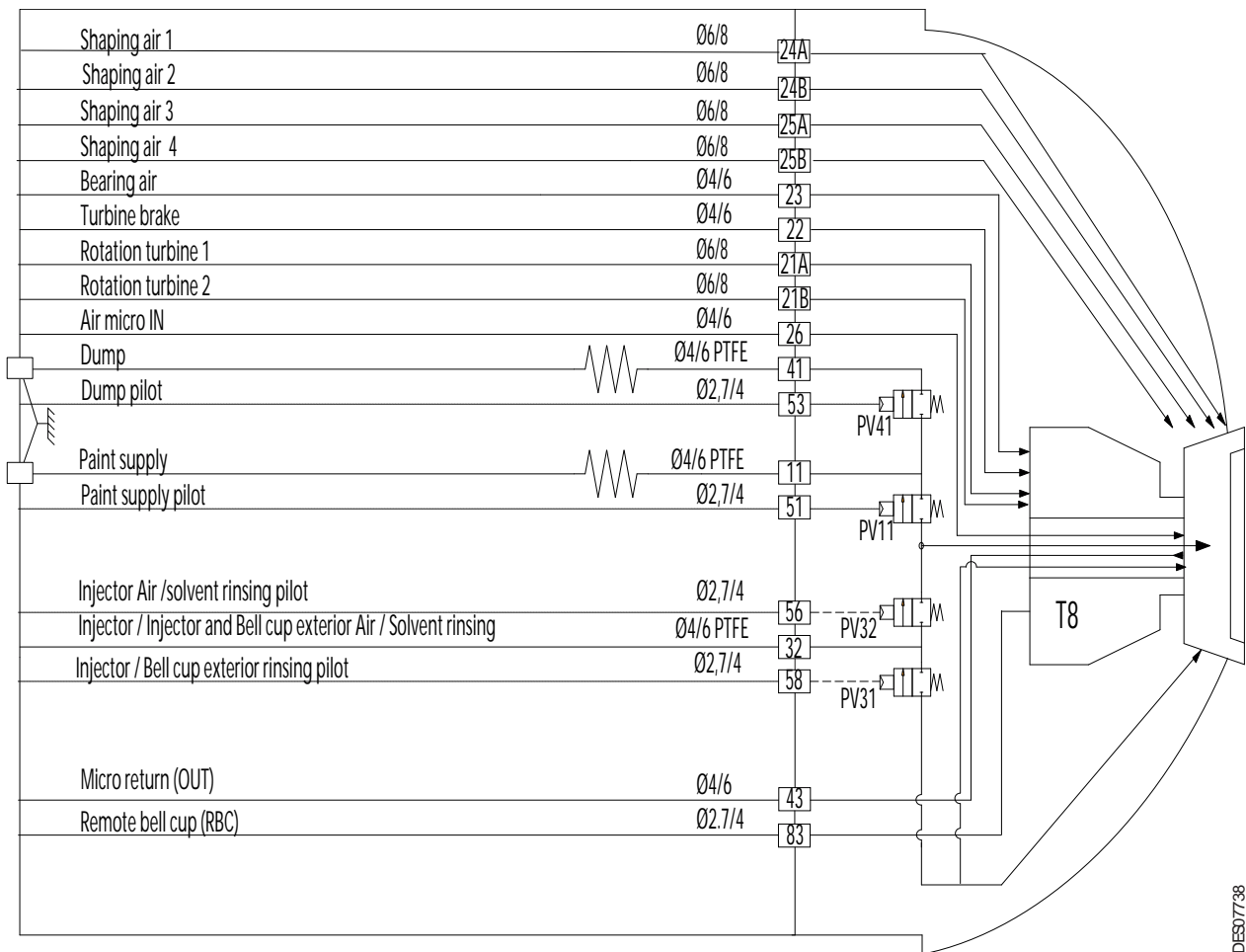
If used with a Frequency/Voltage converter, the certified electrical system (Microphone + zener barrier) must be used ([see DRT6364](#)).



**The length of the "Microphone return" hose should be between 4 and 5 meters to avoid any loss of acoustic signal at the microphone.**

**Due to the high speed of the turbine, a resonance frequency may occur in a hose that does not respect the recommended length range. The resonance frequency causes a stationary wave that inhibits the acoustic signal at the microphone.**

#### 4. Fluid diagram



DES07738

Marking	Function	Hose characteristics
11	Paint supply	D: 4/6 PTFE
21A	Turbine rotation 1	D: 6 / 8 rilsan
21B	Turbine rotation 2	D: 6 / 8 rilsan
22	Turbine braking	D: 4/ 6 rilsan
23	Bearing air	D: 4/ 6 rilsan
24A	Shaping air 1	D: 6 / 8 rilsan
24B	Shaping air 2	D: 6 / 8 rilsan
25A	Shaping air 3	D: 6 / 8 rilsan
25B	Shaping air 4	D: 6 / 8 rilsan
26	Microphone air IN	D: 4/ 6 rilsan
32	Air / solvent rinsing injector / exterior injector and bell cup	D: 4/6 PTFE
41	Dump	D: 4/6 PTFE
43	Microphone return (OUT)	D: 4/ 6 rilsan
51	Paint supply pilot	D: 2.7/ 4 rilsan
53	Dump pilot	D: 2.7/ 4 rilsan
56	Air / solvent rinsing injector pilot	D: 2.7/ 4 rilsan
58	Air / solvent rinsing exterior injector and bell cup pilot	D: 2.7/ 4 rilsan
83	Remote bell cup (RBC)	D: 2.7/ 4 rilsan

PTFE (Teflon) hoses must not be replaced by polyamide or polyurethane hoses.  
Blue hoses are used for the different air supplies.  
Colourless hoses are used for the product.



After a rinsing phase outside the bell cup and injector, it is imperative to end the rinsing phase by blowing out the hose "32" for 1 to 2 seconds.  
Hose 41 (purge) must be cleaned and blown out for 1 to 2 seconds before switching on the power supply.

The **RBC: Remote Bell Cup** function (input 83) is a pressure tap in the turbine that is proportional to the bell cup holding force (magnetic clip).

This pressure must be higher than 1.5 bar.

- RBC pressure  $\leq$  0.9 bar, **so** the bell cup is missing
- 0.9 bar < RBC pressure < 1.5 bar **then** the holding force is insufficient (dirty turbine fixing cone, damaged bell cup cone).

When the RBC pressure is lower than 1.5 bar, then the " Bell cup retaining/ presence " fault must be activated, which will prevent the rotation and activation of the paint supply valve (except in maintenance mode in order to carry out paint flow measurements).

**AS check:** this function is linked to the **RBC**. When the RBC pressure is less than 1.5 bar, an " AS check problem " must also be activated. In fact, the problem can come from a bad tightening of the outer cover, a bad tightening of the holding flange and / or a fault in the presence or holding of the bell cup.

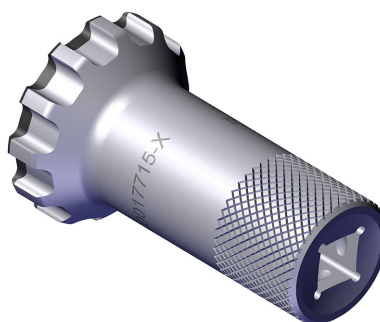
The operator is asked to check these elements, the production is interrupted because the sprayer cannot be used with this fault.

## 5. Startup

### 5.1. Tools



Part Number	Description	Qty	Unit of sale
900019642	Tool for assembling and disassembling the rear nut and the nut from the quick disconnect plate	1	1



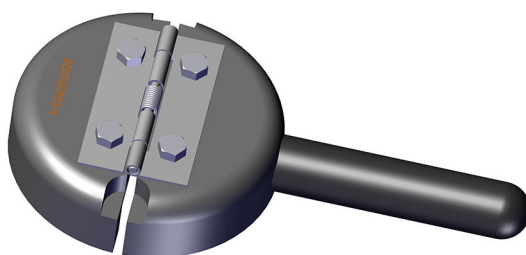
Part Number	Description	Qty	Unit of sale
900017715	Installation / Removal tool for T8 outer cover	1	1



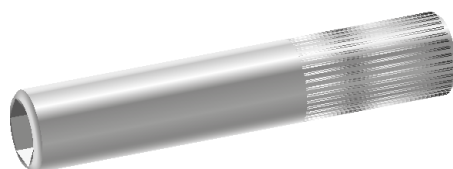
Part Number	Description	Qty	Unit of sale
900019783	Assembly / disassembly tool for low voltage connection	1	1



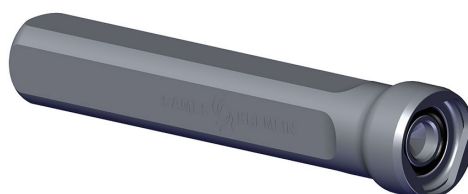
Part Number	Description	Qty	Unit of sale
900005784	Removal tool for EC 35 magnetic bell cup	1	1



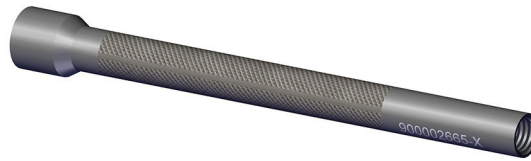
Part Number	Description	Qty	Unit of sale
900018693	Removal tool for EC 43 magnetic bell cup	1	1
900000803	Removal tool for EC 50 magnetic bell cup	1	1
1204427	Removal tool for EX 65 magnetic bell cup	1	1



Part Number	Description	Qty	Unit of sale
910000700	Injector removal tool	1	1



Part Number	Description	Qty	Unit of sale
900019557	Nano5 valve assembly/disassembly tool	1	1



Part Number	Description	Qty	Unit of sale
900002665	Trapezoidal tool for clipped fittings	1	1



Part Number	Description	Qty	Unit of sale
240000301	Seal extractor tool	1	1



Part Number	Description	Qty	Unit of sale
H1GMIN017	Vaseline white (100 ml)	1	1
H1GSYN037	Dielectric grease for high voltage unit (100 ml)	1	1

**Additional tools and accessories required:**

The tools listed below should be available for product installation and maintenance operations.

- Hose cutter (P/N W3SCTU002).
- Screwdriver (medium, large)
- Phillips screwdriver PH2
- Allen wrench (2.5 and 5 mm).
- Flat wrenches (4, 6,9, 12 mm)
- Open-end pipe wrench (6, 12 and 14 mm).
- Torque wrench from 5 to 50 Nm, 3/8" square.
- Fine brush

## 5.2. Sprayer installation

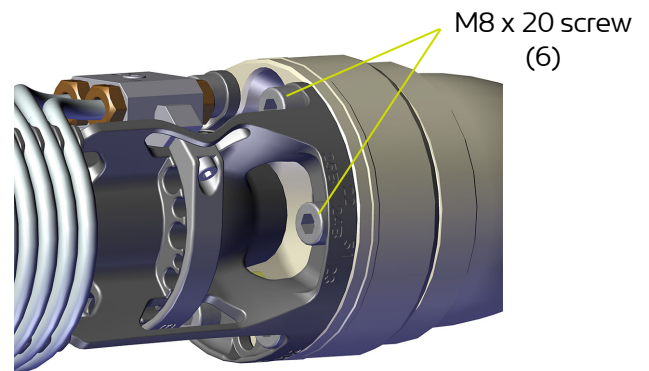
For installation rules: [see § 1.5.2 page 14](#)

The **Nanobell 803 ST SB HR** is packaged in 4 parts: fully equipped body with assembled rear support, equipped support tube, high voltage unit and ground cable.

Note: The low-voltage connection is delivered with the low-voltage cable separately from the **Nanobell 803**.

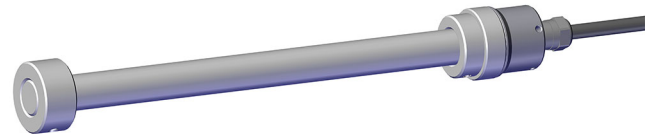
To install it, follow the steps below:

- **Step 1:** Place the nut on the equipped support tube and then install the assembly on the up and down robot (reciprocator)
- **Step 2:** Unscrew the rear nut manually.
- **Step 3:** Remove the equipped body assembly from the rear support by unscrewing the nut after removing the cover.
- **Step 4:** Install the rear support on the support tube and fix it with the 6 screws M8x 20.

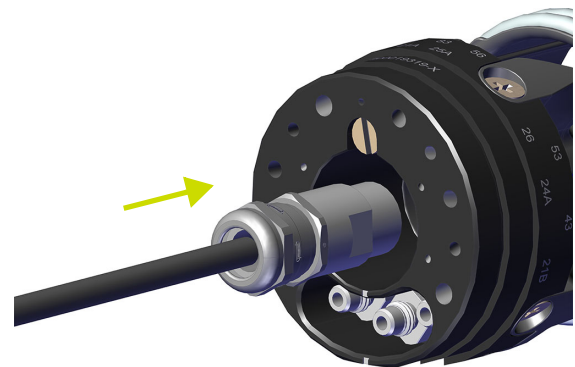


- **Step 5:** Install the low-voltage connection with the low-voltage cable.

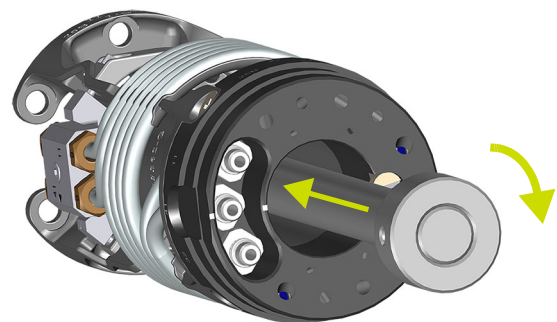
Screw the tool (P/N: 900019783) onto the low-voltage cable connection



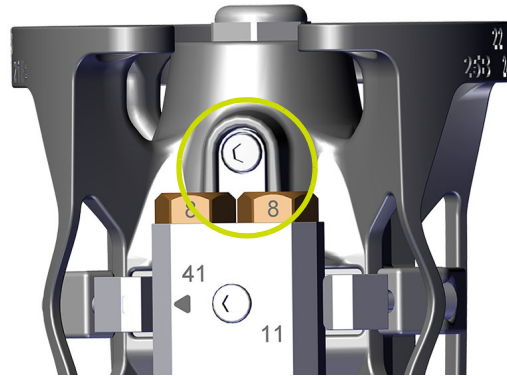
Pass the low-voltage cable from the other end through the rear support and the support tube until the tool (P/N: 900019783) equipped with the low-voltage connection is inserted in the quick disconnect plate.



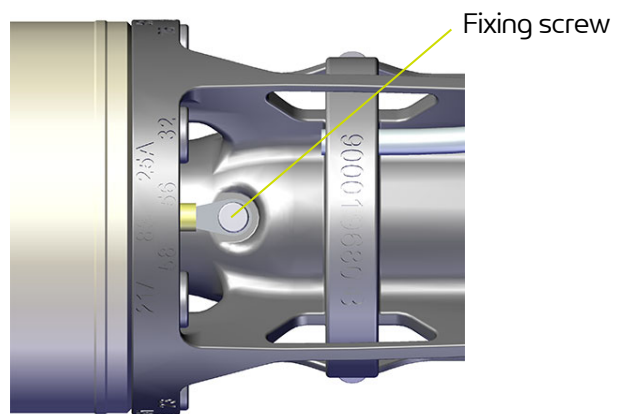
Push it completely in, making light rotations to position the flat of the low-voltage connection at the bottom of the rear support.



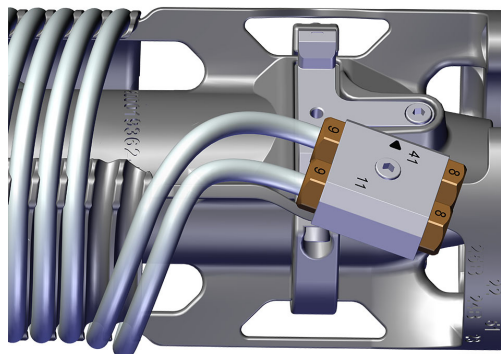
- **Step 6:** Secure the low voltage connection using a 4 mm allen wrench with the M4x 12 screw (longest) on top of the rear support at the coil connection block.



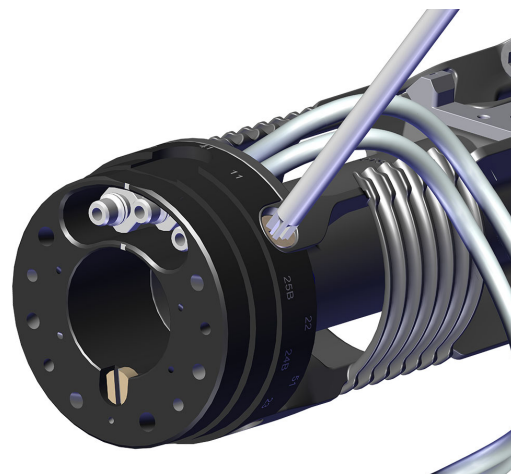
- **Step 7:** Fasten the earth cable with a 4 mm allen key to the low voltage connection at the earth symbol by the smaller lug with the M4x8 fixing screw after having passed it through the support tube by the larger lug side.



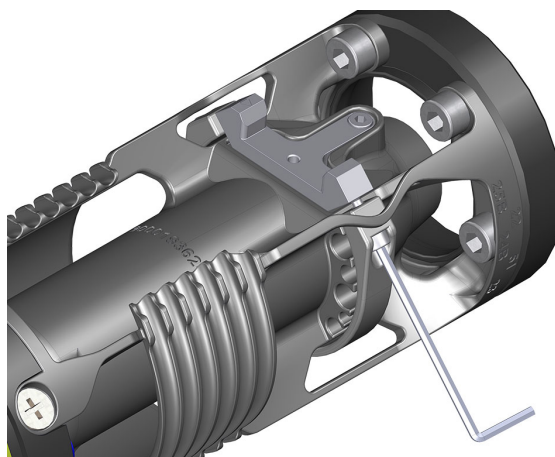
- **Step 8: Tubing the Nanobell 803:**  
Unscrew the coil connection block (captive screw).  
Unroll the coils.



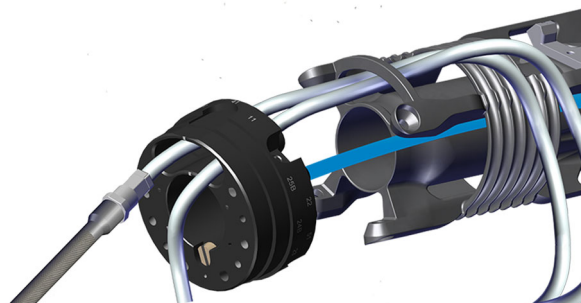
Separate the quick disconnect plate from the rear support by unscrewing the 4 M6 x 15 screws with the PH2 Phillips screwdriver in order to facilitate the tubing.



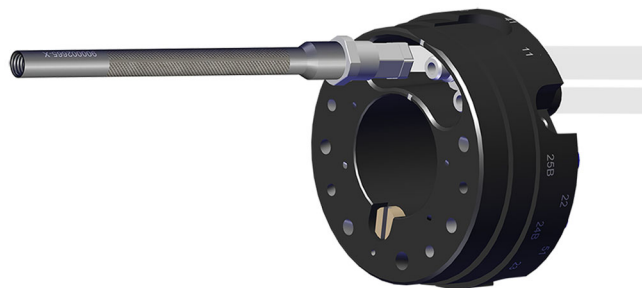
Unscrew the 2 captive screws M4 x 16 in order to remove the hose flange.



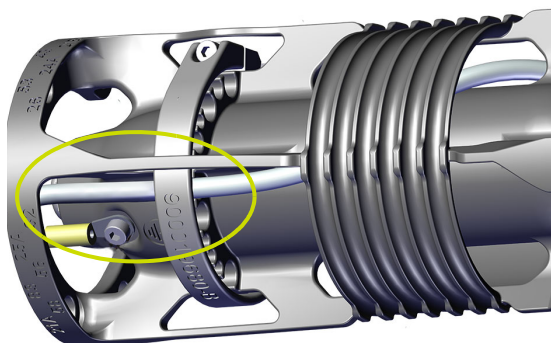
Hose the sprayer starting with hose 32  
1 Equip the hose 32 with its fitting



2 Use the tool (P/N: 90002665) to insert the hose into the quick disconnect plate.  
Clip it into the quick disconnect plate.



then position it in the location indicated on the rear support.



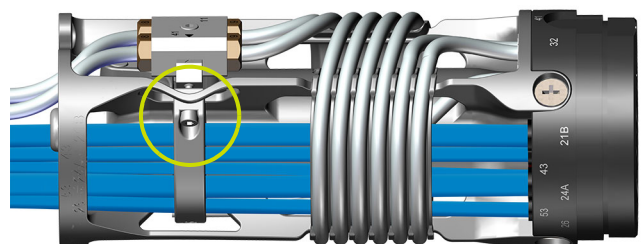
Continue through the air hoses respecting their location.



Replace the quick disconnect plate on the rear support by pulling on the hoses so that there is no slack and screw the quick disconnect plate back in place on contact with the 4 M6 x 15 screws.

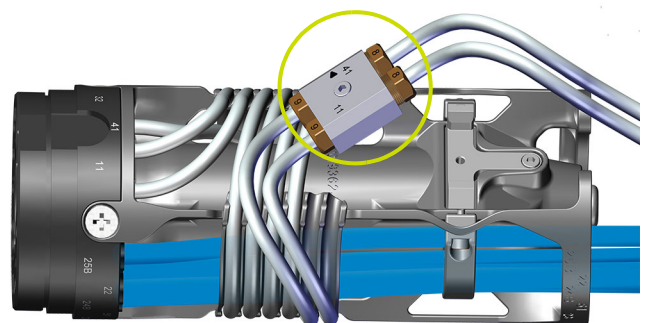


Fix the hose flange with the 2 screws M4 x 16 in order to hold the hoses in position.



Rewind the coils, taking particular care when starting them on the equipped side of the quick disconnect plate. Do not roll them up completely, leave one turn.

Connect the product/solvent hoses to the coil connection block.

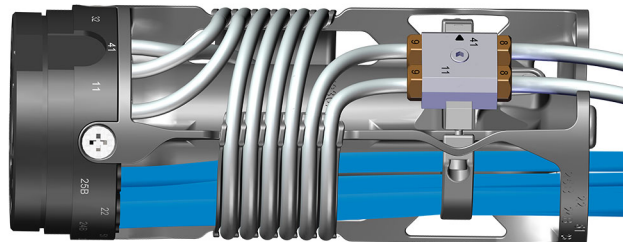


- 1 Unscrew the nuts from the coil connection block
- 2 Thread the nuts on the hoses
- 3 Connect the equipped hoses to the nipples of the coil connection block and screw on the nuts with a 13 open-end wrench.



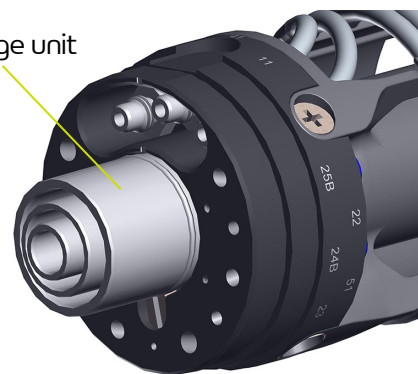
**Hose 11 (product) on the 11 of the coil connection block and 41 (solvent) on the 41.**

Finish winding the coils.  
Fix the coil connection block on the support with the captive screw.

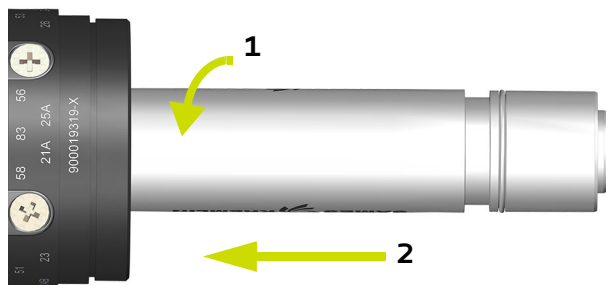


- **Step 9:** Install the high-voltage unit, having previously coated the inside of the baffles and the outside of the high-voltage unit up to the seal with dielectric grease.

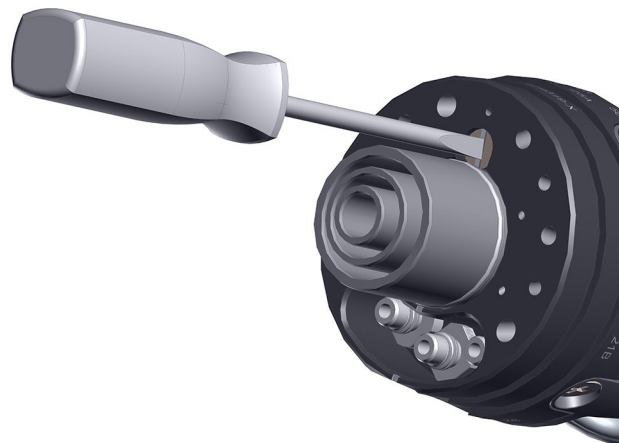
High voltage unit



Make a slight rotation (1) to find the coding of the connector, then push fully (2).

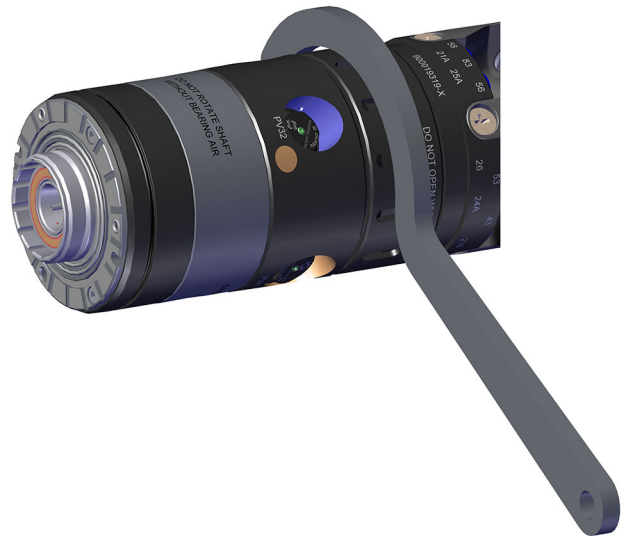


and position the locking screw of the high-voltage unit in the locked position (tighten clockwise).



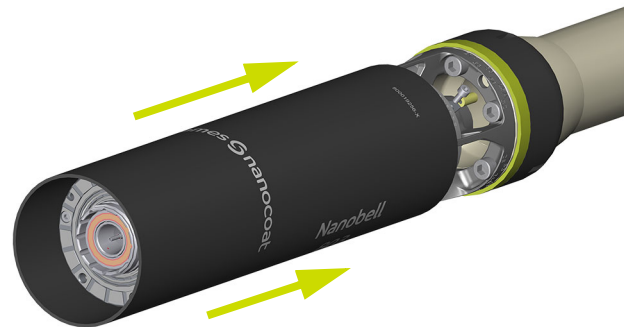
**Position the Nanobell 803 so that the 3 product fittings are down.**

- **Step 10:** Place the equipped body on the equipped quick disconnect plate,



tighten the nut with the tool (P/N: 900019642).

- **Step 11:** Put the cover in place



and the spacer.



- **Step 12:** Install the bell cup/outer cover assembly ([see § 6.3.3 page 47](#)).
- **Step 13:** Re-position the cover nut and tighten it manually.



Cover nut

### 5.3. Shutdown and Startup Procedures

**Important recommendations:**

- Follow the air settings given in Section 3.2.
- The bearing air must be at least 5 bar at the inlet of the body
- Check that the speed regulating module transmits a signal

#### 5.3.1. Shutdown Procedure

**Important steps to be observed:**

		Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
Stop atomizing	Chronogram						
Switch off the high voltage power supply							
Run a rinsing cycle							
Run a blowing cycle of paint and solvent hoses							
Cut off the shaping air							
Cut off the turbine rotation air *							
Cut off the bearing air							



\* Wait until the turbine has completely stopped 0 rpm.

#### 5.3.2. Startup Procedure

**Important steps to be observed:**

		Step 1	Step 2	Step 3	Step 4
Switch on the bearing air supply	Chronogram				
Start up turbine rotation					
Switch on the shaping air supply					
Switch on the high voltage power supply					
Start up atomization					

## 6. Maintenance

Preventive maintenance is an essential part of production and ensures the reliability of the installation. As a reminder, the performance of equipment can only be guaranteed if a minimum of control and cleaning operations are performed on this equipment.



**Soiling and wear of the Nanobell 803 ST SB HR sprayer depend on the operating and application conditions and the production rate.**

### 6.1. Summary table of maintenance operations

The maintenance intervals indicated in the procedures below are only indicative. The user will have to create his own maintenance schedule as he uses the **Sames** equipment.

Procedure	Detail	Duration	Frequency
<b>Cleaning</b>			
<b>A</b>	Cleaning of atomizer exterior, outer cover and bell cup	5 min	8 hours
<b>B</b>	<b>B1</b> Cleaning of bell cup and fixing cone	2 min	40 hours
	<b>B2</b> Cleaning of outer cover	5 min	40 hours
	<b>B3</b> Cleaning of injector exterior	2 min	40 hours
<b>C</b>	<b>C1</b> Cleaning of turbine	2 min	520 hours
	<b>C2</b> Cleaning of injector/ injector holder	2 min	520 hours
<b>Replacement</b>			
<b>Maintenance of body</b>			
<b>D</b>	<b>D1</b> Installation / Removal of shaping air shroud / T8 nut assembly	< 5 min	-
	<b>D2</b> Body installation / Removal	< 10 min	-
	<b>D3</b> Replacement of o-rings	15 min	6 to 12 months
	<b>D4</b> Replacement of Nano5 valve	5 min	3 million cycles*
<b>Maintenance of quick disconnect plate</b>			
<b>E</b>	<b>E1</b> Replacement of hoses	10 min	12 to 24 months
	<b>E2</b> Replacement of fittings	5 min	-
	<b>E3</b> Replacement of high voltage unit	5 min	-
	<b>E4</b> Replacement of quick disconnect plate	30 min	-
<b>Maintenance of rear support</b>			
<b>F</b>	<b>F1</b> Maintenance of coil connection block	15 min	-
	<b>F2</b> Replacement of coils	10 min	-
	<b>F3</b> Replacement of the low voltage connection	10 min	-

**Note:** the low voltage connection can only be removed with a tool according to procedure F3 ([see § 6.4.11 page 66](#)).

\*: except for the damage of the needle.

## 6.2. Preventive maintenance plan – PMP 7164

[see § 10.1 page 88](#)

The objective of the proposed preventive maintenance plan is to define in an exhaustive way, the verification, replacement and cleaning actions of the installed **Sames** equipment.

In order to anticipate breakdowns and malfunctions that may be due to technical deviations of the installation, the preventive maintenance plan attached to the user manual lists the routine maintenance operations necessary for better comfort in the use of the production tool.

Depending on the skills, area of responsibility and accreditation of each person involved, the preventive maintenance plan can be divided into two distinct levels: level 1 and level 2:

- **Level 1:** first level maintenance is essentially composed of visual control and cleaning operations of some elements of the equipment. To limit this level, only the specific tools supplied with the equipment will be used. This first level of maintenance is generally taken care of by paint operators or installation managers.
- **Level 2:** second level maintenance completes the first level by more complex dismantling operations requiring electrical engineering tools. This second level is generally handled by the factory maintenance department.

### 6.3. Cleaning

These maintenance operations can be performed online. Always refer to the health and safety instructions before carrying out any work ([see § 1.5 page 9](#)).

#### 6.3.1. Procedure A: Atomizer exterior

At regular intervals during frequent use, and at the end of each cycle:

- Stop atomization, run a rinsing cycle.
- Stop the turbine. The bearing air and shaping air remain under pressure to block the solvent flow between the bell cup and inner shaping air shroud.



**Always wear safety goggles.**

**Whenever solvent is handled, gloves made of an appropriate resistant material must be worn. Work in a well-ventilated area whenever solvent is used.**



**It is recommended to use a non-flammable solvent, otherwise follow the note below.**



**Prior to cleaning, It is essential to eliminate all electrostatic charges on the atomizer using a cloth soaked with water then clean using a rag and an approved cleaning product. Do not use a manual solvent gun.**



**Under no circumstances should the sprayer or any of its components be sprayed with solvent or with water at high or low pressure. Soak the body of the atomizer in a liquid of cleaning without integral disassembling of all its components is strictly prohibited. It is essential to remove bell cup, shaping air assembly, turbine, valves, o-rings and fittings by using suitable tools ([see § 5.1 page 30](#)) then dry all the parts perfectly. If this information is not respected, there is a risk of total deterioration of the atomizer imposing its replacement which is not covered by the Sames guarantee. It is in the same way strictly prohibited to soak the turbine in solvent.**



Sames recommends the use of apolar solvent to limit the contamination on the outer cover after cleaning.

Sames disadvises the use of anti-static plastic films to protect bodies and insulating covers of the atomizers. These films are conductive and can short-circuit the high voltage.

Sames forbids the use of adhesives on the insulating parts of the atomizers.

Sames also prohibits the use of absorbent textile covers to protect the bodies and insulating covers of sprayers. The covers retain cleaning products and paint, which can lead to high voltage problems (piercing, ionization, material degradation, etc.).

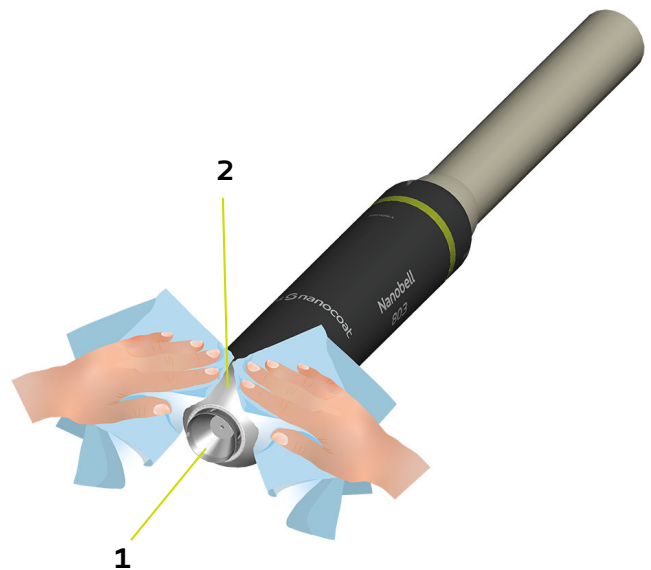
Sames recommends the use of insulating grease for protection of the atomizers. In any case, the protection devices must be insulating to avoid any risk of overcurrent and must be renewed regularly.



It is imperative that the turbine be stopped.

1	Bell cup
2	Outer cover

- Clean the atomizer, the outer cover and the bell cup exterior using a clean rag.
- Dry carefully with compressed air.



## 6.3.2. Procedure B1: Magnetic bell cup and fixing cone

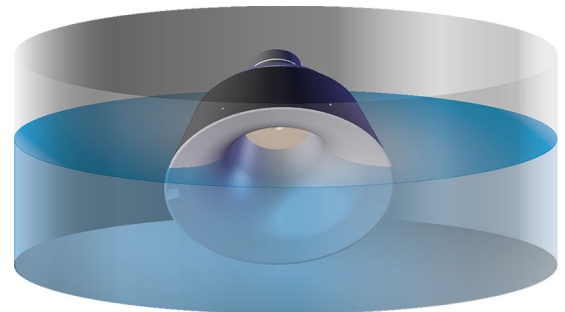


All maintenance or handling operations on the bell cup must be done with extreme care because the bell cup is balanced.



Stop the turbine and cut off the shaping air supply, the bearing air remains under pressure.

- Remove the bell cup with the appropriate tool, [see DRT7127](#).
- Carry out a visual inspection.
- Soak the bell cup for up to one hour in a suitable solvent.



- Clean with a clean cloth



and a soft brush.

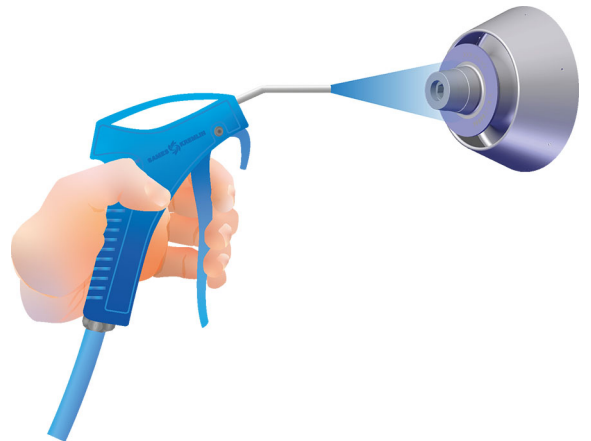




Make sure that all surfaces are clean and completely free of dirt. Pay particular attention to the inner and outer surfaces of the bell cup fixing cone.



- Dry both sides of the bell cup thoroughly with compressed air..



- Replace the bell cup on the sprayer.

**Bell cup fixing cone:****Note:** This procedure can also be performed with the outer cover in place

This operation must be carried out with the turbine bearing air to avoid the penetration of the solvent into the turbine.

- Using a brush slightly soaked in solvent, clean the bell cup fixing cone.

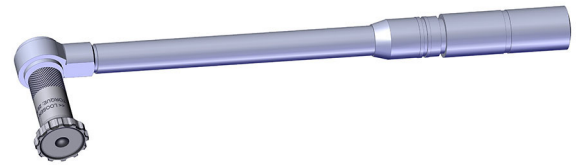


- Dry carefully with a clean, dry, non-fluffy cloth

6.3.3. Procedure B2: Outer cover

- The bell cup has been previously removed and the cover nut unscrewed.

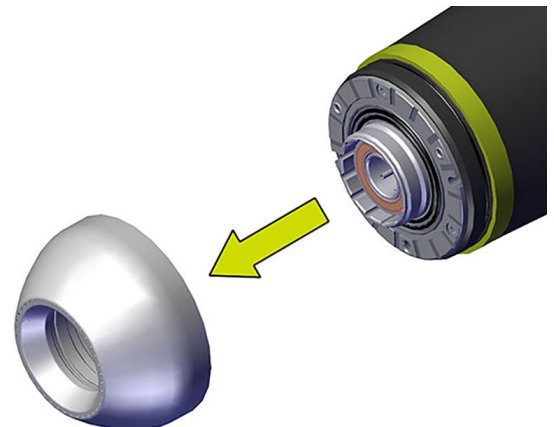
- **Step 1:** Place the tool (P/N 900017715) on a Torque wrench 5 to 50 Nm, 3/8" square.



- **Step 2:** Unscrew the outer cover.

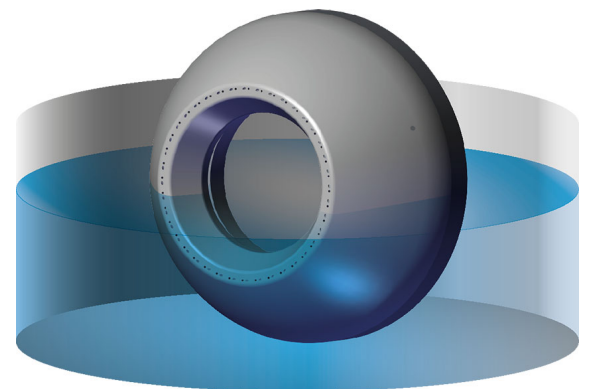


- **Step 3:** Remove the outer cover.

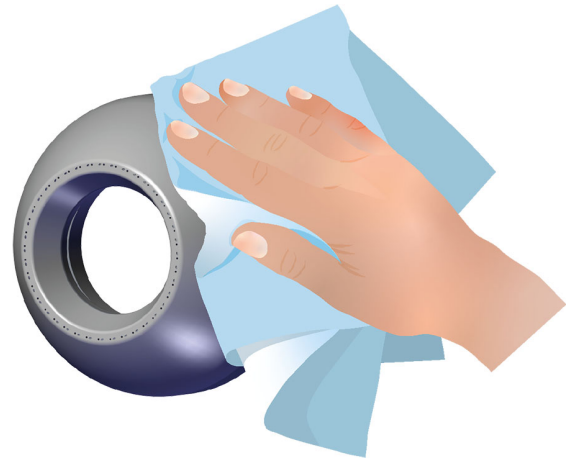


- **Step 4:** Let the outer cover soak for up to one hour in an appropriate solvent.

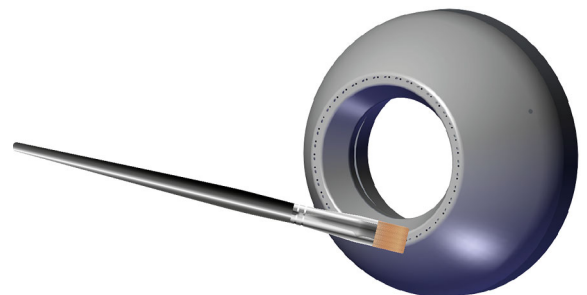
Be careful not to put the surface with the air holes on a hard surface. Place the outer cover on the opposite side.



- **Step 5:** Clean the outer and inner surfaces with a clean cloth soaked in solvent.



- **Step 6:** Use a nylon brush to clean the holes on the front face of the outer cover.



- **Step 7:** Dry carefully with compressed air (concentrating on the holes to eliminate paint residues) then wipe with a clean, dry cloth.



- **Reinstall the outer cover:** place the outer cover on the sprayer, tighten to 25 N.m then manually screw on the cover nut.



## 6.3.4. Procedure B3: Injector exterior



**This operation must be carried out with the turbine bearing air to avoid the penetration of the solvent into the turbine.**

Proceed with the bell cup, the outer cover previously removed.

- Using a brush slightly soaked in solvent, clean the injector exterior.



- Dry carefully with a clean, dry, non-fluffy cloth.

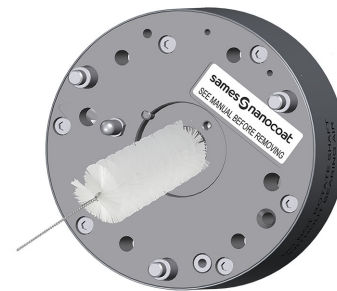
6.3.5. Procedure C1: Cleaning of the turbine

- Proceed with bell cup, outer cover and shaping air shroud / T8 nut assembly previously removed.

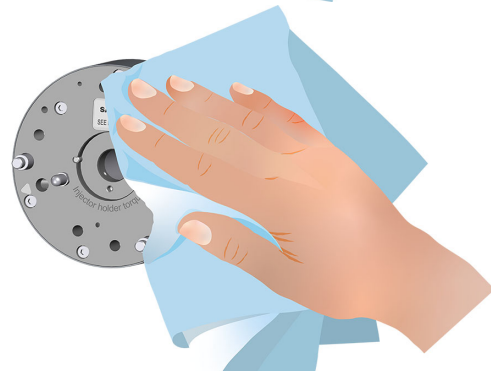
- Unscrew the three turbine fixing screws and pull the turbine in the axis.  
Remove the injector/injector holder assembly ([see § 6.3.6 page 52](#)).



- Clean the inside of the turbine with a cylindrical brush.



- Then clean the outside of the turbine with a soft, lint-free cloth.





**Do not soak the turbine in solvent.**

- **Before reinstalling the turbine on the body:** Check the condition of the O-rings  
Replace them if necessary  
Make sure they are all present ([see DRT7128](#)).
- **Reassembling:** Put back in place the injector/injector holder into the turbine ([see § 6.3.6 page 52](#)).  
Position the turbine by aligning a screw and centering pin on the body. Secure the turbine with the three screws, tighten to a torque of 2.2 Nm



6.3.6. Procedure C2: Injector/ Injector holder

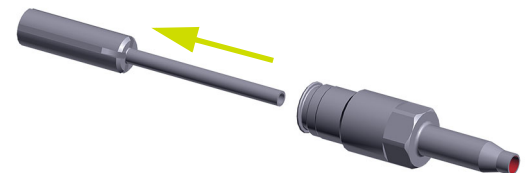
Bell cup and outer cover are previously removed.

**Injector only:** (it is not necessary to remove the turbine or the shaping air shroud / T8 nut assembly).

- **Step 1:** Using the tool (Ref.: 910000700), unscrew the injector (clockwise) and remove it, taking care not to damage the injector and its two O-rings.



Any operation on the injector must be carried out with care.



- **Step 2:** Clean the injector as well as the diffuser with a soft brush previously soaked in solvent



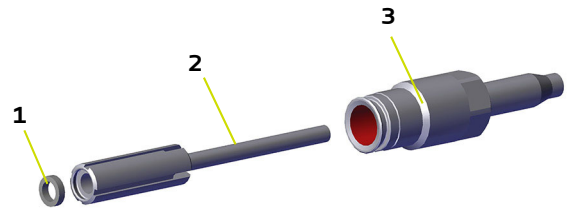
and then dry thoroughly with compressed air.



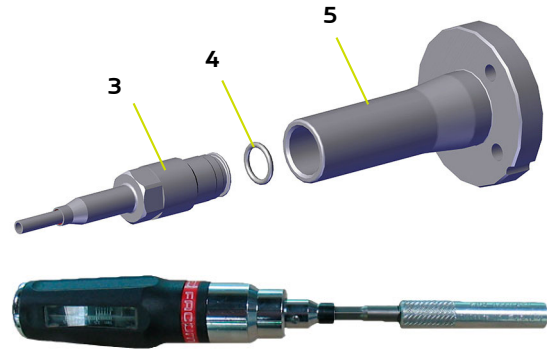
Check the condition of the O-rings and replace them if necessary. ([see § 8.2.3 page 83](#)).

In case of heavy soiling: Soak the injector for one hour in a suitable solvent and dry thoroughly with compressed air.

- **Step 3:** Insert the injector (2) with its o-ring (1) into the diffuser (3), do not tighten it fully.



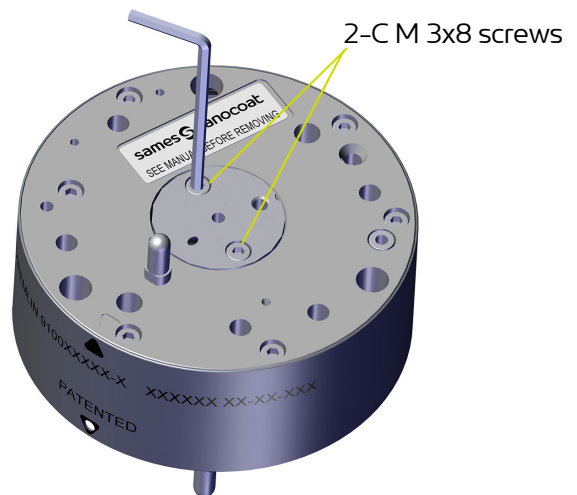
Install the o-ring (4) on the diffuser (3), place the assembly in the injector holder (5) and tighten manually.



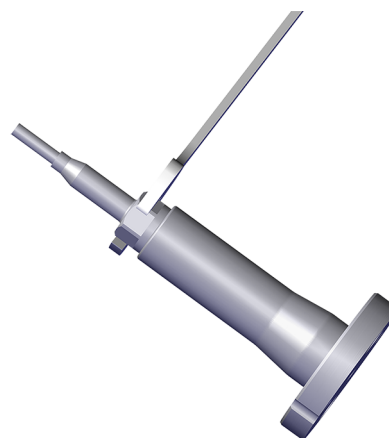
- **Step 4:** Finish tightening the injector in the injector holder using the assembly tool (P/N: 910000700), on which a torque screwdriver is fitted, with a torque of 2.2 Nm.

**Injector / Injector holder:**

- **Step 5:** Unscrew the three fixing screws holding the turbine on the equipped body. Pull the turbine in the axis. If necessary, remove the injector holder, unscrew the 2 screws fixing the injector holder with a 2,5 mm Allen key.



- **Step 6:** Using a 9 mm open-end wrench, unscrew the injector (clockwise) and remove it, making sure not to damage the injector and its two O-rings. Then repeat steps 2, 3 and 4.



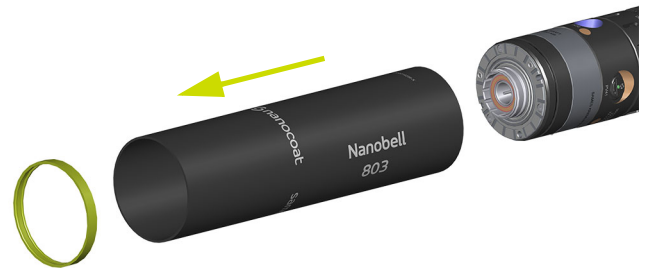
- **Reassembling:** Insert the injector holder into the turbine, tighten the two screws to a torque of 1.7 N.m.

### 6.4. Replacement

The following operations are preferably performed in a workshop.

#### 6.4.1. Procedure D1: Installation / Removal of shaping air shroud/ T8 nut assembly

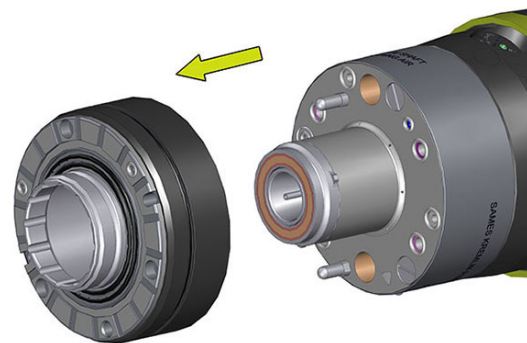
- Remove the bell cup and outer cover.
- **Step 1:** Remove the ring, then the cover.



- **Step 2:** Unscrew the 3 screws C M 4x40 with a 3 mm allen wrench.



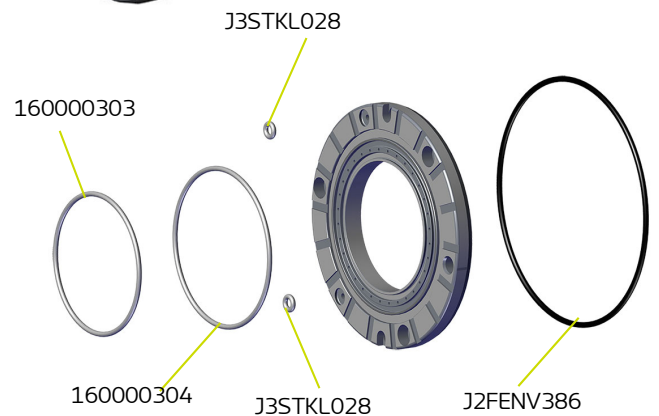
- **Step 3:** Uncouple the shaping air shroud / T8 nut assembly by pulling the assembly through the nut.



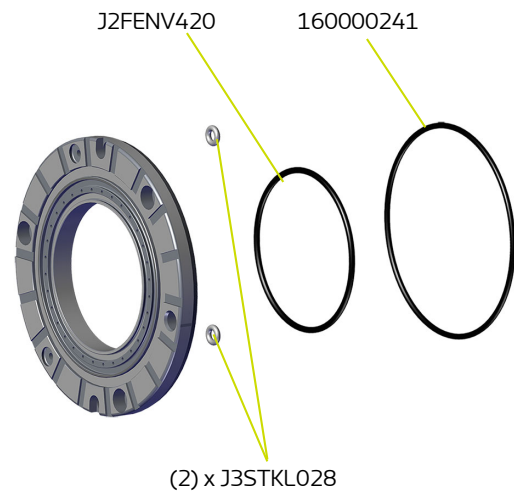
- **Step 4:** Check the condition of the o-rings, replace them if necessary, remove them with the tool (P/N 240000301):

**O-ring set, T8 exterior flange (P/N 910027917).**

The o-ring (P/N: J2FENV386) must be replaced systematically as soon as it has been removed from its groove.



- **Step 4:** (continued)  
**O-ring set, T8 interior flange (P/N 910027918).**

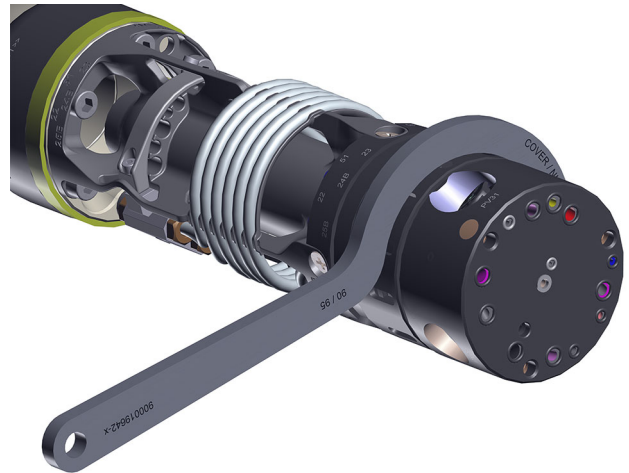


- **To reassemble:** proceed in reverse order.  
Place the assembly on the body, and tighten the 3 screws C M 4x40 to a torque of 1.7 N.m.

6.4.2. Procedure D2: Body installation / removal

- Remove the bell cup, shaping air assembly (and possibly turbine and injector/holder assembly).

- Remove the body:** Hold the body and loosen the nut with the tool (P/N: 900019642).

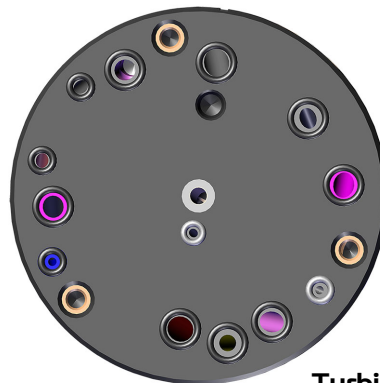


- Reinstall the body:** Fix the body on the quick disconnect plate by screwing the nut with the tool (P/N: 900019642).

6.4.3. Procedure D3: Replacement of body o-rings

- Check the conditions of the o-rings and replace if necessary.

**P/N of Turbine side body o-ring set: 910031013**



**Turbine face**

**P/N of quick disconnect plate side body o-ring set: 910031012.**



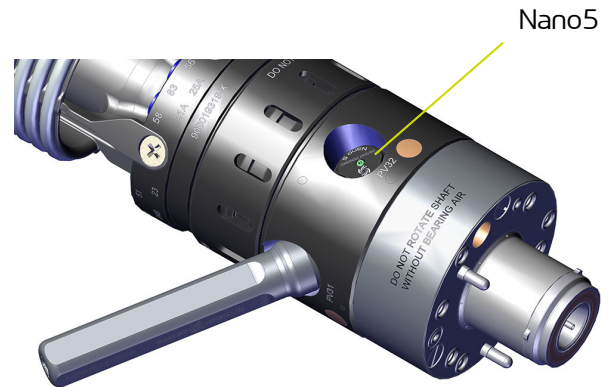
**Quick disconnect plate face**

Before reassembling the body, make sure they are in place.

6.4.4. Procedure D4: Replacement of Nano5 valve

- **Remove the Nano5:**  
[see RT Nr 6453](#) for the operations listed below.

Remove the Nano5 valves using the tool  
P/N: 900019557.



Check the condition of the Nano5 valves, clean them and replace them if necessary.  
Before reassembly, coat the threads of the Nano5 valves with Vaseline.  
Install the Nano5 in the body, screw with the tool (P/N: 900019557), then position the torque wrench on the tool and tighten to a torque of between 1.5 N.m min. and 2 N.m max.



**Note:** It is also possible to access the Nano5 valves without disassembling the bell cup/shaping air assembly:

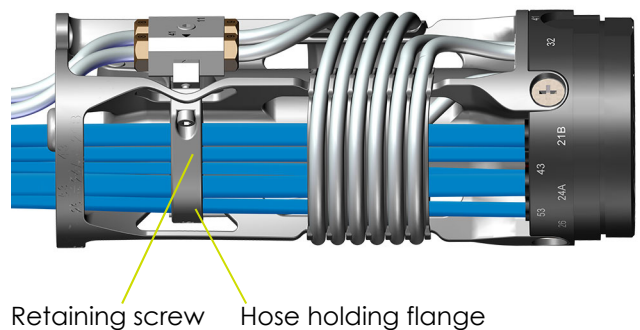
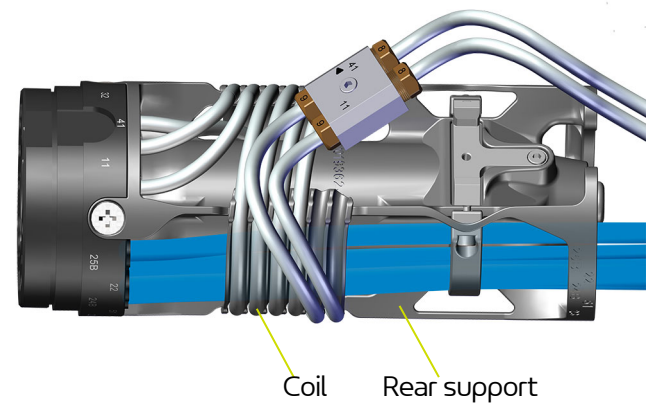
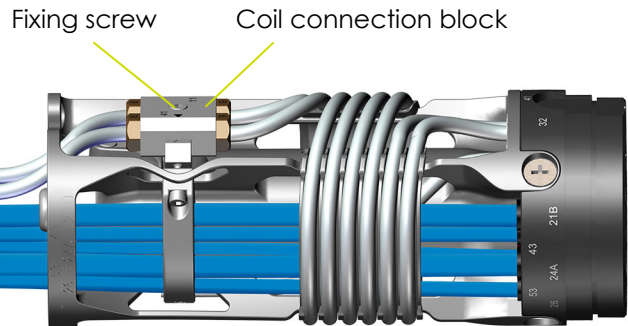
- Unscrew the nut from the cover with the tool (P/N: 900019642), slide the nut and the ring on the support tube.
- Slide the cover towards the rear of the sprayer.



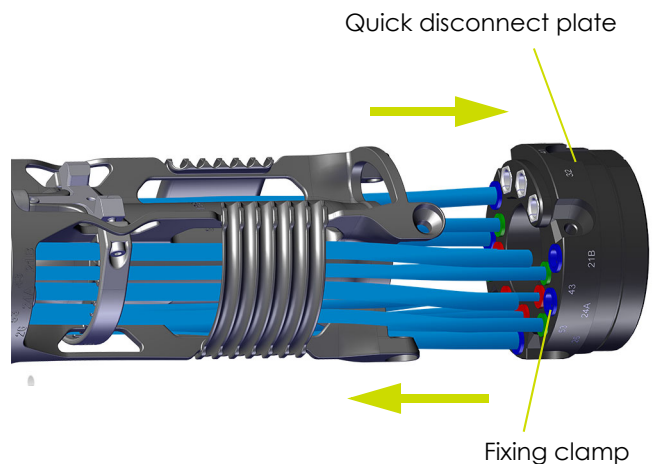
**Be sure to put the Nano5 back in its place, they must not be mixed up.**

6.4.5. Procedure E1: Replacement of hoses

- The body being previously removed.
- Using a 4mm Allen wrench, loosen the fixing screw of the coil connection block.
- Remove the coil connection block and unsnap the coil from the rear support.
- Remove the hose holding flange by unscrewing the 2 retaining screws M4x16.
- Remove the 4 Phillips head screws with a PH2 Phillips screwdriver, which secure the quick disconnect plate to the rear support.



- Pull the quick disconnect plate forward
- **For air hoses:** Disconnect the damaged hose from its retaining clamp  
**For rinsing hose (32):** Position the tool (P/N: 900002665) on the fitting, screw on and then pull the fitting out by pulling it in the axis with the tool. To remove the fitting, follow procedure E2 [see § 6.4.6 page 60](#).
- Unclip the hose from the back and pull it out through the support tube.

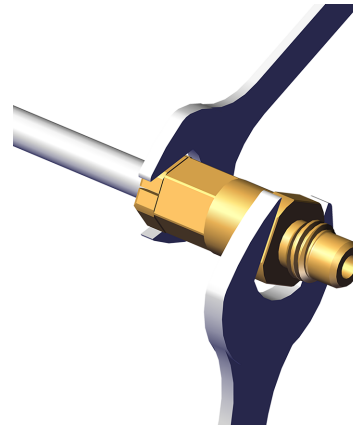


### Reinstallation of hoses:

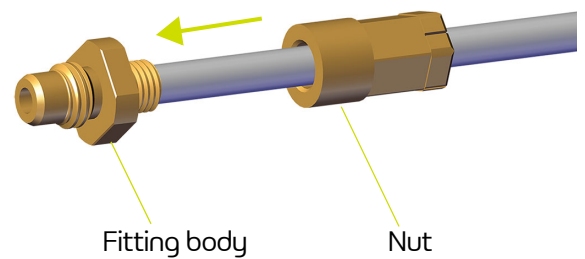
- **For air hoses:** Replace the hose, pass the hose through the support tube, then through the rear support, and push the hose all the way into the fixing clamp.  
**For the rinsing hose (32):** Replace the rinsing hose (32), pass the hose through the support tube, then through the rear support and the quick disconnect plate and follow procedure E2 ([see § 6.4.6 page 60](#)) to equip the hose with a new fitting.  
 Then screw the tool (P/N: 900002665) on this fitting and clip it into the bottom of the quick disconnect plate.

## 6.4.6. Procedure E2: Replacement of product fitting

- **Remove the product fitting:** Loosen the nut while holding the fitting with a flat wrench and pull the fitting out of the hose by pulling in the axis.

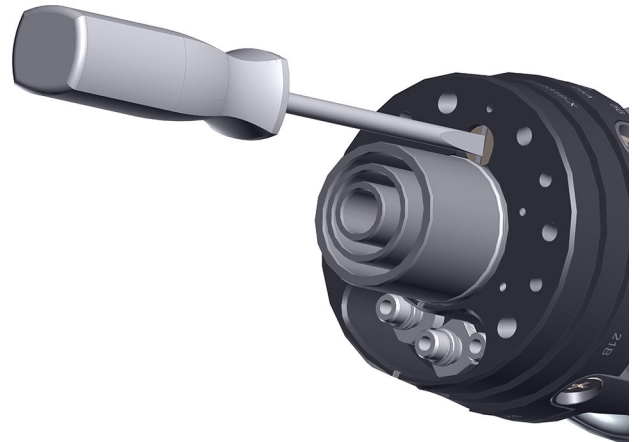
**Reassembly of fittings:**

- Place the nut on the hose, push the hose onto the fitting body up to the shoulder, and tighten the nut to the stop.

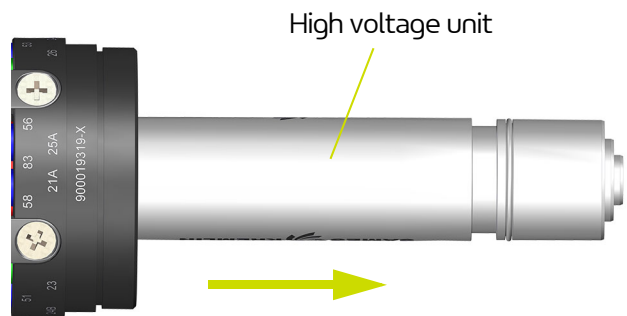


6.4.7. Procedure E3: Replacement of the HVU810 high voltage unit  
The procedure D2 having been followed beforehand ([see § 6.4.2 page 56](#)).

- To remove the high-voltage unit, unlock the retaining screw.

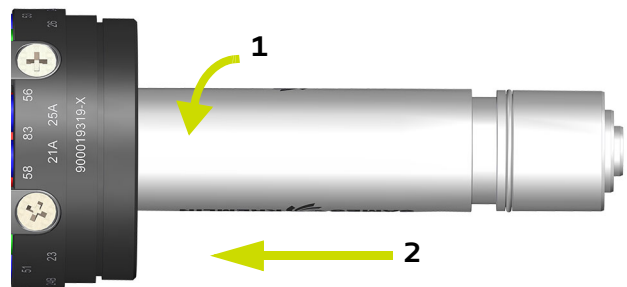


- Then pull the high-voltage unit in the axis to disconnect it.



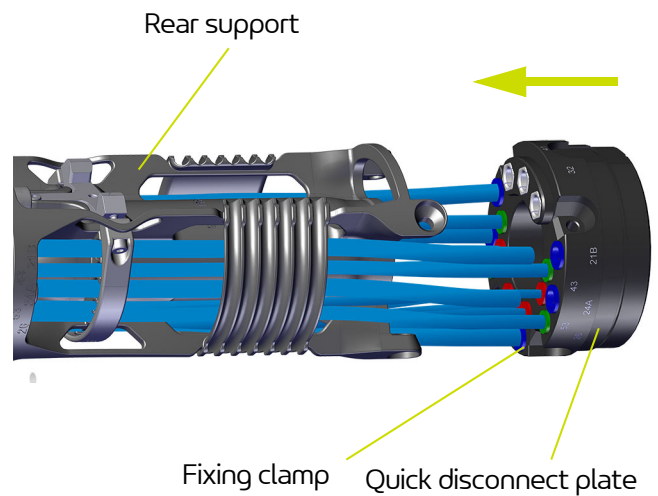
- Install the new high-voltage unit, having previously coated the inside of the baffles and the outside of the high-voltage unit with dielectric grease up to the o-ring.

Make a slight rotation (1) to find the coding of the connector, then push fully (2) and position the locking screw of the high-voltage unit in the locked position (tighten clockwise).



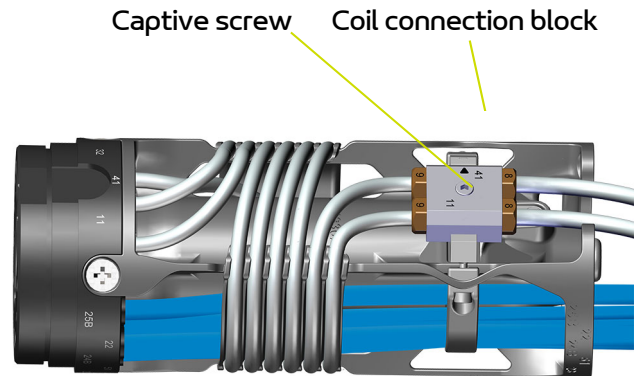
6.4.8. Procedure E4: Replacement of quick disconnect plate

- Remove all hoses from each fixing clamps ([see § 6.4.5 page 58](#)).
- Remove the 32 hose fitting ([see § 6.4.5 page 58](#))
- Remove the coils ([see § 6.4.10 page 64](#))
- Put in place the new quick disconnect plate
- Clip each hose onto the fixing clamp.
- Replace the 32 hose fitting ([see § 6.4.5 page 58](#))
- Replace the coils ([see § 6.4.10 page 64](#))
- Push the quick disconnect plate to the rear support and tighten the 4 screws securing the rear support to the quick disconnect plate with a PH2 Phillips screwdriver.
- Replace the hoses and coil on the rear support.
- Place the hose holding flange and the coil connection block on the rear support.

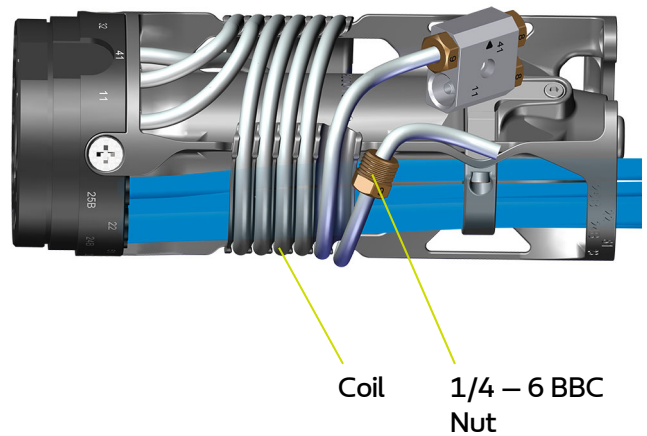


6.4.9. Procedure F1: Maintenance of the coil connection block

- Using a 4 mm allen wrench, unscrew the captive screw in order to remove the coil connection block from its support.



- Using a 13 mm open-end wrench, unscrew the four fittings (1/4 - 6 BBC nut) from the coil connection block and extract the four hoses from the block.
- Check its condition, replace it if necessary. For reassembly, proceed in reverse order.



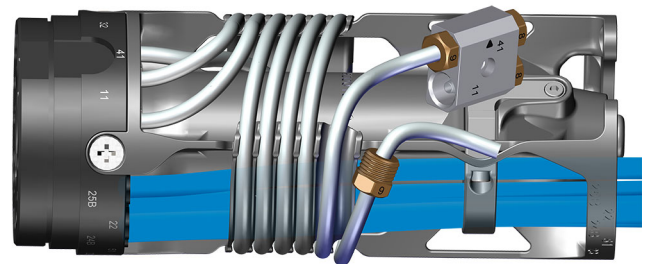
6.4.10. Procedure F2: Replacement of coils

The F1 procedure having been followed beforehand ([see § 6.4.9 page 63](#)).

- Unwind the 2 coils completely.
- At the other end of the coils, unclip the fittings from the quick disconnect plate using the tool (P/N: 900002665): place it on the fittings, screw and then remove the fittings by pulling them in the axis with the tool.

Then remove the fittings by following procedure E2 ([see § 6.4.6 page 60](#))

Then remove the two nuts and replace the two coils.



- Equip the coils with the fittings on the quick disconnect plate side following procedure ([see § 6.4.6 page 60](#)) then screw the tool (P/N: 900002665) onto the fittings.

Pass the coils through the quick disconnect plate and clip the fittings into the bottom of the quick disconnect plate.



**Note: Two 875 mm long hoses will be installed on circuit 11 and circuit 41.**

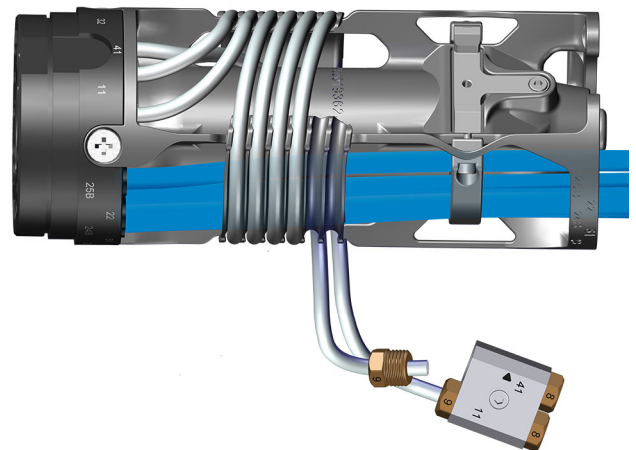
- Wind the coils around the rear support, take special care when starting to wind the coils (refer to the 1st illustration).

Clip the coils onto the rear support, leaving one turn.

Place the two fitting nuts on the two coils, screw the nuts on the coil connection block with a 13 open-end wrench.

Attention: Hose 11 on the 11 and 41 on the 41.

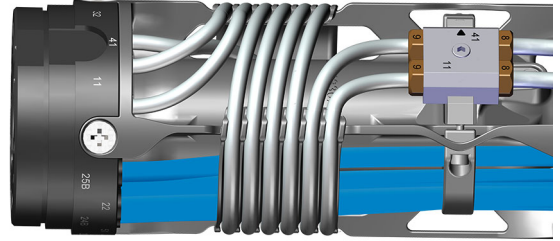
Finish winding the coils.



Before mounting the coils on the nipples of the coil connection block, check if the length of the coils is not too long compared to the position of the coil connection block by winding them completely on the rear support.

If it is the case, check that the coil is clipped on each clip of the rear support and readjust the length of the hose with the tube cutter (Ref.: W3SCTU002).

- Place the coil connection block on the rear support and tighten the captive screw.

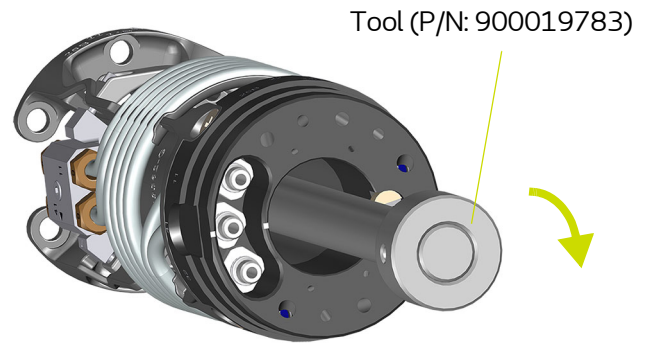


**Check that the coil is clipped on each clip of the rear support before replacing the cover in order not to damage it.**

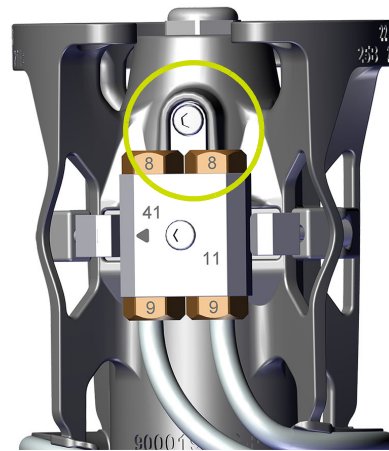
6.4.11. Procedure F3: Replacement of the low voltage connection

The E3 procedure having been followed beforehand ([see § 6.4.7 page 61](#))

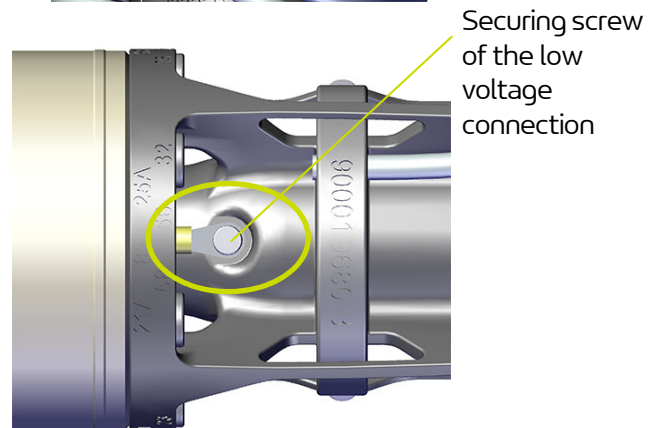
- Place the tool (P/N: 900019783) inside the quick disconnect plate until the connection of the high-voltage unit at the bottom of the rear support.
- Screw the tool (P/N: 900019783) onto the connection of the high-voltage unit.



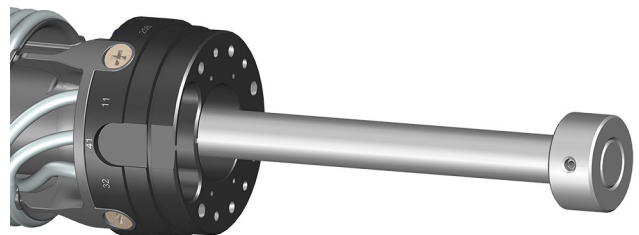
- Using a 4 mm Allen wrench, unscrew the M4x8 fixing screw of the LV connection with the ground cable.

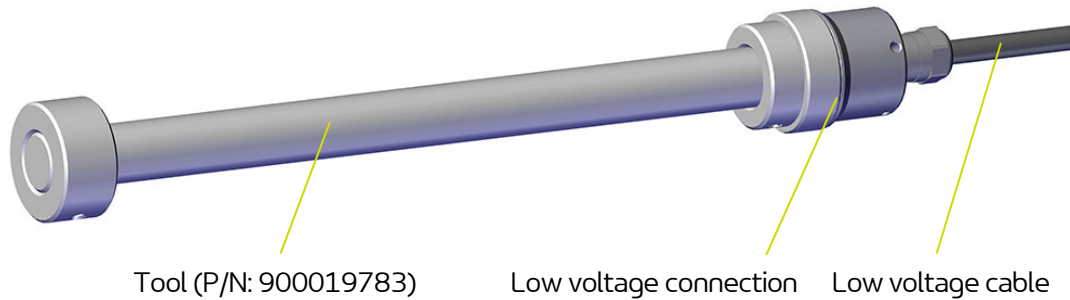


- Using a 4 mm Allen key, unscrew the M4x12 fixing screw of the low-voltage connection with the top of the rear support at the coil connection block.



- Extract by pulling the assembly (tool P/N: 900019783 and LV connection).



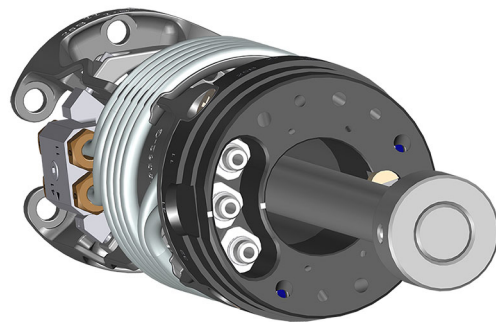


- Disconnect the low-voltage connection from the tool. (P/N: 900019783).

**Reinstallation:**

- Screw the tool (P/N: 900019783) on the low voltage connection.
- Pass the low voltage cable through the rear support and the support tube.
- Insert the tool (P/N: 900019783) equipped with the connection in the quick disconnect plate, push it all the way in, making a slight rotation while trying to position the flat of the connection.
- Using a 4 mm allen wrench, secure the high voltage unit connection with the screw (longest) on top of the rear support.
- Fasten the lug of the earth cable to the LV connection at the earth symbol with the M4 x 8 fixing screw

- Remove the tool after unscrewing it from the LV connection.



## 7. Troubleshooting

Symptoms	Probables Causes	Remedies	
High voltage faults (For details <a href="#">see DRT7122</a> )	Worn cable	Replace the low voltage cable ( <a href="#">see § 6.4.11 page 66</a> )	
	HVU problem	See information on the GNM 300 control module. <a href="#">see DRT7122</a>	
	GNM300 problem		
	Product deposit in the coil (high voltage rise)	Coil cleaning by "solvent air" trains Replace the coil ( <a href="#">see § 6.4.10 page 64</a> )	
Low electrostatic effect	No high voltage	See information on the GNM 300 control module <a href="#">see DRT7122</a>	
	Insufficient high voltage	Check sprayer output voltage Increase the high voltage	
	Distance between spray head and part to be painted too large	Check the recommended application distance <a href="#">see DRT7127</a>	
	Part not connected to ground	Clean the parts supports. Check the grounding of the parts and the conveyor.	
	Ventilation too high	Reduce the suction flow of the booth, while complying with the regulations in force	
	Product resistivity too high	Reduce the resistivity of the product so that $\rho < 500M\Omega.cm$	
	Product resistivity too low	Check the resistivity of the product so that $\rho > 6M\Omega.cm$	
	Short-circuit of the control module from outside the sprayer		Check that the protective material used is non-conductive.
			Check the outside of the sprayer for soiling and clean with a non-conductive solvent ( $\rho > 15 M\Omega.cm$ ) if necessary
Short-circuit of the control module by the product hose		Check the resistivity of the product and its conformity with the version of the sprayer.	

Symptoms	Probables Causes	Remedies
Droplets not or poorly atomized	Damaged bell cup	Check the condition of the bell cup, replace if necessary <a href="#">see DRT7127</a> )
	Damaged diffuser	Check the condition of the diffuser, replace the bell cup if necessary <a href="#">see DRT7127</a> )
	Product viscosity too low	Check the viscosity of the product so that it is between 20 and 40 seconds - FORD N°4 cut or between 20 and 45 seconds - AFNOR N°4 cup.
	Product flow rate too high	Check that the product flow rate is between 30 and 800 cc/min.
Grooving, stripping	Plugging of the shaping airs	Clean shaping air assembly ( <a href="#">see § 6.3.3 page 47</a> ) et <a href="#">see DRT7127</a> )
	Outer cover not tightened	Check the RBC return and if necessary tighten the outer cover to 25 N.m using the torque wrench and tool P/N: 900017715. ( <a href="#">see § 6.3.3 page 47</a> )
	Shaping air leakage	Check the condition of the o-rings J2FENV420, 160000303, 160000304, J2FENV386, 160000241 of the shaping air shroud / T8 nut assembly. ( <a href="#">see § 6.4.1 page 54</a> )
		Check the condition of the J3STKL078 o-rings on the upper side of the T8 turbine ( <a href="#">see DRT7128</a> )
	Shaping air flow rate too low	Check that the shaping air values used are in accordance with the application tests performed. If necessary, carry out dynamic impacts to check the shape of the paint spray
Shaping air flow rate too high		
Drips	Evaporation of solvents too slow	Use lighter solvents
	Application speed too slow	Decrease product flow rate
	Bell cup rotation speed too slow	Increase the rotation speed of the T8 turbine
No bell cup rotation	No turbine rotation	Check if there is an RBC or AS check fault ( <a href="#">see § 4 page 28</a> )
		Check that the turbine rotates freely without power pilot
		Check the input control
		Check proportional valve
	Product return in the turbine	Check the output on the BSC300 ( <a href="#">see DRT7121</a> for BSC300)
	Product return in the turbine	Follow the interior turbine cleaning procedure ( <a href="#">see DRT7128</a> ) and check the rinsing and priming processes used (flow rate, duration, presence of rotation) in order to prevent the problem from recurring.

Symptoms	Probables Causes	Remedies
Problem with bell cup rotation regulation	No return	Check the fit of hose 43 - microphone return - in its clamp, on the side of the quick disconnect plate and on the retaining hose flange.
		Replace hose 43 - microphone return OUT ( <a href="#">see § 6.4.5 page 58</a> )
		Check the microphone for leaks
		Check the condition of the cable connecting the microphone to the BSC300
	Regulation fault	Check the input connectors on the BSC300 ( <a href="#">see DRT7121</a> )
		Check the fit of hose 43 - microphone return - in its clamp, on the side of the quick disconnect plate and on the retaining hose flange.
		Replace hose 43 - microphone return OUT ( <a href="#">see § 6.4.5 page 58</a> )
		Check the fit of hose 26 - microphone air IN - in its clamp, on the side of the quick disconnect plate and on the retaining hose flange.
		Replace hose 26 - microphone air IN ( <a href="#">see § 6.4.5 page 58</a> )
		Check the microphone for leaks
		Check the length of hose 43 - microphone return (OUT) - between the sprayer and the microphone. ( <a href="#">see § 3.4.2 page 27</a> )
		Check that the connection of hose 43 - microphone return (OUT) - between the sprayer and the microphone is direct, without intermediate connection.
Product return in the turbine	Check the condition of the microphone	
	Check microphone air pressure ( <a href="#">see § 3.2 page 24</a> )	
		Check if there are any product returns in the turbine.
		Follow the interior turbine cleaning procedure ( <a href="#">see DRT7128</a> ) and check the rinsing and priming processes used (flow rate, duration, presence of rotation) in order to prevent the problem from recurring.

Symptoms	Probables Causes	Remedies
Product return in the turbine	Product and/or solvent flow rate too high	Check that the product flow rate is between 30 and 800 cc/min. Check that the solvent flow rate is between 30 and 800 cc/min.
	Clogged diffuser	Clean the bell cup ( <a href="#">see § 6.3.2 page 44</a> et <a href="#">see DRT7127</a> ) Check the bell cup rinsing cycle and the corresponding valve openings. Check in the application process that the sprayer does not stay too long with the bell cup primed with paint, especially in the case of bi-component products.
		Leakage of product and/or solvent from the injector
	RBC and AS check faults	No bell cup
Insufficient holding force of the bell cup on the turbine		Clean the turbine fixing cone ( <a href="#">see § 6.3.2 page 44</a> ) Check for damage to the bell cup cone Replace the bell cup
		Outer cover not tightened
Tightening the rear nut (P/N: 900019644)		Loosen the rear nut, tighten the outer cover and then reassemble the rear nut. ( <a href="#">see § 5.2 page 33</a> )
Incorrect assembly of the shaping air shroud / nut assembly		Check the installation of the assembly ( <a href="#">see § 6.4.1 page 54</a> )
Wrong assembly of the T8 turbine		Check the assembly of the T8 turbine ( <a href="#">see § 6.3.5 page 50</a> )
Incorrect tightening of the body on the quick disconnect plate		Check the installation of the body ( <a href="#">see § 6.4.2 page 56</a> )
Air leakage at the hose 83		Check the fit of the hose 83 in its clamp on the side of the quick disconnect plate, on the hose clamp and on the BSC300 Replace the air hose 83 ( <a href="#">see § 6.4.5 page 58</a> )
		Sensor fault

Symptoms	Probables Causes	Remedies
No spraying	Valve 11 opening fault	<p>Check 11 valve pilot pressure (<a href="#">see § 3.2 page 24</a>)</p> <p>Check the fit of the hose 51 - Paint supply pilot - in its clamp, on the side of the quick disconnect plate and on the retaining hose flange.</p> <p>Replace hose 51 - Paint supply pilot (<a href="#">see § 6.4.5 page 58</a>)</p> <p>Valve control air leakage through valve cap, replace the valve (<a href="#">see § 6.4.4 page 57</a>)</p> <p>Check the operation of the PV51 control solenoid valve in the electro-pneumatic cabinet.</p>
	11 Hose bursting	<p>Replace hose 11 on the coil connection block input (<a href="#">see § 5.2 page 33</a>)</p>
Pump fault	Valve 11 opening fault	<p>Check 11 valve pilot pressure (<a href="#">see § 3.2 page 24</a>)</p> <p>Check the fit of the hose 51 - Paint supply pilot - in its clamp, on the side of the quick disconnect plate and on the retaining hose flange.</p> <p>Replace hose 51 - Paint supply pilot (<a href="#">see § 6.4.5 page 58</a>)</p> <p>Valve control air leakage through valve cap, replace the valve (<a href="#">see § 6.4.4 page 57</a>)</p> <p>Check the operation of the PV51 control solenoid valve in the electro-pneumatic cabinet.</p>
	11-Valve response time too high	<p>Valve control air leakage through the valve cap or at the connection clamp (<a href="#">see § 6.4.4 page 57</a>)</p>

Symptoms	Probables Causes	Remedies
No rinsing	Valve 32 and/or 31 opening fault	Check the pressure of the 32 and/or 31 valve pilot ( <a href="#">see § 3.2 page 24</a> )
		Check the tightness of the hose 56 and/or 58 - Air/solvent pilot - Injector rinsing - and/or - Exterior bell cup rinsing - in its clamp, on the side of the quick disconnect plate and on the side of the retaining hose flange. Replace the hose 56 and/or 58 - Air/solvent pilot - Injector rinsing - and/or - Exterior bell cup rinsing ( <a href="#">see § 6.4.5 page 58</a> ) Check the functioning of the pilot solenoid valve for valves 56 and 58 in the electro-pneumatic cabinet
	Valve 32 and/or 31 response time high	Valve pilot air leakage through the valve cap or at the connection clamp ( <a href="#">see § 6.4.4 page 57</a> )
Problem of color change	Valve 41 opening fault	Check 41 valve pilot pressure ( <a href="#">see § 3.2 page 24</a> )
		Check the tightness of the hose 53 - Dump pilot - in its clamp, on the side of the quick disconnect plate and on the side of the the retaining hose flange. Replace Hose 53 - Dump Pilot ( <a href="#">see § 6.4.5 page 58</a> )
	Valve 41 response time high	Valve pilot air leakage through the valve cap or at the connection clamp, change 41 valve ( <a href="#">see § 6.4.4 page 57</a> )
	Dump hose 41 bent	Check the condition of the dump hose, replace it if necessary ( <a href="#">see § 6.4.5 page 58</a> )
	Faulty fluid rinsing valves or solenoid valves (customer air/solvent)	Check the operation
	Air or solvent pressure too low	Check air and solvent pressures
	Rinsing cycles too short (if problem exists at installation)	Check and increase the rinsing cycle if necessary

Symptoms	Probables Causes	Remedies
Fluid and/or solvent leakage through the valve vent	O-rings or bellows damaged	Replace the valve ( <a href="#">see § 6.4.4 page 57</a> )
Leakage of product and/or solvent from the injector	Valve 11 and/or 32 does not close	Damaged spring Change valve(s) 11 and/or 32 ( <a href="#">see § 6.4.4 page 57</a> )
	Leakage between needle and valve seat 11 and/or 32	Clean the seat after removing the valve ( <a href="#">see § 6.4.4 page 57</a> ) Damaged needle Change the valve(s) ( <a href="#">see § 6.4.4 page 57</a> )
	Foreign body between needle and valve seat 11 and/or 32	Clean the seat after removing the valve ( <a href="#">see § 6.4.4 page 57</a> )
Solvent leakage on the exterior of the bell cup	Valve 31 does not close	Damaged spring Change valve 31 ( <a href="#">see § 6.4.4 page 57</a> )
	Needle leakage on valve seat 31	Clean the seat after removing the valve ( <a href="#">see § 6.4.4 page 57</a> ) Damaged needle Change the valve 31 ( <a href="#">see § 6.4.4 page 57</a> )
	Foreign body between needle and valve seat 11 31	Clean the seat after removing the valve ( <a href="#">see § 6.4.4 page 57</a> )
Leakage of product and/or solvent in the sprayer	Damaged product o-rings	Check condition of seals 160000028, J3STKL094 and 160000027 and replace if necessary ( <a href="#">see § 8.2.2.1 page 81</a> )
	Damaged product fittings	Check the condition of the front surface of the fittings and the connection between fittings and hoses.

## 8. Spare parts list

The spare parts are classified in 2 different types:

- **1st emergency parts:**

The 1st emergency parts are strategic components which are not necessarily consumables but which in case of failure prohibit the operation of the equipment.

Depending on the production line's commitment and the production rates imposed, the first emergency parts are not necessarily kept available in the customer's stock.

Indeed, if an interruption of the production flow is possible, storage is not necessary.

On the other hand, if the stop is not possible, the 1st emergency parts will be kept in stock.

- **Wearing parts:**

Wearing parts are consumable components such as O-rings that undergo regular degradation over time during normal operation of the installation. It is therefore advisable to replace them according to a defined frequency and adapted to the operating time of the installation.

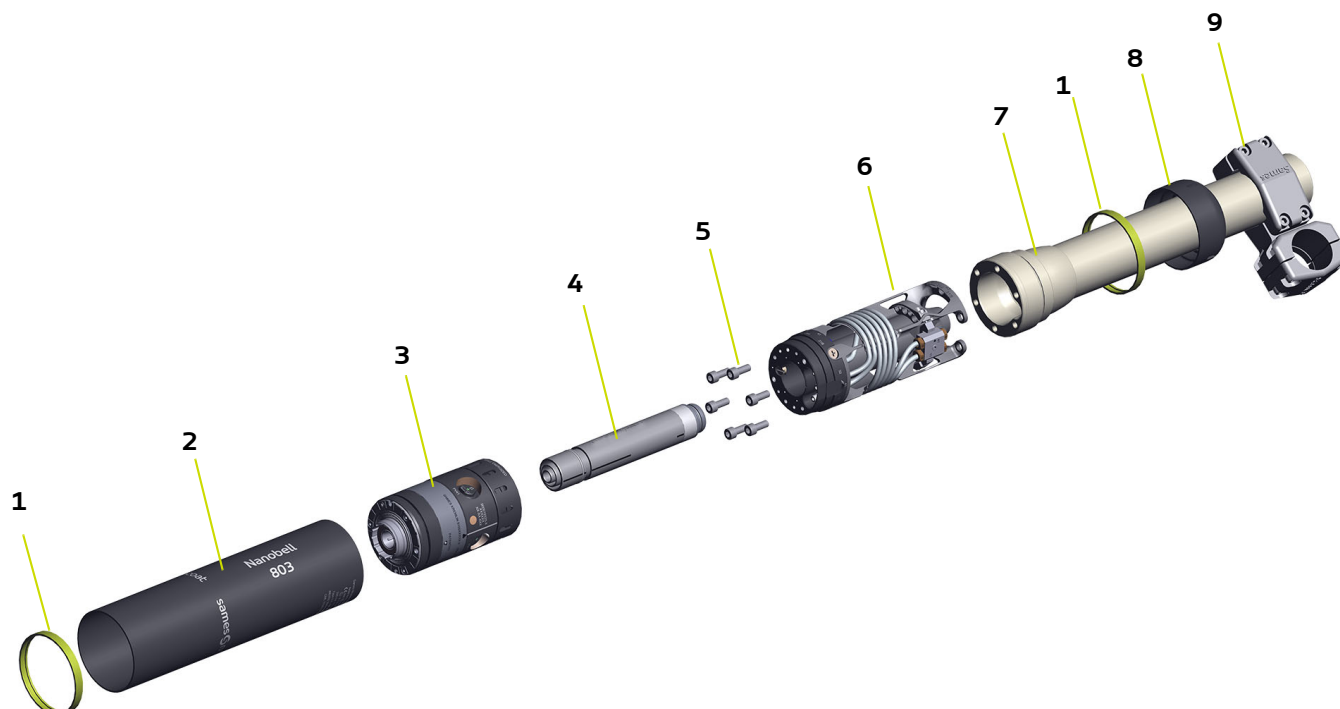
The wearing parts must therefore be kept in the customer's stock.



**In order to ensure optimum assembly, spare parts should be stored at a temperature close to their operating temperature. If not, a sufficient waiting time must be observed before installation, so that all parts are assembled at the same temperature.**

### 8.1. Nanobell 803 ST SB HR

Bell cup and outer cover are not included.



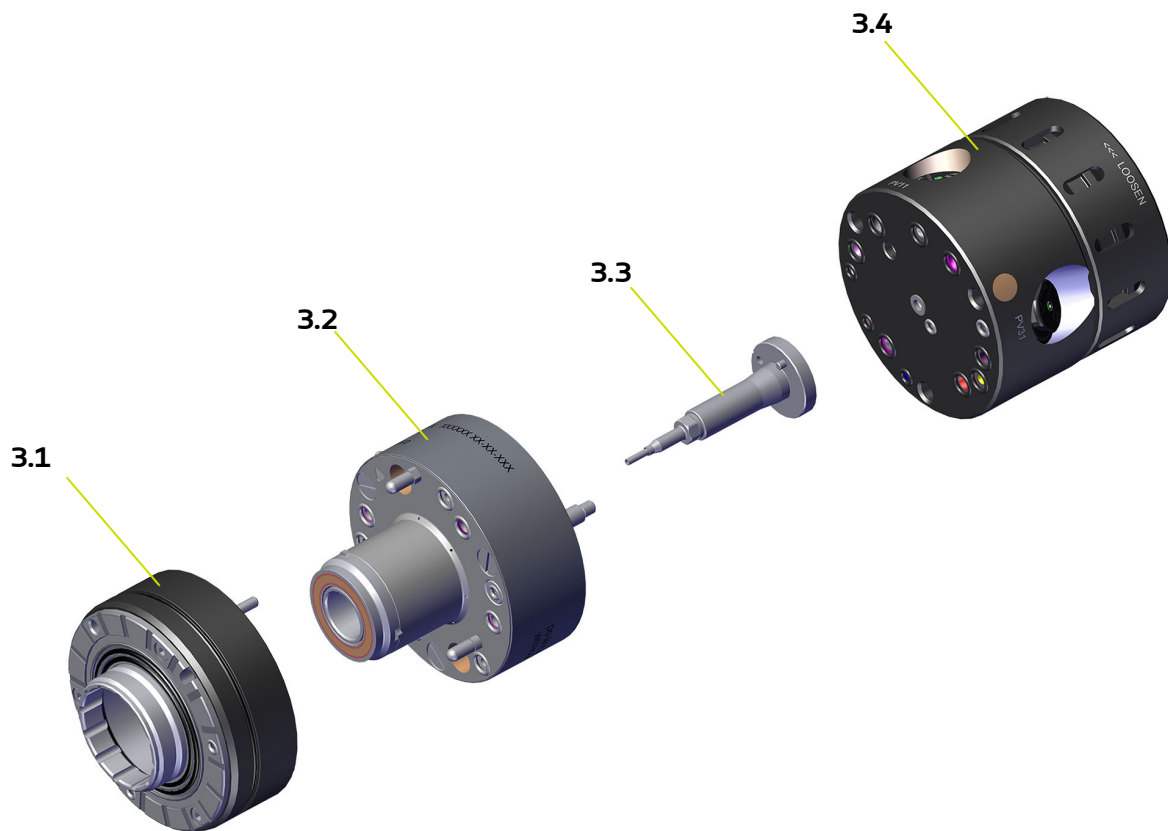
Item	Part number	Description	Qty	Unit of sale	Maintenance level for spare part (*)
	<b>910029588</b>	<b>Nanobell 803 ST SB HR</b>	<b>1</b>	<b>1</b>	-
<b>1</b>	900017710	Spacer, outer cover / valve cover	2	1	1
<b>2</b>	<b>910031008</b>	<b>Cover</b>	<b>1</b>	<b>1</b>	-
<b>3</b>	-	<b>Equipped body assembly (see § 8.2 page 77)</b>	<b>1</b>	<b>1</b>	-
<b>4</b>	<b>910028548</b>	<b>HVU810 high voltage unit (see DRT7166)</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>5</b>	250000372	M8 x 20 nylon glass-filled Chc screw	6	1	1
<b>6</b>	-	<b>Rear support (see § 8.3 page 84)</b>	<b>1</b>	<b>1</b>	-
<b>7</b>	900019643	Support arm Ø 63 x 440	1	1	-
<b>8</b>	900019644	Nanobell 803 cover rear nut	1	1	-
<b>9</b>	1204441	Fastening nut Dia.: 50	1	1	-

(\*)

Level 1: 1st emergency parts

Level 2: Wearing parts

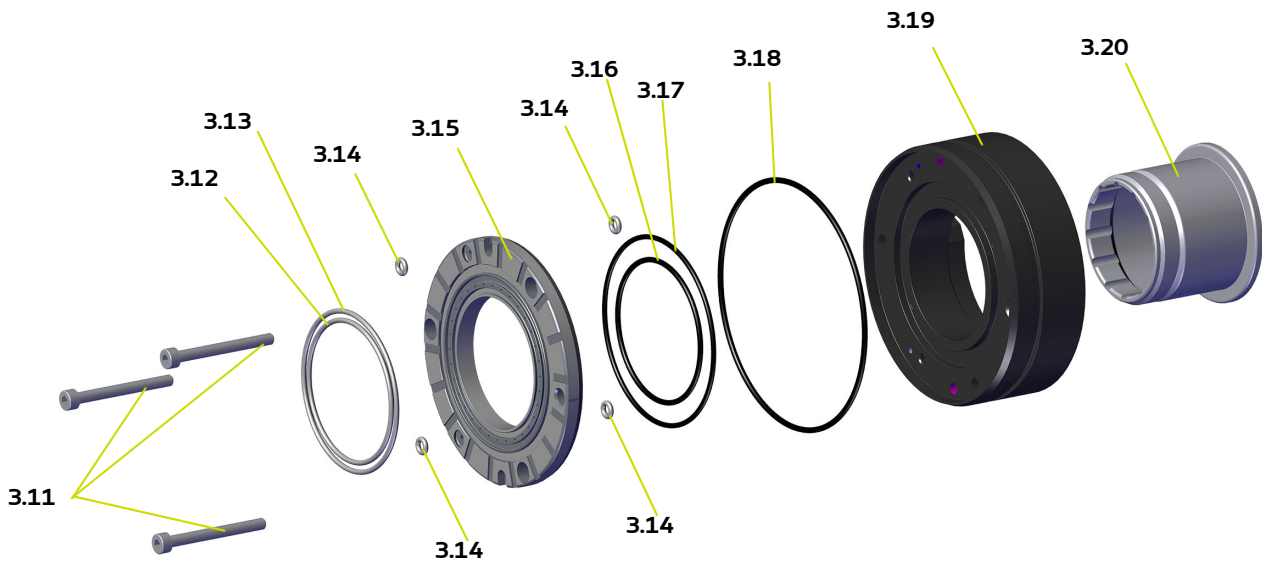
## 8.2. Equipped body assembly



Item	Part number	Description	Qty	Unit of sale	Maintenance level for spare part (*)
3	-	Equipped body assembly	1	1	-
3.1	-	Shaping air shroud / T8 nut assembly (see § 8.2.1 page 78)	1	1	-
3.2	910026052	T8 Turbine (see DRT7128)	1	1	-
3.3	910031671	Injector / Injector holder assembly (see § 8.2.3 page 83)	1	1	-
3.4	910029579SAV	Equipped body (see § 8.2.2 page 80)	1	1	1

(\*)  
Level 1: 1st emergency parts  
Level 2: Wearing parts

8.2.1. Shaping air shroud / T8 nut assembly



Item	Part number	Description	Qty	Unit of sale	Maintenance level for spare part (*)
<b>3.1</b>	-	<b>Shaping air shroud / T8 nut assembly</b>	<b>1</b>	<b>1</b>	<b>-</b>
<b>3.11</b>	X4FVSY127	Chc M4 x 40 stainless steel screw	3	1	-
<b>3.12</b>	160000303	White O-ring - chemically inert	1	1	2
<b>3.13</b>	160000304	White O-ring - chemically inert	1	1	2
<b>3.14</b>	J3STKL028	O-ring - chemically inert	4	1	2
<b>3.15</b>	900018223	Retaining flange	1	1	-
<b>3.16</b>	J2FENV420	O-ring	1	1	2
<b>3.17</b>	160000241	O-ring	1	1	2
<b>3.18</b>	J2FENV386	O-ring	1	1	2
<b>3.19</b>	900018224	T8 shaping air shroud	1	1	1
<b>3.20</b>	900017540	T8 outer cover nut	1	1	-

(\*)  
Level 1: 1st emergency parts  
Level 2: Wearing parts

O-ring sets:

Item	Part number	Description	Qty	Unit of sale	Maintenance level for spare part (*)
	<b>910027917</b>	<b>O-ring set, T8 exterior flange</b>	<b>1</b>	<b>1</b>	<b>2</b>
<b>3.12</b>	160000303	White O-ring - chemically inert	1	1	-
<b>3.13</b>	160000304	White O-ring - chemically inert	1	1	-
<b>3.14</b>	J3STKL028	O-ring - chemically inert	2	1	-
<b>3.18</b>	J2FENV386	O-ring	1	1	-

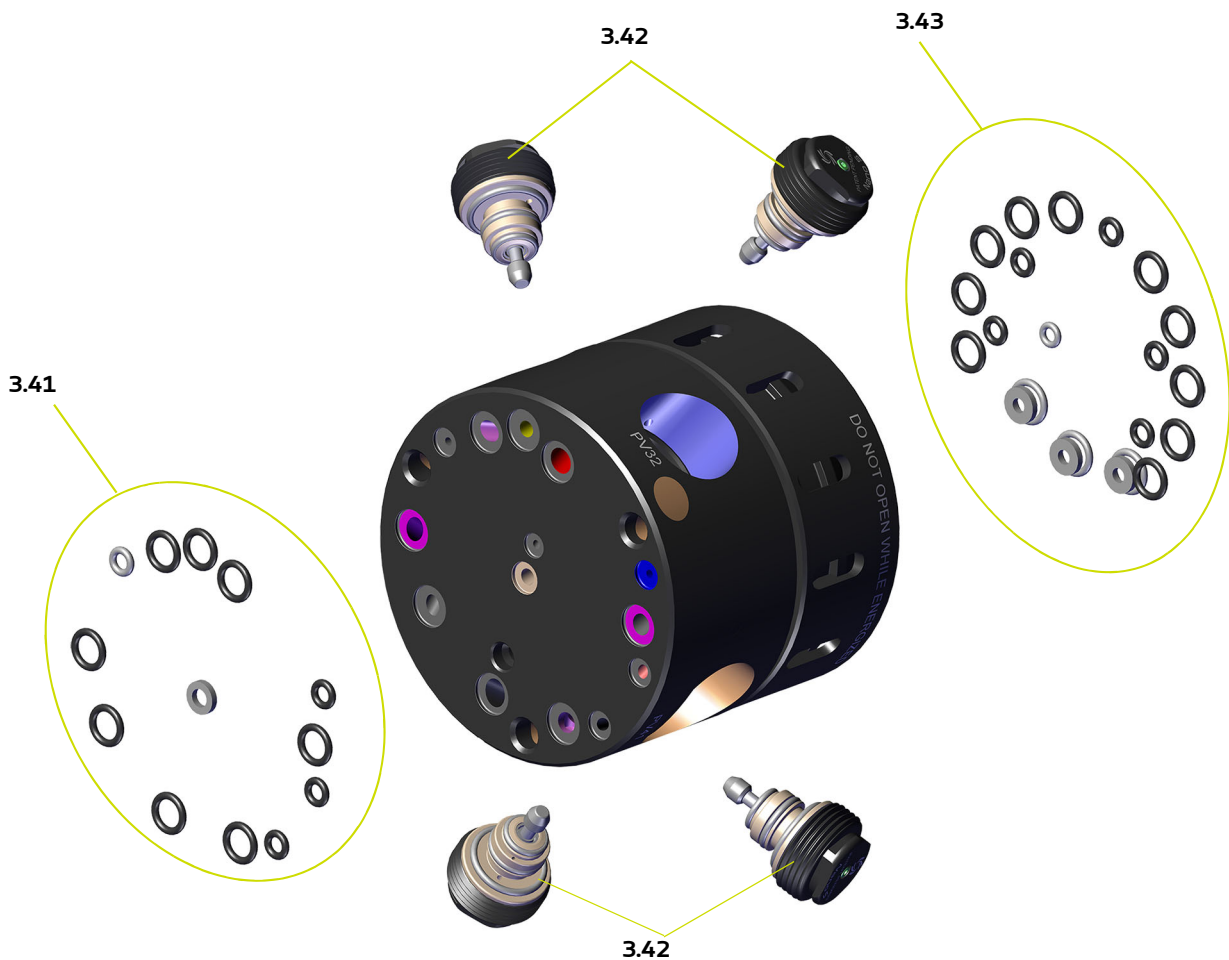
Item	Part number	Description	Qty	Unit of sale	Maintenance level for spare part (*)
	<b>910027918</b>	<b>O-ring set, T8 interior flange</b>	<b>1</b>	<b>1</b>	<b>2</b>
<b>3.14</b>	J3STKL028	O-ring - chemically inert	2	1	-
<b>3.16</b>	J2FENV420	O-ring	1	1	-
<b>3.17</b>	160000241	O-ring	1	1	-

(\*)

Level 1: 1st emergency parts

Level 2: Wearing parts

8.2.2. Equipped body

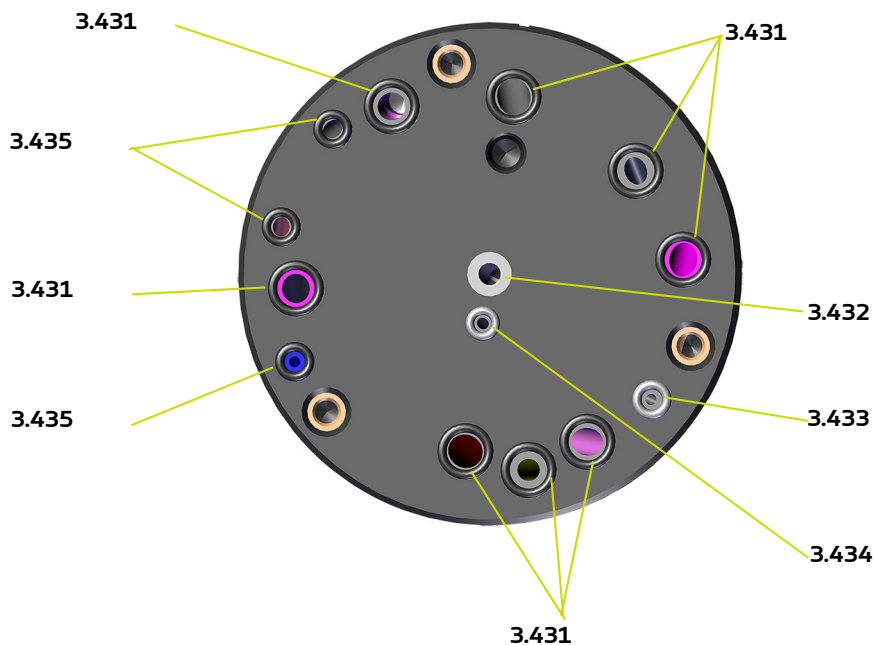


Item	Part number	Description	Qty	Unit of sale	Maintenance level for spare part (*)
3.4	910029579SAV	Equipped body	1	1	1
3.41	910031012	Quick disconnect plate side o-ring set (see § 8.2.2.2 page 82)	1	1	1
3.42	910029032S	Nano5, green indicator (see DRT6453)	4	1	1- 2
	910029033S	Nano5 Flowmax, orange indicator (see DRT6453)	4 Option	1	1- 2
3.43	910031013	Turbine side o-ring set (see § 8.2.2.1 page 81)	1	1	1

(\*)  
Level 1: 1st emergency parts  
Level 2: Wearing parts

Remark: (\*) In case of use with a bi-component product and in case of repeated blocking of the Nano5 green indicator positioned on 11, 41 and 32, replace the Nano5 (P/N: 910029032S) by Nano5 Flowmax orange indicator (P/N: 910029033S).

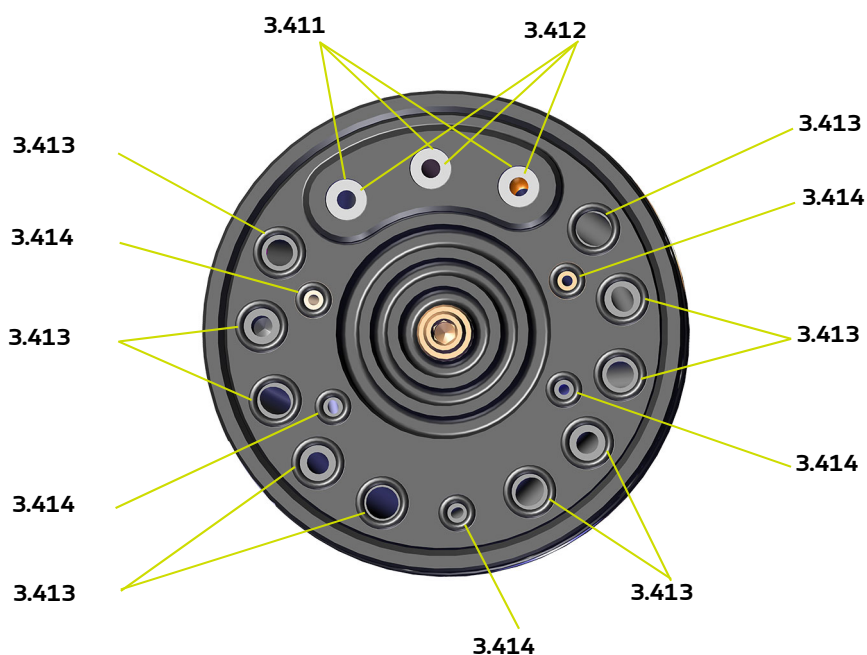
8.2.2.1. Turbine side o-ring set



Item	Part number	Description	Qty	Unit of sale	Maintenance level for spare part (*)
<b>343</b>	<b>910031013</b>	<b>Turbine side o-ring set</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>3.431</b>	J2FTDF082	O-ring	8	1	2
<b>3.432</b>	160000028	O-ring - chemically inert	1	1	2
<b>3.433</b>	J3STKL035	O-ring - chemically inert	1	1	2
<b>3.434</b>	J3STKL002	O-ring - chemically inert	1	1	2
<b>3.435</b>	J2FTDF035	O-ring	3	1	2

(\*)  
Level 1: 1st emergency parts  
Level 2: Wearing parts

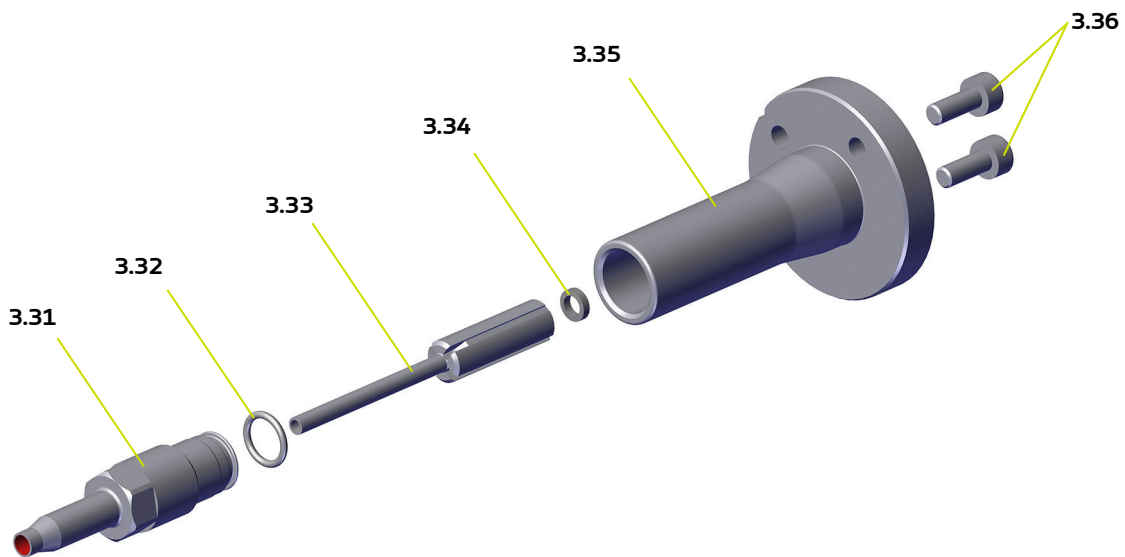
8.2.2.2. Quick disconnect plate side o-ring set



Item	Part number	Description	Qty	Unit of sale	Maintenance level for spare part (*)
3.41	910031012	Quick disconnect plate side o-ring set	1	1	1
3.411	J3STKL094	O-ring - chemically inert	3	1	2
3.412	160000027	O-ring - chemically inert	3	1	2
3.413	J2FTDF082	O-ring	10	1	2
3.414	J2FTDF035	O-ring	5	1	2

(\*)  
Level 1: 1st emergency parts  
Level 2: Wearing parts

8.2.3. Injector/ Injector holder assembly



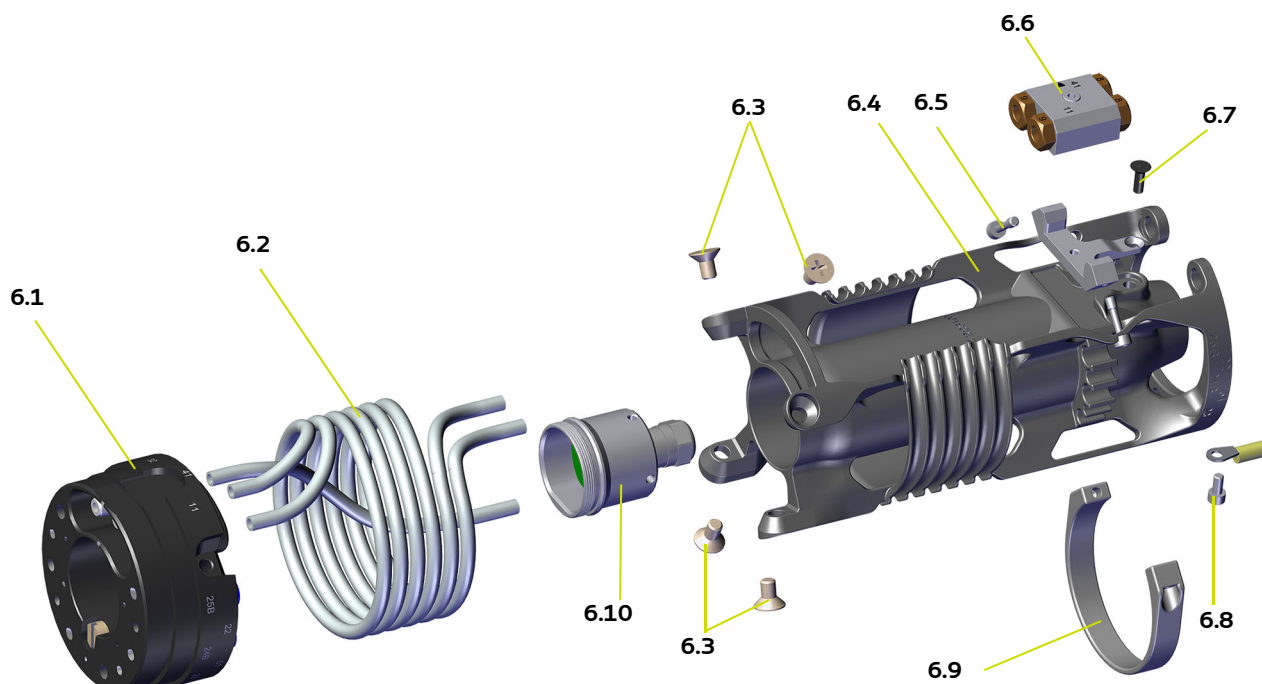
Item	Part number	Description	Qty	Unit of sale	Maintenance level for spare part (*)
<b>3.3</b>	<b>910031671</b>	<b>Injector/ Injector holder assembly</b>	<b>1</b>	<b>1</b>	-
<b>3.31</b>	900000159	REI diffuser	1	1	-
<b>3.32</b>	J3STKL069	O-ring	1	1	2
<b>3.33</b>	900000158	Slotted injector Dia.:1,8 *	1	1	1 - 2
<b>3.34</b>	900010925	Flat seal	1	1	2
<b>3.35</b>	900020338	Injector holder	1	1	-
<b>3.36</b>	X4FVSY065	C M 3 x 8 stainless steel screw	2	1	-

(\*)  
**Level 1: 1st emergency parts**  
**Level 2: Wearing parts**

\* Other injectors

Part number	Description	Qty	Unit of sale	Maintenance level for spare part (*)
900014897	Slotted injector Dia.: 0.9	Option	1	1 - 2
900014118	Slotted injector Dia.:1.2	Option	1	1 - 2
900014119	Slotted injector Dia.:1.5	Option	1	1 - 2

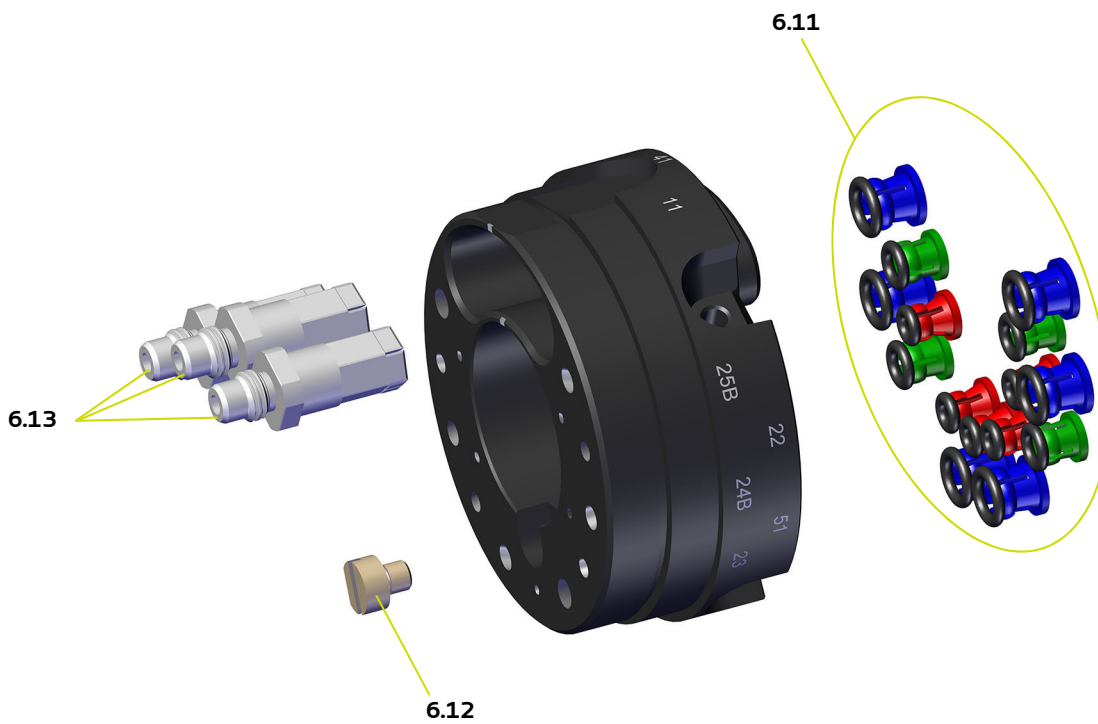
### 8.3. Rear support



Item	Part number	Description	Qty	Unit of sale	Maintenance level for spare part (*)
<b>6</b>	-	<b>Rear support</b>	<b>1</b>	-	-
<b>6.1</b>	<b>910029585</b>	<b>Quick disconnect plate (see § 8.3.1 page 85)</b>	<b>1</b>	<b>1</b>	-
<b>6.2</b>	U1GCBR185	Coil D: 4/6	0,875 x 2	m	1-2
<b>6.3</b>	250000371	Peek F/90 M6 x11 screw	4	1	1-2
<b>6.4</b>	900019362	Support	1	1	-
<b>6.5</b>	<b>910004695</b>	<b>Stainless steel M4 x 16 captive screw</b>	<b>2</b>	<b>1</b>	-
<b>6.6</b>	<b>910031507</b>	<b>Coil connection block 4/6 - 6/8</b>	<b>1</b>	<b>1</b>	-
	<b>910030286</b>	<b>Coil connection block 4/6 - 4/6</b>	<b>Option</b>	<b>1</b>	-
	<b>910031944</b>	<b>Coil connection block 4/6 - 5/8</b>	<b>Option</b>	<b>1</b>	-
<b>6.7</b>	X4FVSY119	Stainless steel Chc M4 X 12 screw	1	1	-
<b>6.8</b>	X4FVSY117	Stainless steel Chc M4 X 8 screw	1	1	-
<b>6.9</b>	900019680	Hose retaining flange	1	1	-
<b>6.10</b>	<b>910029582-XXX</b>	<b>Low voltage connection (see DRT7166)</b>	<b>1</b>	<b>1</b>	-

(\*)  
Level 1: 1st emergency parts  
Level 2: Wearing parts

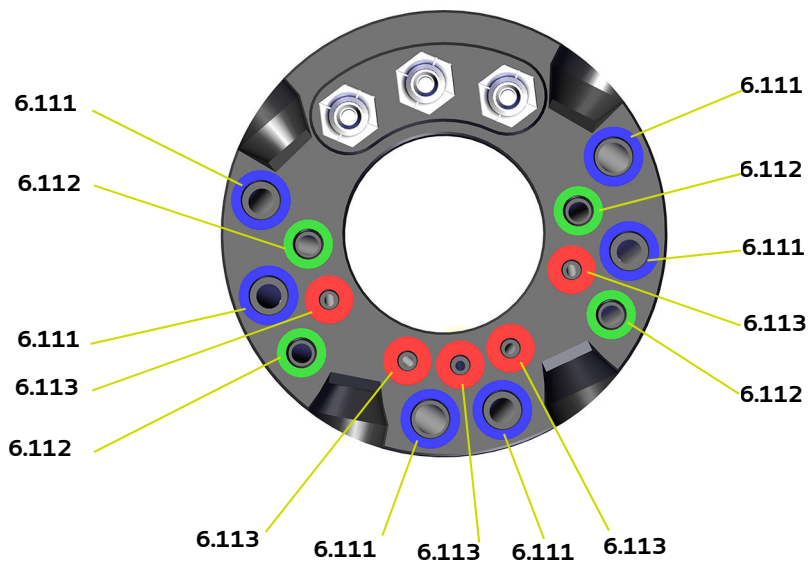
8.3.1. Quick disconnect plate assembly



Item	Part number	Description	Qty	Unit of sale	Maintenance level for spare part (*)
6.1	910029585	Quick disconnect plate assembly	1	1	-
6.11	910031014	Rear side fitting set ( <a href="#">see § 8.3.1.1 page 86</a> )	1	1	1
6.12	900003914	HVU locking screw	1	1	1
6.13	910003344	Anti-rotation fitting 4/6-8	3	1	1

(\*)  
Level 1: 1st emergency parts  
Level 2: Wearing parts

8.3.1.1. Nanobell 803 rear side fitting set



Item	Part number	Description	Qty	Unit of sale	Maintenance level for spare part (*)
<b>6.11</b>	<b>910031014</b>	<b>Rear side fitting set</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>6.111</b>	F6RXZG083	Rear side fitting set	6	1	1
<b>6.112</b>	F6RXZG082	Stainless steel clamp D.: 6/8 + seal	4	1	1
<b>6.113</b>	F6RXZG081	Stainless steel clamp D.: 4/6 + seal	5	1	1

(\*)  
Level 1: 1st emergency parts  
Level 2: Wearing parts

## 9. Revision index History

Created by		Checked by: G. Fournel		Approved by: S. Court
Date	By:	Index	Purpose of the modification and location	
02/2021	S. Court	A		
09/2022	S. Court	B	UKCA marking Change of identity and logo Update of the graphic charter	

## 10. Appendices

### 10.1. Preventive maintenance plan

**PLAN DE MAINTENANCE PREVENTIVE / PREVENTIVE MAINTENANCE PLAN**

Numéro d'ordre Serial	Ensemble - Assembly	Sous ensemble Sub assembly	Désignation de l'élément Designation of the assembly	Pour 1 ensemble - For 1 assembly			Acteurs Métiers Operators - skill (3)				Niveau Level (4)		Manuel d'utilisation Instruction manual	Outil Tool	Document Note	
				Action à effectuer Action to carry out	Temps prévu Estimated Time (1)		Périodicité Periodicity (H / hour) (2)	M	F	E	A	1				2
					100eme H	mn										
<p><b>(1)</b> Temps moyen d'intervention à titre indicatif, et à ajuster par les équipes d'intervention du site / <i>This average intervention time is given for information and should be adjusted by the operating teams on site.</i></p> <p><b>(2)</b> Les périodicités mentionnées sont des moyennes basées sur l'expérience de Sames. A charge des utilisateurs de les adapter aux conditions de leur installation notamment en fonction de la nature des produits utilisés, des vitesses de travail, etc. Sames se réserve le droit de modifier les informations mentionnées dans ce document, sans préavis / <i>The given periodicities are averages based on Sames experience. It is the responsibility of the operators to adapt them to the conditions of their installation, in particular with respect to the nature of the products being used, the work speeds, etc. Sames Kremlin reserves the right to change the information in this document without notice.</i></p> <p><b>(3)</b> M : Mécanicien - F : Spécialiste fluide - E : Electricien - A : Automaticien / <i>M : Mechanic - F : Fluid specialist - E : Electrician - A : Automation specialist</i></p> <p><b>(4)</b> 1 = Niveau de Base, 2 = Niveau Avancé / <i>1 = Basic level, 2 = Advanced level</i></p>																
<p><b>Avant toute intervention, se référer au chapitre sécurité du manuel de l'équipement / Before any intervention, see chapter safety equipment manual</b></p>																
1	Tête de pulvérisation <i>Spray head</i>	Injecteur <i>Injector</i>	Nettoyage extérieur <i>Exterior cleaning</i>	6,66	5	40	X				1			910000700	Trempage 1h solvant MEK (Méthyléthylkétone) <i>Soak 1h solvent MEK (Methylethylketone)</i>	
2	Support arrière <i>Rear support</i>	Tuyaux, câbles et raccords <i>Hoses, cable and fittings</i>	Contrôle usure / fuite <i>Wear / Leakage check</i>	16,66	5	40	X				2					
3	Corps équipé <i>Equipped body</i>	Joints <i>O-rings</i>	Contrôle fuite <i>Leakage check</i>	16,66	10	40	X				1	2				
4	Equipement <i>Equipment</i>	Outillage spécifique <i>Specific tool</i>	Contrôle visuel <i>Visual control</i>	3,33	2	40	X				1					
5	Corps <i>Body</i>	Unité Haute Tension <i>Unit High voltage</i>	Contrôle visuel <i>Visual control</i>	16,66	10	500			X		2		<a href="#">DRT7166</a>			
6	Unité - Haute Tension <i>Unit - High voltage</i>	Câbles Unité - Haute Tension <i>Unit cables - High voltage</i>	Contrôle visuel <i>Visual control</i>	16,66	10	500			X		2		<a href="#">DRT7166</a>			
7	Corps pulvérisateur <i>Atomizer body</i>	Capot <i>Cover</i>	Contrôle serrage <i>Control tightening</i>	3,33	2	500	X				2					
8	Tête de pulvérisation <i>Spray head</i>	Injecteur / Porte injecteur <i>Injector / injector holder</i>	Nettoyage <i>Cleaning</i>	25,00	15	500	X				1			910000700	Trempage 1h solvant MEK (Méthyléthylkétone) <i>Soak 1h solvent MEK (Methylethylketone)</i>	
9	Equipement <i>Equipment</i>	Jupe d'air <i>Shaping air</i>	Nettoyage des orifices de sorties <i>Cleaning of the openings of exits</i>	25,00	15	500	X				1		<a href="#">DRT7127</a>			
10	Corps équipé <i>Equipped body</i>	Vannes nano 5 <i>Nano 5 valves</i>	Contrôle fuite et ouverture <i>Leakage and opening control</i>	3,33	2	500		X			2		<a href="#">DRT6453</a>			
11	Support arrière <i>Rear support</i>	Tuyaux préformés et raccords (purge et produit) <i>Coils and fittings (paint and dump)</i>	Contrôle usure / fuite <i>Wear / Leakage check</i>	3,33	2	500	X				2					
12	Paramètre process <i>Process parameter</i>	Turbine <i>Turbine</i>	Essai vitesse régulation <i>Speed and regulation control</i>	25,00	15	1000		X			2		<a href="#">DRT7128</a>		BSC300	

PLAN DE MAINTENANCE PREVENTIVE / PREVENTIVE MAINTENANCE PLAN

Numéro d'ordre Serial	Ensemble - Assembly	Sous ensemble Sub assembly	Désignation de l'élément Designation of the assembly	Pour 1 ensemble - For 1 assembly			Acteurs Métiers Operators - skill (3)				Niveau Level (4)		Manuel d'utilisation Instruction manual	Outil Tool	Document Note	
				Action à effectuer Action to carry out	Temps prévu Estimated Time (1)		Périodicité Periodicity (H / hour) (2)	M	F	E	A	1				2
					100eme H	mn										
13	Nanobell 803 ST SB HR Pulvérisateur à bol rotatif pour peinture solvantée ≥ 6MΩ.cm Nanobell 803 ST SB HR Rotary cup sprayer for solvent-based paint resisitvity ≥ 6MΩ.cm	Tête de pulvérisation Spray head	Turbine Turbine	Nettoyage Cleaning	8,33	5	500		X			2	<a href="#">DRT7128</a>		<b>Ne jamais tremper ou immerger la turbine dans le solvant</b> <i>Never soak or submerge turbine in solvent</i>	
14		Support arrière Rear support	Unité Haute Tension Unit High voltage	Contrôle general et Graissage puits (Graisse diélectrique) General control and Greasing well (Diélectric grease )	16,66	10	500			X		2	<a href="#">DRT7166</a>		Graisse diélectrique Ref : H1GSYN037 <i>Dielectric grease Ref : H1GSYN037</i>	
15		Unité - Haute Tension Unit - High voltage	Câbles Unité - Haute Tension Unit cables - High voltage	Contrôle général General control	16,66	10	500			X		2	<a href="#">DRT7166</a>			
16		Paramètre process Process parameter	Fonction débit peinture Paint flow function	Contrôle débit Flow test	25,00	15	1000		X			2				
17		Paramètre process Process parameter	Fonction haute tension High Voltage Function	Contrôle Control	16,66	10	1000		X			2	<a href="#">DRT7122</a>			
18		Paramètre process Process parameter	Turbine Turbine	Essai vitesse Speed control	25,00	15	1000		X			2	<a href="#">DRT7121</a>			
19		Paramètre process Process parameter	Unité haute tension High voltage unit	Essais Haute tension High voltage test	25,00	15	1000		X			2	<a href="#">DRT7122</a>			
20		Corps équipé Equipped body	Injecteur Injector	Contrôle serrage Control tightening	3,33	2	2500	X				1		910000700	Couple serrage/Torque : 3,5 Nm	
21		Corps équipé Equipped body	Porte injecteur Injector holder	Contrôle serrage Control tightening	3,33	2	2500	X				1		Clé Allen 2,5 mm Allen wrench 2.5mm	Couple serrage/Torque : 1,7 Nm	
22		Support arrière Rear support	Tuyaux, câbles et raccords Hoses, cable and fittings	Remplacement tuyaux préformés Replacement coils	50,00	30	5000	X				2	<a href="#">DRT7038</a>			
23	Corps pulvérisateur Atomizer body	Circuit microphone Microphone circuit	Contrôle Control	8,33	5	5000	X				2					

PLAN DE MAINTENANCE PREVENTIVE / PREVENTIVE MAINTENANCE PLAN

Numéro d'ordre Serial	Ensemble - Assembly	Sous ensemble Sub assembly	Désignation de l'élément Designation of the assembly	Pour 1 ensemble - For 1 assembly			Acteurs Métiers Operators - skill (3)				Niveau Level (4)		Manuel d'utilisation Instruction manual	Outil Tool	Document Note	
				Action à effectuer Action to carry out	Temps prévu Estimated Time (1)		Périodicité Periodicity (H / hour) (2)	M	F	E	A	1				2
					100eme H	mn										
24		Equipement Equipment	Bol Bellcup	Remplacement 1 an (durée de vie*) Replacement 1 year (duration life*)	3,33	2	5000	X				1	2	<a href="#">DRT7127</a>	900005784 900000803 1204427  <b>(*) La durée de vie d'un bol dépend de la nature des produits chimiques utilisés, du temps de fonctionnement et du respect des opérations de maintenance</b> <b>(*) The life cycle of a bellcup depends on the nature of the chemical products used, the operating time and the respect of the maintenance operations</b>	
25		Support arrière Rear support	Câble équipé - Unité Haute Tension Equiped cable - High voltage unit	Remplacement Replacement	100,00	60	10000			X			2	<a href="#">DRT7122</a>		
26		Corps équipé Equipped body	Kit joints côté turbine O-ring kit turbine side	Remplacement Replacement	25,00	15	10000		X				2		Kit joint côté turbine 910031013 Turbine side o-ring set 910031013	
27		Corps équipé Equipped body	Kit joints côté plan de pose Quick disconnect plate side o-ring set	Remplacement Replacement	25,00	15	10000		X				2		Kit joint côté plan de pose 910031012 Quick disconnect plate side o-ring set 910031012	
28		Corps équipé Equipped body	Vannes nano 5 Nano 5 valves	Remplacement Replacement (3 000 000 cycles)	8,33	5	10000		X				2	<a href="#">DRT6453</a>	Outil / Tool : 900019557 Couple serrage/Torque : 1,7 Nm Toute nouvelle Nano 5 vannes doit être rodée Running-in : For all new Microvalves (200 cycles)	
29		Tête de pulvérisation Spray head	Turbine Turbine	Remplacement Replacement	25,00	15	—	X					2	<a href="#">DRT7128</a>		
30		Corps pulvérisateur Atomizer body	Câble microphone Microphone cable	Remplacement câble microphone Replacement of microphone system	8,33	5	—	X					2	<a href="#">DRT6190</a>		
31		Support arrière Rear support	Unité haute tension High voltage unit	Remplacement Replacement	33,33	20	—			X			2	<a href="#">DRT7166</a>	Graisse diélectrique Ref : H1GSYN037 Dielectric grease Ref : H1GSYN037	
32	<a href="#">(DRT7164)</a>	—	Pulvérisateur Atomizer	Remplacement pour maintenance Replacement for maintenance	8,33	15	—	X					2			
33		Équipement Equipment	Face avant, afficheur et touches Front panel, display and buttons	Vérification aspect Checking appearance	1,66	1	40	X				1			A chaque début de production Every start production	

PLAN DE MAINTENANCE PREVENTIVE / PREVENTIVE MAINTENANCE PLAN

Numéro d'ordre Serial	Ensemble - Assembly	Sous ensemble Sub assembly	Désignation de l'élément Designation of the assembly	Pour 1 ensemble - For 1 assembly			Acteurs Métiers Operators - skill (3)				Niveau Level (4)		Manuel d'utilisation Instruction manual	Outil Tool	Document Note	
				Action à effectuer Action to carry out	Temps prévu Estimated Time (1)		Périodicité Periodicity (H / hour) (2)	M	F	E	A	1				2
					100eme H	mn										
34	Module de commande GNM 300 Control module GNM 300	Équipement Equipment	Câblage Wiring	Vérification intégration dans armoire Checking integration into cabinet	1,66	1	40			X			2			
35		Équipement Equipment	Câblage Wiring	Vérification hygiène câblage et connectique Checking wiring and connectors hvaiene	1,66	1	40			X			2			
36		Équipement Equipment	Câblage Wiring	Vérification mise à la terre Checking ground connection	3,33	2	40			X			2			
37		Équipement Equipment	Face avant Front face	Vérification fonctionnement module Checking smooth	8,33	5	40			X			2			
38		Paramètre process Process parameter	Haute tension High voltage	Relevé valeur Record value	1,66	1	500 (4 fois/an)				X	1				
		Paramètre process Process parameter	Intensité Intensity	Relevé valeur Record value	1,66	1	500 (4 fois/an)				X	1				
39	(DRT7122)	Équipement Equipment	Haute tension High voltage	Test coupure sécurité Haute Tension High Voltage Fail-safe Test	1,66	5	1000 (2 fois/an)				X	1		DRT7122	Voir §1.6. Procédure de contrôle de la fonction de coupure sûre de la haute tension See §1.6. Procedure for checking the high voltage safe shutdown function	
40	Pièces de rechange Spare parts	Stock Stock	Pièces Spare parts	Vérification disponibilité des pièces de première urgence Checking availability of spare parts	8,33	5	2 fois/an	X	X			1	2			

PIÈCES DE RECHANGE / SPARE PARTS

Numéro d'ordre Serial	Ensemble Assembly	Sous-ensemble Sub assembly	Désignation de l'élément Designation of the assembly	Référence Reference	Qté Qty	Pièces de rechange Spare parts		Remarques Comments
						Usure Wear	1 <sup>ère</sup> Urgence 1 <sup>st</sup> Emergency	
1	Nanobell 803 ST SB HR Pulvérisateur à bol rotatif pour peinture solvantée ≥ 6MΩ.cm Nanobell 803 ST SB HR Rotary cup sprayer for solvent- based paint resistivity ≥ 6MΩ.cm	Bol Bellcup (RT7127)	Bol EC 35 Hi-TE aluminium Aluminium EC 35 Hi-TE bell cup	910000636	1	X	X	Fréquentiel de remplacement conseillé : 5000 heures Recommended replacement frequency: 5000 hours
2			Bol EC 35 Hi-TE titane Titanium EC 35 Hi-TE bell cup	910011188	1	X	X	
3			Bol EC 43 Hi-TE titane Titanium EC 43 Hi-TE bell cup	910028230	1	X	X	
4			Bol EC 50 Hi-TE aluminium Aluminium EC 50 Hi-TE bell cup	910003159	1	X	X	
5			Bol EC 50 Hi-TE titane Titanium EC 50 Hi-TE bell cup	910008756	1	X	X	
6			Bol EX 65 Hi-TE aluminium Aluminium EX 65 Hi-TE bell cup	910004615	1	X	X	
7			Bol EX 65 Hi-TE titane Titanium EX 65 Hi-TE bell cup	910009383	1	X	X	
8			Bol EX 65 Hi-TE Aluminium bois Aluminium EX 65 Hi-TE bell cup wood	910034426	1	X	X	
9		Jupe extérieure NW NW outer cover (DRT7127)	Joint torique perfluoré (inclus dans le bol) O-ring - chemically inert (included in bellcup)	J3STKL094	1	X		
10			Jupe extérieure EC 35 NW EC 35 NW outer cover	900018351	1		X	
11			Jupe extérieure EC 43 NW EC 43 NW outer cover	900021255	1		X	
12			Jupe extérieure EC 50 NW EC 50 NW outer cover	900018225	1		X	
13			Jupe extérieure EX 65 NW EX 65 NW outer cover	900018362	1		X	
14		Corps équipé Equipped body	<b>Turbine T8</b> T8 turbine	910026052	1			X
15			<b>Kit joints face plan de pose</b> Quick disconnect plate side o-ring set	910031012	1			X
16			<b>Kit joints face turbine</b> Turbine side o-ring set	910031013	1			X
17			<b>Nano 5 témoin vert</b> Nano 5, green indicator	910029032S	4	X		
18			Nano 5 Flowmax témoin orange Nano 5 Flowmax, orange indicator	910029033S	4	Option		
19		Nano 5 témoin vert Nano 5, green indicator (DRT6453)	Joint torique - perfluoré O ring - chemically inert	J3STKL197	1	X		
20			Joint torique - perfluoré O ring - chemically inert	J3STKL138	1	X		
21			Joint torique - perfluoré O ring - chemically inert	J3STKL102	1	X		
22		Ensemble injecteur / porte injecteur Injector / Injector holder assembly	Joint torique - perfluoré O ring - chemically inert	J3STKL069	1	X		
23			Joint plat Flat seal	900010925	1	X		
24			Vis C M 3 x 8 - inox C M 3 x 8 stainless steel screw	X4FVSY066	2			
25		Kit joints face plan de pose Quick disconnect plate side o-ring set	Joint torique - perfluoré O ring - chemically inert	J3STKL094	3	X		
26			Joint torique - perfluoré O ring - chemically inert	160000027	3	X		
27			Joint torique O ring	J2FTDF082	10	X		
28			Joint torique O ring	J2FTDF035	5	X		
29			Joint torique O ring	J2FTDF082	8	X		
30		Kit joints face turbine Turbine side o-ring set	Joint torique - perfluoré O ring - chemically inert	160000028	1	X		
31			Joint torique - perfluoré O ring - chemically inert	J3STKL035	1	X		
32			Joint torique - perfluoré O ring - chemically inert	J3STKL002	1	X		
33			Joint torique O ring	J2FTDF035	3	X		
34		Turbine T8 T8 turbine DRT7128	<b>Kit joints face supérieure turbine</b> O-ring kit, top face turbine	910028462	1			X
35			<b>Vis équipée</b> Equipped screw	910028440	3			X
36			Joint (inclus dans vis équipée) Seal (included in equipped screw)	640910	3			
37		Kit joints face supérieure turbine O-ring kit, top face turbine	Joint torique - perfluoré O ring - chemically inert	J3STKL078	7	X		
38			Joint torique - perfluoré O ring - chemically inert	J3STKL028	2	X		

PIÈCES DE RECHANGE / SPARE PARTS

Numéro d'ordre Serial	Ensemble Assembly	Sous-ensemble Sub assembly	Désignation de l'élément Designation of the assembly	Référence Reference	Qté Qty	Pièces de rechange Spare parts		Remarques Comments	
						Usure Wear	1 <sup>ère</sup> Urgence 1 <sup>st</sup> Emergency		
39	(DRT7164)	Ensemble jupe int. / Ecrou T8 Shaping air shroud / T8 nut assembly	<b>Kit joints extérieur bride T8</b> <i>O-ring set, T8 exterior flange</i>	<b>910027917</b>	1		X		
40			<b>Kit joints intérieur bride T8</b> <i>O-ring set, T8 interior flange</i>	<b>910027918</b>	1		X		
41		Kit joints extérieur bride T8 <i>O-ring set, T8 exterior flange</i>	Joint torique <i>O ring</i>	<b>J2FENV420</b>	1	X			
42			Joint torique <i>O ring</i>	<b>J2FENV488</b>	1	X			
43			Joint torique - perfluoré <i>O ring - chemically inert</i>	<b>J3STKL028</b>	2	X			
44			Joint torique <i>O ring</i>	<b>J2FENV386</b>	1	X			
45		Kit joints extérieur bride T8 <i>O-ring set, T8 exterior flange</i>	Joint torique <i>O ring</i>	<b>J2FENV420</b>	1	X			
46			Joint torique - perfluoré <i>O ring - chemically inert</i>	<b>J3STKL028</b>	2	X			
47			Joint torique <i>O ring</i>	<b>160000241</b>	1	X			
48		Support arrière <i>Rear support</i>	Vis F/90 M6 x11 Peek <i>Peek F/90 M6 x11 screw</i>	<b>250000371</b>	4		X		
49			Coil D: 4/6 Long : 2 x 0,875 <i>Coil D: 4/6 Length: 2x0.875</i>	<b>U1GCBR185</b>	2		X		
50		Plan de pose équipé <i>Quick-disconnect plate assembly</i>	<b>Kit raccords face arrière</b> <i>Rear side fitting set</i>	<b>910031014</b>	1		X		
51			Vis blocage UHT <i>High-voltage unit locking screw</i>	<b>900003914</b>	1	X	X		
52			Raccord anti-rotation 4/6-8 <i>Anti-rotation fitting 4/6-8</i>	<b>910003344</b>	3				
53		Kit raccords face arrière <i>Rear side fitting set</i>	Griffe inox D.: 6/8 + joint <i>Stainless steel clamp D.: 6/8 + seal</i>	<b>F6RXZG083</b>	6	X			
54			Griffe inox D.: 4/6 + joint <i>Stainless steel clamp D.: 4/6 + seal</i>	<b>F6RXZG082</b>	4	X			
55			Griffe inox D.: 2,7/4 + joint <i>Stainless steel clamp D.: 2;7/4 + seal</i>	<b>F6RXZG081</b>	5	X			
56		Unité haute tension HUV 810 <i>HVU 810 high voltage unit</i>	Unité haute tension HUV 810 <i>HVU 810 high voltage unit</i>	<b>910028548</b>	1		X		
57			Joint torique - perfluoré <i>O-ring (chemically inert)</i>	<b>J3STKL340</b>	1	X			
58	Joint torique - perfluoré <i>O-ring (chemically inert)</i>		<b>160000110</b>	1	X				
59	Graisse diélectrique <i>Dielectric grease</i>		<b>H1GSYN037</b>	1	X				
60	<b>Connexion basse tension SANS boîte à bornes</b> <i>Low voltage connection WITHOUT terminal box</i>								
61	Connexion GNM 300 liaison Neptunox <i>Connection GNM 300 to Neptunox connector</i>		Câble basse tension Long: 6 m <i>Low voltage cable Length: 6m</i>	<b>910029408-060</b>	1		X		
62			Câble basse tension Long: 12 m <i>Low voltage cable Length: 12m</i>	<b>910029408-120</b>	1		X		
63			Câble basse tension Long: 18 m <i>Low voltage cable Length: 18m</i>	<b>910029408-180</b>	1		X		
64			Câble basse tension Long: 22 m <i>Low voltage cable Length: 22m</i>	<b>910029408-220</b>	1		X		
65	Connexion basse tension avec câble <i>Low voltage connection with cable</i>		Câble basse tension Long: 20 m <i>Low voltage cable Length: 20m</i>	<b>910029582-020</b>	1	X	X		
66		Câble basse tension Long: 48 m <i>Low voltage cable Length: 48m</i>	<b>910029582-048</b>	1	X	X			
67		Câble basse tension Long: 80 m <i>Low voltage cable Length: 80m</i>	<b>910029582-080</b>	1	X	X			
68	GNM300-HVU 810 <i>GNM300-HVU 810</i>	Câble basse tension Long: 20 m <i>Low voltage cable Length: 20m</i>	<b>910031945</b>	1	X	X			
69	<b>Connexion basse tension AVEC boîte à bornes</b> <i>Low voltage connection WITH terminal box</i>								
70	Connexion GNM 300 liaison Boîte à bornes <i>Connection GNM 300 to terminal box</i>	Câble basse tension Long: 6 m <i>Low voltage cable Length: 6m</i>	<b>910033271-060</b>	1		X			
71		Câble basse tension Long: 12 m <i>Low voltage cable Length: 12m</i>	<b>910033271-120</b>	1		X			
72		Câble basse tension Long: 18 m <i>Low voltage cable Length: 18m</i>	<b>910033271-180</b>	1		X			

PIÈCES DE RECHANGE / SPARE PARTS



Numéro d'ordre Serial	Ensemble Assembly	Sous-ensemble Sub assembly	Désignation de l'élément Designation of the assembly	Référence Reference	Qté Qty	Pièces de rechange Spare parts		Remarques Comments
						Usure Wear	1 <sup>ère</sup> Urgence 1 <sup>st</sup> Emergency	
73		Terminal box	Câble basse tension Long: 22 m Low voltage cable Length: 22m	910033271-220	1		X	
74		Connexion Boîte à bornes / UHT Connection Terminal box to HVU	Câble basse tension Long: 20 m Low voltage cable Length: 20m	910033272-020	1	X	X	
75			Câble basse tension Long: 48 m Low voltage cable Length: 48m	910033272-048	1	X	X	
76	(DRT7166)		Câble basse tension Long: 80 m Low voltage cable Length: 80m	910033272-080	1	X	X	

## 10.2. EU and UK Declarations of conformity



## UE DECLARATION OF CONFORMITY

(1) The manufacturer herewith declares that the equipment is in conformity with the relevant Union harmonization legislation.

(2) Equipment type	PULVERISATEUR ELECTROSTATIQUE DE PEINTURE / ELECTROSTATIC PAINT SPRAY SYSTEM <b>Nanobell 803 ST SB HR + HVU810 + GNM300</b>			
(3) Applicable Directives	2014/34/UE ATEX Directive	(4) Marking	Sprayer Nanobell 803  II 2 G 350 mJ < E < 2 J Type C-L EN 50176 Control module GNM300  II (2) G [350 mJ < E < 2 J]	
		Matériel associé GNM300 doit être installé en zone sûre (zone non dangereuse) Associated equipment GNM300 must be installed in safe zone (non explosive area)		
		Le signe X placé derrière le numéro d'attestation d'examen UE/UK de type indique que lors de l'apparition d'un défaut «di/dt sécuritaire», tout mouvement susceptible de réduire la distance de sécurité doit être stoppé (arrêt du déplacement du pulvérisateur et arrêt du convoyeur transportant les pièces à pulvériser) avant d'autoriser le réarmement du défaut. "X" placed after the number of the EU-type examination certificate indicates that, following a high-voltage shutdown when a "di/dt" safety fault occurs, any movement that may reduce the safety distance must be stopped (the movement of the sprayer and the movement of the conveyor carrying the parts to spray) before allowing the reset of the defect.		
		(5) Harmonised standards	EN 50176 : 2009	
		(6) Conformity assessment procedures	UE type examination certificate : INERIS 20ATEX0035X Production Quality Assurance Notification : INERIS 03ATEXQ721	Notified Body : INERIS 0080 60550 Verneuil-en-Halatte France
2014/30/UE Electromagnetic Compatibility Directive	(5) Harmonised standards	EN 61000-6-4 : 2007 /A1 : 2011 EN 61000-6-2 : 2005		
2014/35/UE Low Voltage Directive	(5) Harmonised standards	EN 61010-1 : 2011		
(7) This declaration of conformity is issued under the sole responsibility of the manufacturer.				

**Director of the MEYLAN site - Executive Management (EM)**

Richard WLODARCZYK

DocuSigned by:

*Richard Wlodarczyk*

9900D9C0034B4A2...

Established in Meylan, on 13-oct.-22 | 11:23 CEST

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# UE DECLARATION OF CONFORMITY

(1)	<p>Le Fabricant déclare que le matériel désigné ci-après est conforme à la législation d'harmonisation de l'Union applicable suivante/ Der Hersteller erklärt, dass das nachfolgend bezeichnete Material den folgenden anwendbaren Harmonisierungsrechtsvorschriften der Union entspricht / El fabricante declara que el equipo designado a continuación es conforme con la siguiente legislación de armonización de la UE aplicable / Il fabbricante dichiara che l'attrezzatura designata di seguito è conforme alla seguente legislazione di armonizzazione UE applicabile / O Fabricante declara que o equipamento designado abaixo está em conformidade com a seguinte legislação de harmonização aplicável da UE / Producent deklaruje, że urządzenie wskazane poniżej jest zgodne z następującymi obowiązującymi przepisami harmonizacyjnymi UE/ De fabrikant verklaart dat de hieronder beschreven apparatuur in overeenstemming is met de volgende toepasselijke EU-harmonisatiewetgeving/ Výrobce prohlašuje, že níže uvedené zařízení je ve shodě s těmito platnými harmonizačními právními předpisy EU/ Výrobce prohlašuje, že níže uvedené zařízení je ve shodě s těmito platnými harmonizačními právními předpisy EU/ Producenten erklærer, at det nedenfor angivne udstyr er i overensstemmelse med følgende gældende EU-harmoniseringslovgivning/ Valmistaja vakuuttaa, että jäljempänä mainitut laitteet ovat seuraavien sovellettävien EU:n yhdenmukaistamislainsäädännön mukaisia./ Tootja kinnitab, et allpool nimetatud seadmed vastavad järgmistele kohaldatavatele ELi ühtlustamise õigusaktidele./ Ražotājs apliecina, ka turpmāk norādītās iekārtas atbilst šādiem piemērojamiem ES saskaņošanas tiesību aktiem./ Gamintojas pareiškia, kad toliau nurodyta įranga atitinka šiuos taikytinus ES derinamuosius teisės aktus/ Производителят декларира, че посоченото по-долу оборудване е в съответствие със следното приложимо законодателство на ЕС за хармонизация/ A gyártó kijelenti, hogy az alább megjelölt berendezés megfelel a következő alkalmazandó uniós harmonizációs jogszabályoknak / Producătorul declară că echipamentul desemnat mai jos este în conformitate cu următoarea legislație de armonizare a UE aplicabilă/ Ο κατασκευαστής δηλώνει ότι ο εξοπλισμός που αναφέρεται κατωτέρω συμμορφώνεται με την ακόλουθη ισχύουσα νομοθεσία ενωρίμωσης της ΕΕ/ Προϊζνοδαč ovime izjavljuje da je oprema u skladu sa zakonskim zahtjevima Uje dinjene Kraljevine./ Výrobca vyhlasuje, že nižšie uvedené zariadenie je v súlade s týmito platnými harmonizačnými právnymi predpismi EÚ/ Произвојалец изјављује, да је сподат наведена опрема складна з насљедној вејавној усклајевалној законодајој ЕУ/ Производител заявяет, что указанное ниже оборудование соответствует следующим применимым законодательным актам ЕС по гармонизации/ 製造者は、以下に指定された装置が、適用される以下のEU調和法に適合していることを宣言する。/ 製造商声明, 下面指定的设备符合以下适用的欧盟协调立法。</p>
(2)	<p>Type d'équipement/ Art der Ausrüstung/ Tipo de equipo/ Tipo di attrezzatura/ Tipo de equipamento/ Rodzaj sprzętu/ Type uitrusting/ Typ zařízení/ Typ av anordning/ Type af anordning/ Laitteen tyyppi/ Seadme tüüp/ Iekārtas tips/ Įrangos tipas/ Вид оборудване/ A berendezés típusa/ Tipul de echipament/ Τύπος εξοπλισμού/ Vrsta opreme/ Typ zariadenia/ Vrsta naprave/ Тип оборудования/ 機器の種類/ 设备类型</p>
(3)	<p>Directives applicables/Anwendbare Richtlinien/Directivas aplicables/Direttive applicabili/Directivas aplicáveis/Obowiązujące dyrektywy/Toepasselijke richtlijnen/Platné smernice/ Tillämpliga direktiv/ Gældende direktiver/ Sovellettavat direktiivit/ Kohaldatavad direktiivid/ Piemērojamās direktīvas/ Taikomos direktyvos/ Приложими директиви/ Alkalmazandó irányelvek/ Directive aplicabile/ Ισχύουσες οδηγίες/ Primjenjive smjernice/ Uplatnitelne smernice/ Veļjavne directive/ Применимые директивы/ 適用される指令/ 适用的指令</p>
(4)	<p>Marquage/Markierung/Marcado/Marcatura/Marcação/Znakowanie/Markering/Označení/Märkning/Mærkning/Merkintä/Märgistus/Markējums/Ženklinimas/Маркировка/Jelðis/Marcare/Σήμανση/Obilježava/Označovanie /Označevanje/Маркировка/マーキング/ 标识</p>
(5)	<p>Normes harmonisées/Harmonisierte Normen / Normas armonizadas/ Norme armonizate/Normas harmonizadas /Normy zharmonizowane/Geharmoniseerde normen /Harmonizované normy /Harmoniserade standarder /Harmoniserede standarder /Yhdenmukaistetut standardit /Harmoniseeritud standardid /Saskaņotie standarti /Suderinti standartai /Хармонизирани стандарти /Harmonizált szabványok / Standarde armonizate/ Евармонизирана прототипа /Harmonizirani standardi /Harmonizované normy /Usklajeni standardi /Гармонизированные стандарты /整合規格 /协调标准</p>
(6)	<p>Procédure d'évaluation de la conformité/Verfahren der Konformitätsbewertung/Procedimiento de evaluación de la conformidad/Procedura di valutazione della conformità/Procedimento de avaliação da conformidade/Procedura oceny zgodności/Conformiteitsbeoordelingsprocedure/Postup posuzování shody / Förfarande för bedömning av överensstämmelse/Procedure for overensstemmelsesvurdering /Vaatimustenmukaisuuden arviointimenettely / Vastavushindamismenetlus/Atbilstības novērtēšanas procedūra /Atitikties vertinimo procedūra /Процедура за оценка на съответствието /Megfelelőségértékelési eljárás / Procedura de evaluare a conformității/ Διαδικασία αξιολόγησης της συμμόρφωσης /Postupak ocjene uskladnosti /Postup posuzovanja shody /Postopek ugotavljanja skladnosti /Процедура оценки соответствия / 適合性評價手順 / 符合性評估程序</p>
(7)	<p>Cette déclaration de conformité est délivrée sous la seule responsabilité du fabricant. / Diese Konformitätserklärung wird unter der alleinigen Verantwortung des Herstellers ausgestellt./ Esta declaración de conformidad se emite bajo la única responsabilidad del fabricante./ Questa dichiarazione di conformità è rilasciata sotto la sola responsabilità del produttore./ Esta declaração de conformidade é emitida sob a exclusiva responsabilidade do fabricante./ Niniejsza deklaracja zgodności została wydana na wyłączną odpowiedzialność producenta./ Deze verklaring van overeenstemming wordt afgegeven onder de uitsluitende verantwoordelijkheid van de fabrikant./ Toto prohlášení o shodě je vydáno na výhradní odpovědnost výrobce./ Denna försäkran om överensstämmelse utfärdas på tillverkarens eget ansvar. / Denne overensstemmelseserklæring er udstedt på producentens eget ansvar./ Tämä vaatimustenmukaisuusvakuutus annetaan valmistajan yksinomaisella vastuulla./ Käesolev vastavusdeklaratsioon on välja antud tootja ainuvastutusel./ Šī atbilstības deklarācija ir izdota uz ražotāja atbildību./ Už šią atitikties deklaraciją atsako tik gamintojas./ Настоящата декларация за съответствие се издава на пълната отговорност на производителя./ Ezt a megfelelőségi nyilatkozatot a gyártó kizárólagos felelőssége mellett adjuk ki./ Prezenta declarație de conformitate este emisă pe răspunderea exclusivă a producătorului./ Η παρούσα δήλωση συμμόρφωσης εκδίδεται με αποκλειστική ευθύνη του κατασκευαστή./ Ova izjava o skladnosti izdaje se isključivo pod odgovornošću proizvođača./ Toto vyhlásenie o zhode sa vydáva na výhradnú zodpovednosť výrobcu./ Za to izjavo o skladnosti je odgovoren izključno proizvajalec./ Din iddikjarazzjoni ta' konformità għandha tinfhaq taħt ir-responsabbiltà unika tal-manifattur./ Данная декларация соответствия выдана под исключительную ответственность производителя./ この適合宣言は、製造者の単独責任のもとで発行されています。/本符合性声明由制造商全权负责发布。</p>

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<b>(2) Equipment type</b>	PULVERISATEUR ELECTROSTATIQUE DE PEINTURE / ELECTROSTATIC PAINT SPRAY SYSTEM			
	<b>Nanobell 803 ST SB HR + HVU810 + GNM300</b>			
<b>(3) Applicable Directives</b>	<b>(4) Marking</b>	Sprayer Nanobell 803 II 2 G 350 mJ < E < 2 J Type C-L EN 50176		
		Control module GNM300 II (2) G [350 mJ < E < 2 J]		
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	<b>(5) Designated standards</b>		EN 50176 : 2009	
	<b>(6) Conformity assessment procedures</b>	UK type examination certificate : CML 21UKEX9798X	Notified Body : Eurofins E&E CML Limited Newport Business Park, New Port Road Ellesmere Port CH65 4LZ UK	
		Production Quality Assurance Notification : CML 21UKQAN14372		
2016 No. 1091	<b>(5) Designated standards</b>	EN 61000-6-4 : 2007 /A1 : 2011 EN 61000-6-2 : 2005		
2016 No. 1101	<b>(5) Designated standards</b>	EN 61010-1 : 2011		
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**Director of the MEYLAN site - Executive Management (EM)**

Richard WLODARCZYK

DocuSigned by:  
  
9900D9C0034B4A2...

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(2)	<p>Type d'équipement/ Art der Ausrüstung/ Tipo de equipo/ Tipo di attrezzatura/ Tipo de equipamento/ Rodzaj sprzętu/ Type uitrusting/ Typ zařízení/ Typ av anordning/ Type af anordning/ Laitteen tyyppi/ Seadme tüüp/ Iekārtas tips/ Įrangos tipas/ Вид оборудване/ A berendezés típusa/ Tipul de echipament/ Τύπος εξοπλισμού/ Vrsta opreme/ Typ zariadenia/ Vrsta naprave/ Тип оборудования/ 機器の種類/ 设备类型</p>
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(5)	<p>Normes désignées/Bezeichnete Normen / Normas designadas / Norme designate / Normas designadas / Normy wyznaczone / Aangewezen normen/ Určené normy/ Utpekade standarder / Udpegede standarder / Nimetyl standardit / Määratud standardid / Izraudzītie standarti / Paskirtieji standarti / Определени стандарти / Kijelölt szabványok / Standarde desemnate / Καθορισμένα πρότυπα / Određeni standardi / Určené normy / Določeni standardi / Назначенные стандарты / 指定された規格/ 指定的标准</p>
(6)	<p>Procédure d'évaluation de la conformité/Verfahren der Konformitätsbewertung/Procedimiento de evaluación de la conformidad/Procedura di valutazione della conformità/Procedimento de avaliação da conformidade/Procedura oceny zgodności/Conformiteitsbeoordelingsprocedure/Postup posuzování shody / Förfarande för bedömning av överensstämmelse/Procedure for överensstemmelsesvurdering / Vaatimustenmukaisuuden arviointimenettely / Vastavushindamismenetlus/ Atbilstības novērtēšanas procedūra / Atitikties vertinimo procedūra / Процедура за оценка на съответствието / Megfelelőségértékelési eljárás / Procedura de evaluare a conformității/ Διαδικασία αξιολόγησης της συμμόρφωσης / Postupak ocjene usklađenosti / Postup posuzovanja shody / Postopek ugotavljanja skladnosti / Процедура оценки соответствия / 適合性評價手順/ 適合性評估程序</p>
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## SAMES

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