SAMES KREMLIN

User manual

Nanogun Airspray H2O
GNM 6080

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WARNING : SAMES KREMLIN **SAS has been declared as a training centre with the Ministry of employment.**
Our company organises training courses providing the indispensable know-how for the installation and maintenance of our equipment all year long.
A catalogue is available on request. Select the training programme, type of learning method and skills you need from our range, to meet your production targets.
These training courses can be organised on the premises of your company or at the training centre located at our head office in Meylan.

Training service:
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SAMES KREMLIN **SAS** has drafted this operating manual in French and mandated English, German, Spanish, Italian and Portuguese translations.
The company declares reservations on all translations and refuses any liability with respect to these translated documents.

Nanogun Airspray H2O
GNM 6080

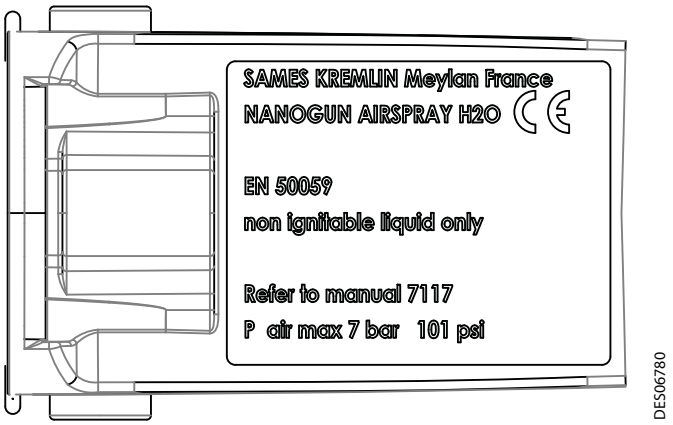
1. Product identification

The markings of the **Nanogun Airspray H2O** guns differentiate the configuration of the low pressure gun (LP).

1.1. Version identification

1.1.1. On the gun barrel

The marking on the barrel is the same across the entire **Nanogun Airspray H2O** range.



Product pressure	Versions of Nanogun Airspray H2O
7 bar	JR06 (round spray 06) JR08 (round spray 08) JR12 (round spray 12) JP (flat spray)

1.1.2. On the lower part of the gun handle

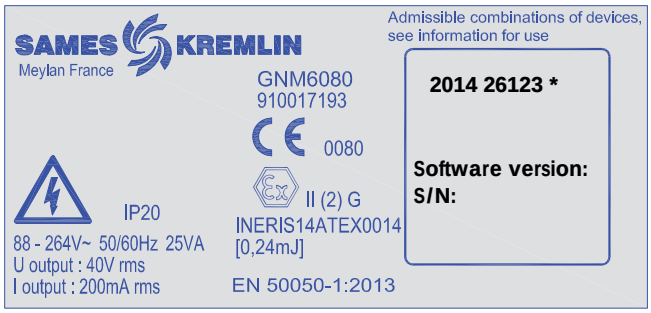
This marking combines, under a single number, the configurations of guns operating at the same level of pressure generation.

1.2. GNM 6080 control module

The **GNM 6080** control module has been installed outside of the "ATEX" zone.

Markings

EC marking



Marking CSA

Example: * 2014: Year of manufacturing
26: Week number
123: nth generator built during week 26.

WARNING : The Nanogun Airspray H_2O equipment are all compliant with the operational safety standard (i.e. Standard EN13849, level SIL 1); maintaining this level of safety requires periodic inspections of the equipment, at least once every 5 years or 15,000 hours of operations (whichever comes first). This control step pertains to each of the electrical and electronic components as well as to the set of very specific program(s); you should contact your subsidiary, distributor or regular SAMES KREMLIN representative, who will inform you of the appropriate steps to take.

2. Health and safety guidelines

WARNING : This equipment may be hazardous if it is not used, disassembled and reassembled in accordance with the rules indicated in this manual and in any applicable European Standard or national safety regulations.

The warning sign summarising the safety rules (procedures and precautions) of the present user's manual must be placed in a visible location within the zone of the coating product spraying station.

WARNING : The good working order of this equipment is only under warranty provided use of original spare parts distributed by "SAMES KREMLIN**" company.**

2.1. Regulations

The **Nanogun Airspray H2O** gun must always be used under the set of conditions required by current standards and rules as regards the application of paints and varnishes (see the Standards and Directive EN 50.053 Directive, Part 1 ISO 12100, EN 1953 and 99/92/CE).
In **Canada**, the installation must comply with the Code "C22.1 Canadian Electrical Code, Part I, Safety Standard for Electrical Installations**".**
In the **United States**, the installation must comply with the Code "NFPA 70: National Electrical Code".

The **Nanogun Airspray H2O** gun has been designed to operate within a 2nd-degree pollution environment, as defined according to the Standard IEC-60664-1.
2nd-degree pollution: Under normal use conditions, only non-conductive type pollution arises. On a temporary basis, conduction caused by condensation may arise.

WARNING : Before using the Nanogun Airspray H2O gun, be sure that all operators:

- Have previously been trained by the SAMES KREMLIN **company,** or by its distributors authorised to this effect.
- have read and understood the user's manual as well as all installation and use rules listed below.

It is incumbent upon the Operators' Workshop Manager to ensure and verify that all operators have read and understood the user's manuals relative to peripheral electrical devices present within the spraying perimeter.

2.2. Installation rules

- The hand-held electrostatic projection equipment can only be used in designated projection spots in accordance with Standard EN 16985 or under equivalent ventilation conditions.
- Install the equipment **away from any explosive zone**.
- Servo-control the control module start-up to the "on" position of the booth's suction fan.
- Correctly connect the control module to the installation's ground terminal.
- Connect the pump and the product tank by means of an equipotential connection.
- Connect all metal parts of the installation (paint pumps, containers, stools, spin coaters, etc., which positioned within three meters of the gun to the ground.
- Keep the spray zone clean and free of all unnecessary components.

- The floor where the operator works must be antistatic (either unclad concrete flooring or a metal grating). Never cover the floor with an insulating covering. In potentially explosive locations, the floor assemblies must be antistatic, in accordance with Standard EN 61340-4-1.
- The use inside the booth of an uncovered flame, any incandescent object, a device or object capable of generating sparks other than the gun is strictly prohibited.
  It is also prohibited to store in the vicinity of the booth or in front of the doors flammable products or containers in which such products had been stored.
- The jars and cans containing paint or solvent must be systematically closed after use.
- The paint feed pump used must be rated with a maximum 1:1 ratio, and the pump's air supply must be equipped with a safety relief valve to limit pressure to a maximum value of 6.5 bar.
- **Inside an explosive zone**, it is prohibited to use electrical or non-electrical equipment that has not been certified, like electrical extension cables, surge protector power bars, switches, etc.

2.3. Rules of use

- Verify the extraction ventilation system efficiency on a daily basis.
- Once a week, verify the adequate operations of the ventilation system servo controls.
- Before starting to spray, be sure the gun contains a nozzle and a head, and moreover verify that the head ring has been perfectly clamped.
- Correctly ground all metal parts of the booth, along with the parts to be painted. The resistance relative to the ground must be less than or equal to 1MΩ (for a 500-V voltage measurement). This resistance must be regularly checked and, in any case, at least once a week.
- Ensure that anyone entering the spray zone is wearing the antistatic shoes in accordance with Standard EN 61340-4-3. The measured insulation resistance must not exceed 100MΩ.
- The protective clothing intended to be worn, including gloves, must be compliant with Standard EN 1149-5. The measured insulation resistance must not exceed 100MΩ.
- The operator must also wear ear defenders when using the guns **Nanogun Airspray H2O** (see § 4 page 14).
- The operator must hold the **Nanogun Airspray H2O** either with a bare hand or with antistatic gloves or gloves modified so as to establish a direct contact between the butt and his/her hand.
- Never throw or intentionally allow the electrostatic gun to fall. A gun drop could damage the high-voltage generator. After a fall, it is advised to verify the good working order of the gun outside of the zone before its subsequent reuse.
- Never point the gun in the direction of another person.
- Verify the gun at least once a week.
- Refrain from using the equipment in the following cases:
  1 If an air leak is observed around the gun when the trigger is released;
  2 If the gun's electrical connector is not being securely held in place by means of the two safety screws;
  3 If the gun barrel and handle show signs of a shock capable of altering the seal on the gun's internal parts.
- The manual electrostatic projection device can only be operated if it is in perfect condition. Any damaged equipment must be immediately removed from active service and repaired. Worn parts must be immediately replaced.
- Closely follow use guidelines for the paints and solvents being applied (e.g. wear a mask).
- Close and purge both the air and paint inlet prior to any extended equipment downtime.
- Verify the good working order of the paint hose prior to any equipment start-up.
- The electro-pneumatic link connector, secured by means of two screws, **MUST NEVER BE DISCONNECTED WHILE IN AN EXPLOSIVE ATMOSPHERE**.
- Use of the equipment must imperatively cease if any of the following elements barrel, handle, electro-pneumatic connector, head or head ring is damaged.

2.4. Maintenance rules

- Regularly maintain and repair the electrostatic projection equipment according to the instructions contained in this user's manual.
- Only use metal containers to hold the cleaning liquids and connect to ground according to a safe procedure.
- Before any maintenance procedure:
  1 Turn off the control module.
  2 Verify that the air and paint circuits are no longer pressurised.
  3 Dump the paint circuit.
  4 All energy sources must be locked out.
- Clean the gun either in their dedicated spots with mechanical ventilation or by using cleaning liquids with a flash point at least 15°C higher than ambient temperature.
- Opt to use non-flammable cleaning products.
- Do not restore electrical power supply as long as the head and nozzle have not been correctly remounted onto the gun.
- Never soak or immerse the gun in the solvent. The operator is able, as needed, to use a cloth soaking in solvent in order to clean the gun and then immediately dry it to avoid solvent from entering the gun.

WARNING : Never spray solvent when the control module is turned on and/or when the switch placed at the back of the gun is in the "I" position.

WARNING : Shutting off the compressed air supply line does not prohibit triggering high voltage should the trigger be activated.

- The operator must have been trained by a SAMES KREMLIN company or else by the Distributors it has certified for this purpose, in order to carry out the **Nanogun Airspray H_2O** gun maintenance operations.

WARNING : It is strictly prohibited to use solvents derived from halogenated hydrocarbons as well as products containing these solvents in the presence of aluminium or zinc. Failure to comply with these guidelines exposes the user to the risks of explosion.

2.4.1. Products used

Given the diversity of products used and the impossibility to inventory the characteristics of these products, SAMES KREMLIN cannot be held liable for:

- for any incompatibility in the materials of products used whenever they come into contact with the materials listed below:
  - Stainless steel
  - Fluoro-Ethylene-Propylene (FEP)
  - Polyamide Imide (PAI)
  - Polyoxymethylene (POM)
  - Tungsten carbide and tungsten
  - PTFE elastomer
  - Polypropylene
  - IXEF
  - Glass fibre
  - Ceramic
  - Aluminium
  - Titanium
  - PEEK
  - PEHD and PEBD
  - prefluorinated rubber
- Risks related to the use of these products on both personnel and the environment.
- Wear, misalignment, equipment or machine malfunction as well as subpar quality of the application caused by use of these products.

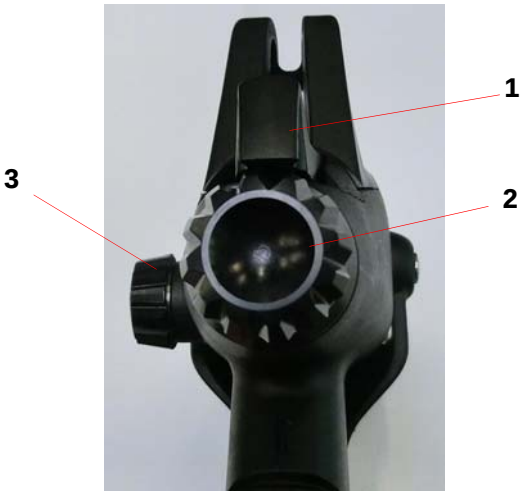
3. Description of spray gun and GNM 6080 control module

The **Nanogun Airspray H2O** guns are intended for spray paints or water based water-thinnable or hydrosoluble varnish.
Sprayed liquids must be non-flammable (defined in the Standard EN 50059:2018 Annex C) and strongly conductive.
The use of any other type of paint is excluded.
The **Nanogun Airspray H2O** guns will be connected to the **GNM 6080** control module.

The versions of the **Nanogun Airspray H2O** range are differentiated by their head.

	Characteristics
Nanogun Airspray H2O JR06	Super vortex round spray - Low pressure - ∅ 6 mm
Nanogun Airspray H2O JR08	Super vortex round spray - Low pressure - ∅ 8 mm
Nanogun Airspray H2O JR12	Super vortex round spray - Low pressure - ∅ 12 mm
Nanogun Airspray H2O JP	Flat spray - Low pressure

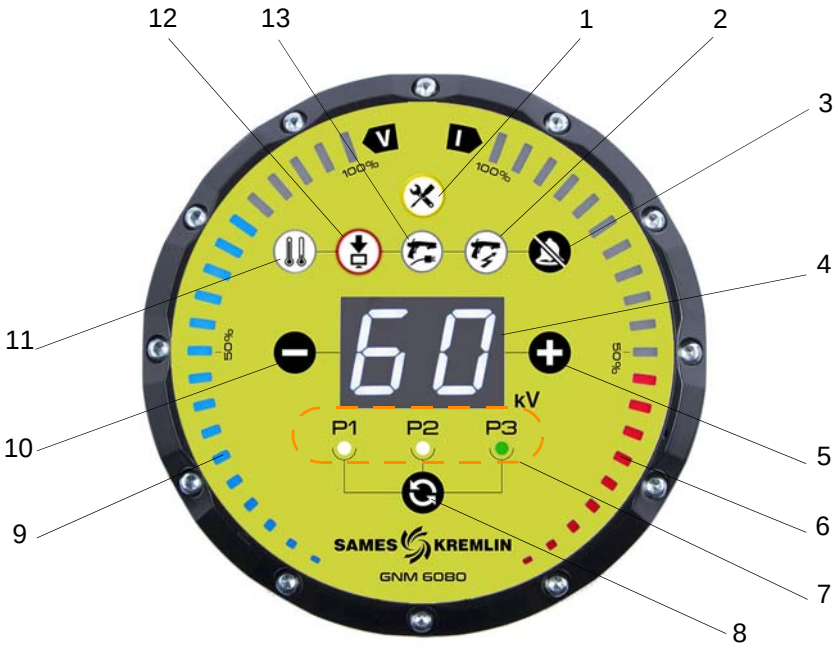
3.1. Functions available based on this gun



- The switch (Rep. 1) allows turning on or off the high voltage supply.
  When this switch is placed in position " I ", activating the trigger turns on the high voltage.
  When this switch is placed in position " 0 ", activating the trigger does not turn on the high voltage.
- The notched knob at the rear of the gun (Ref.2) is for adjusting the product flow rate.
- The side detented knob (Rep. 3) serves to adjust the spray dimension.

3.2. GNM 6080 control module

The **GNM 6080** control module serves to display the use parameters along with their settings.



Front side of the GNM 6080 control module

1	Maintenance indicator light
2	High voltage default indicator light
3	Acknowledgement of defaults
4	Display of the voltage set point
5	Increase of the voltage set point
6	Bar graph of current consumption
7	Active, preset memory indicator lights
8	Selection of the active memory
9	Voltage bar graph
10	Decrease in the voltage set point
11	Temperature default indicator light
12	Generator default indicator light
13	Low-voltage cable default indicator light

Temperature default: The temperature default forces the indicator lights (Rep. 11 and 12). Once the temperature drops below the minimum, the temperature indicator light (Rep. 11) shuts off, and the operator has the option of deleting the default by pressing the “Default Acknowledgement” button (Rep. 3).

Generator default: This default combines all internal generator defaults. If it is impossible to acknowledge this default, the problem would require a service call by the repairs department, please contact SAMES KREMLIN.

Low-voltage connection default: The generator fails to detect or no longer detects the presence of the gun. After shutting off the power supply, verify the gun/generator connection.

High-voltage default: Defaults specific to gun operations related to the high voltage:
- Generator service start-up with the trigger activated.
- Demand for a abrupt current surge during high-voltage operations.
- Defective operations of the high-voltage cascade.

Maintenance indicator light: This indicator light turns on (orange) once the trigger has been pulled 800,000 times or after 1,000 hours of gun operations (see § 10.1 page 25).
This indicator light in the on position notifies that the gun is in need of a maintenance visit. No specific maintenance on the GNM 6080 module.
The generator is capable of managing up to 20 different guns.

Side face of the GNM 6080 control module

12	Gun cable connector
13	Connector for external cabling
14	On/off switch
15	Power supply
16	Ground connector
17	Pressure balancing membrane
18	Diagnostic outlet (mini USB type)

4. Technical characteristics

4.1. General characteristics of the guns

	JR06	JR08	JR12	JP
Type of spray	Round Super Vortex	Round Super Vortex	Round Super Vortex	Flat
Original head assembled	JR06	JR08	JR12	P15
Maximum incoming paint pressure	7 bar	7 bar	7 bar	7 bar
Incoming compressed air pressure	6 bar ± 1 bar			
Min/max ambient temperature	0°C - 40°C			
Maximum flow of paint (paint viscosity 20s AFNOR 4 cross-section) in cm^3/min	650	650	750	750
Spray width at 25 cm	19 cm	20 cm	21 cm	37 cm
Air flow rate, in Nm^3/h	6.6-16.8	7.8-16.8	9.4-22.5	10.3-25.2
Acoustic pressure (*)	93.8 dB(A)	93.8 dB(A)	93.8 dB(A)	98.6 dB(A)
AFNOR Cup No. 4 suggested paint viscosity	14 s to 50 s			
Space requirements	273 x 220 x 52			
Mass (without either the hose or the cable)	570 g			
Output voltage	60 kV maximum [+0 kV; -1.5 kV] (adjustable on GNM 6080)			
Output current	80 µA maximum			
Output current in a short-circuit	< 20 µA			
Input voltage of the high-voltage cas-	45 V AC maximum			
Input current of the high-voltage cas-	300 mA maximum			
Air coupling	1/4 NPS - F			
Paint coupling	1/2 JIC - M			
Electrical functions available on the gun	High-voltage On / Off switch			
Electrical / pneumatic connector	The electro-pneumatic connector, secured by means of two screws. **MUST NEVER BE DISCONNECTED IN AN EXPLOSIVE ATMOSPHERE**			
Maximum operating altitude	2,000 m			
Maximum relative humidity of 80% for temperatures of up to 31°C, then linear decrease until 50% relative humidity at 40°C	Maximum of 80% without condensation			
Surface temperature	T6			
Protection index	IP 20			
Transport / Storage				
Time spent in storage	Max. 2 years			
Min/max storage temperature	-10°C + 45°C			
Humidity	95% without condensation			
Min. pressure	750 mbar			
Exposure to UV rays	Stored out of direct light			
Exposure to ionising radiation	Not accepted			

(*) The continuous equivalent weighted sound pressure level is between 93.8 and 98.6dBA depending on the pistol versions.

Measuring conditions:

The equipment has been put into operation at the maximum characteristics, and the measurements have been performed at the operator position of the "API" manual paint testing cab (closed cab with glass wall) located on the site of SAMES KREMLIN at Meylan in France.

Measurement method:
The equivalent weighted sound pressure level (93.8 to 98.6 dBA) is measured in LEQ value, measured over observation periods of at least 30 seconds.

4.2. Characteristics of the GNM 6080
Category II installation (in accordance with Standard EN 61010-1).

General	
Mass	1.7 kg
Space requirements	Diameter: 168 mm
	Height: 91 mm
Operating temperature	0 - 40°C
GNM 6080 input	
Voltage	88 - 264 V AC
Frequency	50 - 60 Hz
Maximum current	0.25 A
Maximum power	25 V.A
GNM 6080 output	
Voltage	40 V RMS
Current	200 mA RMS

WARNING : The GNM 6080 automatically adapts to the power supply voltage.

4.3. Characteristics of the compressed air
Required characteristics of the compressed air supply according to Standard NF ISO 8573-1

Characteristics	Value
Maximum dew point at 6 bar (87 psi)	Category 4, i.e. +3°C (37° F)
Maximum particle size distribution of the solid pollutants	Category 3 i.e. 5 µm
Maximum oil concentration	Category 1, i.e. 0.01mg / m_0^3 *
Maximum concentration of solid pollutants	5 mg / m_0^3 *

(*): The values are given for a temperature of 20°C (68°F) at atmospheric pressure.

5. Operations

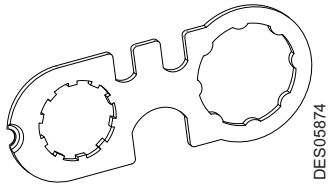
Pressing the trigger serves to delay the order to open the air valve, then activation of the high voltage, and lastly the paint nozzle needle. The high-voltage order may be inhibited by shifting the gun switch.

The **Nanogun Airspray H_2O** gun is equipped with a magnetic sensor that detects the trigger position. This sensor serves to activate the high-voltage power supply once the air valve returns to a value lying between 1 and 1.8 mm.

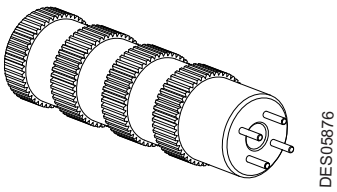
- The knob at the rear of the gun (Ref.2) is for adjusting the paint flow rate.
  - Selector switch turned to the left: maximum flow rate of the spray.
  - Selector switch turned to the right: paint flow reduced.

- The side knob is used to adjust the spray dimension.
  - Clamped screw: reduced impact.
  - Loosened screw: high impact.

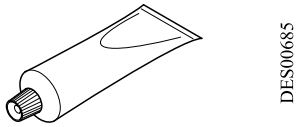
6. Specific tooling



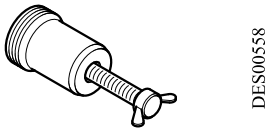
Part number	Description	Qty	Sales unit
900010674	Multipurpose wrench	1	1



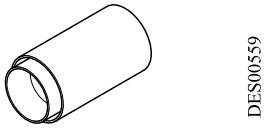
Part number	Description	Qty	Sales unit
900010973	Tool for fitting /removing flat spray nozzle	1	1



Part number	Description	Qty	Sales unit
H1GMIN017	White Vaseline (100 ml)	1	1
H1GSYN037	Dielectric grease for the high-voltage cascade and nozzle needle channel (100 ml)	1	1



Part number	Description	Qty	Sales unit
1402015	Tool for removing flat spray nozzle	1	1
443678	Tool for removing round spray JR06/JR08/JR12 diffuser	option	1



Part number	Description	Qty	Sales unit
444239	Tool for fitting and centering the 06 round spray diffuser	1	1
003008	Tool for fitting and centering the 08 round spray diffuser	1	1
003009	Tool for fitting and centering the 12 round spray diffuser	1	1

Part number	Description	Qty	Sales unit
240000301	Joint extractor tool	1	1

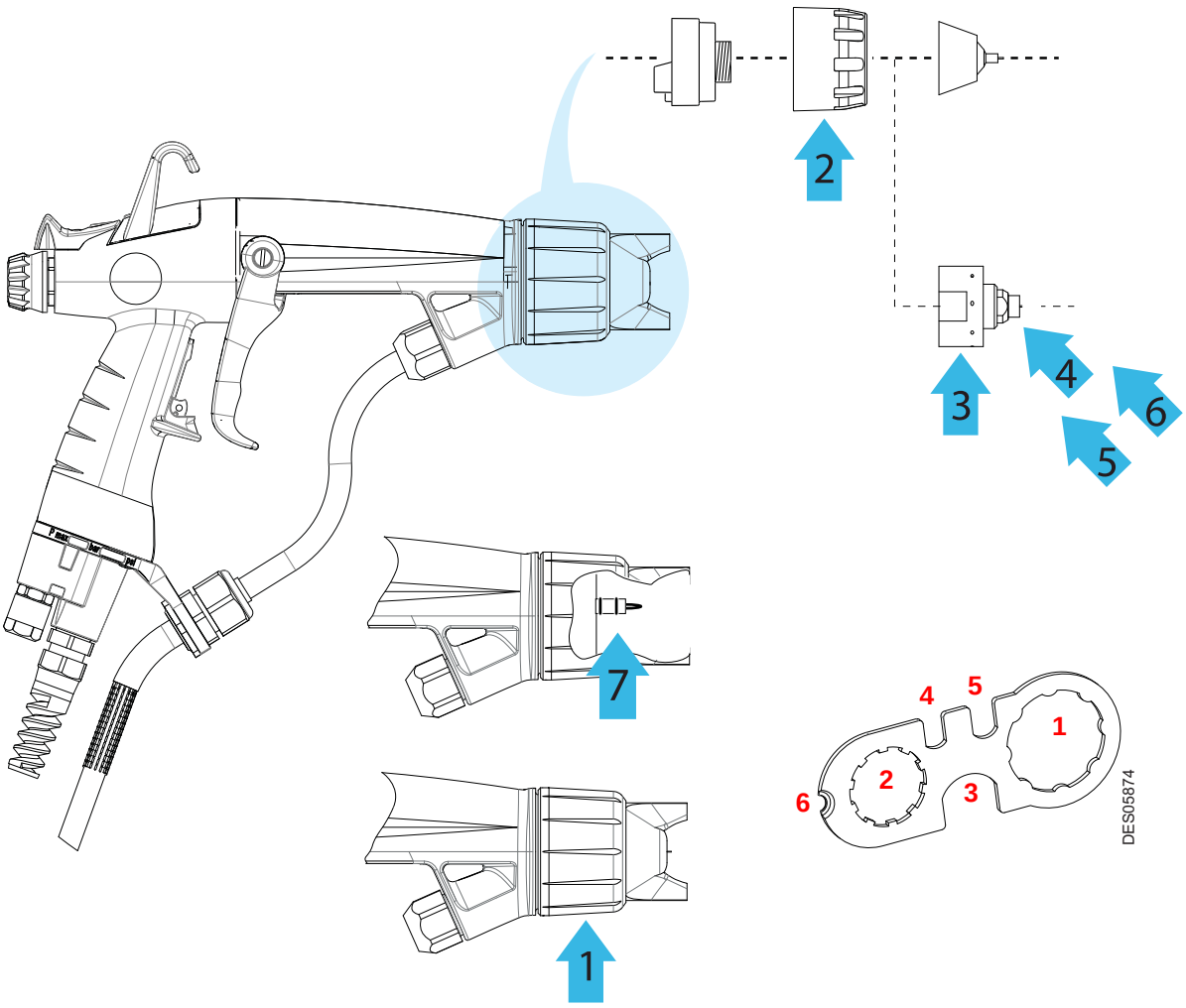
Part number	Description	Qty	Sales unit
129400923	Air cap cleaning brush	1	10

Other necessary tools and accessories:

It is recommended to possess the tools listed below to install and maintain the product.

- Flat-head screwdriver (2.5 x 75; 4 x 100, 5, 5 x 100)
- Crosspoint screwdriver(0 x 75; 2 x 125)
- Allen wrenches (3 - 6 mm)
- Torque wrench 1 to 5 Nm (R.304DA Facom) (Ref. SAMES KREMLIN: 240000095)
- Flat wrenches (5 - 5.5 - 15 - 17 - 18 - 21 - 24 - 27)
- Pipe wrench (4)
- Flat pliers
- Cutting pliers.

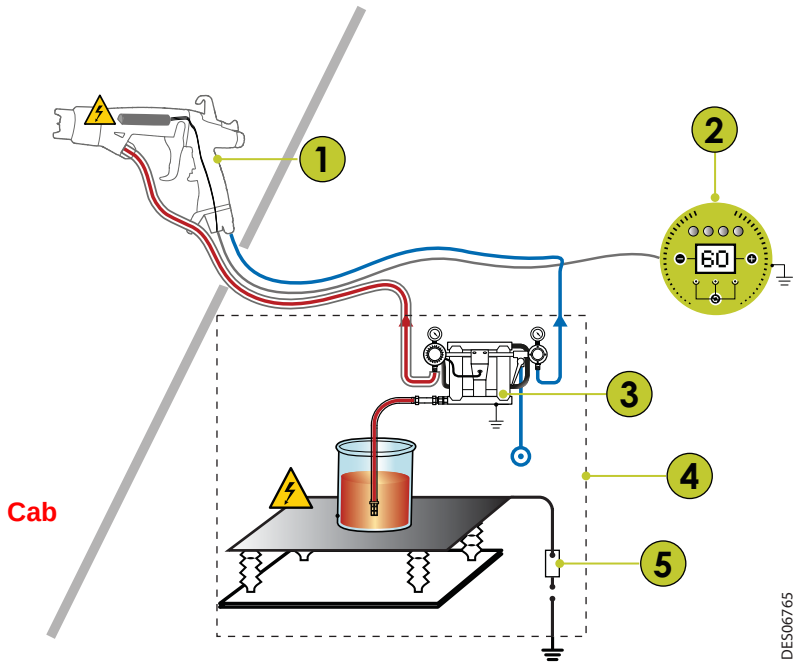
6.1. Use of the multipurpose wrench



1 : Clamping of the head ring.
2 : Clamping of the nozzle support ring.
3 : Tightening of the round spray low pressure nozzle.
4 : Tightening the injector (∅ 6 mm and 8 mm) on the nozzle (round spray).
5 : Tightening the injector (∅ 12 mm) on the nozzle (round spray).
6 : Removal of the joint cartridge on the barrel

7. Installation

WARNING : Before proceeding with any operation, please refer to the installation rules (see § 2.2 page 7).



1	**Nanogun Airspray H2O** gun
2	**GNM 6080** control module
3	Diaphragm pump
4	Insulating cabinet
5	Short circuiter

The paint intake must be installed within a ventilated zone.

The tank of paint must be a conductor and a capacity ≤ 30 liters (8 US gal).

The dump hose end must be immersed in the paint.

WARNING : The paint supply pump:

- Must have a maximum ratio of 1:1.
- and the pump's air inflow must be equipped with a safety relief valve to limit pressure to a maximum value of 6.5 bar.

8. Use

8.1. Recommendations regarding the paint to be used

In general, all the paints and water-based water-dilutable or water-soluble varnish used with conventional pneumatic guns (including weakly metallic paints) are normally used with the **Nanogun Airspray H_2O** gun.

8.1.1. Viscosity

The best results are obtained with a viscosity that extends from 25 to 30 seconds, as measured with the AFNOR Cup no. 4. Nonetheless, some paints with a lower or higher viscosity (e.g. 14 to 50 seconds or more) may be projected as well.

8.2. Spraying rules

These settings are only indicative and may be subject to variations in particular due to the temperature and the ambient humidity .

Viscosity of the paint 20 sec CA4 and length of the paint hose 7.5 m:

Flat spray nozzle with high head performance (Ref.:900009014)	Product flow in cc/min	130	285	525	750	900
	Pressure Product in bars	0.3	0.8	1.5	2.6	3.1
	Compressed air flow, in Nm^3/h	10.3	15.8	19.4	25.2	30
	Compressed air pressure in bars *	1.4	2.4	3.1	4.2	6
	Width of the spray in cm**	11	24	35	37	37
	Finishing	Good	Good	Good	Good	Average
Round spray nozzle ∅: 6 mm	Product flow in cc/min	70	200	400	650	
	Product in bars	0.4	1	2	4	
	Compressed air flow, in Nm^3/h	6.6	7.8	12.2	16.8	
	Compressed air pressure in bars *	1.2	1.5	2.7	4	
	Width of the spray in cm**	8	8	15	19	
	Finishing	Good	Good	Good	Good	
Round spray nozzle ∅: 8 mm	Product flow in cc/min	120	150	315	660	
	Product in bars	0.2	0.3	0.6	1.5	
	Compressed air flow, in Nm^3/h	6.6	7.8	11.3	16.8	
	Compressed air pressure in bars *	1	1.3	2.1	3.4	
	Width of the spray in cm**	8	9	11	20	
	Finishing	Good	Good	Good	Good	
Round spray nozzle ∅: 12 mm	Product flow in cc/min	135	150	310	660	
	Product in bars	0.2	0.3	0.6	1.5	
	Compressed air flow, in Nm^3/h	8.4	9.4	12.8	22.5	
	Compressed air pressure in bars *	1.2	1.5	2.2	4.3	
	Width of the spray in cm**	NS***	11	13	21	
	Finishing	Good	Good	Good	Good	

- ***** Dynamic Pressure measured at the input of the compressed air supply hose when the gun is in use.
- ****** Maximum size of the spray obtained when the additional air circuit is open to the maximum with a spraying distance of 250 mm and an electrostatic voltage of 60 kV.
- ******* Flow too low, film not closed taking into account the duration of spraying.

Viscosity of the paint 50 sec CA4 and length of the paint hose 7.5 m:

Flat spray nozzle with high head performance (Ref.:900009014)	Product flow in cc/min	120	285	495	750	915
	Pressure Product in bars	0.75	1.8	3.2	5	6.5
	Compressed air flow, in Nm^3/h	10.3	15.8	19.4	25.2	30
	Compressed air pressure in bars *	1.4	2.4	3.1	4.2	5.5
	Width of the spray in cm**	11	24	35	37	37
	Finishing	Good	Good	Good	Good	Average
Round spray nozzle ∅: 6 mm	Product flow in cc/min	The use a 6 mm injector to spray a viscous product is not recommended. Only spray tests used to determine the values of pressure produced and compressed air to be applied				
	Product in bars					
	Compressed air flow, in Nm^3/h					
	Compressed air pressure in bars *					
	Width of the spray in cm**					
	Finishing					
Round spray nozzle ∅: 8 mm	Product flow in cc/min	140	300	640		
	Product in bars	0.9	1.8	3.8		
	Compressed air flow, in Nm^3/h	7.8	11.3	16.8		
	Compressed air pressure in bars *	1.3	2.1	3.4		
	Width of the spray in cm**	9	11	20		
	Finishing	Good	Good	Good		
Round spray nozzle ∅: 12 mm	Product flow in cc/min	150	290	740		
	Product in bars	0.8	1.6	3.9		
	Compressed air flow, in Nm^3/h	9.4	12.8	22.5		
	Compressed air pressure in bars *	1.5	2.2	4.3		
	Width of the spray in cm**	11	13	21		
	Finishing	Good	Good	Good		

- ***** Dynamic Pressure measured at the input of the compressed air supply hose when the gun is in use.
- ****** Maximum size of the spray obtained when the additional air circuit is open to the maximum with a spraying distance of 250 mm and an electrostatic voltage of 60 kV.

9. Examples of poor equipment use

The non-exhaustive list below indicates the primary cases of poor paint spraying equipment use.

WARNING : SAMES KREMLIN **would like to recall therefore that it is essential to comply with the prescriptions listed below.**

It is prohibited to install the control module in an explosive atmosphere.
It is prohibited to perform excessive and repeated traction on the paint and air hose or on the electrical cable connecting the gun.
It is prohibited to disconnect the gun's electrical coupling in an explosive atmosphere.
It is prohibited to leave the hoses and electrical cable in a space where vehicles circulate, preventing the risk of them being crushed or severed.
It is prohibited to spray a liquid other than paint or varnish using the **Nanogun Airspray H_2O.**
It is prohibited to leave the gun or subject it to mechanical shocks.
It is prohibited to leave the gun on the floor.
It is prohibited to use the gun in order to handle or displace the parts to be painted.
It is prohibited to let the gun soak in a solvent or spray it with solvent.
It is prohibited to spray solvent without first having turned off the control module and/or shut down the high voltage at the level of the gun.

It is essential to connect the control module ground terminal to the paint insulation ground terminal.
It is essential to clamp both safety screws on the electrical coupling.

10. Maintenance

10.1. Summary table of preventive maintenance

To be carried out when the maintenance indicator light on the GNM 6080 turns on.

Subassembly	Description	Part Number	Qty	Minimum replacement period
Nozzle support (JR/JP)	O-ring	J3STKL094	1	3 months
Barrel	Seal cartridge	910014338	1	6 months or 500,000 handling operations(*)
	O-ring (Seal cartridge)	J3STKL005	1	3 months
	O-ring - chemically inert	J3STKL032	1	6 months
	O-ring	J2FENV435	1	12 months
	O-ring - chemically inert	J3STKL078	2	12 months
	O-ring - chemically inert	J3STKL002	1	12 months
	O-ring - chemically inert	J3STKL019	1	12 months
Handle	O-ring (electrical connector)	160000041	1	12 months
	O-ring (handle base)	160000067	1	12 months
	O-ring (air nipple)	J2FTCF018	1	12 months
		J3STKL018	1	12 months
Air valve	O-ring - chemically inert (exterior valve)	J3STKL005	1	12 months
	O-ring - chemically inert (interior valve)	J3STKL032	1	12 months
	Seal ring	900010256	1	12 months

WARNING : (*) Once either of these two time periods has elapsed.

WARNING : Prior to any maintenance operation carried out on the gun, please refer to the health and safety instructions (see § 2 page 7):
- Turn off the the control module.
- Verify that the air and paint circuits are no longer pressurised.
- Dump the paint circuit.

10.2. Electro-pneumatic coupling

- **Step 1**: Disassemble the low-voltage cable using a 3 Allen wrench, unscrew the two captive screws of the electro-pneumatic coupling.


Step 1

- **Step 2**: Disconnect the electro-pneumatic coupling by pulling on it.

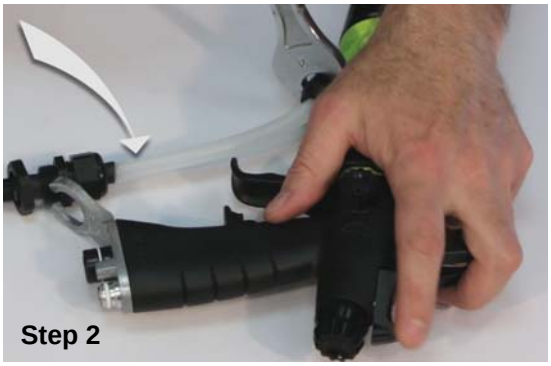

Step 2

10.3. Paint hoses

- **Step 1**: Unscrew the locknut of the cable gland using a 27 flat wrench, remove the cable gland from the bracket.

Step 1

- **Step 2**: With a 21 flat wrench, unscrew the upper nut on the paint hose. Unscrew the nut while turning the hose.



Step 2

For the reassembly step, screw the lower nut on the paint hose until reaching its stop point. Position the locknut of the cable gland below the bracket, with the cable gland above in the hexagonal imprint. Clamp the locknut of the cable gland onto the bracket.

10.4. Spraying head assembly

Round and flat spray nozzles:

- **Step 1**: Manually unscrew the ring of the head and then remove the head.

- **Step 2**: With the multifunction wrench, unscrew the fitted nozzle and the nozzle support nut.

- **Step 3**: Remove the nozzle support by pulling it parallel to the axis of the barrel.
  Replace the seals every three months (see § 13.6 page 51).

For the reassembly step, proceed in the reverse order.

10.5. Barrel

- **Step 1**: **Seal cartridge:** Using the multifunction wrench, remove the cartridge from the barrel. Systematically replace it at each disassembly.

  When replacing the O-ring seal located on | in front of the cartridge, remove it using a screwdriver, and put the new one in place, making sure it is correctly positioned.

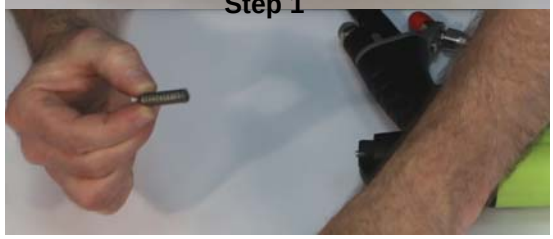
  For reassembly make sure to place the cartridge in the correct direction (white seal toward the outside). Push the cartridge until it clips into the barrel. Apply vaseline to the white seal.

- **Step 2**: **Sealing joint**: Replace the sealing joint every three months. Using a small screwdriver (2.5mm) remove the seal, taking care not to damage the barrel.
  For reassembly, apply vaseline to the seal.

- **Step 3**: **HVcontact**: With a size 4 pipe wrench, unscrew the HV contact, systematically replacing the fibre washer at each disassembly. Replace the HV contact if necessary, and screw it back into the barrel.

10.6. Paint nozzle needle

- **Step 1**: Unscrew the paint nozzle needle in back of the gun, recover the spring.



- **Step 2**: Press on the trigger and pull it manually towards the back of the paint nozzle needle.

WARNING : After every 4 or 5 reassemblies, add some dielectric grease (Ref.: H1GSYN037) within the open channel in the barrel.

10.7. Switch

- **Step 1**: With a 5.5-mm screwdriver, unscrew the washer head screw. Pull the switch lever upward.

- **Step 2**: Replace the O-ring (see § 13.2 page 47). Insert the new switch into its housing. Coat the retaining screw with LOCTITE low strength thread lock and then clamp the screw so that the switch shows slight resistance.

10.8. Trigger

- **Step 1**: Using a screwdriver, unscrew the two washer head screws and remove both sides of the trigger.

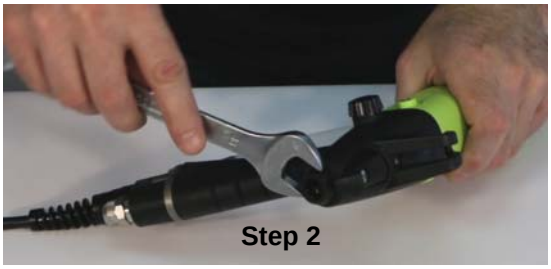
Reassembly of the trigger:

- Insert one of the trigger sides onto its shoulder and then slide the other side into its housing.

10.9. Air valve

- **Step 1**: Disassemble the paint nozzle needle (see § 10.6 page 30).

- **Step 2**: Unscrew the air valve stop nut using an 18 flat wrench.



Point the gun barrel upwards and recover the spring and air valve. Should the parts not fall, tap in the palm of your hand

or use the paint nozzle needle to withdraw the air valve.

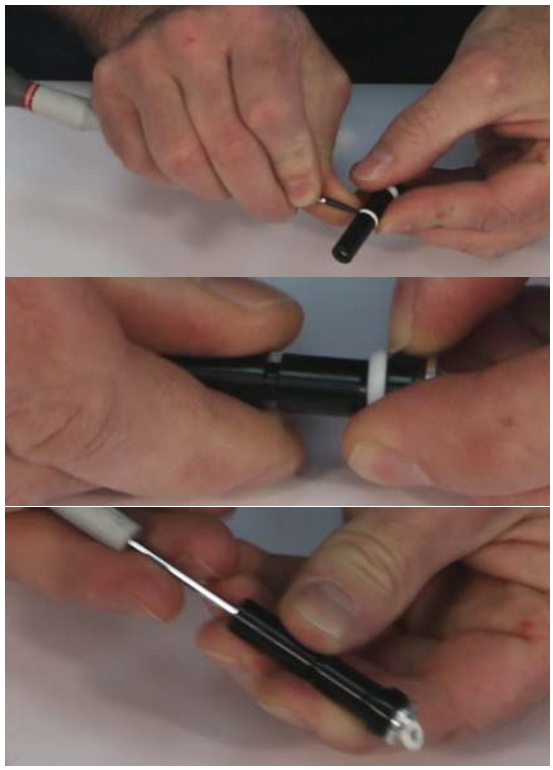
10.9.1. Repairing the air valve

Three levels of maintenance are possible:

- **Level 1**: Standard level of maintenance since the air valve body is not subject to any friction or wear.
- **Level 2**: Corrective level, to be performed in case the valve body has deteriorated.
- **Level 3**: Exceptional level, to only be performed in case the magnet gets lost or broken.

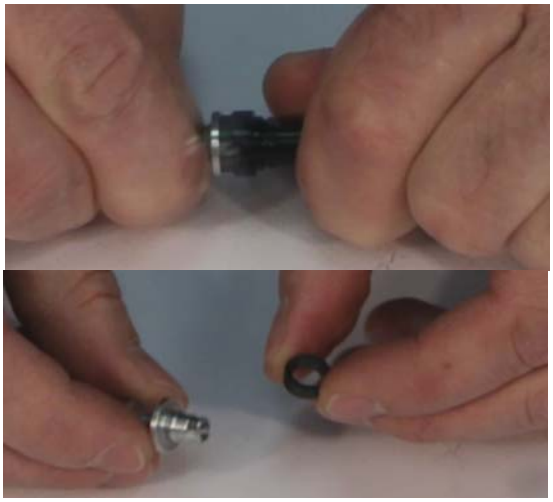
Level 1: Replacement of the three o-rings (P/N# J3STKL032 interior seal, J3STKL005 exterior seal and 900010256 conic sealant seal.

- For all three seals, extract the former one in taking care not to damage the air valve body (they may however be destroyed).
- The conic sealant seal must be pushed down into its locking mechanism on the valve body in being sure not to alter its conic range.



Level 2: If the air valve body (black part) has deteriorated.

- Manually extract or insert an M4 screw into the aluminium ring (activating the locking mechanism), pull along the axis of the part, remove the magnet in paying attention to identify its direction (silver-plated / black sides).



- Raise the magnet in the right direction (see § 10.9.1.1 page 33) and lock the ring into the valve body by pushing firmly with your finger.

Once the gun has been completely reassembled, inspect the high-voltage activation and shutdown. If the high-voltage is permanently activated or does not turn off: verify the magnet direction.

Level 3: If the magnet is broken or lost.

- Replace the complete air valve (P/N# 910015405) (see § 10.9 page 31).
  Before using the gun, inspect the high-voltage on and off switches.

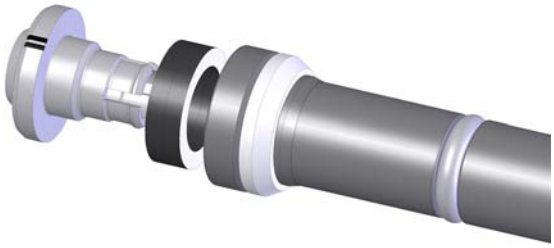
If the high-voltage is permanently activated, disassemble the handle and remove one of the washers that serve to adjust the reed sensor position; proceed step by step without removing multiple washers at a time.

If the high-voltage does not activate, don't disassemble the handle and instead add a washer to adjust the reed sensor position; proceed step-by-step without adding multiple washers at the same time.

WARNING : Various washer thicknesses may be installed, always begin by adding or removing the thinnest.

10.9.1.1. Magnet assembly direction

- **Case no. 1:** For guns of type 1 (see serial no.). Back stop without a marking, the sliver-plated side of the magnet must make contact with the shoulder of the back stop.
- **Case No. 2:** For guns of type 2 (see serial no.). Back stop with markings, the black side of the magnet must make contact with the shoulder of the back stop.



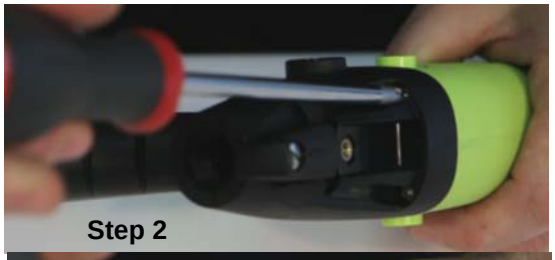
10.10. Fastening hook

- Place the switch in the "I" position. Using a 5.5-mm screwdriver, unscrew the washer head screw and remove the hook by pulling upward.

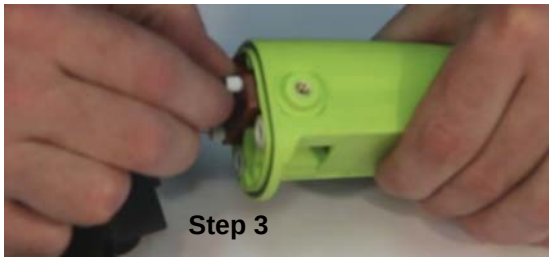
10.11. High-voltage cascade

- **Step 1**: Remove the trigger see § 10.8 page 31, and remove the paint nozzle needle.

- **Step 2**: Unscrew the 4 screws using a 2-mm crosspoint screwdriver while holding the barrel on the handle.

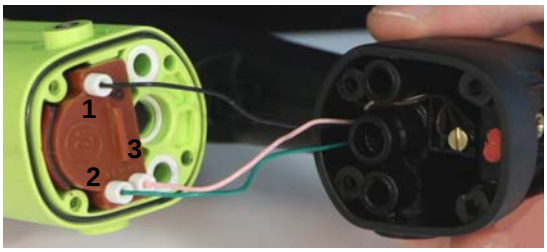


- **Step 3**: Manually unscrew or by using a small flat pliers the three cascade connection wires, then carefully pull the contacts towards the back.



- **Step 4**: Disassemble the high-voltage contact in front of the barrel (see § 10.5 page 29). Extract the cascade.

WARNING : Be mindful of the colours used (terminal 1: black; terminal 2: green; terminal 3: pink).

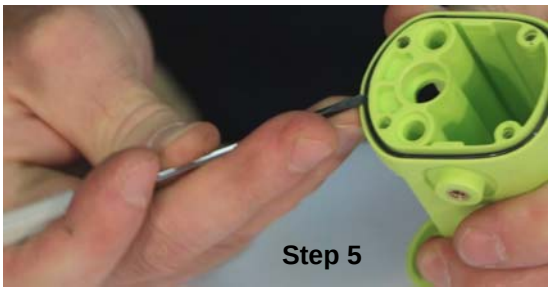


For the reassembly step, proceed in the reverse order.
Replace the high-voltage cascade. **Coat the cascade with some dielectric grease** (Ref.: H1GSYN037) and then place it in its housing.
Push the cascade until its stop in the barrel. Connect the three wires and clamp all three. Verify the condition of the O-rings, replace them as needed.

10.12. Barrel

- **Step 1**: Remove the trigger see § 10.8 page 31, and the paint nozzle needle.
- **Step 2**: Unscrew the four screws used to fasten the barrel onto the handle.
- **Step 3**: Manually unscrew or by using a small flat pliers the three cascade connection wires, then carefully pull the contacts towards the back.
- **Step 4**: **Replacement of the O-rings of both air channels and the air valve (step 3: not required):** Remove and replace the three O-rings.

- **Step 5**: **Replacement of the barrel/handle O-ring (step 3: mandatory)**: Remove and replace the O-ring.
  This O-ring is to be replaced every year.



- **Step 6**: **Replacement of an O-ring in back of the nozzle needle:** Remove and replace the O-ring.

For the reassembly step, proceed in the reverse order.

10.13. Handle

- **Step 1**: Separate the barrel from the handle.

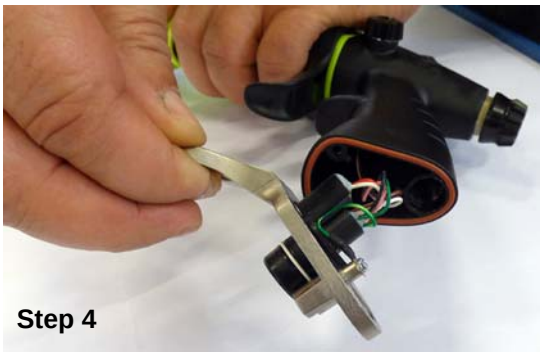
- **Step 2**: **Gun handle base**
  Unscrew the air nipple using a 16 Allen wrench. Replace the O-rings every 12 months.


Step 2

- **Step 3**: Unscrew the two screws (K35 x 14) with a 2 crosspoint screwdriver. Upon each screw removal, replace the fibre washers.

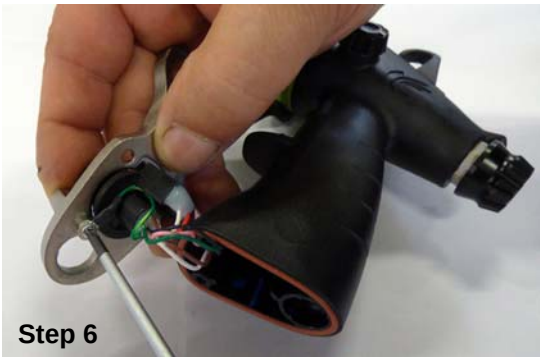

Step 3

- **Step 4**: Raise the base in order to gain access to the handle base joint. Replace this seal every 12 months.


Step 4

- **Step 5**: Remove the electrical connector by pushing it to a point where the base exits.
  Replace the connector seal every 12 months.

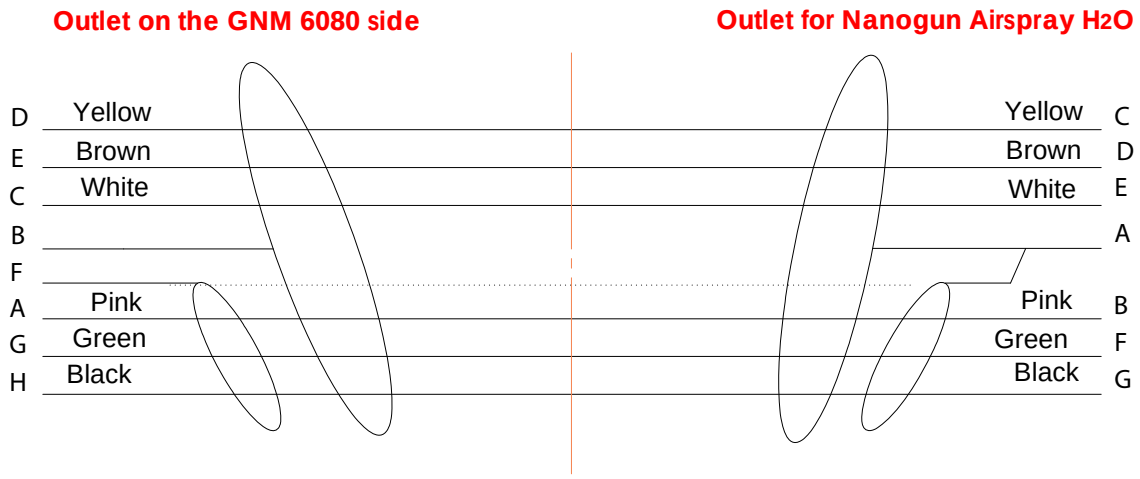
- **Step 6**: **Replacement of the base:** unscrew the ground wire screw using a 0 crosspoint screwdriver, remove it and replace it.


Step 6

For the reassembly step, proceed in the reverse order. Replace the pin of the connector in the base polarising slot and re-screw the ground connection.
Coat the air nipple seals with dielectric grease.
Tighten the air nipple with 1.5 N.m of torque. Tighten the two screws (K35 x 14) with a 1.3 N.m tightening torque.

10.14. Electrical diagrams

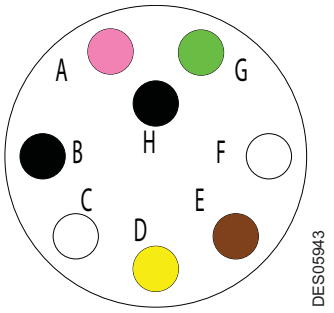
10.14.1. GNM 6080 / Nanogun Airspray H_2O connection cable



10.14.2. GNM 6080 trigger cable

Outlet on the GNM 6080 side

A	Pink	Primary transformer UHT 3
B	Shield	Shield
C	White	REED sensor (trigger)
D	Yellow	Dallas chip
E	Brown	0 V joint chip / reed
F		Third-party shield
G	Green	Primary transformer UHT 2
H	Black	Return IHT 1



(*)
Switch open: Nanogun Airspray H_2O trigger released
Switch closed: Nanogun Airspray H_2O trigger activated
Characteristics of the dry contact: 0.5 A max / 24 V AC/DC max.

11. Cleaning

Prior to any maintenance operation carried out on the gun, please refer to the health and safety instructions (see § 2 page 7).

11.1. Cleaning of the product circuit

- Unplug the **GNM 6080** control module.
- Install a bucket of solvent instead of a barrel of paint.
- Open the recirculation valve in order to clean the pump.
- Close the recirculation valve and press the trigger until clean solvent exits the gun nozzle.

11.2. Cleaning of the gun

The gun must be cleaned immediately after use and at the end of the day.
In order to proceed with the cleaning steps, follow the instructions listed below:

WARNING : It is strictly prohibited to immerse the Nanogun Airspray H_2O gun into the solvent

WARNING : Use an appropriate solvent: not greasy and non-chlorinated.

- **Step 1**: Unplug the **GNM 6080** control module.
- **Step 2**: Depressurise the gun's air circuit.
- **Step 3**: Dump the gun's paint circuit and rinse it using an appropriate solvent (see § 2.4 page 9).
- **Step 4**: Depressurise the gun's paint circuit.
- **Step 5**: Dry the gun head using a dry soft cloth that remains intact.
- **Step 6**: Unscrew the gun's head ring, remove the gun head (see § 10.4 page 28).
- **Step 7**: Clean the head with a wet brush of solvent and dry the head.
- **Step 8**: Raise the head and its ring.
- **Step 9**: Carefully dry the gun with compressed air (head placed downward) before turning the **GNM 6080** control module back on.

WARNING : Never disassemble the nozzle needle line whenever the paint hose still contains either paint or solvent.

WARNING : During cleaning of the nozzle, aim the spray gun nozzle towards the floor in order to prevent solvent or paint from flowing into the barrel ducts.

WARNING : After each cleaning cycle, dry using compressed air the supply hose and ducts in order to eliminate all traces of solvent.

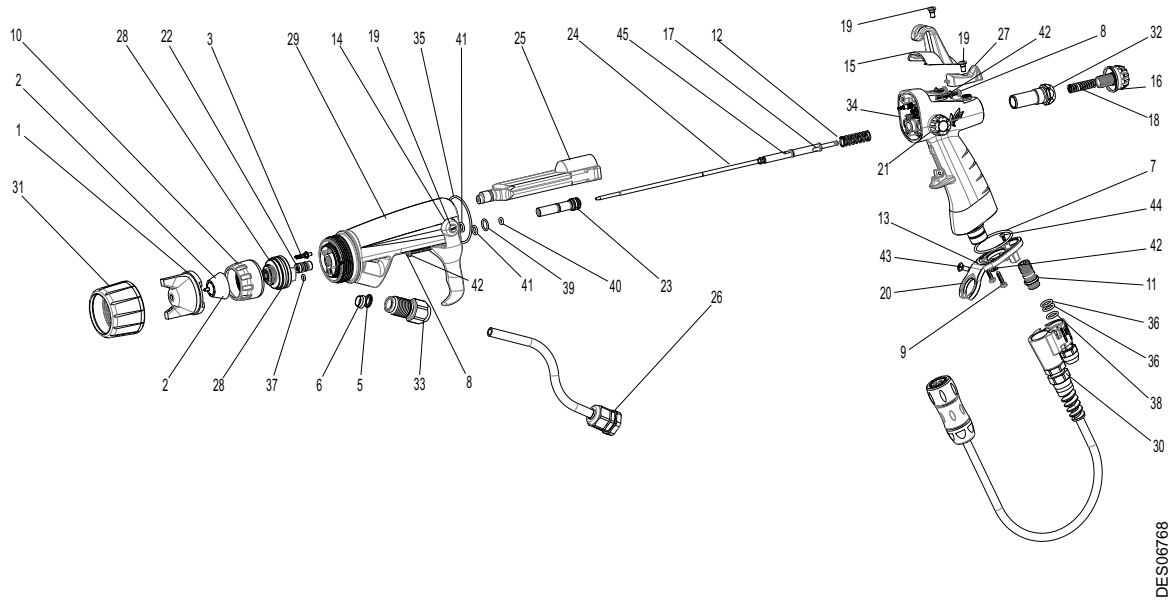
11.3. Elimination of wastes

The removal, transport and elimination of wastes generated by use of the equipment (used solvent, unused paint, residue, dirty cloths, booth sludge, water from curtains applied in the booth, used dry filters, ventilation air, etc.) must take place in strict compliance with current local regulations.

11.4. Dismantling and Recycling

11.4.1. Nanogun Airspray H_2O

WARNING : All parts may be contaminated by paint and/or solvent residue. Before proceeding to dismantle the equipment, clean the gun and more specifically the inside of the paint hoses with an appropriate cleaning product and dry them with compressed air.

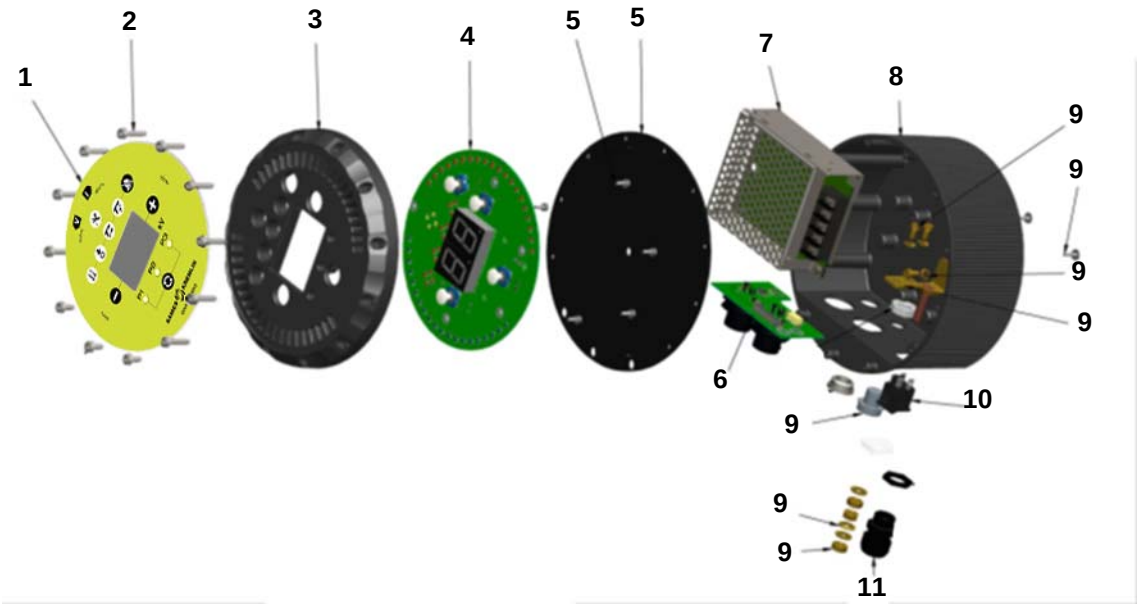


Rep.	Material
Spray area	
1.6, 22.28, 33.37	Plastic material containing fibreglass or Kevlar
31	Plastic loaded material, PTFE, chemically inert rubber
28	Plastic material containing fibre, titanium
2	Plastic and stainless steel
5, 22	Chemically inert rubber
3*	Brass
26	Polyethylene and stainless steel
Barrel zone	
14, 29*	Plastic material containing fibre
8, 19	Stainless steel
35, 39.40, 41, 42	Chemically inert rubber or fibre joints
25	Plastic material, copper, steel, ceramic, ROH electronic and electrical components,
Product and air valve zone	
23, 24*	Tungsten, PEEK, stainless steel, rubber perfluorcarbons, PTFE, magnet (iron), aluminium
12*, 18*, 45*	Stainless steel
16*, 17*, 21	Aluminium
32	Plastic material, chemically inert rubber

Seal area	
15, 34	Plastic material containing fibre, stainless steel, brass, copper
Not represented	Trigger position sensor: ROH electrical components, plastic, copper
	Connector to the base of the joint: ROH electronic components, plastic, copper
19	Stainless steel
27	Plastic material containing fibre, magnet (iron)
Flange area of seal connection to the generator	
13	Aluminium
11, 20, 42, 43, 44	Stainless steel
7, 36	Rubber
30	Plastic material containing fibre, steel, copper
Product hose / air hose zone	
Not represented	Air hose: PU
Not represented	Product hose: polyethylene or elastomerised polyethylene Fittings: zinc-plated steel and stainless steel Sheath: polyamide Cable gland: material containing plastic

*** These parts (3, 12, 16, 17, 18, 24, 29, 45) may be fouled due to dielectric grease.**

11.4.2. GNM 6080



Rep.	Description	Material
1	Keyboard / front side*	Plastic material
2	Fastening screws front side	Steel
3	Primary card support and front side	Aluminium
4	Primary card	Electrical and electronic components, ROH printed circuit
5	Bottom sheet metal and fastening screws	Steel
6	Connector card	Electrical and electronic components, ROH printed circuit
7	Electrical power supply	Electrical and electronic components, ROH printed circuit
8	Box	Aluminium
9	Fastening accessories	Steel and brass
10	Electrical switch	ROH electrical component
11	Cable gland	Plastic material
Not represented		
12	Power supply cable	Plastic material and copper

*** Reminder: This part may become fouled by paint residue.**

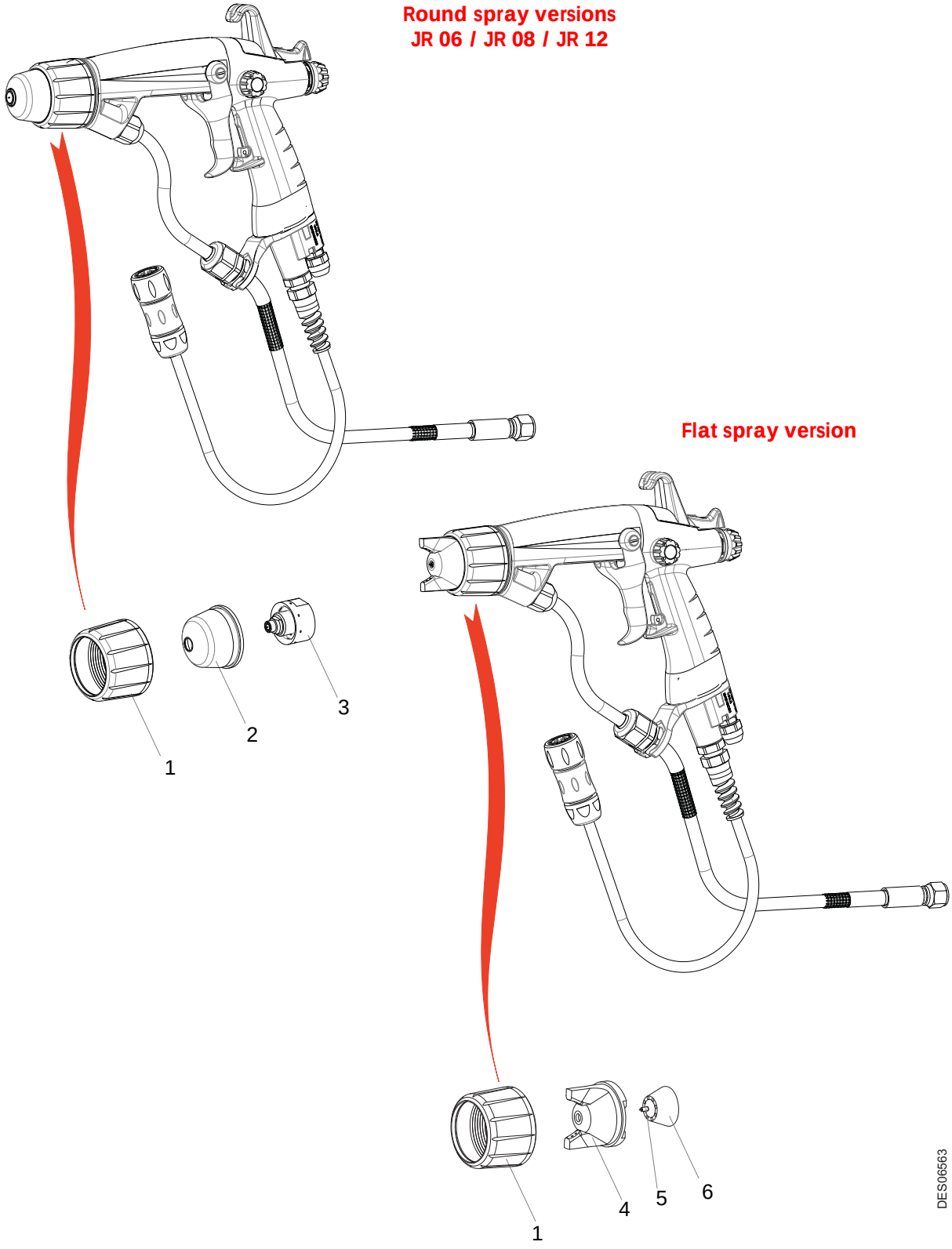
12. Common malfunctions and repairs

Defaults	Possible Causes	Remedies
Uneven paint flow	Presence of air in the paint circuit	Dump the paint circuit
	Paint flow rate too slow	Increase pressure at the pump or pressurised vessel.
	Impurities in the circuit	Verify the filter, then dump the circuit.
	Lack of paint in the paint tank	Replace paint
	Paint too viscous	Verify the paint viscosity
The paint is not flowing or only barely flowing upon exiting the gun.	Nozzle clogged	Clean the nozzle
	The nozzle needle does not retract	Verify the nozzle needle line
	Filter clogged	Clean the filter
	No pump pressure	Verify the pump
	paint too viscous	Verify the paint viscosity
	Obstructed ∅ 6,35 mm paint hose	Unclog or change the paint hose
The paint is constantly flowing.	Foreign body preventing the nozzle needle from closing.	Disassemble the nozzle support and clean it along with the seat. Clean the nozzle needle end
	Worn nozzle needle	Change the nozzle needle and possibly the nozzle support.
	Damaged nozzle support	Change the nozzle support
The paint exits by the head air holes.	Nozzle not tight on the seat	Tighten the nozzle
	Damaged cartridge	Change the cartridge
	Damaged paint joint	Change the joint
Poor spray	Nozzle partially clogged	Clean the nozzle
	Insufficient paint pressure	Increase the paint flow rate
	Excessive viscosity	Dilute the paint
	Lack of air in the spray	Increase the air pressure
	Excessive paint flow rate	Decrease the paint flow rate
	Damaged paint injector	Change the injector
Orange skin	Evaporation of solvents too fast	Use heavier solvents
	Paint droplets too thick	Increase the spraying distance
		Dilute the paint
		Increase the spraying air pressure
		Reduce the nozzle size
		Increase the electrostatic effect

Defaults	Possible Causes	Remedies
Running / dripping paint	Evaporation of solvents too slow	Use more lightweight solvents
	Speed of application too slow	Slow the paint flow rate
		Increase the spraying air pressure
		Decrease the electrostatic effect
Paint spray loaded in the center	Excessive paint flow rate	Decrease the paint flow rate
		Increase the air pressure
	Nozzle too thick	Use a smaller nozzle
	Viscosity of the paint excessive	Dilute the paint
	Air orifices partially blocked	Clean the spraying head
Little electrostatic effect	Absence of high voltage	See indication on the control module
	Insufficient high voltage	Increase the high voltage
	Distance too great between spraying head and part	Control the Nanogun Airspray H_2O output voltage
		Spray at a distance lying between 200 and 300 mm
	Part not grounded	Clean the hooks. Verify the grounding of parts and the conveyor
	Excessive ventilation	Reduce the booth's suction flow rate, while respecting current regulations
	Spraying pressure too high	Reduce the spraying pressure
	Excessive paint flow rate	Reduce the paint flow rate
	Generator short-circuit: - by the exterior	Clean the gun exterior using a non-conductive solvent
		Take a new cover, one that's clean and dry
	Generator short-circuit: - by the nozzle needle line	Change both the cartridge and the nozzle needle
	Generator short-circuit: - by the air channel	Clean the air channels in the barrel
	Generator short-circuit: - by the product hose - and/or the cabinet - or the insulating table.	- check the product hose Check the insulation of the pump and the paint reservoir. Clean the insulating enclosure and dry it carefully
The operator has felt electrical discharges when touching the part.	Part not grounded or poorly grounded	

13. Spare parts

13.1. Nanogun Airspray H2O Low Pressure (LP)



For the various options: see § 13.13 page 57.

Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910023072-075	**Nanogun Airspray H2O JR 06 LR round spray, hose length 7.5 m**	**1**	**1**	**-**
	910023072-150	**Nanogun Airspray H2O JR 06 LR round spray, hose length 15 m**	**1**	**1**	**-**
	-	**Gun Nanogun Airspray H2O** (see § 13.2 page 47)	-	-	-
1	**910015921**	**Fitted head ring** (see § 13.5 page 51)	**1**	**1**	**3**
2	900011365	Super vortex cap	1	1	3
3	**910018322**	**Fitted nozzle JR06** (see § 13.7 page 52)	**1**	**1**	**1**
		Not shown			
	050123306	Adapter M1/2 JIC - F3/8NPS paint hose	1	1	3

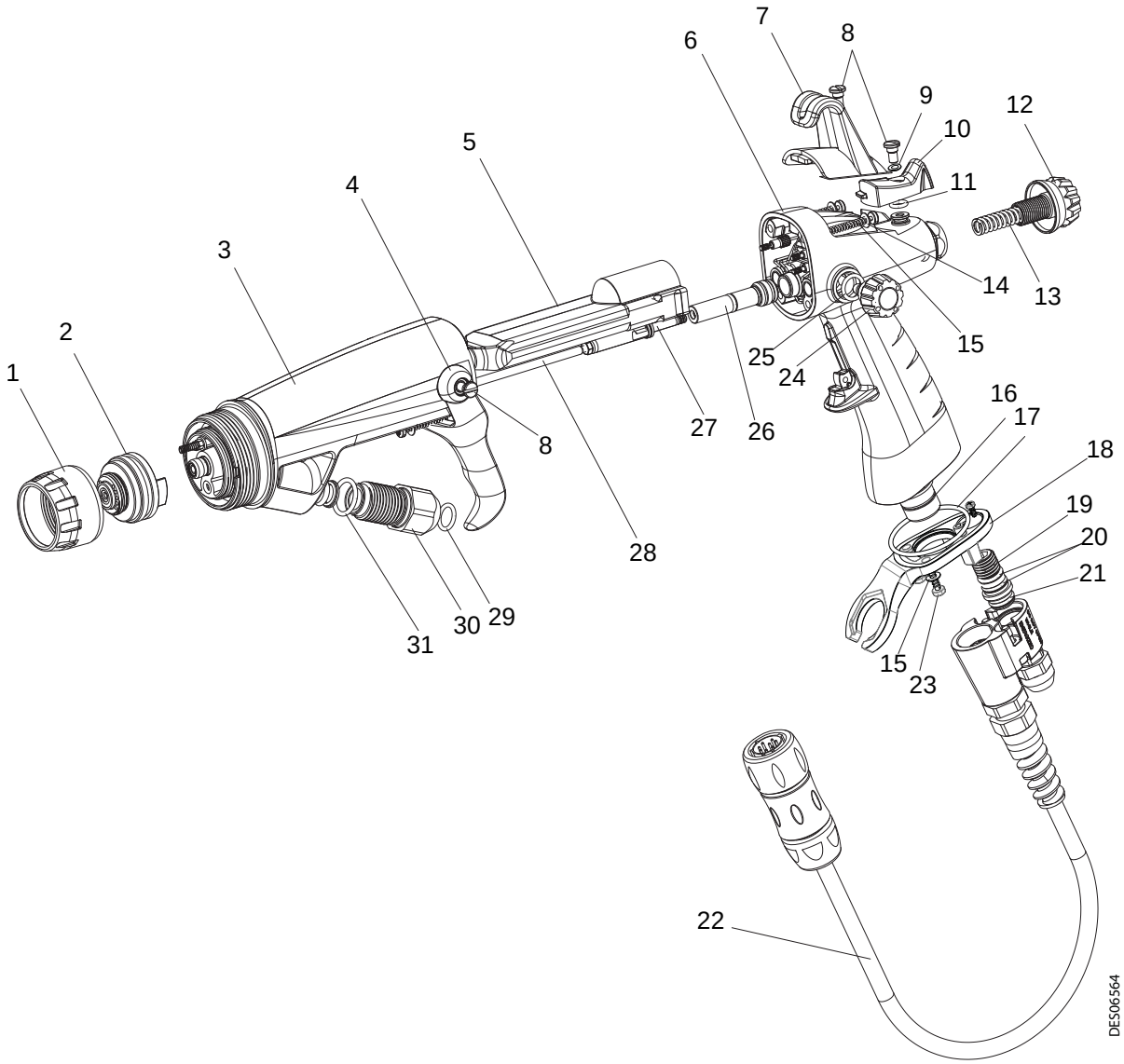
Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910023071-075	**Nanogun Airspray H2O JR 08 LR round spray, hose length 7.5 m**	**1**	**1**	**-**
	910023071-150	**Nanogun Airspray H2O JR 08 LR round spray, hose length 15 m**	**1**	**1**	**-**
	-	**Gun Nanogun Airspray H2O** (see § 13.2 page 47)	-	-	-
1	**910015921**	**Fitted head ring** (see § 13.5 page 51)	**1**	**1**	**3**
2	900010503	Super vortex cap	1	1	3
3	**910003847**	**Fitted nozzle JR08** (see § 13.7 page 52)	**1**	**1**	**1**
		Not shown			
	050123306	Adapter M1/2 JIC - F3/8NPS paint hose	1	1	3

Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910023070-075	**Nanogun Airspray H2O JR 12 LR round spray, hose length 7.5 m**	**1**	**1**	**-**
	910023070-150	**Nanogun Airspray H2O JR 12 LR round spray, hose length 15 m**	**1**	**1**	**-**
	-	**Gun Nanogun Airspray H2O** (see § 13.2 page 47)	-	-	-
1	**910015921**	**Fitted head ring** (see § 13.5 page 51)	**1**	**1**	**3**
2	900010504	Super vortex cap	1	1	3
3	**910003920**	**Fitted nozzle JR12** (see § 13.7 page 52)	**1**	**1**	**1**
		Not shown			
	050123306	Adapter M1/2 JIC - F3/8NPS paint hose	1	1	3

Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910023073-075	**Nanogun Airspray H2OJP LR flat spray, hose length 7.5 m**	**1**	**1**	**-**
	910023073-150	**Nanogun Airspray H2OJP LR flat spray, hose length 15 m**	**1**	**1**	**-**
	-	**Gun Nanogun Airspray H2O** (see § 13.2 page 47)	-	-	-
1	**910015921**	**Fitted head ring** (see § 13.5 page 51)	1	1	3
4	900009014	High performance flat spray head	1	1	1
5	446028	Electrode (included in rep.6)	1	5	1
6	1406402	Fitted nozzle JP	1	1	1
Not shown					
	050123306	Adapter M1/2 JIC - F3/8NPS paint hose	1	1	3

(*)
Level 1: Standard preventive maintenance.
Level 2: Corrective maintenance.
Level 3: Exceptional maintenance.

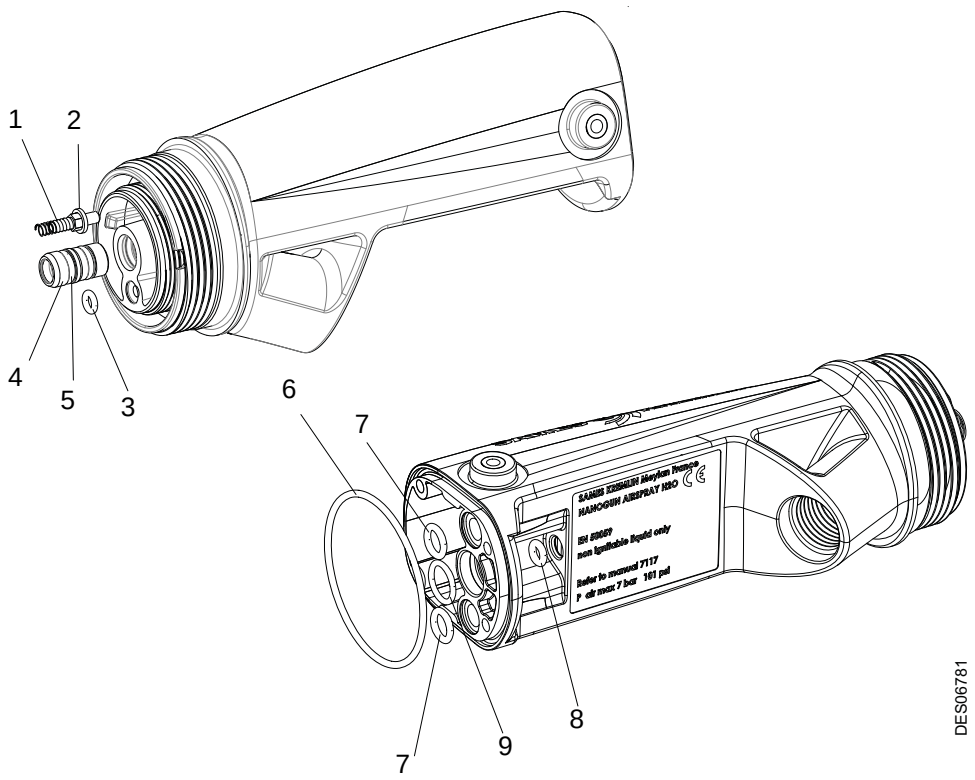
13.2. Nanogun Airspray H_2O gun all versions



Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	-	**Nanogun Airspray H_2O gun**	**-**	**-**	**-**
1	900000320	Nozzle support nut	1	1	3
2	**910015721**	**Nozzle support** (see § 13.6 page 51)	**1**	**1**	**1**
3	**910025083**	**Equipped barrel** (see § 13.3 page 49)	**1**	**1**	**3**
4	900010237	Trigger	1	1	3
5	**910015508**	**Equipped high-voltage cascade**	**1**	**1**	**3**
6	**910015944**	**Equipped handle for Nanogun Airspray H_2O**	**1**	**1**	**3**
7	900010239	Fastening hook	1	1	3
8	900010385	C M4 curved washer head screw	4	1	3
9	900013808	PTFE flat washer (included in item 10)	1	1	2
10	**910018204**	**On/off button with joint and magnet** (included in item 6)	**1**	**1**	**3**
11	J3STKL005	Chemically inert O-ring (included in item 15)	1	1	1
12	900010240	Knurl back of paint	1	1	3
13	900010265	Paint spring 8 bar	1	1	1
14	250000036	Handle / barrel fastening screw	4	1	3
15	J4BRND039	Fiber seal for fastening screw	6	1	3
16	160000041	Grey chemically inert O-ring (included in item 11)	1	1	1
17	160000067	O-ring (included in item 11)	1	1	1
18	900010009	LR gun base	1	1	3
19	**910006118**	**Fitted air nipple**	**1**	**1**	**2**
20	J2FTCF018	O-ring (included in item 19)	2	1	1
21	J3STKL018	White chemically inert O-ring (included in item19)	1	1	1
22	**910015869**	**Electro-pneumatic coupling** (see § 13.9 page 53)	**1**	**1**	**3**
23	250000037	Base-handle fastening screw	2	1	3
24	**910014166**	**Fitted additional air settings button** (included in item 6)	**1**	**1**	**3**
25	J2FTDF121	O-ring (included in item 26)	1	1	1
26	**910018203**	**Fitted air valve** (see § 13.4 page 50)	**1**	**1**	**3**
27	900010253	Rear nozzle needle stop	1	1	3
28	**910018219**	**Fitted nozzle needle** (see § 13.8 page 53)	**1**	**1**	**1**
29	J2FTDF121	O-ring (included in item 32)	1	1	1
30	**910015931**	**Fitted paint coupling**	**1**	**1**	**2**
31	J2FTCF178	O-ring (included in item 32)	1	1	1

(*)
Level 1: Standard preventive maintenance.
Level 2: Corrective maintenance.
Level 3: Exceptional maintenance.

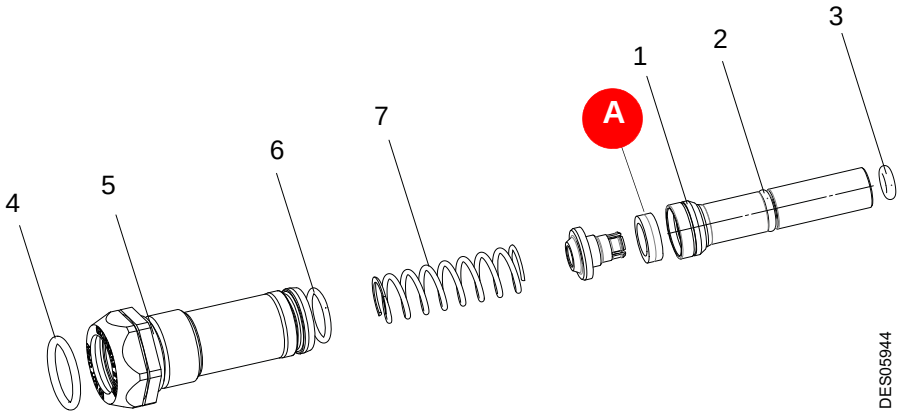
13.3. Equipped barrel



Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910025083	**Equipped barrel**	**1**	**1**	**3**
1	1407354	HV contact	1	1	1
2	J2CRAN031	Contact sealing joint	1	1	1
3	J3STKL002	O-ring - chemically inert	1	1	1
4	**910014338**	**Seal cartridge**	**1**	**1**	**1**
5	J3STKL005	Chemically inert O-ring (included in item 4)	1	1	1
6	J2FENV435	O-ring	1	1	1
7	J3STKL078	O-ring - chemically inert	2	1	1
8	J3STKL032	O-ring - chemically inert	1	1	1
9	J3STKL019	O-ring - chemically inert	1	1	1

(*)
Level 1: Standard preventive maintenance.
Level 2: Corrective maintenance.
Level 3: Exceptional maintenance.

13.4. Equipped air valve and air valve Nut

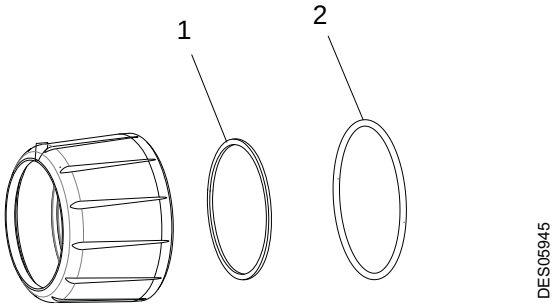


Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910018203	**Equipped air valve**	**1**	**1**	**3**
1	900010256	Sealant ring	1	1	1
2	J3STKL005	O-ring - chemically inert (exterior valve)	1	1	1
3	J3STKL032	O-ring - chemically inert (interior valve)	1	1	1
	910015922	**Equipped air valve nut**	**1**	**1**	**3**
4	J2FTDF155	O-ring	1	1	1
5	J2FTDF160	O-ring	1	1	1
6	J2FTDF999	O-ring	1	1	1
7	900009024	Air spring	1	1	1

(*)
Level 1: Standard preventive maintenance.
Level 2: Corrective maintenance.
Level 3: Exceptional maintenance.

WARNING : Recover the magnet A on the former air valve in order to retain the same trigger values.
If the magnet is lost, contact SAMES KREMLIN**.**

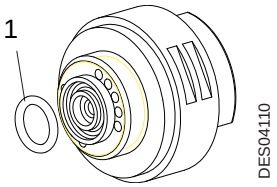
13.5. Fitted head ring



Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910015921	**Fitted head ring**	**1**	**1**	**1**
1	900010497	Sliding ring	1	1	3
2	J2FENV445	O-ring	1	1	1

(*)
Level 1: Standard preventive maintenance.
Level 2: Corrective maintenance.
Level 3: Exceptional maintenance.

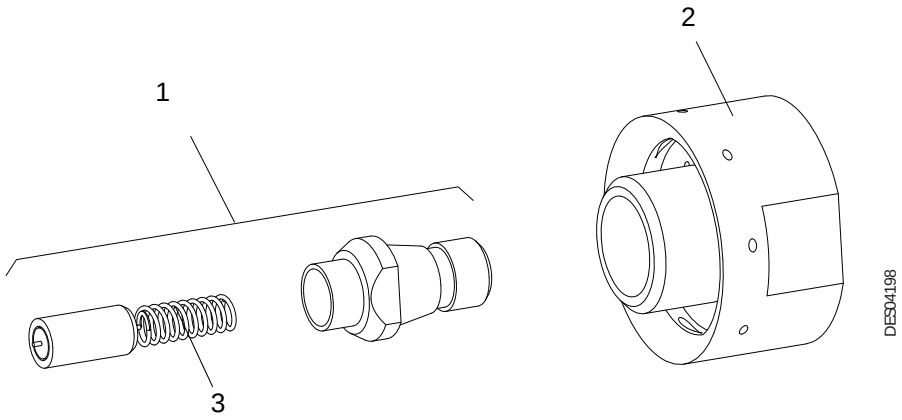
13.6. Nozzle support



Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910015721	**Nozzle support**	**1**	**1**	**1**
1	J3STKL094	O-ring - chemically inert	1	1	1

(*)
Level 1: Standard preventive maintenance.
Level 2: Corrective maintenance.
Level 3: Exceptional maintenance.

13.7. Fitted round spray nozzles



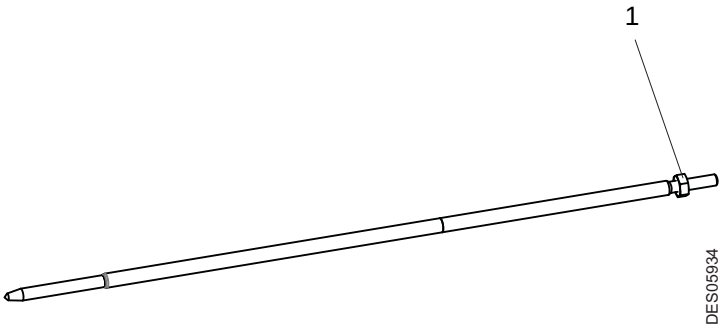
Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910018322	**Fitted nozzle JR06**	**1**	**1**	**1**
1	455234	Injector caliber 6	1	5	1
2	1305211	Vortex nozzle	1	1	1
3	448110	Electrode (included in item1)	1	10	1

Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910003847	**Fitted nozzle JR08**	**1**	**1**	**1**
1	455235	Injector caliber 8	1	5	1
2	1305211	Vortex nozzle	1	1	1
3	448110	Electrode (included in item1)	1	10	1

Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910003920	**Fitted nozzle JR12**	**1**	**1**	**1**
1	455236	Injector caliber 12	1	5	1
2	1305211	Vortex nozzle	1	1	1
3	448110	Electrode (included in item1)	1	10	1

(*)
Level 1: Standard preventive maintenance.
Level 2: Corrective maintenance.
Level 3: Exceptional maintenance.

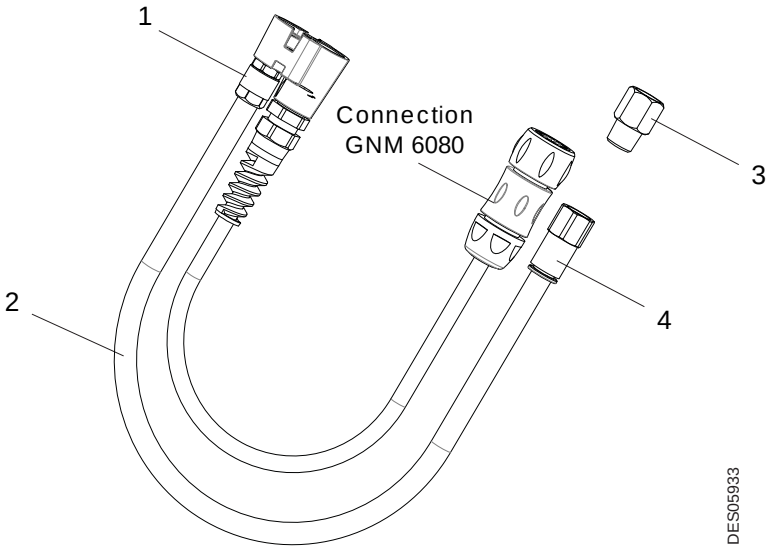
13.8. Equipped nozzle needle



Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910018219	**Equipped nozzle needle**	**1**	**1**	**1**
1	X7CEHU003	H M3 U brass nut	1	1	3

(*) Level 1: Standard preventive maintenance.
Level 2: Corrective maintenance.
Level 3: Exceptional maintenance.

13.9. Electro-pneumatic coupling



Item	Part Number	Description	Qty	Sales unit	Spare parts level
	910015869-100	**LR 10-m electro-pneumatic coupling**	**1**	**1**	**3**
	910015869-200	**LR 20-m electro-pneumatic coupling**	**1**	**1**	**3**
1	900015289	Simple male union	1	1	3
2	**910021087-100**	**Fitted polyurethane air hose outer diameter: 10**	**10 m**	**m**	**1**
	910021087-200	**Fitted polyurethane air hose outer diameter: 10**	**20 m**	**m**	**1**
3	F6RLHG362	NPT female / BSP male adapter	option	1	3
4	130000527	Quick coupler	1	1	3

13.10. Paint hoses

Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
For the Nanogun Airspray H2O round/Flat spray guns					
1	910020516-075	PTFE 7.5-m LR/LP product hose ∅ 6	1	1	1
	910020516-150	PTFE 15-m LR/LP product hose ∅ 6	1	1	1
2	910018200	Olive kit for hose 10 ext	1	1	2
3	910018292	Cable gland + nut	1	1	2

(*)
Level 1: Standard preventive maintenance.
Level 2: Corrective maintenance.
Level 3: Exceptional maintenance.

13.11. Nanogun Airspray seal set

Part number	Description	Location	Quantity
910021244	**Nanogun Airspray seal set**		**1**
J3STKL005	Chemically inert O-ring	Air valve, on/off button seal cartridge	3
J2FENV435	O-ring	Barrel	1
J3STKL078	Chemically inert O-ring	Barrel	2
J3STKL019	Chemically inert O-ring	Barrel	1
J3STKL002	Chemically inert O-ring	Barrel	1
910014338	Seal cartridge	Barrel	1
J3STKL032	Chemically inert O-ring	Barrel, air valve	2
160000041	Chemically inert O-ring	Handle	1
160000067	O-ring	Handle	1
J2FTCF018	O-ring	Air nipple	2
J3STKL018	Chemically inert O-ring	Air nipple	1
J4BRND039	Fiber seal	Handle-barrel fastening, base-handle fastening	6
900010256	Sealing ring	Air valve	1
J3STKL094	Chemically inert O-ring	Nozzle support	1

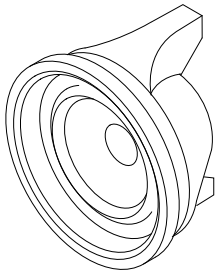
13.12. GNM 6080 control module

Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910017193	**GNM 6080 CE control module**	**1**	**1**	**3**
	910017192	**GNM 6080 CSA control module** (only USA and CANADA)	**1**	**1**	**3**
	910005759	**GNM 6080 fastening kit**	**1**	**1**	**3**
	842635	5-m mass cable, lug D: 6	1	1	3

(*)
Level 1: Standard preventive maintenance.
Level 2: Corrective maintenance.
Level 3: Exceptional maintenance.

13.13. Options for the Nanogun Airspray H_2O guns

13.13.1. Flat spray heads



Part Number	Description	Qty	Sales unit	Spare parts level (*)
737549	Flat spray head	Option	1	1
737550	JPE head (narrow flat spray)	Option	1	1
737552	JPL head (wide flat spray)	Option	1	1

(*)
Level 1: Standard preventive maintenance.
Level 2: Corrective maintenance.
Level 3: Exceptional maintenance.

13.13.2. Online product filters

Title	Part Number	Versions
Filter (M / F 1/2 JIC)	155010100	LP
Sieve 12	129609909	

WARNING : The filters are shipped from the factory with a size 6 sieve. For low pressure versions, prior to their installation, it is recommended to change the size 6 sieve of the filter that initially has a size 12 sieve.

For versions LR, the coupler F 3/8 NPT- M1/2 JIC on the outlet of the pump must be removed and replaced with the filter.

13.14. Appendices

13.14.1. Hose protection casing

This casing protects the hoses and cables, thereby guaranteeing flexibility and longevity.

Description	Part Number	Sales unit
 Rilsan hose protection duct with 30 collars	910021086	50-m roll

13.14.2. Gun protective cover

Description	Part Number	Sales unit
 DES01269 Protective cover	900011711	10

13.14.3. Warning sign

Description	Part Number	Sales unit
 Warning sign	1407684	1

13.14.4. Safety relief valve

Description	Part Number	Sales unit
 Safety relief valve 6.5 bar 1/4 G	903080401	1