



## User manual

### Nanogun Airmix<sup>®</sup> H<sub>2</sub>O GNM 6080

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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 Airmix® H2O

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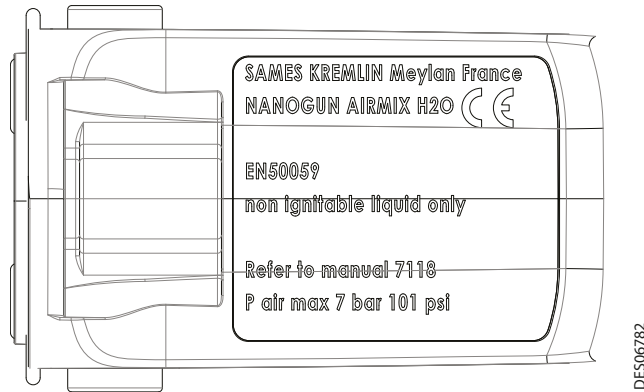
# 1. Product identification

The **Nanogun Airmix<sup>®</sup> H2O** gun markings will allow differentiating between the 120-bar and the 200-bar model configuration.

## 1.1. Version identification

### 1.1.1. On the gun barrel

The marking on the barrel is the same across the entire **Nanogun Airmix<sup>®</sup> H2O** range.



### 1.1.2. On the lower part of the gun handle

**Serial no.**



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

Product pressure	Versions of Nanogun Airmix <sup>®</sup> H2O
120 bar	JP (flat spray)
200 bar	JP (flat spray)

## 1.2. GNM 6080 control module

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

### Markings

#### EC marking



#### CSA marking



Example: \* 2014: Year of manufacturing  
 26: Week number  
 123: n<sup>th</sup> generator built during week 26.



**WARNING :** The Nanogun Airmix<sup>®</sup> H2O 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 Airmix<sup>®</sup> 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 Airmix<sup>®</sup> H2O** gun has been designed to operate within a 2nd-degree pollution environment, as defined according to the Standard IEC-664-1.

**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 Airmix<sup>®</sup> H2O** gun, be sure that all operators

- have received preliminary training by the SAMES KREMLIN, or by the Distributors it has certified for this purpose.
- 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 12215 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 paint 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 ratio suited to the type of gun, such as 19:1 for the 120 bar version and 30:1 for the 200 bar version, 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, fitted with its so-called "duckbill" protection device, 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 1M $\Omega$  (for a 500-V voltage measurement). This resistance must be regularly checked and, in any case, at least once a week.
- The operator must wear antistatic shoes in accordance with Standard EN 61340-4-3 and moreover hold the **Nanogun Airmix<sup>®</sup> H2O** gun either with a bare hand or with antistatic gloves or gloves modified so as to establish a direct contact between the handle and his/her hand. The shoes intended to be worn by the operator must be compliant with Standard ISO 20344. The measured insulation resistance must not exceed 100M $\Omega$
- The protective clothing intended to be worn, including gloves, must be compliant with Standard EN 1149-5. The measured insulation resistance must not exceed 100M $\Omega$
- The operator must also wear ear defenders when using the guns **Nanogun Airmix<sup>®</sup> H2O** ([see § 4 page 14](#)).
- Ensure that anyone entering the spray zone is wearing the antistatic shoes or has been grounded by any other means.
- 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.
- Only use paints whose flash point is at least 15°C higher than room temperature.
- 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 coupling 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 coupling, 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 Airmix® H2O** 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 Airmix<sup>®</sup> H<sub>2</sub>O** guns are for spraying water-soluble or water-dilutable water-based paint.

Sprayed liquids must be non-flammable (defined in the draft standard pr EN 50059:2016 Annex C) and strongly conductive.

The use of any other type of paint is excluded.

The **Nanogun Airmix<sup>®</sup> H<sub>2</sub>O** guns will be connected to the **GNM 6080** control module.

The versions of the **Nanogun Airmix<sup>®</sup> H<sub>2</sub>O** range are differentiated by the permissible product pressure product and by the calibre of the insert.

	Characteristics
<b>Nanogun Airmix<sup>®</sup> H<sub>2</sub>O 120 7.5</b>	Flat spray - 120 bar hose 7.5 m
<b>Nanogun Airmix<sup>®</sup> H<sub>2</sub>O 200 7.5</b>	Flat spray - 200 bar hose 7.5 m

#### 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.

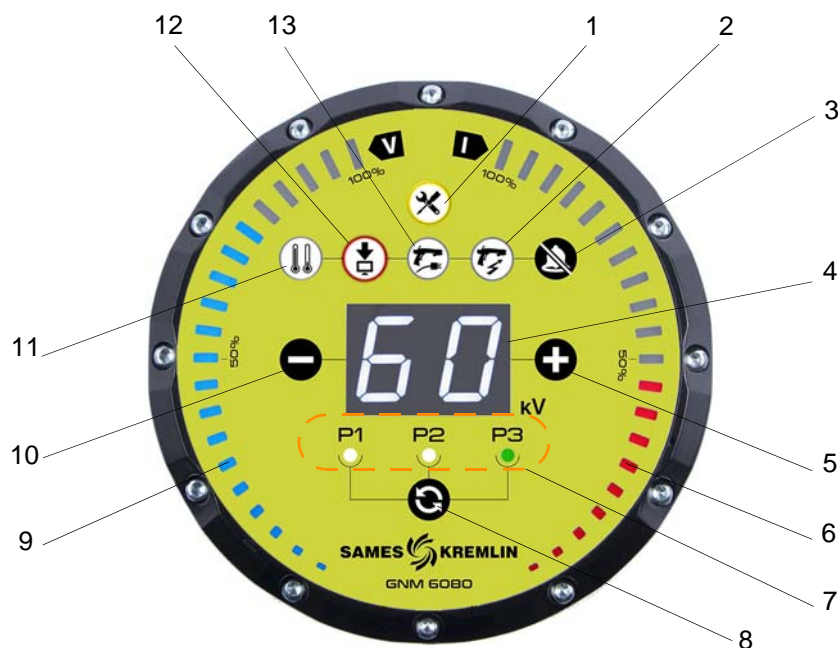


#### **WARNING :**

- **The knob in back of the gun (Rep. 2) must always be held in place (clockwise); it does not influence the paint flow rate.**
- The side detented knob (Rep. 3) serves to adjust the spray dimension. Its action will become even weaker as product pressure rises.

### 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

	120	200
Type of spray	Flat	
Original head assembled	09	
Maximum incoming paint pressure	120 bar	200 bar
Incoming compressed air pressure	6 bar ± 1 bar	
Min/max ambient temperature	0°C - 40°C	
Maximum water flow rate	See table below	
Spray width at 25 cm	See table below	
Air flow rate, in Nm <sup>3</sup> /h	10.3-25.2	
Acoustic pressure	90 dB(A)	
AFNOR Cup No. 4 suggested paint viscosity	20 s to 120 s	
Space requirements	305 x 220 x 52	
Mass (without either the hose or the cable)	595 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 cascade	45 V AC maximum	
Input current of the high-voltage cascade	300 mA maximum	
Air coupling	1/4 NPS - F	
Paint coupling	1/2 JIC - F	
Electrical functions available on the gun	High-voltage On / Off switch	
Electrical / pneumatic connector	The electro-pneumatic connector, secured by means of two screws. <b>MUST NEVER BE DISCONNECTED IN AN EXPLOSIVE ATMOSPHERE</b>	
Maximum operating altitude	2,000 m	
<b>Maximum relative humidity</b> 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	
<b>Transport / Storage</b>		
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	

## 4.2. Flows

### Flat spray

Gauge	Flow rate (in cc/min)			Width, in cm
	at 70 bar	at 120 bar	at 200 bar	
03-05	150	200	260	12
03-07	150	200	260	17
04-05	220	290	380	12
04-07	220	290	380	17
04-09	220	290	380	21
04-11	220	290	380	25
04-13	220	290	380	29
06-09	330	430	570	21
06-11	330	430	570	25
06-13	330	430	570	29
06-15	330	430	570	33
09-09	450	590	770	21
09-11	450	590	770	25
09-13	450	590	770	29
09-15	450	590	770	33
12-11	600	790	1030	25
12-13	600	790	1030	29
12-15	600	790	1030	33
14-09	720	940	1230	21
14-11	720	940	1230	25
14-13	720	940	1230	29
14-15	720	940	1230	33
14-17	720	940	1230	37

Remarks: The flow rate measurements were conducted with water. The width of the impact is measured at a distance of 25 cm (10 inches).

### Hollow cone round spray

Gauge	Flow (cc/min)			Impact diameter at 250 mm in cm	Impact diameter at 250 mm in cm
				Nanogun 120 bar Spraying air 4 bars	Nanogun 200 bar Spraying air 4 bars
Dynamic air pressure					
Dynamic product pressure	120	140	200	140	200
K20	250	260	330	100	110
K30	320	350	420	110	120
K40	400	440	540	110	120
K50	580	600	780	120	130
K60	900	1000	1200	120	130
K70	900	1000	1200	120	130

Note: The hollow cone only gives good results at high product pressures; we do not recommend working below 140 bars. The best results are obtained between 160 and 200 bars.

Note: The spraying air pressure must be set between 2 and 3 bars (4 for the K70 gauges); below this, the spraying becomes less precise and above the jet becomes more dynamic and the hollow cone's benefits are reduced.

#### 4.3. 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.

#### 4.4. 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 <sup>3</sup> *
Maximum concentration of solid pollutants	5 mg / m <sup>3</sup> *

(\*): 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 Airmix<sup>®</sup> H2O** 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.



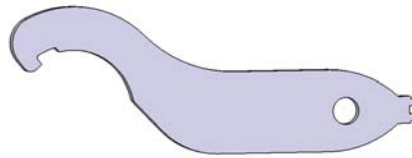
**WARNING :** The button located in back of the gun does not serve to adjust the paint flow rate; nonetheless, it is possible to adjust it by modifying the nozzle calibre and/or the incoming product pressure.

- The side button serves to adjust the spray dimension within a range that narrows as the product pressure increases.
  - Clamped screw: large impact.
  - Loosened screw: reduced impact.

**Note:** The higher the pressure of the product, the less the button on the side can vary the size of the spray.

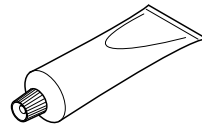
- In order to modify the spray dimension, it is necessary to change the nozzle.

## 6. Specific tooling



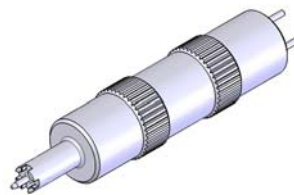
DES06505

Part Number	Description	Qty	Sales unit
900012843	Multipurpose wrench	1	1



DES00685

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
900010160	Cartridge and air valve assembly tool	1	1



Part Number	Description	Qty	Sales unit
240000301	Seal extractor tool	1	1

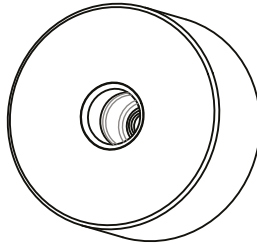


Part Number	Description	Qty	Sales unit
129400923	Air cap cleaning brush	1	10



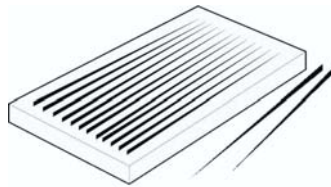
DE506974

Part Number	Description	Qty	Sales unit
900016773	Supply pad removal tool (hollow cone)	1	10



DE506973

Part Number	Description	Qty	Sales unit
900016975	Rapid injector rinsing tool (hollow cone)	1	10



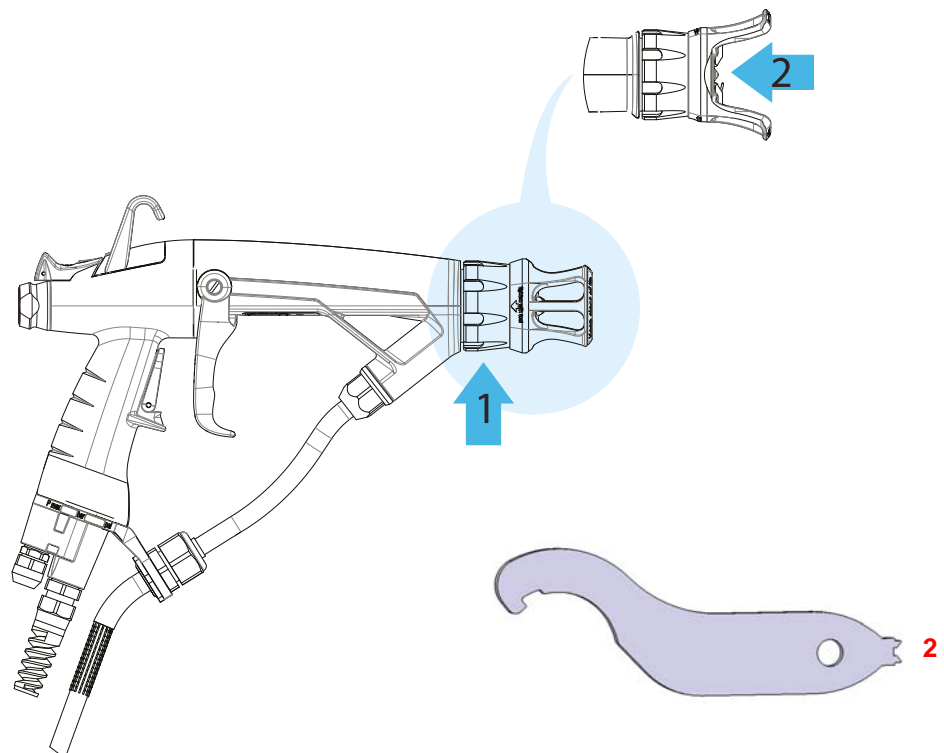
Part Number	Description	Qty	Sales unit
000094000	Unplugging needles for gauges 04 through 09	1	1 box (12)
000094002	Unplugging needles for gauges above 09	1	1 box (12)

**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 - 11 - 15 - 17 - 18 - 21 - 24 - 27)
- Pipe wrench (4 - 13)
- Flat pliers
- Fine cutting pliers.
- Ohmmeter

## 6.1. Use of the multipurpose wrench



- 1 : Clamping of the head ring.
- 2 : Extraction of the head nozzle.

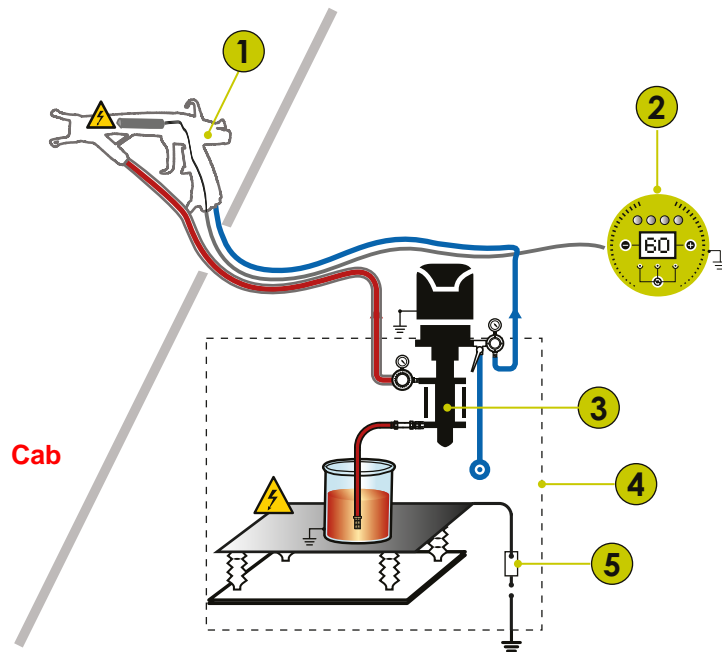
DES06505

## 7. Installation



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

With a piston pump for all versions



DES06789

1	Nanogun Airmix H <sub>2</sub> O gun
2	GNM 6080 control module
3	Piston 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  $\leq 30$  liters (8 US gal).

The dump hose end must be immersed in the paint.



**WARNING :** The paint supply pump:

- must feature a maximum ratio of 19:1 for the 120-bar version and of 30:1 for the 200-bar version;
- 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 varnishes used with conventional pneumatic guns are used normally with the Nanogun Airmix<sup>®</sup> H<sub>2</sub>O gun. the pigments contained in the paint should be less than 5 µm.

#### 8.1.1. Viscosity

The best results are obtained with a viscosity that extends from 25 to 90 seconds, as measured with the AFNOR Cup no. 4. Nonetheless, some paints with a lower or higher viscosity (e.g. 120 seconds or more) may be projected as well.

#### 8.1.2. Flash point

Only use paints whose flash point is at least 15°C higher than room temperature.

## 8.2. Spraying rules

Regardless of the type of nozzle, the quality of spraying depends on both the supply pressure and the product viscosity: as viscosity increases, pressure must also rise, yet the final outcome is also influenced by the product's dilution.

### A few key points:

- Viscosity: 40 sec CA4: minimum product pressure of 70 bar.
- Viscosity: 60 sec CA4: minimum product pressure of 90 bar.
- Viscosity: 90 sec CA4: minimum product pressure of 130 bar.

The addition of more air serves to reduce the impact width by 25% at a 120-bar pressure; moreover, the higher the product pressure, the smaller the influence being exerted by the additional air. In order to limit the production of overspray, it is recommended to never exceed an air pressure of 4 bar.

Using the nozzles with small impact width (XX-09 or 11), whenever the additional air is open, the jet is practically round.

### Table of impact widths in water at a gun/part distance of 25 cm (closed to any additional air).

Nozzles	Impact width
03-05	12 cm
04-05	
03-07	17 cm
04-07	
04-09	21 cm
06-09	
09-09	
12-09	
14-09	
04-11	25 cm
06-11	
09-11	
12-11	
14-11	
04-13	29 cm
06-13	
09-13	
12-13	
14-13	
06-15	33 cm
09-15	
12-15	
14-15	
14-17	37 cm

## 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 <b>prohibited</b> to install the control module in an explosive atmosphere.
It is <b>prohibited</b> to perform excessive and repeated traction on the paint and air hose or on the electrical cable connecting the gun.
It is <b>prohibited</b> to disconnect the gun's electrical coupling in an explosive atmosphere.
It is <b>prohibited</b> to leave the hoses and electrical cable in a space where vehicles circulate, preventing the risk of them being crushed or severed.
It is <b>prohibited</b> to spray a liquid other than paint or varnish using the <b>Nanogun Airmix® H2O</b>
It is <b>prohibited</b> to leave the gun or subject it to mechanical shocks.
It is <b>prohibited</b> to leave the gun on the floor.
It is <b>prohibited</b> to use the gun in order to handle or displace the parts to be painted.
It is <b>prohibited</b> to let the gun soak in a solvent or spray it with solvent.
It is <b>prohibited</b> 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 <b>essential to</b> connect the control module ground terminal to the paint insulation ground terminal.
It is <b>essential to</b> 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
Seat casing	O-ring - chemically inert	J3STKL046	1	3 months
	O-ring - chemically inert	J3STKL075	1	3 months
Adapter	Flat seal	900014821	1	6 months
	O-ring - FEP Viton	J2FENV288	1	12 months
Barrel	Seal cartridge	910015881	1	6 months or 500,000 handling operations(*)
	O-ring (Seal cartridge)	J3STKL005	1	3 months
	O-ring - chemically inert	J3STKL014	1	6 months
	O-ring - FEP Viton	J2FENV435	1	12 months
	O-ring - chemically inert	J3STKL078	2	12 months
	O-ring - chemically inert	J3STKL032	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
Nozzle	Sieve or flat seal depending on the calibre	129609901 or 900012793	1	When changing the nozzle or every month
Head ring	O-ring - FEP Viton	160000170	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 link

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



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



### 10.3. Paint hoses

It is not necessary to remove the electro-pneumatic coupling ([see § 10.2 page 26](#)) to complete these operations.

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



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



**For the reassembly step,** screw the upper 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

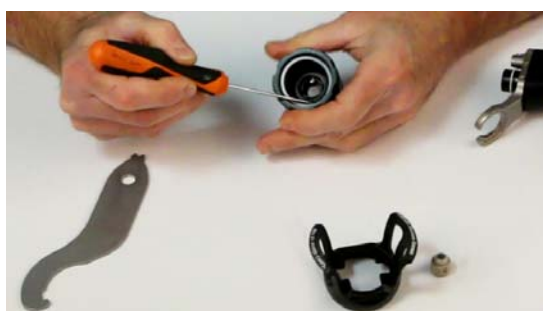
- **Step 1:** with the multipurpose wrench (Ref.: 900012843), unscrew the head ring.



- **Step 2:** Extract the head nozzle using the multipurpose wrench. **Do not use your fingers.**



If necessary, replace the head seal.

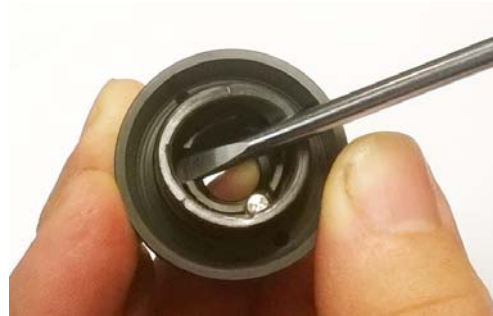


For the reassembly step, proceed in the reverse order.

## 10.5. Replacement of the head electrode.

### Disassembly:

- **Step 1:** Extract the conductive PTFE washer. Insert the blade of the screwdriver under the washer through one of the two slots at the rear of the head (do not use the housing where the centering pin is located). Make a slight rotating movement with the screwdriver and proceed in the same manner with the second slot. Remove the washer by hand.



The rear part of the electrode is visible.



- **Step 2:** Straighten the electrode vertically with the flat nose pliers.



- **Step 3:** Push the electrode toward the rear of the head. When the electrode is sufficiently out, extract it from the rear with the flat nose pliers.



- **Step 4:** With the flat nose pliers, remove the small PTFE tube surrounding the electrode. Check that there are no residues in the passage of the electrode. If necessary, manually push a drill bit or a metal rod of 1 mm in the hole.



**Reassembly:**

The repair kit includes an electrode equipped with its small PTFE tube.

- **Step 1:** Manually clean, if necessary with caution, the passage of the electrode with a drill bit or a metal rod of 1 mm in diameter.



- **Step 2:** Insert the electrode with the PTFE tube. As soon as it appears on the other side of the head, pull it out with your fingers. Then push it up to the bottom of the housing using the screwdriver, and the return strand of the electrode must go back into a small bore, with only the rear part of the electrode being flush with the bottom of the counterbore.



- **Step 3:** Clip the conductive PTFE washer. Replace it if necessary. It is recommended not to reuse the washer more than 3 to 4 times, and it must not be able to be removed without the aid of a tool.



- **Step 4:** Check the continuity between the PTFE conductive washer and the metal tip of the electrode. The value usually measured is of the order of 200 to 300  $\Omega$  but a value up to 1000  $\Omega$  is permissible.



- **Step 5:** Fold the electrode with the flat nose pliers and fold it over to a length of about 5 mm.



**WARNING :** The small PTFE tube must not hide the end of the electrode, so fold it over if necessary. However, the metal end may be a little uncovered (less than 1mm).



**WARNING :** The electrode must not be in contact with the injector when the head is mounted on the gun.

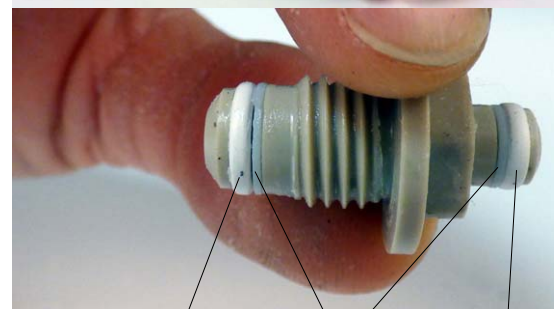


## 10.6. Barrel

- **Step 1:** Unscrew the seat casing using a 13-mm pipe wrench.

Then remove it.

Should the O-rings and anti-extrusion rings located in front and back of the nozzle require replacement, remove them using a screwdriver, position the new rings and new seals in place while double checking their correct location and after coating them first with Vaseline.



- **Step 2: Seal cartridge:** Unscrew the cartridge using the tool (Ref.: 900010160).

Should the ring and external joint require replacement, remove them using a screwdriver, position the new ring and new seal in place while double checking their correct location and coating them with Vaseline in advance.

**Note:** The lip seals located inside the cartridge cannot be changed.





- **Step 3:** Manually remove the adapter equipped with its O-ring and high-voltage resistance by its spring and pulling on it.



**WARNING :** Be careful not to damage the resistance during its extraction.



**Step 3**



### 10.7. Paint nozzle needle

- **Step 1:** Unscrew the knob at the back of the gun, and recover the spring.



**Step 1**



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



**Step 2**



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

## 10.8. 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 54](#)). 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.



## 10.9. 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.

## 10.10. Air valve

- **Step 1:** Disassemble the paint nozzle needle ([see § 10.7 page 33](#)).
- **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.



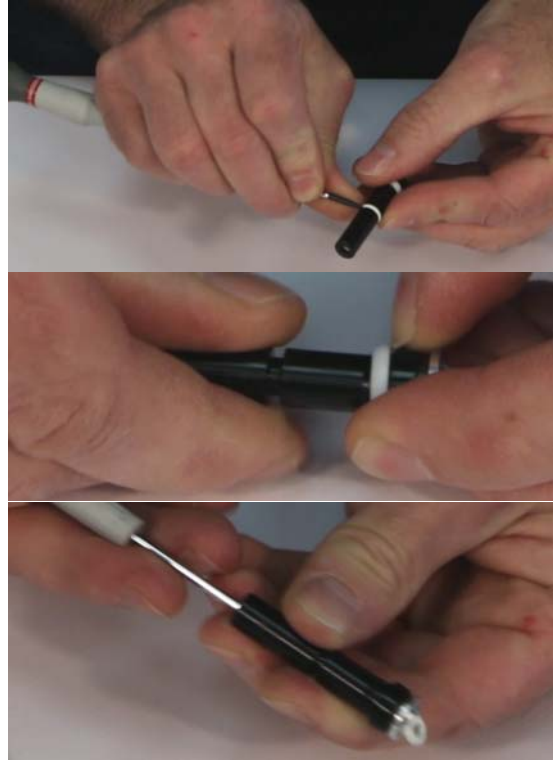
### 10.10.1. Repairing of the air valve

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-ring** (P/N# J3STKL032 interior O-ring, J3STKL005 exterior O-ring and 900010256 conic sealant joint).

- For all three O-rings, extract the former one in taking care not to damage the air valve body (they may however be destroyed).
- The conic sealant joint 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 § 10.10.1.1 page 37](#)) 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 shut-down. 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 (Ref.: 910015405) ([see § 10.10 page 35](#)).  
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.

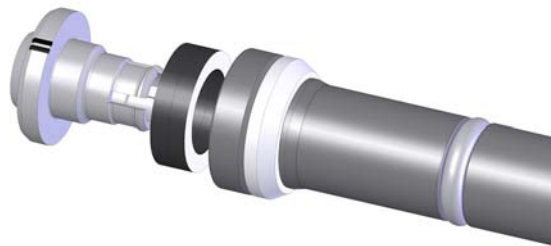
If the high-voltage does not activate, don't disassemble the handle and instead add a washer to adjust the reed sensor position; proceed step-by-step without adding multiple washers at the same time.



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

#### 10.10.1.1. Magnet assembly direction

- **Case no. 1:** For guns of type 1 (see serial no.). Back stop without a marking, the silver-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.



#### 10.11. 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.



## 10.12. High-voltage cascade

- **Step 1:** Remove the trigger [see § 10.9 page 34](#), 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.  
Note: Each time a screw is disassembled, replace the fibre washers as well (Ref.: J4BRND039).



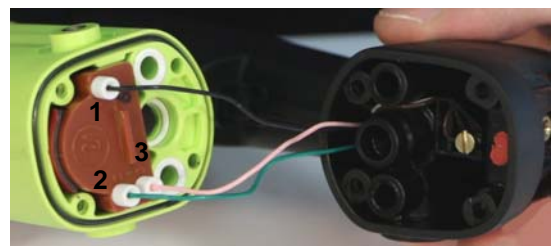
- **Step 3:** Manually unscrew or by using a small flat pliers the three cascade connection wires, then carefully pull the contacts towards the back.



- **Step 4:** Unscrew the high-voltage contact in front of the barrel with a flat screwdriver. 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.

### 10.13. Barrel

- **Step 1:** Remove the trigger [see § 10.9 page 34](#), 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 seal 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.



**WARNING :** Coat the O-rings with a fine layer of Vaseline before setting them into place.

For the reassembly step, proceed in the reverse order.

## 10.14. Handle

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

- **Step 2: Gun handle base**

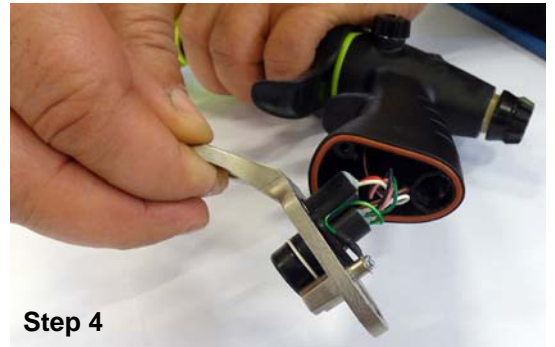
Unscrew the air nipple using a 16 Allen wrench. Replace the seals every 12 months.



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



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



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

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



**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.

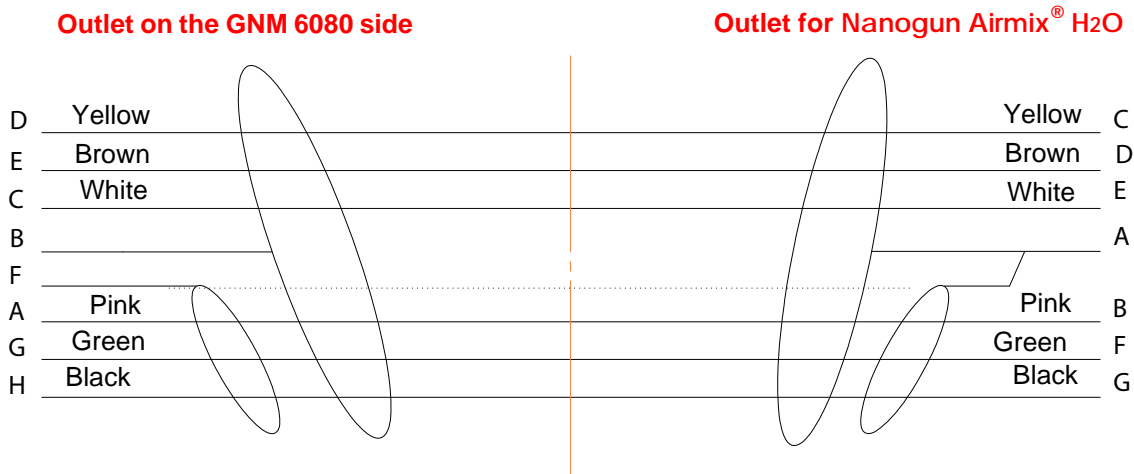
Coat the air nipple seals with dielectric grease.

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.



## 10.15. Electrical diagrams

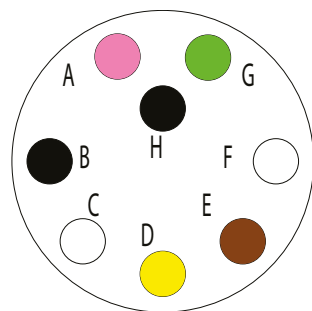
### 10.15.1. GNM 6080 / Nanogun Airspray Airmix® H2O connection cable



### 10.15.2. GNM 6080 trigger cord

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

Outlet on the GNM 6080 side



(\*)

**Switch open: Nanogun Airmix® H2O trigger released**

**Switch closed: Nanogun Airmix® H2O 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 Airmix<sup>®</sup> H<sub>2</sub>O 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. Hollow cone nozzle cleaning

It is vital to clean the spraying head fully at the end of each shift or when use is interrupted, depending on the type of product between 5 and 30 minutes.

#### Cleaning procedure:

- **Step 1:** Disconnect the air and high voltage supplies. Engage the safety catch on the trigger.



- **Step 2:** Loosen the cap nut, retrieve the cap and the low cone and plunge them into a solvent bath for a few minutes then clean them with a clean cloth.



- **Step 3:** Using an 11 flat wrench, unscrew the injector, leave to soak in the solvent then clean with a clean cloth and a soft brush.



- **Step 4:** Screw the placebo injector fully in place by hand. Remove the safety catch and bleed the circuit.

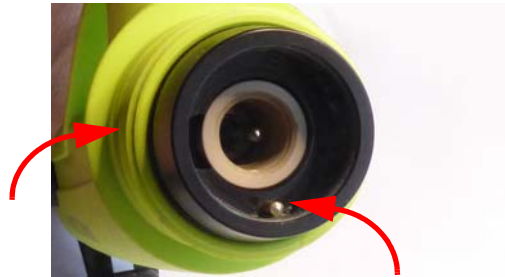


## Reassembly:

- **Step 5:** Remove the placebo injector.
- **Step 6:** Coat the rear part (threading / seal) of the dielectric grease injector.



- **Step 7:** Add more and/or put back the dielectric grease on the HV contact. Coat the external thread of the barrel with dielectric grease.



- **Step 8:** Put the internal cone and the cap back in place. Tighten the cap nut.

### 11.4. Elimination of wastes

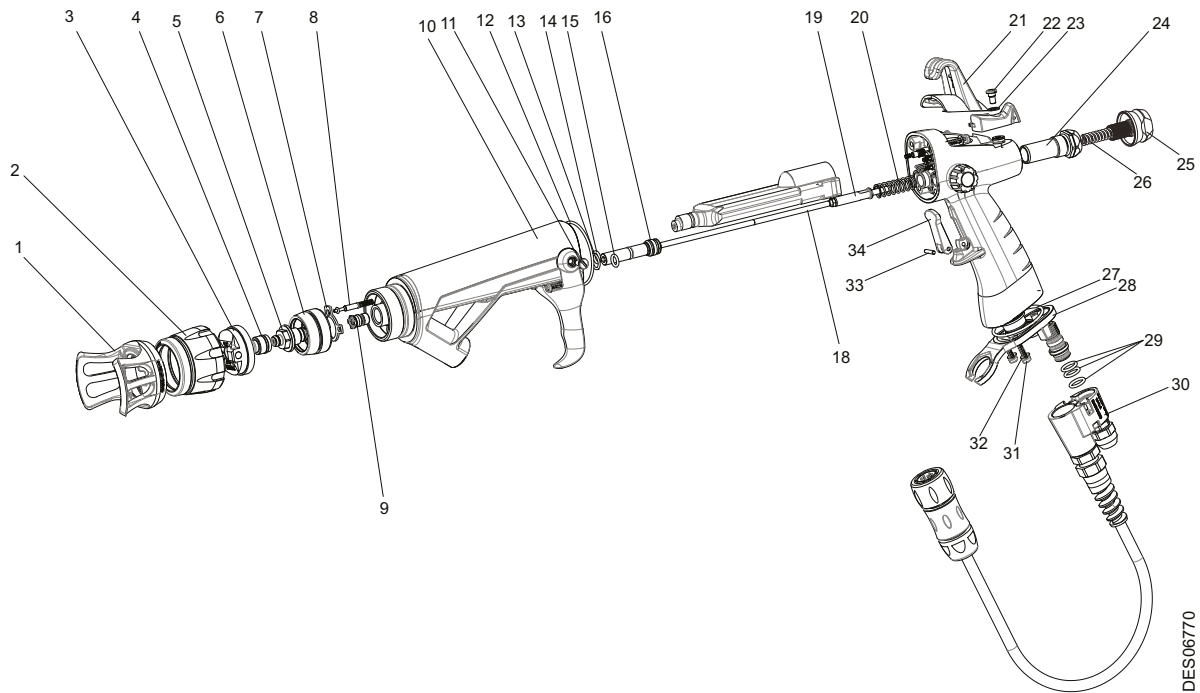
The removal, transport and elimination of wastes generated by use of the equipment (used solvent, unused paint, residue, dirty cloths, booth sludge, water from curtains applied in the booth, used dry filters, ventilation air, etc.) must take place in strict compliance with current local regulations.

## 11.5. Dismantling and Recycling

### 11.5.1. Nanogun Airmix® H2O



**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.



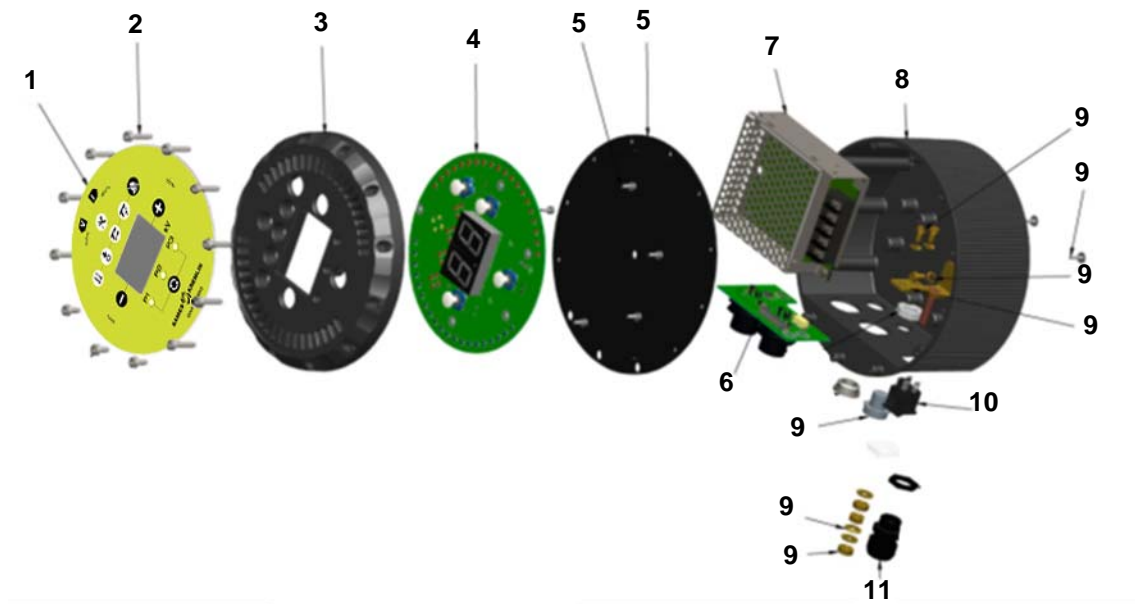
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Rep.	Material
1	Polypropylene not containing with glass fibre
2, 6*	POM C, PTFE, chemically inert rubber
3	Plastic material containing glass fibre, PTFE, stainless steel
4	PEEK, tungsten carbide, PTFE, stainless steel
5*	PEEK, chemically inert rubber, stainless steel
7*	PTFE
8*	Brass, agglomerated carbon
9*	Stainless steel, chemically inert rubber, PTFE
10*,11	Plastic material containing fibre, PEEK
23, 12, 13, 14, 15	Chemically inert rubber
16	Loaded PEEK , chemically inert rubber, PTFE
18*	Plastic material, copper, steel, ceramic, ROH electronic components,
19*	Tungsten, PEEK, stainless steel, aluminium

20*, 26*, 22, 31, 33	Stainless steel
21	Plastic material containing fibre
24*	Plastic material, prefluorinated rubber
25*, 28	Aluminium
27, 29	Rubber
30	Plastic material containing fibre, copper, stainless steel
32	Fibre joint
34	Polyamide not loaded
Not represented	Air hose: PU
Not represented	Product hose: PTFE - aramid - PU Fittings: zinc-plated steel or stainless steel Cable gland: plastic material containing fibres

\* These parts (5, 6, 7, 8, 9, 10, 11, 18, 19, 20, 24, 25, 26) may be fouled due to dielectric grease.

11.5.2. 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, ROHS printed circuit
5	Bottom sheet metal and fastening screws	Steel
6	Connector card	Electrical and electronic components, ROHS printed circuit
7	Electrical power supply	Electrical and electronic components, ROHS printed circuit
8	Box	Aluminium
9	Fastening accessories	Steel and brass
10	Electrical switch	ROH electrical component
11	Cable gland	Plastic material
<b>Not represented</b>		
12	Power supply cable	Plastic material and copper

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

## 12. Common malfunctions and repairs

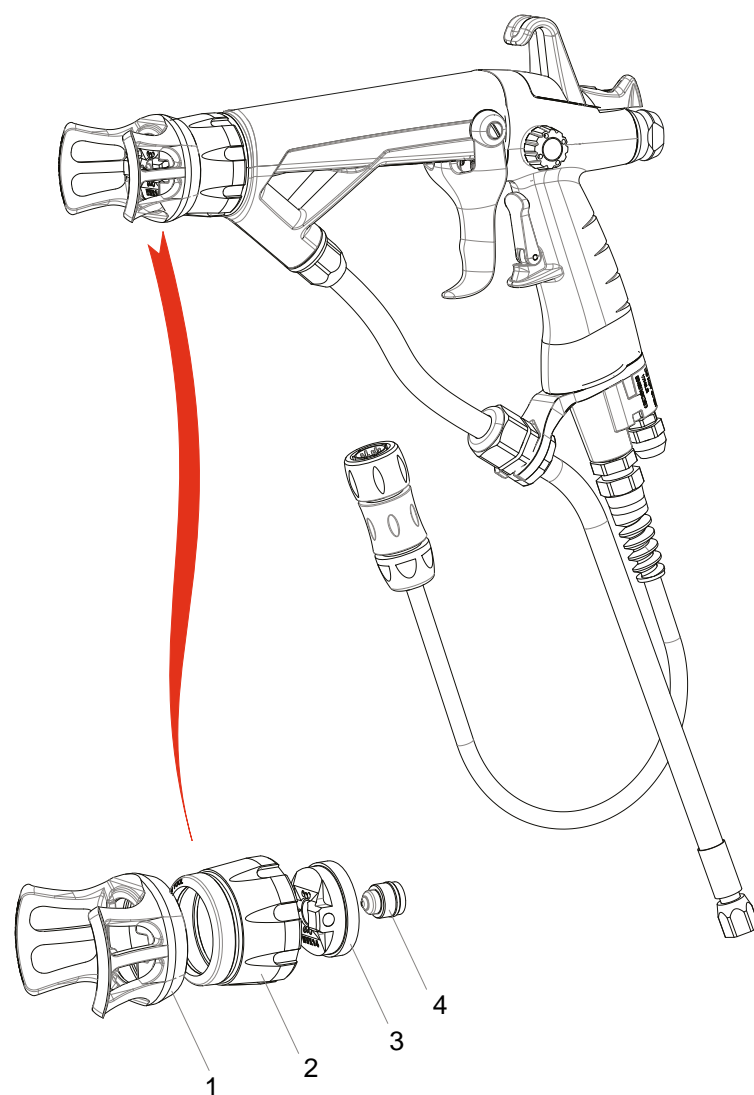
Defaults	Possible Causes	Remedies
Uneven paint flow	Presence of air in the paint circuit	Dump the paint circuit
	Paint flow rate too slow	Increase pressure at the pump or pressurised vessel.
	Impurities in the circuit	Verify the filters, then dump the circuit.
	Lack of paint in the paint tank	Replace 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
	Clogged filters	Clean the filters
	No pump pressure	Verify the pump
	Paint too viscous	Verify the paint viscosity
The paint is constantly flowing.	Obstructed paint pipe	Unclog or change the paint pipe
	Foreign body preventing the nozzle needle from closing.	Disassemble the seat casing, clean it along with the seat. Clean the nozzle needle end
	Worn nozzle needle	Change the nozzle needle and ultimately the seat door.
The paint exits by the head air holes.	Damaged seat casing	Change the seat casing
	Damaged cartridge	Change the cartridge
Poor spray	Damaged paint joint	Change the joint
	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
Orange skin	Nozzle damaged or worn	Change the nozzle
	Evaporation of solvents too fast	Use heavier solvents
		Increase the spraying distance
		Dilute the paint
		Increase the paint pressure
		Reduce the nozzle size
Increase the electrostatic effect		
Paint droplets too thick		



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 Decrease the electrostatic effect
Paint jet poorly distributed	Excessive paint flow rate	Decrease the paint flow rate Increase the air pressure
	Nozzle too thick	Use a smaller and thinner 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 <b>Nanogun Air-mix<sup>®</sup>H<sub>2</sub>O</b> 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 of the product and/or air
	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 pipe - and/or the cabinet - or the insulating table.	Check the product hose Check the insulation of the pump and the paint tank. Clean the insulating enclosure and dry it carefully	
The operator has felt electrical discharges when touching the part.	Part not grounded or poorly grounded	Verify the ground connections. The user must wear gloves and conductive shoes, in accordance with Standards EN 61340-4-3 and ISO20344.

## 13. Spare parts

### 13.1. Nanogun Airmix<sup>®</sup> H<sub>2</sub>O guns for water-based paint (LR)



DES06565

For the various options: [see § 13.13 page 66.](#)

Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910023074-075	Nanogun Airmix® H2O 120 bar JP with 09-091 nozzle and 7.5 m paint hose	1	1	-
	910023074-150	Nanogun Airmix® H2O 120 bar JP with 09-091 nozzle and 15 m paint hose	1	1	-
	-	Nanogun Airmix® H2O gun (see § 13.2 page 54)	-	-	-
1	900013829	Duckbill (included in Item 2)	1	1	3
2	<b>910019358</b>	<b>Head ring</b> (see § 13.1.2 page 53)	<b>1</b>	<b>1</b>	<b>1</b>
3	130001435	Fitted head (see § 13.1.3 page 53)	1	1	3
4	130001420	Nozzle (see § 13.1.1 page 52)	1	1	1
<b>Not shown</b>					
	050123306	Adapter M1/2 JIC - F3/8NPS paint pipe	1	1	3

Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910023075-075	Nanogun Airmix® H2O 200 bar JP with 09-091 nozzle and 7.5 m paint hose	1	1	-
	910023075-150	Nanogun Airmix® H2O 200 bar JP with 09-091 nozzle and 15 m paint hose	1	1	-
	-	Nanogun Airmix® H2O gun (see § 13.2 page 54)	-	-	-
1	900013829	Duckbill (included in Item 2)	1	1	3
2	<b>910019358</b>	<b>Head ring</b> (see § 13.1.2 page 53)	<b>1</b>	<b>1</b>	<b>1</b>
3	130001435	Fitted head (see § 13.1.3 page 53)	1	1	3
4	130001420	Nozzle (see § 13.1.1 page 52)	1	1	1
<b>Not shown</b>					
	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.

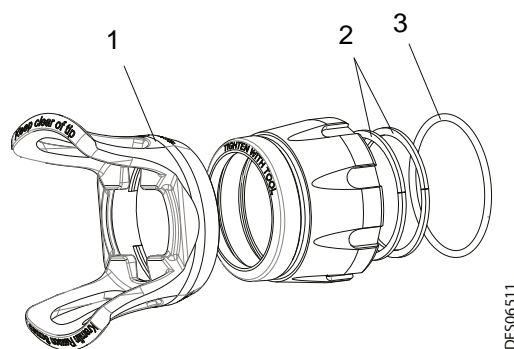
### 13.1.1. The nozzles as an option

Part Number	Description	Quantity
130001597	Nozzle MX03.05	Option
130001563	Nozzle MX03.07	Option
130001564	Nozzle MX04.05	Option
130001565	Nozzle MX04.07	Option
130001566	Nozzle MX04.09	Option
130001414	Nozzle MX04.111	Option
130001415	Nozzle MX04.131	Option
130001416	Nozzle MX06.091	Option
130001417	Nozzle MX06.111	Option
130001418	Nozzle MX06.131	Option
130001419	Nozzle MX06.151	Option
130001420	Nozzle MX09.091	1
130001421	Nozzle MX09.111	Option
130001422	Nozzle MX09.131	Option
130001423	Nozzle MX09.151	Option
130001424	Nozzle MX12.091	Option
130001425	Nozzle MX12.111	Option
130001426	Nozzle MX12.131	Option
130001427	Nozzle MX12.151	Option
130001428	Nozzle MX14.091	Option
130001429	Nozzle MX14.111	Option
130001430	Nozzle MX14.131	Option
130001431	Nozzle MX14.151	Option
130001432	Nozzle MX14.171	Option
130001433	Nozzle MX18.111	Option
129609901	Sieve no. 4	10
129529903	Sealant washer	10

Hollow cone nozzle: **(not available for North American market)**

Part Number	Description	Quantity
910025472	Injector 20 hollow cone nozzle	Option
910025473	Injector 30 hollow cone nozzle	Option
910025474	Injector 40 hollow cone nozzle	Option
910025475	Injector 50 hollow cone nozzle	Option
910025476	Injector 60 hollow cone nozzle	Option
910025477	Injector 70 hollow cone nozzle	Option

### 13.1.2. Fitted head ring



DES06511

Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	<b>910019358</b>	<b>Fitted head ring</b>	<b>1</b>	<b>1</b>	<b>1</b>
1	900013829	Duckbill	1	1	3
2	900010164	PTFE flat seal	2	1	1
3	160000170	FEP/FKM seal	1	1	1

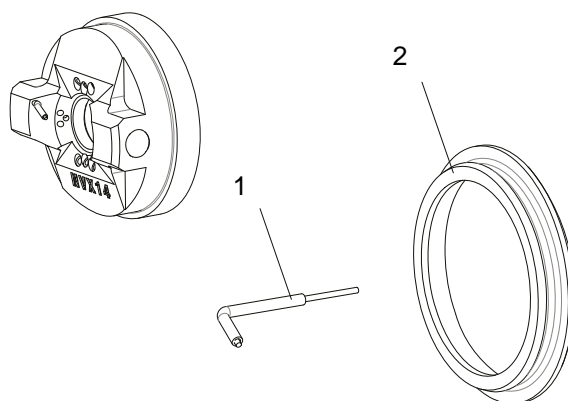
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Level 1: Standard preventive maintenance.

Level 2: Corrective maintenance.

Level 3: Exceptional maintenance.

### 13.1.3. Fitted head



DES06762

Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	<b>130001435</b>	<b>Fitted head</b>	<b>1</b>	<b>1</b>	<b>3</b>
1	132284012	Electrode and PTFE tube	1	5	1
2	132284010	Conductive PTFE washer	1	1	2

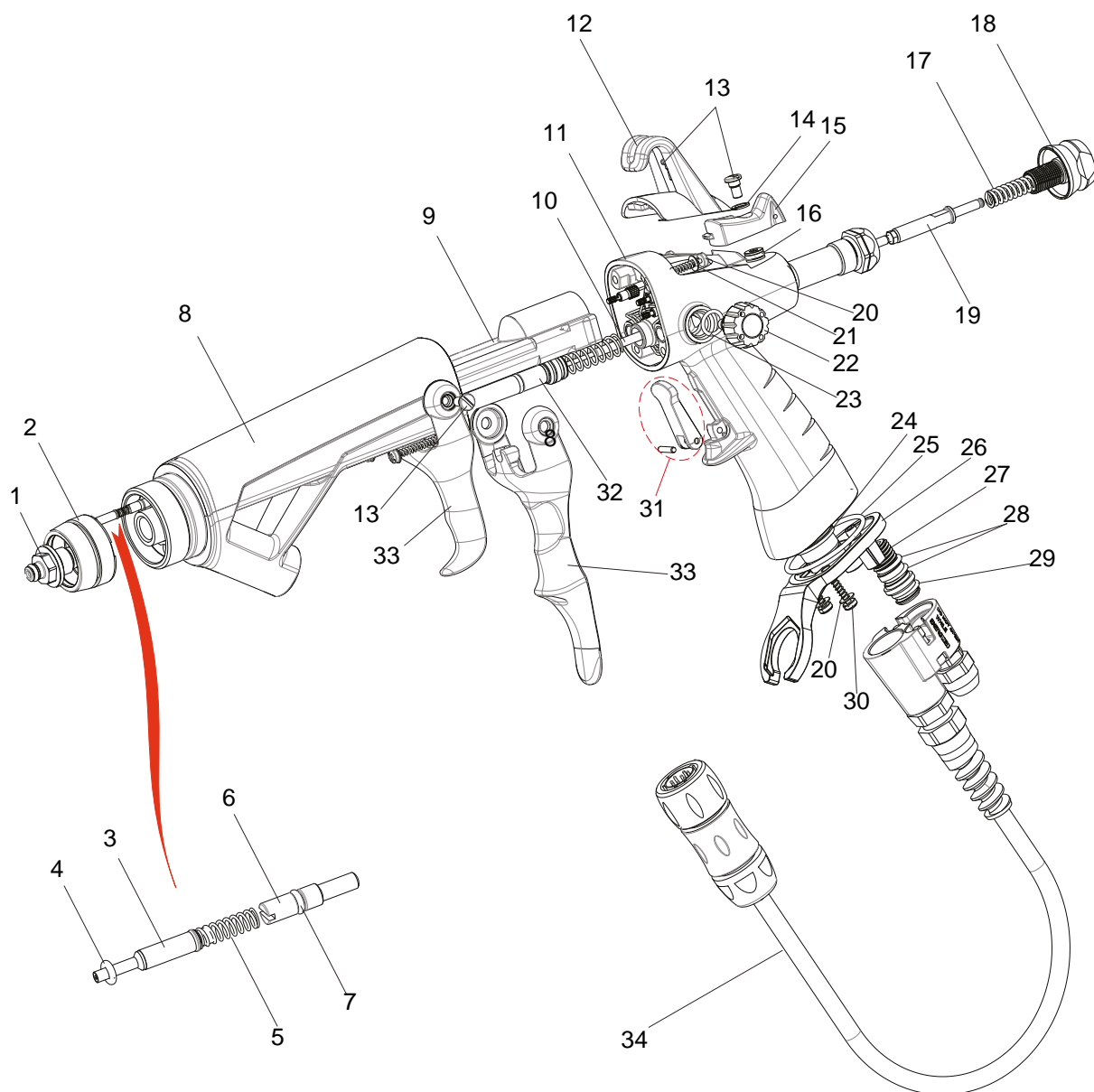
(\*)

Level 1: Standard preventive maintenance.

Level 2: Corrective maintenance.

Level 3: Exceptional maintenance.

13.2. Nanogun Airmix® H2O gun



Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	-	Nanogun Airmix <sup>®</sup> H2O gun	-	-	-
1	910019359	Fitted seat casing ( <a href="#">see § 13.3 page 57</a> )	1	1	1
2	910019360	<b>Fitted adapter Nanogun Airmix<sup>®</sup> H2O</b> ( <a href="#">see § 13.4 page 57</a> )	1	1	3
3	910015934	<b>Fitted high-voltage contact</b> (included in Item 8)	1	1	2
4	J3STKL014	Chemically inert O-ring (included in Item 3)	1	1	2
5	900014787	Spring	1	1	1
6	910019356	<b>High-voltage contact screw</b> (included in Item 8)	1	1	1
7	J2FTDF014	O-ring (included in Item 6)	1	1	1
8	910025082	<b>Equipped barrel</b> ( <a href="#">see § 13.5 page 58</a> )	1	1	3
9	910015508	<b>Equipped high-voltage cascade</b>	1	1	3
10	910019508	<b>Fitted nozzle needle</b> ( <a href="#">see § 13.7 page 60</a> )	1	1	1
11	910022672	<b>Equipped handle Nanogun Airmix<sup>®</sup> H2O 120 bar</b>	1	1	3
	910022679	<b>Equipped handle Nanogun Airmix<sup>®</sup> H2O 200 bar</b>	1	1	3
12	900010239	Fastening hook	1	1	3
13	900010385	C M4 curved washer head screw	4	1	3
14	900013808	PTFE flat washer (included in Item 15)	1	1	2
15	910018204	<b>On/off button with seal and magnet</b> (included in Item 11)	1	1	3
16	J3STKL005	Chemically inert O-ring (included in Item 15)	1	1	1
17	900010266	Paint spring 120 bar	1	1	1
	900010267	Paint spring 200 bar	1	1	1
18	900015784	Knurl back of paint	1	1	3
19	900010882	High-pressure paint stop	1	1	3
20	250000036	Handle / barrel fastening screw	4	1	3
21	J4BRND039	Fibre washer for fastening screw	6	1	3
22	910014166	<b>Fitted additional air settings button</b> (included in Item 11)	1	1	3
23	J2FTDF121	Black FKM O-ring (included in Item 22)	1	1	1
24	160000041	Grey chemically inert seal (included in Item 11)	1	1	1
25	160000067	Red FKM seal (included in Item 11)	1	1	1

26	900010009	LR gun base	1	1	3
<b>27</b>	<b>910006118</b>	<b>Fitted air nipple</b>	<b>1</b>	<b>1</b>	<b>2</b>
28	J2FTCF018	Black FKM O-ring (included in Item 27)	2	1	1
29	J3STKL018	White chemically inert O-ring (included in Item 27)	1	1	1
30	250000037	Base-handle fastening screw	2	1	3
<b>31</b>	<b>910022663</b>	<b>Trigger / pin lock assembly</b>	<b>1</b>	<b>1</b>	<b>3</b>
<b>32</b>	<b>910018203</b>	<b>Fitted air valve (<a href="#">see § 13.6 page 59</a>)</b>	<b>1</b>	<b>1</b>	<b>3</b>
33	900010237	Trigger	1	1	3
	900014446	4-finger trigger	1 option	1	3
<b>34</b>	<b>910015869-XXX</b>	<b>Electro-pneumatic coupling (<a href="#">see § 13.8 page 60</a>)</b>	<b>1</b>	<b>1</b>	<b>3</b>

(\*)

Level 1: Standard preventive maintenance.

Level 2: Corrective maintenance.

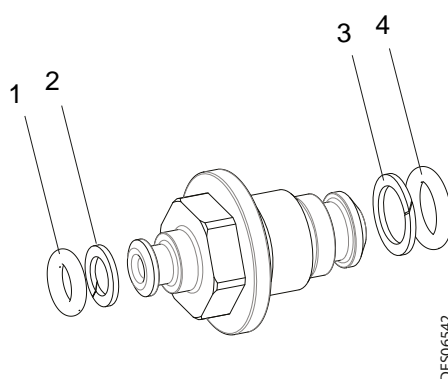
Level 3: Exceptional maintenance.



**WARNING :** It is strictly forbidden to remove the rear paint knurl (Item 18) when the gun is under pressure.

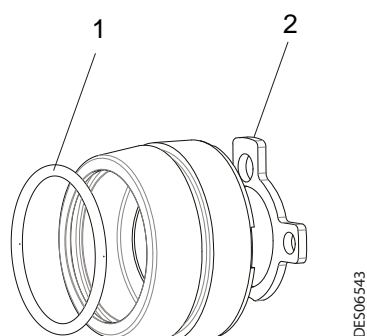


### 13.3. Equipped seat casing (flat spray only)



Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	<b>910019359</b>	<b>Equipped seat casing</b>	<b>1</b>	<b>1</b>	<b>1</b>
1	J3STKL046	O-ring - chemically inert	1	1	1
2	900013368	Anti-extrusion ring	1	1	1
3	900012300	Anti-extrusion ring	1	1	1
4	J3STKL075	O-ring - chemically inert	1	1	1

### 13.4. Equipped adapter (flat spray only)



Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	<b>910019360</b>	<b>Equipped adapter</b>	<b>1</b>	<b>1</b>	<b>3</b>
1	J2FENV288	O-ring - FEP FKM	1	1	1
2	900014821	Flat seal	1	1	1

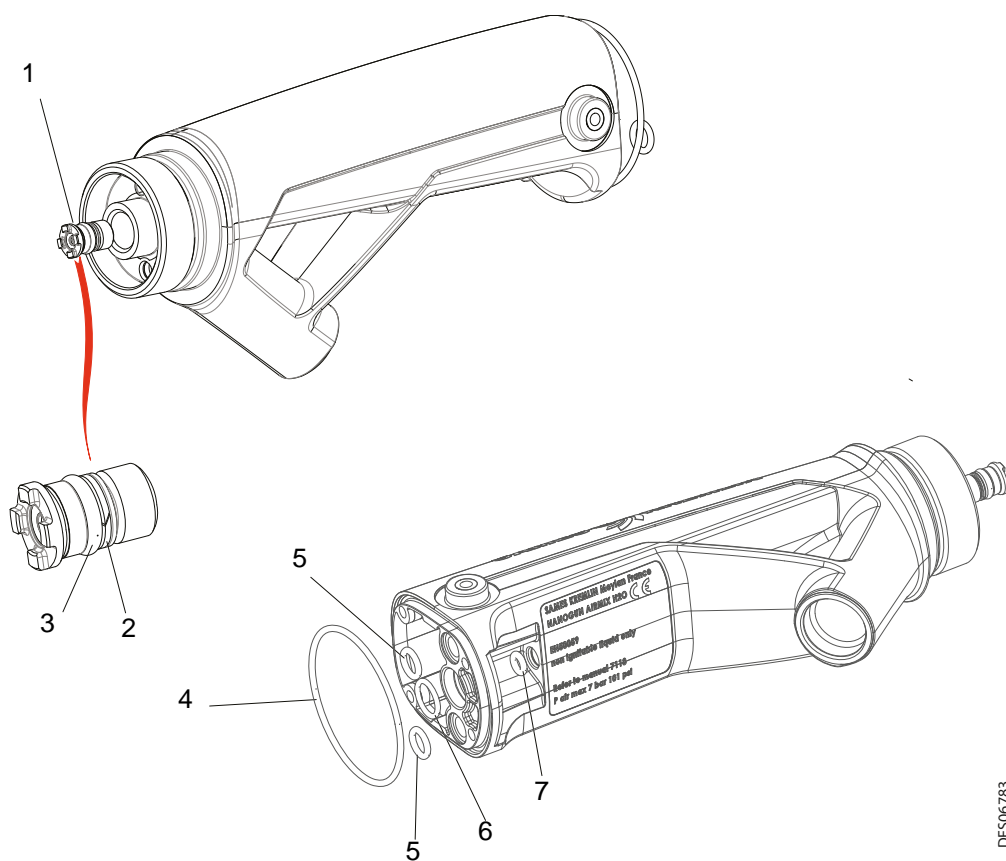
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Level 1: Standard preventive maintenance.

Level 2: Corrective maintenance.

Level 3: Exceptional maintenance.

### 13.5. Equipped barrel



DE506783

Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	<b>910025082</b>	<b>Equipped barrel</b>	<b>1</b>	<b>1</b>	<b>3</b>
<b>1</b>	<b>910015881</b>	<b>Nozzle needle sealant cartridge</b>	<b>1</b>	<b>1</b>	<b>1</b>
2	900012782	Anti-extrusion ring (included in Item 1)	1	1	1
3	J3STKL005	O-ring - chemically inert (included in Item 1)	1	1	1
4	J2FENV435	O-ring - FEP Viton	1	1	1
5	J3STKL078	O-ring - chemically inert	2	1	1
6	J3STKL019	O-ring - chemically inert	1	1	1
7	J3STKL032	O-ring - chemically inert	1	1	1

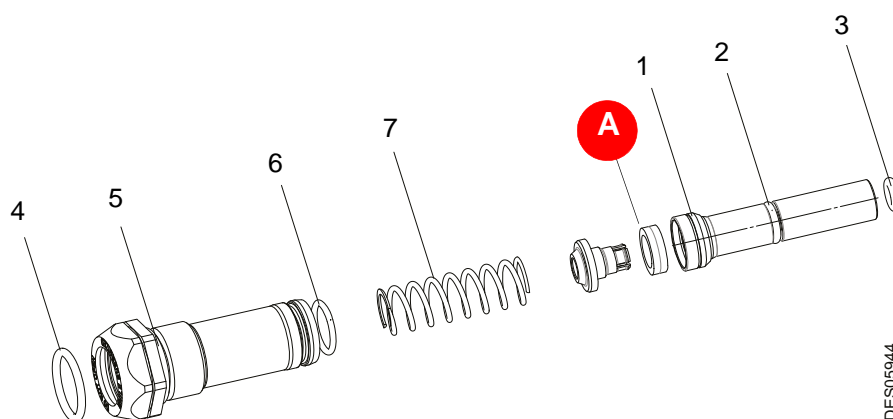
(\*)

Level 1: Standard preventive maintenance.

Level 2: Corrective maintenance.

Level 3: Exceptional maintenance.

### 13.6. Equipped air valve and air valve Nut



Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	<b>910018203</b>	<b>Equipped air valve</b>	<b>1</b>	<b>1</b>	<b>3</b>
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
	<b>910015922</b>	<b>Equipped air valve nut</b>	<b>1</b>	<b>1</b>	<b>3</b>
4	J2FTDF155	Black FKM O-ring	1	1	1
5	J2FTDF160	Black FKM O-ring	1	1	1
6	J2FTDF999	Black FKM O-ring	1	1	1
7	900009024	Air spring	1	1	1

(\*)

Level 1: Standard preventive maintenance.

Level 2: Corrective maintenance.

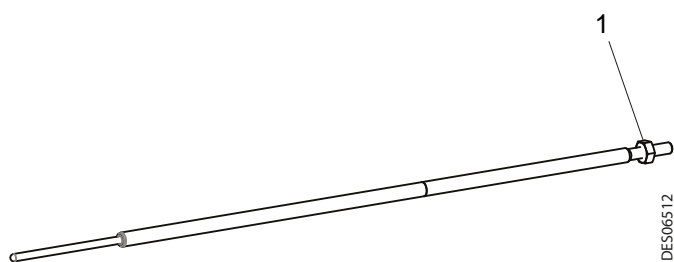
Level 3: Exceptional maintenance.



**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.

### 13.7. Equipped nozzle needle



Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910019508	Equipped nozzle needle	1	1	1
1	X7CEHU003	H M3 U brass nut	1	1	3

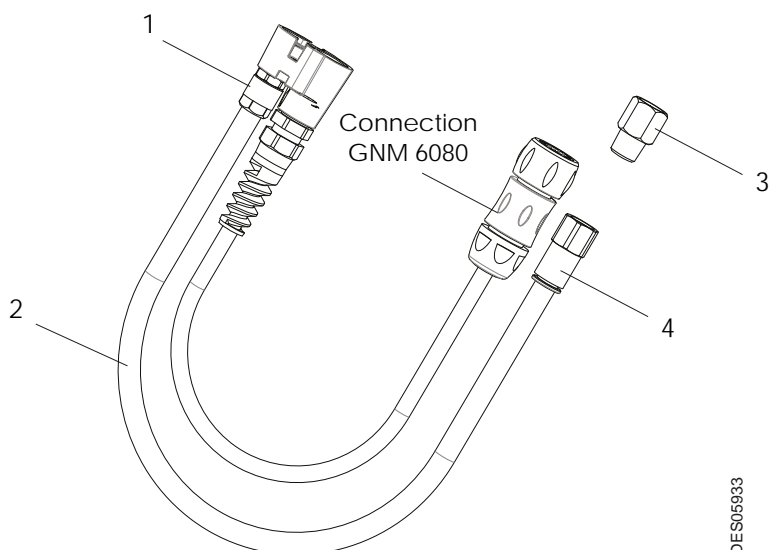
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**Level 1: Standard preventive maintenance.**

**Level 2: Corrective maintenance.**

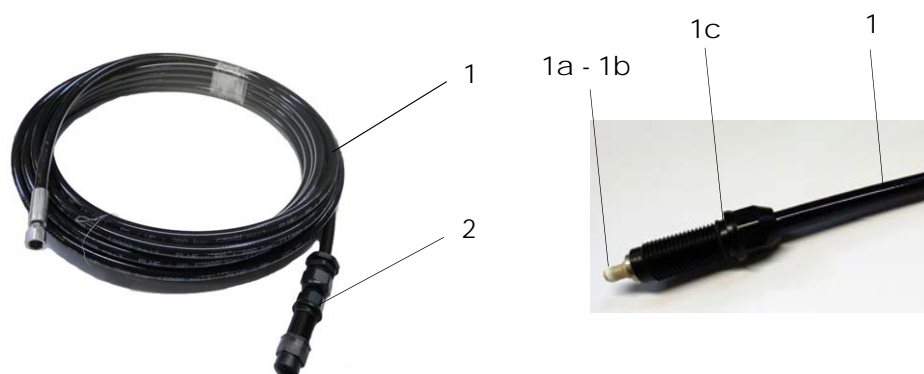
**Level 3: Exceptional maintenance.**

### 13.8. Electro-pneumatic coupling



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

### 13.9. Paint hose



Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
1	910020165-075	Product hose LR PTFE 7.5m Ø 5	1	1	1
	910020165-150	Product hose LR PTFE 15m Ø 5	1	1	1
1a	J3STKL028	Chemically inert O-ring (included in Item 1)	1	1	1
1b	900013398	Anti-extrusion ring (included in Item1)	1	1	1
1c	J2FTDF177	Black FKM O-ring (included in Item 1)	1	1	1
2	E3RPLS018	Cable gland nut	1	1	3

(\*)

Level 1: Standard preventive maintenance.

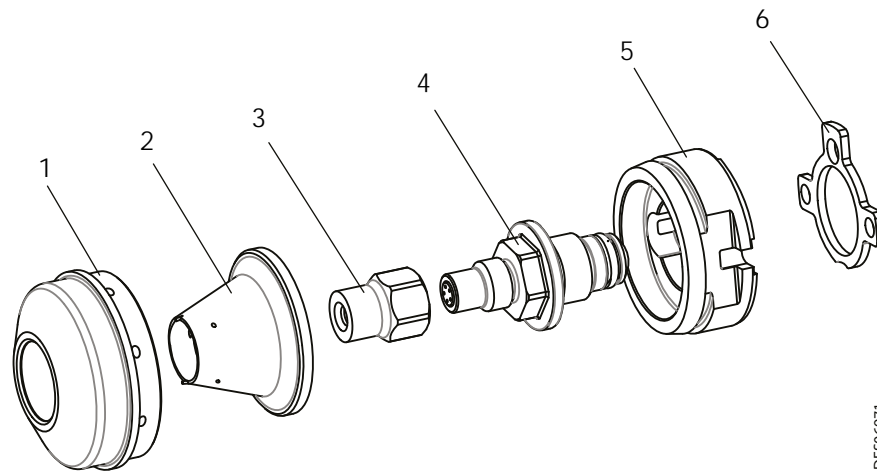
Level 2: Corrective maintenance.

Level 3: Exceptional maintenance.

### 13.10. Nanogun Airmix® H2O seal kit

Part Number	Title	Location	Quantity
910022694	Nanogun Airmix® H2O seal kit		1
J3STKL005	Chemically inert O-ring	Barrel, air valve, on/off button	3
J2FENV435	FEP/FKM O-ring	Barrel	1
J3STKL078	Chemically inert O-ring	Barrel	2
J3STKL019	Chemically inert O-ring	Barrel	1
910015881	Nozzle needle sealant cartridge	Barrel	1
J3STKL032	Chemically inert O-ring	Barrel, air valve	2
900012782	Anti-extrusion ring	Barrel	1
160000041	Chemically inert O-ring	Handle	1
160000067	Red FKM O-ring	Handle	1
J2FTCF018	Black FKM O-ring	Air nipple	2
J3STKL018	Chemically inert O-ring	Air nipple	1
J4BRND039	Fibre washer	Handle-barrel fastening, base-handle fastening	6
900010256	Sealant ring	Air valve	1
J3STKL075	Chemically inert O-ring	Equipped seat casing	1
900012300	Anti-extrusion ring	Equipped seat casing	1
J3STKL046	Chemically inert O-ring	Equipped seat casing	1
900013368	Anti-extrusion ring	Equipped seat casing	1
900014821	Adapter flat joint	Equipped adapter	1
J2FENV288	FEP/FKM O-ring	Equipped adapter	1
J3STKL014	Chemically inert O-ring	High-voltage contact	1

### 13.11. Hollow cone kit (not available for North American market)



Item	Part Number	Description	Qty	Sales unit	Spare parts level (*)
	910025480-20	Hollow cone kit K20	1	1	3
	910025480-30	Hollow cone kit K30	1	1	3
	910025480-40	Hollow cone kit K40	1	1	3
	910025480-50	Hollow cone kit K50	1	1	3
	910025480-60	Hollow cone kit K60	1	1	3
	910025480-70	Hollow cone kit K70	1	1	3
1	900011505	Cap	1	1	2
2	910018917	Spraying cone	1	1	2
3	910025472	Injector 20 hollow cone	1	1	1
	910025473	Injector 30 hollow cone	1	1	1
	910025474	Injector 40 hollow cone	1	1	1
	910025475	Injector 50 hollow cone	1	1	1
	910025476	Injector 60 hollow cone	1	1	1
	910025477	Injector 70 hollow cone	1	1	1
4	910025478	Equipped hollow cone seat casing (see § 13.11.1 page 64)	1	1	2
5	900011504	Hollow cone adaptor	1	1	3
6	900014821	Flat seal	1	1	1

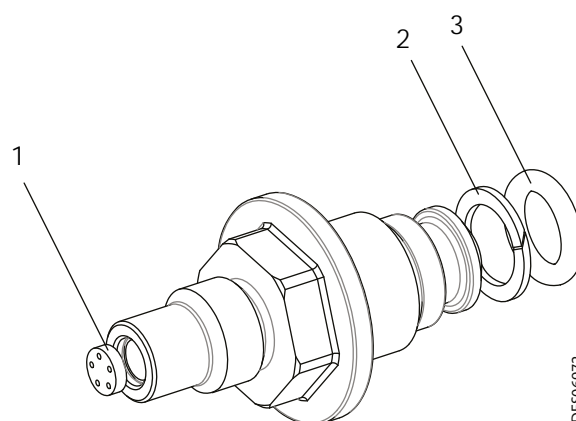
(\*)

Level 1: Standard preventive maintenance.

Level 2: Corrective maintenance.

Level 3: Exceptional maintenance.

### 13.11.1. Equipped hollow cone seat casing



Rep	Référence	Description	Qté	Unité de vente	Niveau Pièces de rechange (*)
	<b>910025478</b>	<b>Porte siège cône creux équipé</b>	<b>1</b>	<b>1</b>	<b>2</b>
1	999469300	Pastille carbure de répartition	1	1	1
2	900012300	Bague anti-extrusion	1	1	1
3	J3STKL075	Joint torique perfluoré	1	1	1

(\*)

Level 1: Standard preventive maintenance.

Level 2: Corrective maintenance.

Level 3: Exceptional maintenance.



### 13.11.2. Procedure for changing from a flat spray to a round spray



**WARNING : To carry out this operation, the gun must be disconnected from any supply (product / air / current).**

#### **Remove the flat spray:**

- 1 Loosen the cap nut (Ref.: 910019358).
- 2 Remove the cap (Ref.: 130001435), if the injector does not come away at the same time, remove it too
- 3 Loosen the seat casing (Ref.: 910019359) while pressing the trigger.
- 4 Remove the adaptor (Ref.: 910019360) and the flat seal (Ref.: 900014821) located at the rear. Make sure you do not lose or break the high voltage contact and the O-ring (Ref.: J3STKL014).
- 5 Extract the first split ring (Ref.: 900010164) inside the cap nut and remove the cap.

#### **Install the round spray (hollow cone):**

- 1 Put the flat seal in place (Ref.: 900014821) and the hollow cone adaptor (Ref.: 900011504). Make sure you do not lose or break the high voltage contact and the O-ring (Ref.: J3STKL014).
- 2 Add a little dielectric grease to the HV contact and a film to the seat casing thread. Make sure you do not lose the distribution pad carbide (Ref.: 999469300) at the front of the part.
- 3 Screw the seat casing fully onto the barrel while pressing the trigger.
- 4 Add a film of dielectric grease to the threading at the front of the seat casing; make sure you do not get any on the distribution carbide pad.
- 5 Screw the injector fully on the seat casing.
- 6 Insert the cap into the cap nut and put the retaining ring back in place.
- 7 Put the cone in place
- 8 Add a film of grease on the barrel threading
- 9 Tighten the cap nut fully (with its cap) on the barrel.

### 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 Airmix® H2O guns

Online product filter


Description	Part Number	Versions
Filter (M / F 1/2 JIC)	130000322	LR* 120 or 200 bar
Sieve 6	129609908	LR 120 or 200 bar

\* Reduced filter dimension installed at the pump outlet for the LR versions, and the pump must be equipped with a M 1/2 JIC output coupling.


### 13.14. Appendices

#### 13.14.1. Hose protection casing

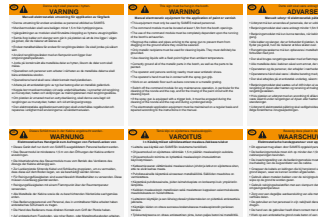
This casing protects the hoses and cables, thereby guaranteeing flexibility and longevity.

Description	Part number	Sales unit
 <p>Rilsan hose protection duct with 30 collars</p>	910021086	50-m roll


#### 13.14.2. Gun protective cover

Description	Part Number	Sales unit
 <p>DES01269 Protective cover</p>	900011711	10

#### 13.14.3. Warning sign

Description	Part Number	Sales unit
 <p>Warning sign</p>	1407684	1

#### 13.14.4. Safety relief valve

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