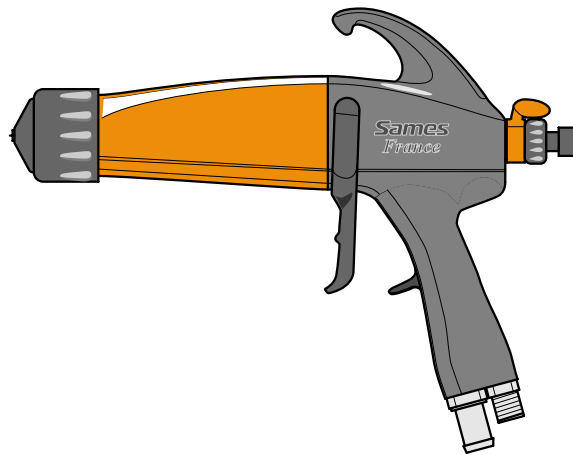




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User manual

MIV 6600 W Atomizer Round Spray and Fan Spray for Waterborne Paints

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MIV 6600 W Atomizer Round Spray and Fan Spray for Waterborne Paints

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This document contains links to the following user manuals:
[see RT Nr 6209](#) the user manual for the **GNM 100 control module**.
[see RT Nr 6332](#) the user manual for the **CPH 600**.

1. Safety Instructions



Equipment performance is only guaranteed if original spare parts distributed by “SAMES Technologies” are used.



Safety warning. This equipment may be dangerous if it is not operated, disassembled and reassembled in accordance with the instructions given in this manual and in any European Standard or national safety regulations in force.

2. Regulations in Force

The European standard EN 50 059 defines the “Specifications of equipment used for manual electrostatic spraying of non-inflammable coating and finishing products.” It specifies the assembly and the test regulations for manually-operated electrostatic atomizers, their high-voltage generator and their source of supply in spraying product in order to protect the operator from high-voltage discharges.

The European standard EN 50 059 defines a non-inflammable product for spraying purposes as a product that can not be ignited, whatever its air mixture, by an energy source of less than 500 milli-Joules.

It is recommended that the regulations in force concerning the application of inflammable finishing products be taken into account (European Standard EN 50 053, part 1), in which:

2.1. It is stipulated that:

- Connect the parts to be painted to the facility ground. This applies to all other metal parts in the paint booth. Before applying the product on the first part of the day, check there is no current fluctuation by bringing a part, that is electrically connected to the ground, closer to the nozzle. This test has to be carried out with set-values at their maximum (voltage and power), in non-exlosive atmosphere areas and with product supply off. Otherwise, contact «Sames Technologies».
- The control module be installed outside the paint booth,
- The control module be switched off for all maintenance operations, particularly when cleaning the nozzle with solvents or diluting agents, as these are usually highly flammable products.
- The painter wear anti-static shoes and work bare-handed or with gloves that are either anti-static or specially designed to allow direct contact between the handle and his hand.
- The personnel working in the vicinity of the painter must also wear anti-static shoes.
- Plastic floors are to be avoided. Work must be carried out on an anti-static surface such as bare concrete or metal duckboards.

2.2. It is advisable to:

- Group together the cables and hoses connected to the atomizer so that they are not lying on the floor where they run the risk of being damaged.
- Interlock the start-up of the **GNM 100** with the booth ventilation system so that the **GNM 100** can only be started up when the spray booth ventilation system is in operation.

3. Safety Instructions

3.1. Risks and dangerous phenomena

	Risks	Remedies or warning
Crushing	The operator's finger is trapped between the trigger and the handle when the trigger is pressed.	Proceed with caution when pressing and releasing the trigger.
Penetration	Risk due to the presence of the high-voltage electrode on the atomizer nozzle.	The operator should take care not to prick himself with the electrode protruding from the air cap.
Atomization and ejection of compressed air.	Uncontrolled escape of coating liquid if the trigger is pressed unintentionally (for example: The trigger may be pressed if the gun is accidentally dropped).	Shut off the air and paint supplies when the equipment is idle for a prolonged period.
	Paint needle or air needle leakage.	Periodically check the needle and air distributor for leaks.
	Ageing and wear of the atomizer components (for example: Damage to the gun, needle wear, split seal, etc...).	Periodically check the condition of the different components of the atomizer.
	Escape of compressed air if the air is not cut off and flushed before removing the air / low-voltage connector below the handle of the atomizer.	Close the air stop valve and flush the atomizer air circuit by pressing the trigger before inserting the connector.
Damage	Parts coming loose as a result of vibration.	Periodically check the condition of the different components of the atomizer.
	Equipment wear.	Periodically check the condition of the different components of the atomizer.
	Physical damage to paint and air hoses.	Periodically check the condition of the paint and air hoses.
	Chemical reaction between the different atomized coating liquids or between these coating liquids and the materials from which the atomizer is made (list of materials available on request).	Consult the safety data sheets for the liquids used (see supplier of these liquids).
Electrical risk	The operator comes into direct contact with bare electrical parts during maintenance of the GNM 100 , if the cover is removed while it is still switched on.	This risk can not be eliminated at the equipment design stage. The operator must take care to avoid exposing himself to the risk electric shocks.
	The operator comes into direct contact with the pins of the low-voltage connector below the handle if the compressed air is not cut off and if the GNM 100 is operating.	This risk can not be eliminated at the equipment design stage. The operator must take care to avoid exposing himself to the risk electric shocks.
Noise	The atomization air and paint spraying operations generate noise.	Operators should wear personal protection (ear-muffs, etc.).

	Risks	Remedies or warning
Atomization	Chemical reaction between a mixture of coating products and diluting agents in containers, in the paint hose or in the spray booth (e.g.: on the dry filters or water wash system) .	This risk can not be eliminated at the equipment design stage. The operator must therefore take care to avoid the risk of fire or blow-out. Consult the data sheets for the products used (see product supplier).
Paints	Contact of coating products with any part of the human body.	This risk can not be eliminated at the equipment design stage. The operator must wear protective gloves at all times.
	Inhalation of atomized product vapours.	This risk can not be eliminated at the equipment design stage. The operator must wear a respirator (active carbon filter) and protective goggles at all times.
	Accidental ingestion of liquids used as a result of unsuitable packaging or contamination.	This risk can not be eliminated at the equipment design stage. The operator must not keep any food or drink in the vicinity of his work station.
Equipment	Unexpected flow of coating product or diluting agent following an interruption of the supply caused by a clogged nozzle, for example.	Switch off the pump and flush the circuit before removing the nozzle.
	Incorrect operation of the automatic trigger return function or a bad paint needle seal resulting in uncontrolled flow of coating product or diluting agent for cleaning.	Periodically check the condition of the different components of the atomizer.

3.2. Possible Risks

Safety Device	Risk
Air cap nut missing.	Risk of air cap and nozzle being blown off due to paint pressure: risk of injury.

3.3. Misuse of Equipment.

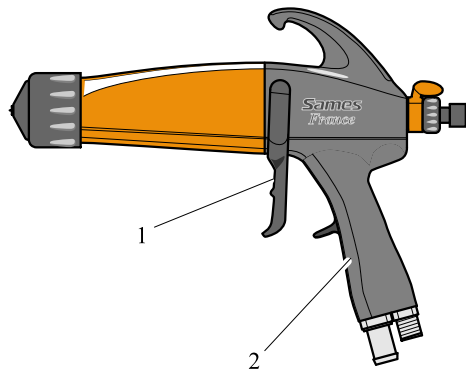
The following is a list of actions to be avoided: This list is not exhaustive.

Not connecting the flow-control contact to the GNM 100 .
Pressing the trigger with the atomizer close to the GNM 100 while it is operating.
Pulling too hard on the air and paint hoses.
Leaving air or paint hoses lying on the floor in areas where they are likely to be crushed by the passage of vehicles.
Pressing the trigger when the gun is pointed towards a person or animal.
Atomizing unauthorised coating liquids.
Dropping the atomizer or subjecting it to impacts.
Using the atomizer without an air cap or nozzle.
Using the gun or air cap of the atomizer to manipulate or move the parts to be painted.
Leaving the atomizer (or the GNM 100) on the floor when it is not in use.
Leaving the equipment pressurised at the end of the shift.
Pouring liquid onto the equipment (or soaking it).
Leaving the equipment exposed to the weather (when working outside).
Connecting the atomizer to an air or coating product supply with unsuitable pressure levels.
Using a quick-disconnect clip to actuate the trigger.
Allowing coating products, solvents or diluting agents to enter the air circuit.
Disconnecting the quick-disconnect plug below the handle while the GNM 100 is operating or while the air stop valve is open.
Connecting the GNM 100 to a mains supply that is not suited to the operating voltage.
Leaving the low-voltage air hose on the floor when it is disconnected from the atomizer. Allowing diluting agent to enter the hose. Cleaning the inside of this hose with diluting agent.

4. Description

The range of **MIV 6600 W** manually-operated electrostatic atomizers is designed exclusively for the atomization of paints, solid colours or waterborne clear coats, waterborne emulsions and non-flammable water-based dispersions at a maximum atomization pressure of 6 bar (90 psi).

Definition of a non-flammable product for spraying purposes (see European standard EN 50059): Product that can not be ignited, whatever its air mixture, by an energy source of less than 500 mJ.



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These atomizers are designed to be supplied with paint by a low-pressure supply system (6 bar max.) such as a pressurised tank or diaphragm pump.

They are designed to be supplied with low voltage and compressed air by the **GNM 100** electrical control module. This module makes it possible to adjust the high voltage and maximum current supplied to the atomizer. A display shows any electrical malfunctions. The high-voltage supply can be switched off on the control module.

MIV 6600 W atomizers are fitted with a pneumatic flow-control contact that establishes the high voltage if the trigger (1) is pressed with the compressed air flowing.

The control module GNM 100 may be connected to or disconnected from the atomizer / flow control contact assembly.

The low-voltage cable connecting the GNM 100 to the atomizer is located inside the compressed air hose to ensure its protection.

The MIV 6600 W is equipped with a connector under the handle (2) for connection/disconnection of the air hose and low-voltage cable with a special tool.

Note: This connector must only be used occasionally and only for atomizer maintenance purposes, in strict compliance with the safety instructions governing its use.

The high-voltage unit is built into the atomizer. **MIV 6600 W** atomizers may be equipped to produce either a fan spray or a round vortex spray (the round spray version exists in calibre 6, 8 and 12). In all cases, the calibre of the spray nozzle (round spray) and the fan air cap (fan spray) must be selected according to the characteristics and flow rate of the paint used, the size of the pattern required and the paint viscosity. The paint circuit of the **MIV 6600 W** is electrically insulated from the ground.

The **MIV 6600 W** atomizers do not require a paint column to conduct high voltage or to produce the electrostatic charge current.

5. Technical Data

5.1. Range of atomizers

Depending on the part to be painted and the viscosity of the paint being used, the following versions of the **MIV 6600 W** will be used:

- Fan spray versions
- Round spray versions

5.1.1. Fan Spray Versions

Length of paint hose	8 m, useful length
Length of air hose	9 m

The maximum flow rate of atomized product depends on the product supply system, the nozzle used, the surface tension of the product to be atomized (wetting power), the required surface finish and, above all, on the viscosity of the product to be atomized. The maximum flow rate is indicated for round spray use, for a finish deemed correct for industrial use, and within the normal viscosity range ([see § 9.1.3 page 16](#)).

This maximum flow rate increases as the viscosity value decreases.

Flow rate using diaphragm pump 753472 in versions equipped with a paint hose of 8 m total length.

5.1.2. Round Spray Versions

These versions will be used for painting tubular or wire-mesh objects ([see § 9.1.2 page 15](#)).

Standard calibre on request	8 calibre 6 and 12
Length of paint hose	8 m, useful length
Length of air hose	9 m

Flow rate using a 1/1 diaphragm pump, in versions equipped with a paint hose of 8 m total length.

5.2. General characteristics

Characteristic	Value
Length	Approximately 290 mm using the round spray, Approximately 300 mm using the fan spray
Weight, without cable or hose	625 g
High voltage	0 to 60 kV
Current	0 to 60 µA
Voltage/current output characteristic	Rectangular
Maximum compressed air pressure	6 bar (90 PSI)
Maximum paint pressure	6 bar (90 PSI)
Air connection	3/8" BSP female, grooved union supplied (for a hose with an internal diameter of 12 mm or a hose with an internal diameter of 8 mm) or 1/4 " NPS male
Paint circuit inlet union	3/8" NPS female

5.3. Characteristics of paint hoses

The paint hose consists of a Teflon inner tube, electrically insulated from the ground (9 m long from the handle to the paint inlet union) and protected by an elastomer hose (8m long from the handle).

6. Operation

The atomizers are fitted with a device for quick adjustment of the spray pattern and automatic adjustment of the paint flow rate to this pattern.

Pressure on the trigger, after taking up the play, opens the atomizing air valve then gradually draws the needle of the paint valve out of its seat until its rod comes up against the adjustment button. The air valve is in a rotary distributor, screwed into its housing and controlled by a lever at the rear of the handle, which is also fitted with the paint flow adjustment button.

When the lever is pushed as far as possible to the right, the paint flow is reduced to the minimum chosen and the spray is very narrow and penetrating.

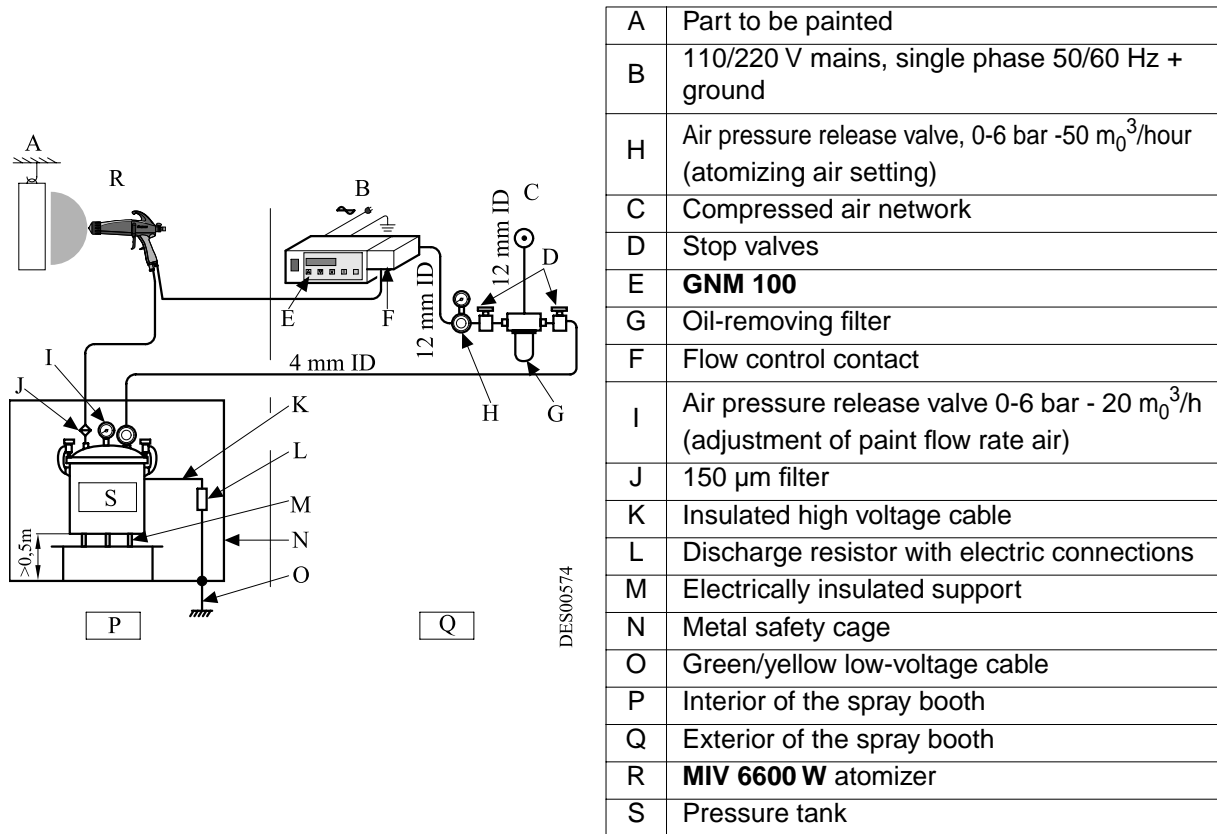
When the lever is pushed as far as possible to the left, the paint flow is increased to the maximum chosen and the spray is very wide, covering a large area, especially if the round spray is used.

7. Installation



The GNM 100 control module and the flow control contact must be installed outside the paint booth. The control module is installed on the support, ref. 822542.

7.1. Installation with a pressure tank



Note: m₀³/h: Volume at atmospheric pressure and at a temperature of 0°C .

A diaphragm pump with a ratio of 1:1 may be used in place of a pressure tank. A pneumatic paint stirrer is usually installed on the pressure tank.

The addition of a small quantity of Vaseline (H1GMIN017) in the high voltage well improves discharge resistance (insulated high-voltage cable side).



Safety Instructions

Ground the discharge resistor before use.

The pressure tank must be installed in a metal safety cage, grounded in order to avoid electrical discharges. The operator must not be able to touch the pressure tank or the metallic parts of the paint circuit during operation.

Install a safety device that grounds the pressure tank when the door of the cage is opened.

7.2. Installation with CPH 600

The **CPH 600** is an electrically insulated supply unit, which is specially designed to supply the **MIV 6600 W** with waterborne paint or other aqueous products (non-inflammable).

Several safety devices are fitted to the **CPH 600** to prevent the operator from running any risk of electric shock.

The **MIV 6600 W** is delivered connected to the **CPH 600**. To connect the **CPH 600** to the pneumatic and electric networks, see the Instruction Manual for the **CPH 600**

([see RT Nr 6332](#)). The **GNM 100** is delivered connected to the **CPH 600**.



The CPH 600 must never be installed in an area where there is a risk of explosion.

8. Practical advice concerning the type of paint to use

In general, all non-inflammable waterborne (or water-soluble) paints and emulsions [see § 2 page 6](#) used with conventional pneumatic atomizers (including slightly metallic paints) can be used in the normal way with the **MIV 6600 W** atomizer.

8.1. Viscosity

The maximum flow rate of paint that may be applied depends essentially on the viscosity and the thixotropy of the paint and on the paint supply system.

It must be noted that a minute addition of water to a waterborne paint or emulsion reduces its viscosity considerably, without visibly reducing its dry extract ratio.

8.2. Resistivity

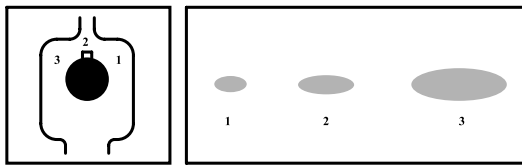
It is not necessary to adapt the resistivity of a waterborne paint or aqueous solution for electrostatic application when using a **MIV 6600 W** atomizer.

9. Use

9.1. Use of the atomizer

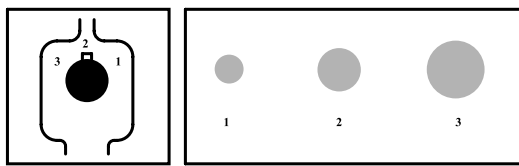
9.1.1. Atomizer operation

- With both versions of this atomizer (fan spray and round spray), the very simple operation consisting of switching to different spray dimensions can be carried out while working. Retouching, preparation or finishing is possible for all shapes without having to rework the part several times.
- In its "round spray" version the atomizer produces a distinctly circular impact, which gradually widens as the lever at the rear of the handle is moved from right to left (see below). The tight conical spray in position 1 (see right, view from behind) can be used to paint recessed or deeply-set areas of the parts. The wide conical spray, position 3, with a low-axial-speed vortex movement is used to paint large areas and tubular assemblies with maximum wraparound effect.
- All intermediate spray dimensions may be obtained by setting the lever between position 1 and position 3.



- In its "fan spray" version, the atomizer is used mostly for painting large flat areas requiring a perfect finish.
- It gives the patterns shown below. Starting with a tightly closed circular spray with the lever in position 1, the pattern obtained gradually widens to reach a maximum in position 3.

9.1.2. Use of round spray injectors and air caps



The round spray version of the atomizer is delivered with the calibre 8 nozzle as standard. This set-up makes it possible to spray between 150 and 650 cm³/min. of paint under good conditions. It is therefore perfectly suited to parts with a medium surface area, for example: Garden and camping furniture, metal furniture, cycles, etc...

For smaller parts (objects made from wire, racks, etc.), it is recommended to use a calibre 6 nozzle/air cap assembly, which makes it possible to paint with flow rates of between 70 and 400 cm³/min. under very good conditions

However, if the parts have a large surface area: Agricultural or public works equipment, we recommend the calibre 12 nozzle / air cap assembly, .

The fan spray set-up is best suited for large parts requiring a good finish but with less wraparound effect.

A **MIV 6600 W** atomizer equipped for round spray may be converted into a conventional **MIV 6600 W** fan spray atomizer by replacing the nozzle, air cap and air distributor.

9.1.3. Use of fan spray injectors and air caps

In its conventional fan spray version, the atomizer is delivered with a nozzle and air cap that make it possible to spray correctly between 100 and 500 cm³/min with maximum spray patterns of approximately 18 to 47 cm depending on the flow rate. An **MIV 6600 W** atomizer equipped for conventional fan spray may be converted into a **MIV 6600 W** round spray atomizer by replacing the nozzle, air cap and air distributor.

9.1.4. Paint flow adjustment

The paint flow rate is adjusted by changing the pressure of the paint supply and/or the position of the adjustment button.

For a viscosity of 25 seconds with an AFNOR no. 4 cup, set the pressure to between 1 and 2 bar for a round spray atomizer and to between 3 and 4 bar for a fan spray atomizer.

With the lever at the back of the handle as far to the right as it will go (position 1, Figures 6 and 7), turn the flow rate adjustment button, keeping the trigger pressed, until the paint flow stops.

Then turn the adjustment button back by approximately half a turn : The atomizer is adjusted.

Note: Never remove the needle assembly when the paint hose still contains paint.

Turn the lever to a suitable position for the work to be carried out and adjust the paint pressure to obtain the required covering speed.

If necessary, fine-tune the button setting. The paint flow rate then varies according to the position of the lever controlling the spray pattern.

9.1.5. Adjusting the atomizing air pressure

For a suitably adapted paint (viscosity of 30 seconds with an AFNOR no. 4 cup) and a correct finish, the air setting will be as follows:

9.1.5.1. Round spray version

Injector calibre		Ø 6			Ø 8			Ø 12		
Paint	Flow rate (cm ³ /min.)	70	200	400	150	300	650	150	300	750
Atomizing air	Flow rate (Nm ³ /hour) (1)	6.7	8.4	15.5	7.5	11.7	17	9	13	23
	Pressure (bar) (2)	1.3	1.7	4	1.3	2.3	3.7	1.4	2.3	4.5
	Spray size (3)	32	33	28	38	36	34	43	42	38

9.1.5.2. Conventional fan spray version

Paint	Flow rate (cm ³ /min.)	100	300	500	750
Atomizing air	Flow rate (Nm ³ /hour) (1)	12.3	14	18.5	25
	Pressure (bar) (2)	1.3	1.5	2.3	3.4
	Spray size (3)	18	34	44	45

(1) Flow rate in Nm³/hour “normal cubic metres per hour,” that is to say, at normal atmospheric conditions, and drawn in by the compressor therefore (1 Nm³/hour = 0.621 SCFM).

(2) Pressure measured at the inlet of the standard 9 m air hose. Increase these pressures by 0.5 to 1.5 bar for a 15 m air hose. Increase them by 2 to 2.5 bar for a 20 m air hose but do not exceed a maximum pressure of 6 bar. The pressures given are measured when the air is flowing to the air cap.

(3) Maximum size of the paint spray (lever in position 3), with a spraying distance of 25 cm and high voltage of 60 kV. This spray size is approximate.

Note: When using higher viscosity or poorer quality paints, or to obtain a perfect finish, the air pressure may need to be increased slightly.

10. Cleaning

The atomizer must be cleaned immediately after use, as with all paint atomizers.

The recommended cleaning procedure is as follows:

- Switch off the control module (essential),
- Ground the paint circuit by connecting the paint supply to an electric ground terminal,
- Rinse the paint circuit by injecting water into it,
- Never soak the atomizer in a diluting agent,
- if necessary, use a suitable type of diluting agent: High-resistivity, grease-free diluting agent; do not use chlorinated solvents,
- Never remove the needle assembly when the paint hose contains paint or diluting agent,
- Unscrew the nut securing the atomizer nozzle cap, remove the cap and clean it. Also clean the injector, taking care to protect its tip, on which the fineness of the spray depends,
- If necessary, clean the outside of the atomizer with a brush soaked in diluting agent and wipe it immediately,
- Re-fit the cap and its nut,
- Dry the atomizer before switching the control module on again.



WARNING : When cleaning the nozzle, always point the spray nozzle towards the ground to prevent fouled diluting agent from flowing into the gun ducts.



WARNING : After each cycle of cleaning, dry with compressed air the conducts and the paint hose to eliminate any trace from solvent.



WARNING : For any operation of assembly or cleaning, ensure that the special screws ([see § 11.9.2 page 27](#) item 45) location are clean.

11. Maintenance - Disassembly and Reassembly



Safety Instructions:

Before carrying out any work on **MIV 6600 W** atomizers you must always:

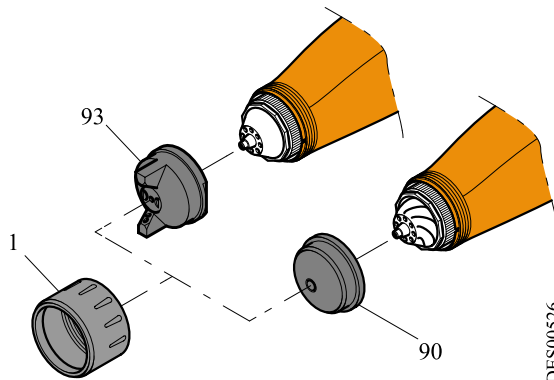
- Switch off the **GNM 100** control module,
- Ground the paint circuit by connecting the paint hose to the installation's ground system,
- Disconnect the power cable of the **GNM 100** control module from the mains supply,
- Clean the paint hose ([see § 10 page 17](#)),
- Switch off the atomizing air supply, then depressurise the air hose by pressing the atomizer trigger,
- Switch off the paint supply before working on the paint hose; it is also necessary to flush it with compressed air by holding down the atomizer trigger.

Note: Disconnection / connection of MIV 6600 W atomizers from or to the GNM 100 control module. For maintenance work on the atomizer, it may be practical to disconnect the atomizer from the control module. Refer to the GNM 100 user manual - [see RT Nr 6209](#).

11.1. Round Spray and Fan Spray Air Caps

11.1.1. Disassembly

- Unscrew the air cap nut (1).
- Remove the air cap (90) or (93).



1	Air cap nut
90	Round spray air cap, calibre 6
	Round spray air cap, calibre 8
93	Round spray air cap, calibre 12
	Conventional fan spray cap

11.1.2. Reassembly



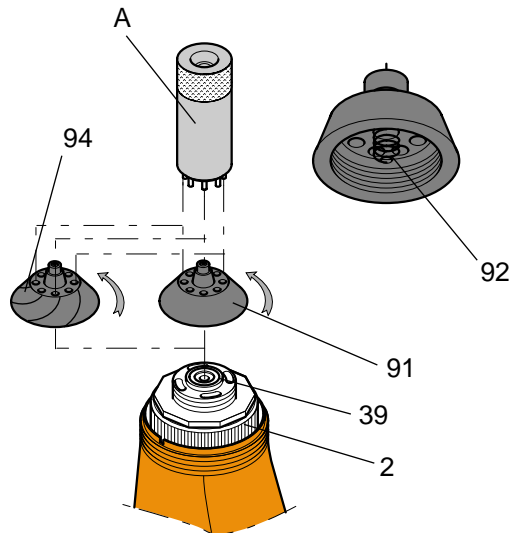
WARNING : Air cap is an emergency part, which must be replaced within 3 to 6 months under normal operating conditions

- Carry out the disassembly operations in reverse order, taking care to keep the cap and nozzle clean.
- Tighten the air cap nut moderately by hand.

11.2. Round Spray and Fan Spray Nozzles

11.2.1. Disassembly

- Remove the atomizer air cap (see § 11.1 page 18).
- Place tool (A) (see § 13.7 page 49) on the front end of the nozzle (91). Turn the tool until all 8 pins fit into the nozzle holes (91).
- Unscrew the nozzle nut (2).
- Take care not to lose the high-voltage electrode spring (92 - see § 13.4 page 46 or see § 13.5 page 47) located inside the nozzle, and the nozzle support O-ring (39).



2	Nozzle nut
39	O-ring - FEP
91	Round spray nozzle, calibre 12 6
	Round spray nozzle, calibre 12 8
	Round spray nozzle, calibre 12
92	Electrode spring
94	Conventional fan spray nozzle

DES00527

11.2.2. Reassembly



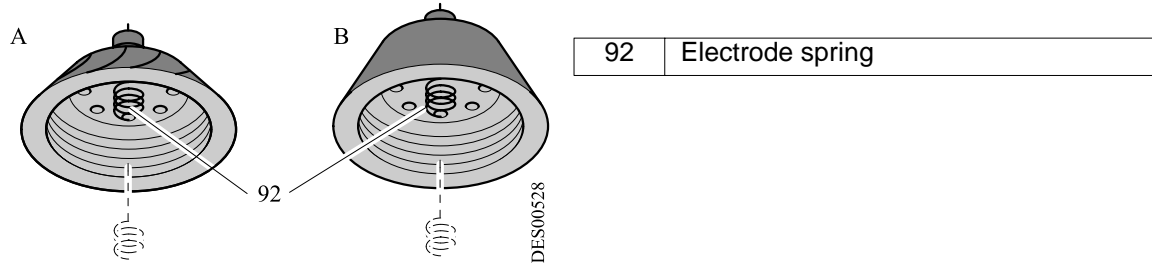
WARNING : Nozzle is an emergency part, which must be replaced within 3 to 6 months under normal operating conditions.

- Check that the O-ring (39) is in place on the nozzle support and in good condition. Replace it if necessary. Check that the electrode spring (92 - see § 13.4 page 46 or see § 13.5 page 47).
- Tighten the nozzle nut (2) by hand.
- Complete the tightening of the nozzle using the tool (A) (see § 13.7 page 49). Do not tighten excessively.

11.3. High-voltage electrode

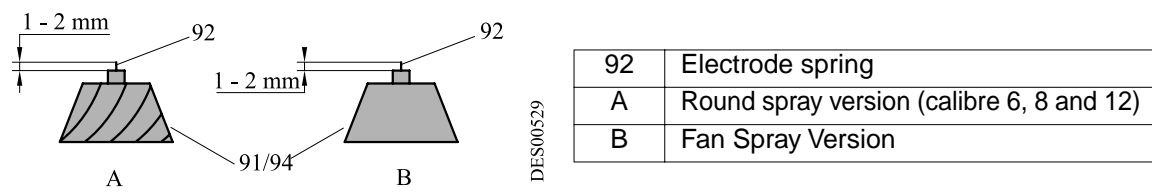
11.3.1. Disassembly

- Remove the atomizer air cap
([see § 11.1 page 18](#)).
- Remove the nozzle ([see § 11.2 page 19](#)).
- Pull on the rear part (spring) of the high-voltage electrode (92) to remove it.



11.3.2. Reassembly

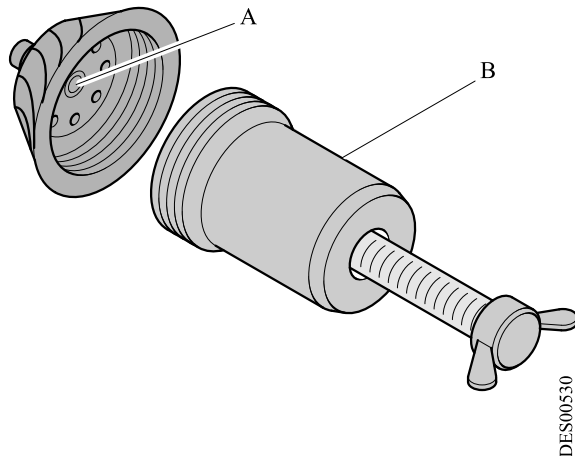
- Thread the straight part of the electrode spring through the central hole of the round spray diffuser, or the fan spray injector, accessible via the rear of the nozzle.
- Refit the nozzle on its support ([see § 11.2 page 19](#)).
- If necessary, cut the straight part of the electrode that protrudes beyond the front of the round spray diffuser or fan spray injector using cutting pliers: The excess must be between 1 and 2 mm.
- Refit the atomizer air cap ([see § 11.1 page 18](#)).



11.4. Round Spray Diffusers

11.4.1. Disassembly

- Remove the atomizer air cap ([see § 11.1 page 18](#)).
- Remove the nozzle ([see § 11.2 page 19](#)).
- Remove the high-voltage electrode spring ([see § 11.3 page 20](#)).
- Fit the nozzle into the round spray diffuser removal tool (B) ([see § 13.7 page 49](#)). Drive out the diffuser by screwing the butterfly nut on the tool.
- If necessary, clean the nozzle and diffuser with diluting agent.



A	Diffuser
B	Tool (B) (see § 13.7 page 49)

11.4.2. Reassembly

- Place the diffuser in the cavity of the diffuser insertion tool (C). There is a tool for each round spray calibre ([see § 13.7 page 49](#)). The diffuser grooves must be facing the outside of the tool.
- Once fitted to the tool, insert the diffuser into the front of the nozzle. The diffuser is in the correct position:
 - When the front surfaces of the diffuser and the nozzle are in the same plane. (tool resting against the front of the nozzle),
 - When the diffuser grooves are inside the nozzle and can no longer be seen.
- Refit the high-voltage electrode spring ([see § 11.3 page 20](#)).

11.5. Fan Spray Injectors

The nozzle and injector are incorporated in the same part: The injector can not therefore be removed.

11.6. Nozzle support

11.6.1. Disassembly

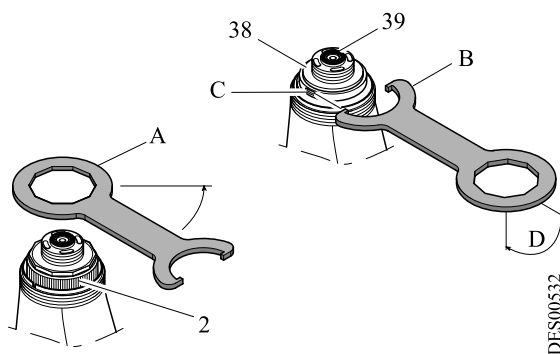
- Remove the atomizer air cap ([see § 11.1 page 18](#)).
- Remove the nozzle ([see § 11.2 page 19](#)), taking care not to lose the high-voltage electrode spring.

Note: The nozzle support may be removed without removing the nozzle.

- Using the special 10-sided wrench (D), remove the nut securing the nozzle support (see figure below).
- The nozzle support (38) is recessed into the front of the gun. Fit the two prongs of the wrench (D) into the notches on the nozzle support (see below). Using the gun as the bearing point and the 10-sided end of the wrench as a lever, extract the nozzle, keeping it parallel to the axis of the atomizer.

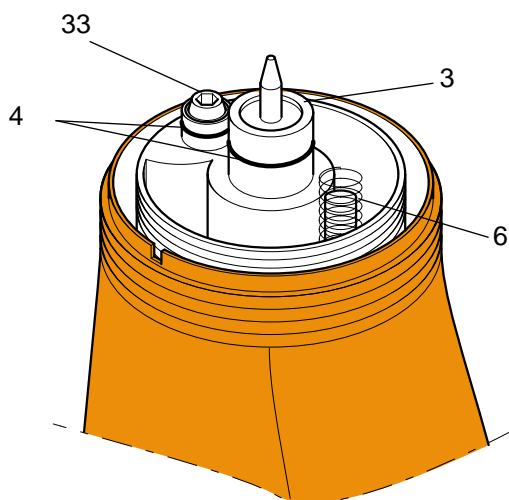


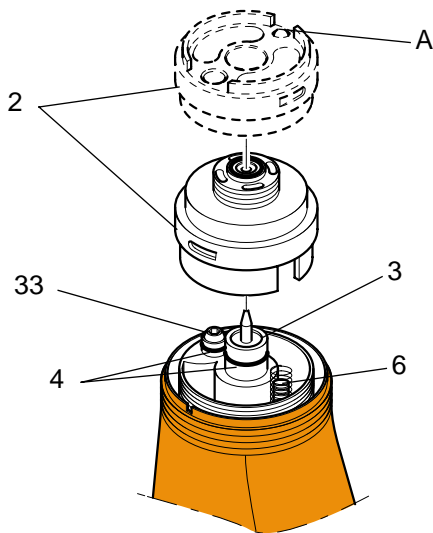
Do not use the prongs of the “fork wrench” (D) to tighten or loosen the nozzle support.



2	Nozzle support nut
38	Nozzle support
39	O-ring - FEP

- Check the condition of the nozzle support O-ring (39) and replace it if necessary.
- The white seal-packing assembly (3) must remain attached to the gun during disassembly. If this is not the case, extract it from the support using the tool (G) ([see § 13.7 page 49](#)). Refit it by gluing it into the gun ([see § 11.8 page 25](#)).
- Check the condition of the seal-packing assembly O-ring (4) and replace it if necessary.
- If necessary, clean the accessible areas of the front of the gun using a fine brush and a diluting agent. Point the front of the gun towards the ground to prevent any diluting agent from running into the air ducts of the gun, then dry the front of the gun with compressed air.





A	Metal contact
2	Nozzle support
3	Seal packing assembly
4	O-ring - chemically inert
6	Spring
11	Paint union

DES00534

11.6.2. Reassembly



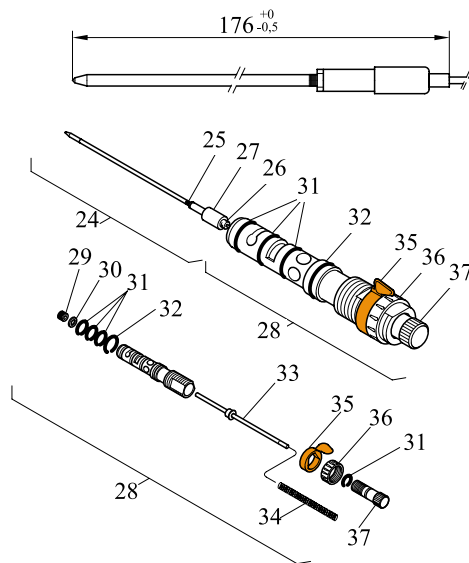
WARNING : Nozzle support is an emergency part, which must be replaced within 1 year under normal operating conditions

- Position the nozzle support (2) at the correct angle on the white seal-packing assembly (3): The metal contact of the nozzle support must face the spring (6) secured to the gun.
- Slowly slide the nozzle support onto the seal packing assembly, pushing it parallel with the axis of the atomizer. Use the nozzle support nut to position the nozzle support correctly. Take care not to damage the white O-ring (4) of the seal packing assembly during this operation. Make sure that the gun's paint union (11) fits into the housing on the nozzle support without the use of force (do not damage the O-ring (4)).
- Tighten the nozzle support nut without excessive force using the 10-sided wrench (D).
(see § 13.7 page 49).
- Check the sealing of the assembly by connecting a supply of diluting agent (at 6 bar) to the atomizer, with the control module switched off. There should be no leakage of diluting agent around the nozzle support nut.

11.7. Needle Assembly

The needle assembly comprises:

- An air distributor (28) that divides the incoming air into atomizing air and fan air for the fan spray, or directional air and vortex air for the round spray. There is a distributor for conventional fan spray atomization and a distributor for round spray atomization (identical for calibre 6, 8 and 12). The distributor is controlled by a lever (35) at the rear of the atomizer,
- A delay box (27) that makes it possible to cut off the paint supply and then the air supply to the atomizer air cap when the trigger is released; it allows the atomizing air, followed by the paint, to flow into the air cap when the trigger is pressed; the delay box is linked to the air cap by a pin (26); it is identical for all MIV 6600 W models,
- A needle (24) controlling the admission or interruption of the paint supply to the nozzle; the needle is identical for all **MIV 6600 W** models; it is screwed to the delay box and held in place by a lock nut (25).



DES00536

24	Needle + plastic nut
25	Nut H M 3, plastic
26	Pin
27	Delay box
28	Round Spray distributor assembly Conventional Fan Spray distributor
29	Packing nut
30	Air seal
31	Small ring
32	Large ring
33	Air needle
34	Needle spring
35	Air adjustment lever
36	Lever nut
37	Distributor nut

11.7.1. Disassembly

- Unscrew the nut (36) at the back of the atomizer by a few turns.
- Pull the lever (35) towards the nut (36) and fully unscrew the needle assembly.
- Be careful to pull the lever in line with the axis of the atomizer, to avoid damaging the needle. Remove the needle assembly.

11.7.2. Maintenance

- If there is an air leak at the air distributor or if one of the bevelled rings (31) or (32) of the distributor is damaged, proceed as follows:
 - Remove the damaged ring by separating its bevelled ends,
 - Fit a new ring on the distributor keeping the bevelled ends abutted (to shape the seal).
- If paint leaks from the needle once the trigger has been released, or if the gold-coloured pointed tip of the needle is damaged, proceed as follows:
 - Unscrew the plastic nut (25),
 - Unscrew the needle (24) from the delay box (27),
 - Fit a new needle,
 - Adjust the length of the needle (between 175.5 and 176 mm, see figure above) by screwing it into the delay box,
 - Tighten the plastic lock nut (25).

11.7.3. Reassembly and Adjustment



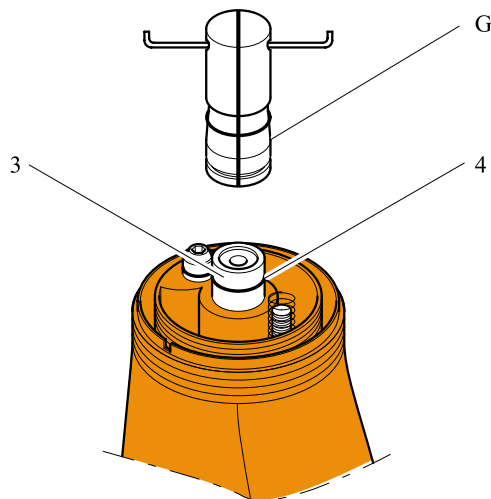
WARNING : Needle is an emergency part, which must be replaced within 1 year under normal operating conditions.

- Apply a thin film of H1GMIN017 grease to the distributor and its seals and along the entire length of the needle.
- Position the needle assembly in its housing. Push the needle assembly in the axis of the atomizer, ensuring that the bevelled ends of the distributor seals are in contact with each other.
- Tighten the needle assembly using the adjustment lever (35) and tighten the nut (36) located behind the lever.
- Adjust the paint flow rate setting button (37) ([see § 9.1.4 page 16](#)).

11.8. Seal Packing Assembly

11.8.1. Disassembly

- Remove the atomizer air cap, nozzle support and needle assembly ([see § 11.1 page 18](#), [see § 11.6 page 22](#) and [see § 11.7 page 23](#)).
- Place tool (G) ([see § 13.7 page 49](#)) on the seal packing assembly (3), making sure that the O-ring (4) of the assembly fits correctly into the housing on the tool that is provided for the purpose. If tool (G) is not available, use an alligator clip to remove the assembly.
- Pull the tool parallel to the axis of the atomizer to remove the assembly.



3	Seal packing assembly
4	O-ring

DES00537

11.8.2. Reassembly

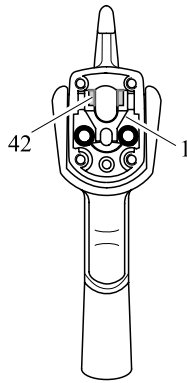
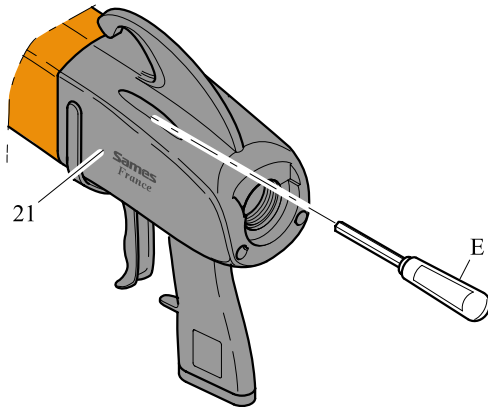
- Remove all traces of glue from the central housing of the gun. Clean and degrease the bonding surfaces of the new seal packing assembly and the central housing of the gun using a grease-free diluting agent, taking care to prevent any diluting agent from entering the interior of the gun. Dry these areas with compressed air.
- Use LOCTITE DP 460 to glue the seal packing assembly into the central housing on the front part of the gun. Apply the glue to the central housing of the gun over a length of 12 mm (i.e. down to the inside chamfer).
- Slide the new seal packing assembly into the central housing by hand until it presses against the inside chamfer of the central housing. The O-ring (4) of the seal packing assembly must be placed towards the front of the atomizer and must remain visible after the new assembly has been fitted.
- Remove any excess glue with a cloth.
- Leave to dry for approximately 8 hours.

This gluing operation must be carried out with great care.

- Refit the nozzle support, needle assembly and atomizer air cap ([see § 11.7 page 23](#), [see § 11.6 page 22](#) and [see § 11.1 page 18](#)).
- Press the trigger several times and make sure that nothing abnormal happens.

11.9. Accessing the Inside of the Atomizer

11.9.1. Disassembly



- Remove the atomizer air cap, nozzle support and needle assembly ([see § 11.1 page 18](#), [see § 11.6 page 22](#) and [see § 11.7 page 23](#)).

- Remove the 4 screws (45) located behind the plugs on the handle using the 3-mm hexagonal wrench (E) ([see § 13.7 page 49](#)). Take care not to lose the washers and the seals.

- Separate the handle (21) from the gun by exerting a slight force on these two parts.

- Check the condition of the O-ring (9) located at the rear of the gun, which provides the seal between the handle and the gun. If necessary, remove it by dislodging it then sliding it along the outer surface of the gun. Remove the seal via the front of the gun (nozzle side). Carefully clean the O-ring housing. Replace the ring if necessary.

- Check the correct location and condition of the stirrup guard (42) on top of the stirrup. There must be no signs of damage (cracks, breaks, soiling) on the two parts fitted on the trigger pin. If necessary, replace the stirrup guard or clean it with a grease-free solvent.

- To replace (or remove) the stirrup guard (42), proceed as follows:

- Use a screwdriver to separate one of the two parts of the guard on the top of the trigger pin. The guard is flexible and bends when it is moved towards the trigger pin.

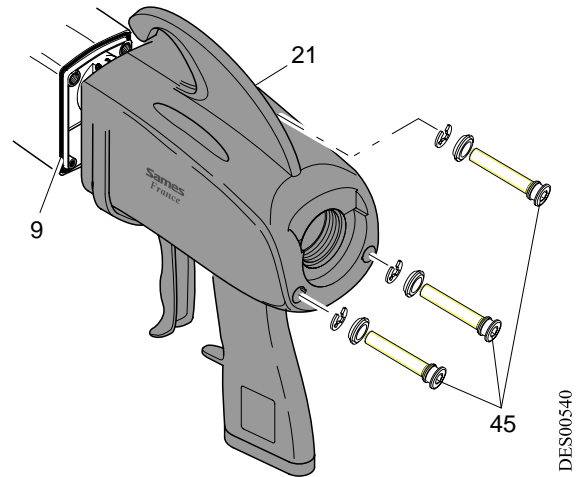
- Pull the stirrup guard towards the front of the handle

to remove it completely.

- Fit a new guard, first fitting one of the two parts of the guard on the trigger pin. Note: Make sure the parts are fitted the right way round, as the guard is not symmetrical.
- Fit the second part of the guard by squeezing it.
- Push the guard fully into place on the stirrup.
- Press the trigger and make sure that the guard remains in place.

11.9.2. Reassembly

9	O-ring - Viton
21	Handle
45	Special screw with seal



- Fit the gun onto the handle (21).
- Tighten the four screws (45) with seals and washers:
 - check that the seal is correctly located. Do not tighten excessively.



WARNING : For any operation of assembly or cleaning, ensure that the special screws (item 45) location are clean.

- Check that the inside of the atomizer is air-tight: Connect a supply of compressed air at 6 bar. If air leakage is detected at the lower screw holes, check ([see § 13.1 page 42](#))
 - the air-tightness of the air seal (30),
 - the air-tightness of seals (31) and (32),
 - the air-tightness of seal (18),
 - the air-tightness of seals (17) and (20),
 - the air-tightness of seal (4),
 - the air-tightness of the special washers (7).



This inspection is essential in order to guarantee the safety of personnel.

- Refit the nozzle support, needle assembly and atomizer air cap ([see § 11.7 page 23](#), [see § 11.6 page 22](#) and [see § 11.1 page 18](#)).

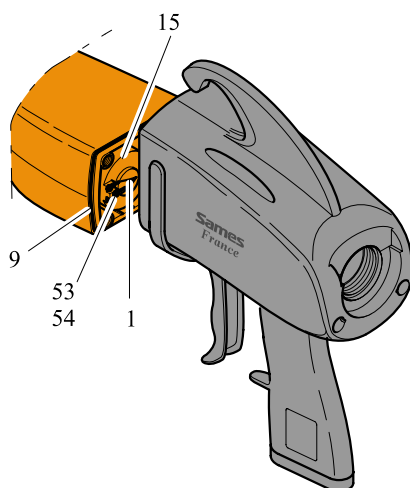
11.10. High Voltage Unit



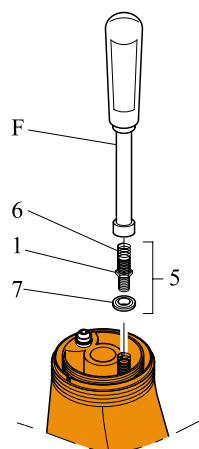
For trained personnel only.

11.10.1. Disassembly

- Accessing the inside of the atomizer ([see § 11.9 page 26](#)).
- Remove the high-voltage contact (5) using the socket wrench (F) ([see § 13.7 page 49](#)). Take care not to lose the sealing washer (7) on the high-voltage contact.
- Twist the gun 1/4 turn around its axis to gain access to the electrical connections in the high-voltage unit (15).



DES00541



DES00542

• Identify the position of the power supply terminals of the high-voltage unit with respect to the gun. Unscrew the 3 screws (53) connecting the 3 wires (blue, white and red) of the high voltage unit power supply. Remove the 3 fan lock washers (54) from the screws, then dislodge the terminals from the unit. ([see § 11.6.2 page 23](#)).

• Thread a 2 mm diameter rod through the hole in the high-voltage contact located at the front of the gun. Push the high-voltage unit out through the rear of the gun (do this gently).

5	High-voltage contact
6	High voltage contact spring
7	Sealing washer
9	O-ring - Viton
15	High voltage unit
53	Screw, C M 2 x 4, galvanised steel
54	Washer, AZ2, galvanised steel



Take care not to drop the high voltage unit as it is fragile and could break. A damaged unit is liable to result in equipment damage or malfunction.

- Check the cleanliness of the surface of the high voltage unit: It must be perfectly clean. If it is not (traces of paint and diluting agent), the source of liquids entering the atomizer must be found and remedied before reassembling the atomizer.
- If the surface of the unit has traces of paint or diluting agent, they must be removed. Use a cloth soaked in grease-free diluting agent (aromatic, aliphatic without alcohol, polyalcohol or ketone) and rub the surface of the unit.

There are four possible reasons for liquids entering the inside of the atomizer:

- Atomizer not properly sealed. In this case, replace:
 - The O-ring (9) between the handle and the gun,
 - Seals (20) and (59) on the separator ([see § 11.13 page 32](#)).
 - Seal (18) at the rear of the distributor support ([see § 11.15 page 34](#)),
 - The two sealing washers (46) under the screws securing the handle to the gun ([see § 11.9 page 26](#)),
 - The sealing washer (7) on the high-voltage contact.
 - Make sure that the seal packing assembly is correctly glued ([see § 11.8 page 25](#)) and check the state of its O-ring (4).
 - Check that the paint union (11) is properly tightened on the gun and check the condition of its O-ring (4) ([see § 11.11 page 30](#)).
 - If the plastic paint hose is damaged or electrically holed, replace it ([see § 11.14 page 33](#)).
- Poor sealing (inside the gun) of the paint union (union (11') + compression ring (12')) + O-ring (4) + nut (14')); if this is the case, replace all components ([see § 11.12 page 31](#)).
- Poor sealing of the compression ring (72') fitted on the plastic paint hose, between the separator and the paint union located under the separator (70'). Replace this compression ring.

If the high-voltage unit has traces of paint or diluting agent on it, they must be removed. Use a cloth soaked in grease-free diluting agent (aromatic, aliphatic without alcohol, polyalcohol or ketone) and rub the surface of the unit.



The unit must never be soaked in the diluting agent.

- Dry the surface of the unit immediately using clean, dry compressed air.
- Check that there are no cracks or black marks on the surface of the unit. If necessary, replace it.

11.10.2. Reassembly

- Apply a thin film of H1GMIN017 grease over the whole surface of the high-voltage unit (15).
- Push the unit (15) (gently) all the way home into the upper housing of the gun with the 3 electrical connection terminals facing upwards and towards the rear of the gun.
- Refit the high-voltage contact at the front of the gun, after first fitting a new sealing washer (7) on the screw. Make sure that the contact spring at the front of the atomizer is in good condition (not broken or deformed).



It is essential to fit a sealing washer and a high-voltage contact fitted with its original spring; the safety of the equipment depends on this.

- Connect the 3 wires (blue, white and red) to the pins on the unit (15), taking care to fit 3 new fan washers (54) between the screw heads and the terminals (see figure below).

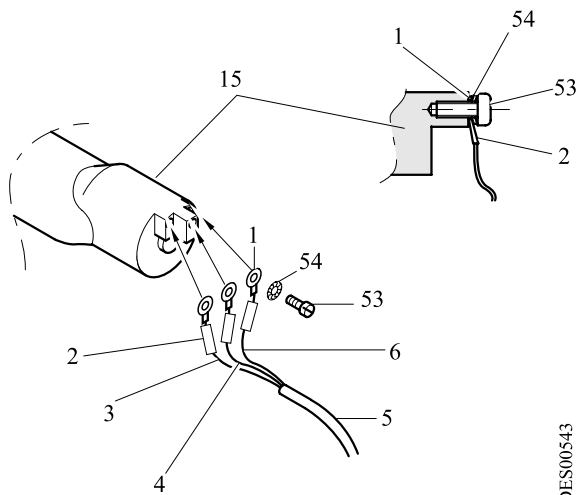


It is essential:

- To fit new fan washers (54),
- To use cable end-pieces with their terminals, their black sheath and their original screw (53),
- To angle the three terminals towards the bottom of the unit (15) without bending or twisting them.

This is to avoid safety risks and prevent possible damage to the equipment.

- Check that the two seals (17) are fitted on the air ducts of the distributor support in the handle.
- Turn the gun by a quarter turn so that it faces the handle. Refit the gun on the handle ([see § 11.9 page 26](#)).

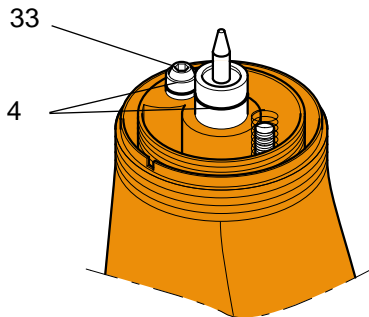


1	Terminal
2	Black sheath, length 10 mm
3	White wire
4	Blue wire
5	Low-voltage cable
6	Red wire
15	High-voltage unit
42	Stirrup guard
53	Screw, C M 2 x 4, galvanised steel
54	Fan washer, AZ2, galvanised steel

DES00543

11.11. O-ring of the gun's paint union

Note: The union (11) does not have to be removed when replacing the O-ring (4).



DES00545

11.11.1. Disassembly

- Remove the atomizer air cap and the nozzle support ([see § 11.1 page 18](#) and [see § 11.6 page 22](#)).
- Extract the O-ring (4) using a screwdriver. Take care not to damage the end part of the paint union during this operation.

11.11.2. Reassembly

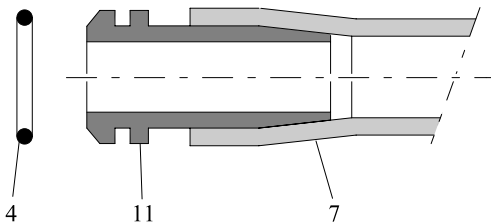
- Fit a new O-ring (4) on the union (11), then tighten the nozzle support with its nut ([see § 11.6.2 page 23](#)) by hand.
- Tighten the nozzle support using tool (D) ([see § 13.7 page 49](#)) with moderation. Refit the nozzle if necessary. Do not fit the atomizer air cap.
- Check the air-tightness of the O-ring: With the **GNM 100** control module switched off, inject water into the atomizer at 6 bar. When the trigger is released, there must be no water leakage around the nozzle nut at the front of the gun.
- Refit the atomizer air cap ([see § 11.1 page 18](#)).

11.12. Gun Paint Union



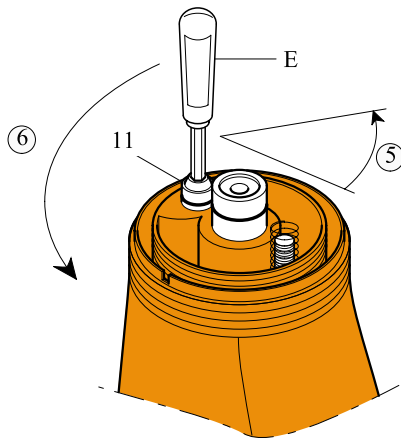
For trained personnel only.

11.12.1. Disassembly



DES00773

- Remove the O-ring (4) from the gun's paint union (11) ([see § 11.11.1 page 30](#)).
- Insert tool (E) into the paint union (11) via the front of the gun and unscrew the union.
- If necessary, unscrew the nut (14) on the union in order to gain access to the sealing compression ring (12).
- If necessary, clean the hole through which the union is fitted and the gun thread with a cloth soaked in diluting agent. Dry the surfaces with compressed air.



DES00546

4	O-ring - chemically inert
7	Plastic paint hose
11	Paint union (without seal)

11.12.2. Reassembly

- Carry out the disassembly procedure in reverse order. When fitting the union to the gun, do not apply excessive torque. The union must nevertheless be securely screwed to the gun using tool (E) ([see § 13.7 page 49](#)).

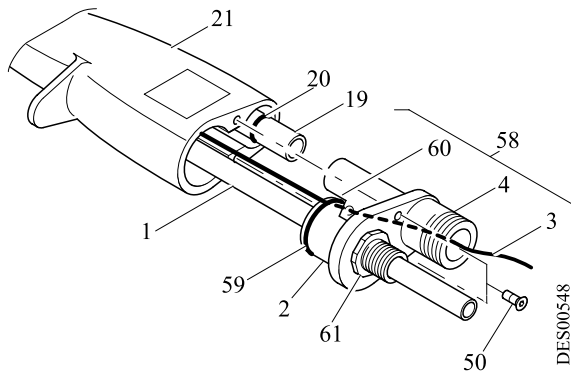
11.13. Separator



For trained personnel only.

11.13.1. Disassembly

- Remove the air/low-voltage hose located under the handle using tool (I) ([see § 13.7 page 49](#)).
- Remove the elastomer paint hose ([see § 11.16 page 37](#)).
- Remove the paint union from the gun ([see § 11.12 page 31](#)).
- Remove the two screws (50) securing the separator (58) to the handle (21), using a 2-mm hexagonal wrench.



19	Air duct
20	O-ring - Viton
50	18-10 stainless steel screw, F/90 Hc M 3 x 10
58	Air/low-voltage separator comprising parts 50, 59, 60, 61 and the paint and air end-pieces
59	O-ring - Viton
60	O-ring - Viton
61	Paint end-piece nut

- Pull the separator to dislodge it from the handle until mechanical resistance is felt in the cable (cable taut). Do not exert excessive force during this operation. The air duct (19 - [see § 13.1 page 42](#)) located in the housing on the rear side of the handle will be extracted during this operation.
- Check the condition of the seal (59) on the metal paint end-piece of the separator. If necessary, replace it by removing the plastic paint hose from the separator ([see § 11.14 page 33](#)).
- The O-ring (20 - [see § 13.1 page 42](#)) is located inside the handle. It is not visible when the separator is removed from the handle.

11.13.2. Reassembly

- Make sure that the seal (20 - [see § 13.1 page 42](#)) is in place around the air duct.
- Fit the air duct into the separator and then fit the separator into the handle.
- Tighten the two screws (50) securing the separator under the handle.
- Fit the paint union to the gun ([see § 11.12 page 31](#)).

11.14. Plastic Paint Hose



WARNING : For trained personnel only. Refer to the safety instructions provided [see § 1 page 6](#).

11.14.1. Disassembly

- Remove the paint inlet union (79').
- Cut the plastic paint hose (83') and remove the nut.
- Remove the paint union from the gun ([see § 11.12 page 31](#)).
- Unscrew the nut on the plastic hose (14') and remove the sleeve (130) and the O-ring (131) ([see § 11.12 page 31](#)).
- Remove the compression ring (12') ([see § 11.12 page 31](#)).
- Remove the 8-metre elastomer paint hose (77):
 - Using a knife, remove the heat-shrinkable sheath (132),
 - Holding the nut (75) under the separator (J) in place with a 17 mm wrench, unscrew the union (85') located under the separator,
 - Twist the elastomer hose during this operation.
 - Remove the elastomer hose (77) from the plastic paint hose (83').
- Remove the plastic paint hose (83').

11.14.2. Reassembly

- Prepare a 9.3-metre plastic paint hose (83').
- Cover the hose with a 100 mm heat-shrinkable sheath (132) using a hair-dryer, centred at 1050 mm from one of the ends of the hose (83') inside the elastomer hose.
- Insert the plastic paint hose (83') into the elastomer hose (77).
- Shape 0.3 metres of the plastic paint hose (85') that comes from the union in order to facilitate its passage inside the atomizer.
- Fit a new compression ring (72') to the hose.
- Thread the hose through the separator.
- Fit the paint union nut (14'), a new compression ring (12'), a new O-ring (131) and a new sleeve (130) ([see § 11.12 page 31](#)).
- Screw the nut (14') onto the paint union (10') ([see § 11.12 page 31](#)).
- Fit the paint union (11') onto the gun ([see § 11.12 page 31](#)).
- Connect the high-voltage unit ([see § 11.10 page 28](#)).
- Place the gun on the handle ([see § 11.9 page 26](#)).
- Remove the separator hose (inlet / outlet) (J) to insert it into the atomizer.
- Remove the hose union (85') and replace the hose inside the elastomer hose (77). Make sure that the new compression ring (72') is correctly located between the separator's metal paint union and union (85').
- Holding the nut (75) in place, re-tighten the union (85') on the metal paint union,
- Cover the elastomer hose (77) with a heat-shrinkable sheath 150 mm long; 50 mm to sheath the elastomer hose and 100 mm to sheath the plastic paint hose.
- Place the paint union (79') at the end of the plastic paint hose.
- Connect the union (79') to the paint supply.
- Check for leaks in the unions with water at 90 psi (6 bar), with the control module switched off.

11.15. Distributor Support



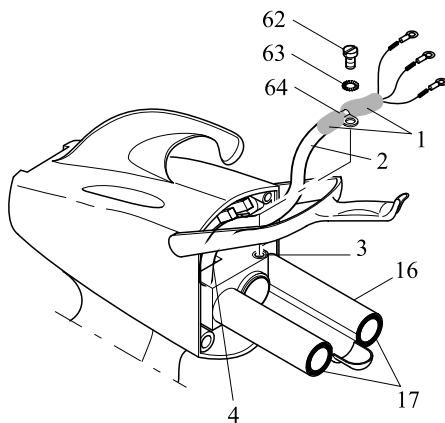
For trained personnel only.

11.15.1. Disassembly

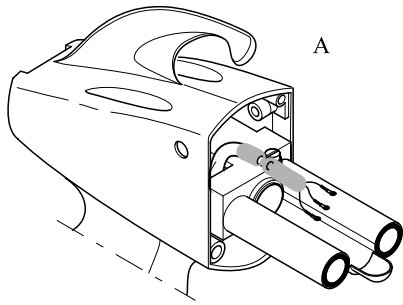
- Disassemble the separator ([see § 11.13 page 32](#)).
- Remove the air duct (19) located in the housing at the rear end of the handle. Use round-nose pliers for this operation. Pull on the duct with the pliers.
- Check the condition of the seal (20) on the duct. Replace it if necessary.
- Lift the trigger of the gun to clear the passage to the distributor support (towards the front of the handle). Pass the paint hose below the trigger fork (see figure below).
- Pull the distributor support (16) fitted in the handle.
- When the cable fastener on the distributor support is accessible, unscrew the screw (62 - [see § 13.1 page 42](#)) and its lock washer (63 - [see § 13.1 page 42](#)).
- Remove the distributor support (16) completely from the handle.
- Check the condition of the rear seal (18) on the distributor support. Replace it if necessary (see figure below).

11.15.2. Reassembly

- Fit the distributor support (16) into the two notches in the handle. The two air supply hoses of the distributor support (16) with their seals (17) must be located on the gun side.
- Secure the cable to the attach tab on the distributor support (64 - [see § 13.1 page 42](#)) Use a new special lock washer (63 - [see § 13.1 page 42](#)) on the attach tab and below the screw head (62 - [see § 13.1 page 42](#)). The screw is screwed into a metal insert on the distributor support. Position the attach tab so that the cable is aligned with the axis of the gun and as close to this axis as possible (see figure below).



DES00549



DES00550

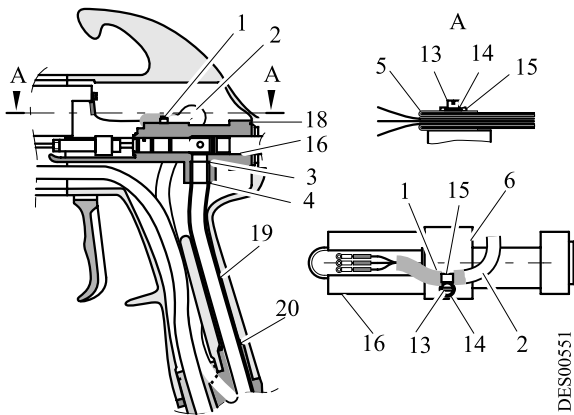
A	View of the distributor support assembled without the trigger
16	Distributor support assembled with seals (17) and (18)
17	O-ring - PC851
18	O-ring - Viton
19	Air duct
20	O-ring - Viton
62	Brass slotted screw, C M 3 x 5
63	Dished spring washer, 3 galvanised steel
64	Attach tab

- Make sure that the attach tab is tightly clamped to the cable shield.



These operations must be carried out with the greatest care. This is to avoid safety risks and prevent possible damage to the equipment.

- Insert the distributor support into the handle without pushing it fully home, making sure that the cable passes freely inside the handle. The cable must be free to move inside the handle.



DES00551

1	Shield pinching
2	Cable
3	Permanently fitted O-ring
4	Housing
5	Shield
6	Shoulder of distributor support
13	Screw
14	Washer
15	Attach tab
18	O-ring - Viton
19	Air duct
20	O-ring - Viton

- Push the distributor support (16) further in until mechanical resistance is felt. Then pull it forward by approximately 1 cm.
- Fit the new air duct (19) from below the handle (rear housing). Push the duct into the distributor support until it is stopped. Once in place, it must fit into the housing on the distributor support that is designed to receive it. An O-ring permanently fitted to the distributor support provides an air seal. At the end of this operation, the air duct must be flush with the bottom of the handle. If this is not the case, the air duct is incorrectly fitted and the operation must be repeated.



This operation must be carried out with the greatest care.

- Push the distributor support fully into the handle.
- Lower the trigger and pass the paint hose through the stirrup fork.
- Refit the separator ([see § 11.13 page 32](#)). Make sure that the seal (20) is correctly fitted.
- Check that the two O-rings (17) are present and in good condition.
- Check that the inside of the gun is airtight:
 - After reassembling the gun, loosen, by two turns, one of the four screws (45), [see § 11.6.2 page 23](#) securing the handle to the gun,
 - Connect an air supply to the gun, at approximately 4 bar, with the control module switched off,
 - Pour a few drops of soapy water into the housing of the screw that was unscrewed (in the handle),
 - No bubbles must form in the soapy water. If bubbles are observed, check:
 - The air duct (19), and the condition of seal (20),
 - The condition of the distributor rings (31 and 32, [see § 11.7 page 23](#)),
 - The tightness of the distributor packing nut (29, [see § 11.7 page 23](#)),
 - The condition of the two seals on the distributor support (17),
 - The condition of the rear seal on the distributor support (18).
 - If no leaks are detected, re-tighten the screw.



This operation must be carried out with the greatest care.

11.16. Elastomer Paint Hose

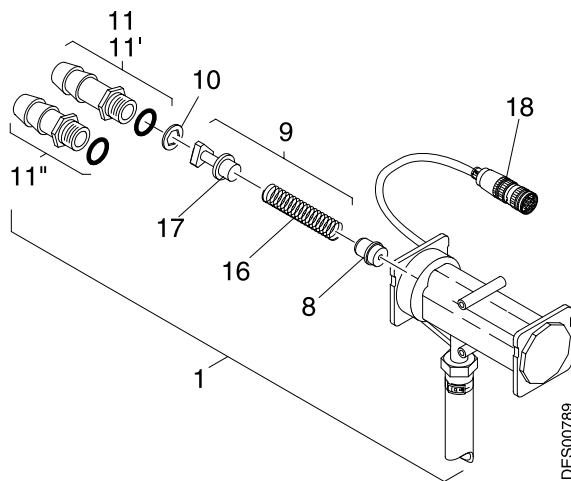
Proceed as follows to replace the 8-metre elastomer hose protecting the plastic paint hose:

- Remove the paint inlet union (79').
- Cut the plastic paint hose (83') flush with the nut.
- Unscrew the nut on the union.
- With a knife, remove the heat-shrinkable sheath (132) from the elastomer hose only. Be careful not to cut the plastic paint hose.
- Remove the collar (73) from the union (85').
- Remove the elastomer hose (77) from the union (85') and from the plastic paint hose (83').
- Prepare the ground braids embedded in the wall of the new elastomer hose; strip and twist a 15 mm length at each end of the hose (77).
- Adapt the length of the new hose (77) exactly to the length of the hose that was removed.
- Fit the hose (77) over the plastic paint tube as far as the handle. Do not forget to locate the small collar (76) below the union (85') before sliding on the hose (77).
- Secure the hose (77) to the assembly (85'). One of the ground braids must be in contact with the union inside the hose, the other must be in contact below the small collar (76) and on the outer surface of the hose.
- Fit the collar (H) to the hose, tightening the braid and the hose onto the union (85').
- At the other end of the elastomer hose, cover the elastomer hose (77) with a heat-shrinkable sheath 150 mm long, 50 mm to sheath the elastomer hose and 100 mm to sheath the plastic paint hose.
- Place the paint union (79') at the end of the plastic paint hose.
- Connect the union (79') to the paint supply.
- Check for leaks in the different unions with water at 90 psi (6 bar), with the control module switched off.

11.17. Maintenance of the Flow Control Contact

- Remove the grooved union (11), (11') or (11'') using a 21-mm flat wrench.
- Remove the stop (10) using an 8-mm hexagonal wrench.
- Pull out the piston (17) - spring (16) - damper (8) assembly.
- Check the condition of the piston, spring and damper, replace them if necessary.

Note: There is no need to lubricate or grease the piston for it to operate.



1	Flow control contact assembly
8	Damper
9	Spring assembly
10	Stop
11	3/8" BSP grooved union with seal for a hose with an internal diameter of 12 mm
11'	3/8" BSP grooved union with seal for a hose with an internal diameter of 8 mm
11''	3/8" BSP grooved union with seal

11.17.1. Disassembly

- Disconnect the connector (18) at the rear of the **GNM 100** (refer to the user manual for the **GNM 100** - [see RT Nr 6209](#)).
- Disconnect the air hose ([see § 11.16 page 37](#)).

11.17.2. Reassembly

- Place the damper (8) at the bottom of the piston housing. The elastomer section must be facing towards the air inlet.
- Fit the piston (17) equipped with the spring (16). The spring is fitted centrally on the piston and held in place by a ridge with the same diameter. When fitting the piston, the conical section must be facing towards the air inlet.
- Screw the stop (10) fully home, tightening it slightly. Check that the piston moves easily when it is actuated by a rod passed through the stop (10).
- Refit the air inlet union (11), (11') or (11'') complete with its seal.
- Connect the flow control contact to the **GNM 100** (refer to the user manual for the **GNM 100**. [see RT Nr 6209](#)) Check the correct electrical operation of the flow control contact:
 - Switch off the paint supply;
 - Supply air to the gun (at a minimum of 2 bar);
 - Start up the **GNM 100** control module with a high voltage setpoint of 0 kV;
 - Operate the trigger on the gun: The "high voltage on" lamp on the **GNM 100** ([see RT Nr 6209](#)) must light up with a maximum delay of 0.5 seconds (after pressing the trigger);
 - Release the trigger: The lamp should go out after a maximum delay of 0.5 seconds;
 - There must be no air leakage on the flow control contact.

11.18. Trigger

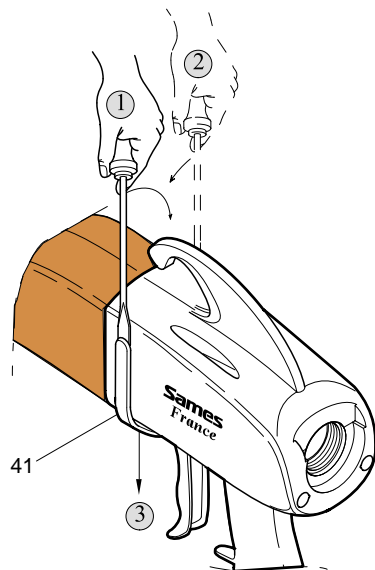
11.18.1. Disassembly

- Slide a wide-bladed screwdriver under one of the two hinges (keeping it in contact with the handle), and lever it against the trigger in order to dislodge the hinge (see steps 1 and 2 in the figure below).
- Pull the trigger towards the base of the gun to remove it completely (see step 3).

11.18.2. Reassembly

- Carry out the operations in reverse order, ensuring that the two 6-sided inserts of the trigger are securely located on the hexagonal rods of the handle.

Note: A special tool is required to remove the hexagonal rods and the trigger stirrup inside the handle. If necessary, replace the assembly comprising the handle, the rods fitted with their bearing and seals and the trigger stirrup (assembled parts) ([see § 11.19 page 39](#)).



41	2-finger trigger
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DES00556

11.19. Handle Assembly



For trained personnel only.

11.19.1. Disassembly

- Remove the trigger ([see § 11.18 page 38](#)).
- Remove the paint union from the gun.
- Remove the distributor support ([see § 11.15 page 34](#)).
- Pull on the separator to remove the plastic paint hose from the handle.

11.19.2. Reassembly

Note: It is advisable to replace the plastic paint hose at the same time. ([see § 11.14 page 33](#)).

- Carry out the disassembly procedure in reverse order.

11.20. Seal Packing Assembly and O-rings



For trained personnel only.

11.20.1. Disassembly

- Remove the paint union from the gun ([see § 11.12 page 31](#)).
- Remove the high-voltage unit ([see § 11.10 page 28](#)) and check its condition.

11.20.2. Reassembly

- Carry out the disassembly procedure in reverse order.

11.21. Replacement of the Air / Low-Voltage Hose

If the gun is installed on a **CPH 600**, when the air / low voltage hose and the flow control contact (1) are replaced, the sleeve (14) is fitted using three-nosed pliers and soapy water from the end of the hose that screws onto the gun. It must be located on the hose in such a way as to be clamped by the stuffing box on the **CPH 600**.

12. Common Faults

Symptoms	Possible causes	Corrective action
The paint flow to the gun nozzle is very slow or has stopped completely.	Insufficient air pressure in the pressure tank or the diaphragm pump.	Increase the air pressure.
	Leak under the pressure tank cover.	Tighten the cover. Replace the cover seal if necessary.
	Paint viscosity too high.	Add water to reduce the viscosity.
	Injector clogged.	Cut off the paint supply to the gun. Remove the air cap. Remove the nozzle and clean it using a brush and diluting agent. If necessary, remove and clean the diffuser (round spray only).
	Diaphragm pump clogged.	Flush the supply air from the pump and re-prime it.
	Pressure tank filter or diaphragm pump filter clogged.	Clean it.
	Incorrect adjustment of the length of the needle assembly.	Check the settings (see § 9.1.4 page 16 and see § 11.7 page 23).
	Paint hose clogged.	Check the paint hose. Replace it if necessary.
Paint comes out in spurts.	Paint flow rate too low.	Increase the flow rate by adjusting the air pressure in the pressure tank or diaphragm pump.
	Air in the paint supply hose.	Flush the hose by pressing the trigger.
	Paint level too low in the pressure tank or paint container.	Refill it.
Paint flows out continuously.	Foreign body preventing closure of the needle.	Remove the nozzle support (see § 11.6 page 22). Clean the nozzle and the tip of the needle.
	Damaged needle.	Replace the needle and, if necessary, the nozzle support.
	Damaged nozzle support.	Replace it.
	Incorrect adjustment of the length of the needle.	Check the settings (see § 9.1.4 page 16 and see § 11.7 page 23).
The air cap becomes soiled very quickly.	Paint not suitable.	Check the viscosity characteristics of the paint (see § 5 page 11).
	Incorrect air/paint balance.	Re-adjust (see § 9.1.5 page 16).
	Paint has run and clogged the air outlet holes in the air cap.	Remove the cap and clean the end of the gun using a fine brush and a diluting agent.
Air leak at the rear of the handle.	Internal air leak.	Carry out the necessary checks (see § 11.6.2 page 23).

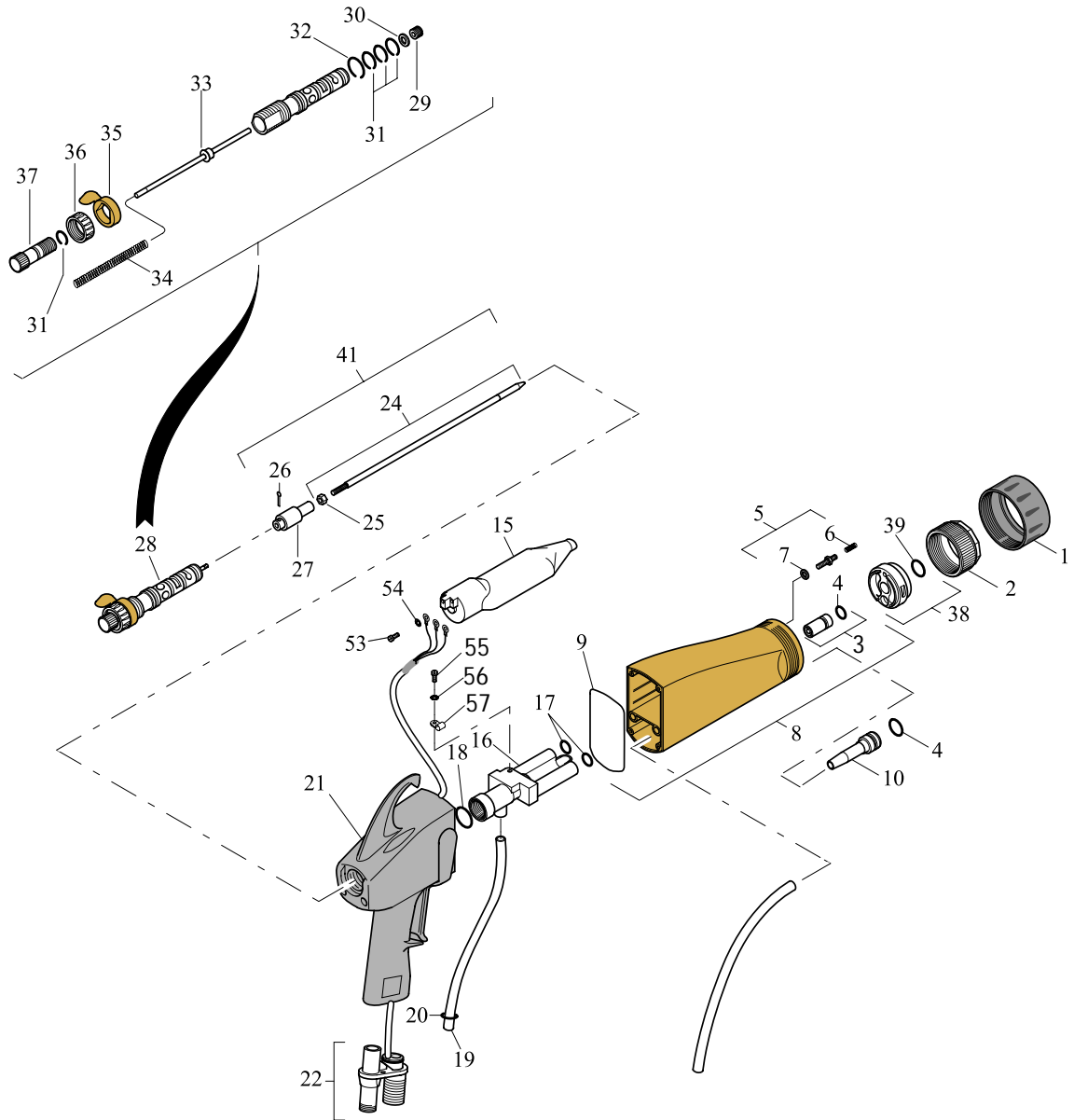
Incorrect atomization and pattern.	Air leaks between the atomizing air chamber and the fan air (or vortex air) chamber.	Unclog the holes in the fan spray cap. Clean the nozzle. Re-tighten the air cap nut.
There is no high voltage at the gun (1) and the control module is operating normally.	The GNM 100 is incorrectly adjusted.	Check the adjustments of the GNM 100 (refer to the user manual for the GNM 100 - see RT Nr 6209).
	Check the operation of the flow control contact.	see § 11.17 page 37 .
	Short circuit in the paint supply system.	Check the paint supply system (CPH 600).
No electrostatic wrap-around effect.	Atomizing air pressure too high.	Reduce the pressure.
	Irregularity in the paint supply system.	See the manual for the CPH 600 see RT Nr 6332 .



The voltage appears normally at the end of the gun only if the trigger is pressed: The atomizing air must leave the cap in order to start up the control module.

13. Spare Parts

13.1. MIV 6600 W atomizer

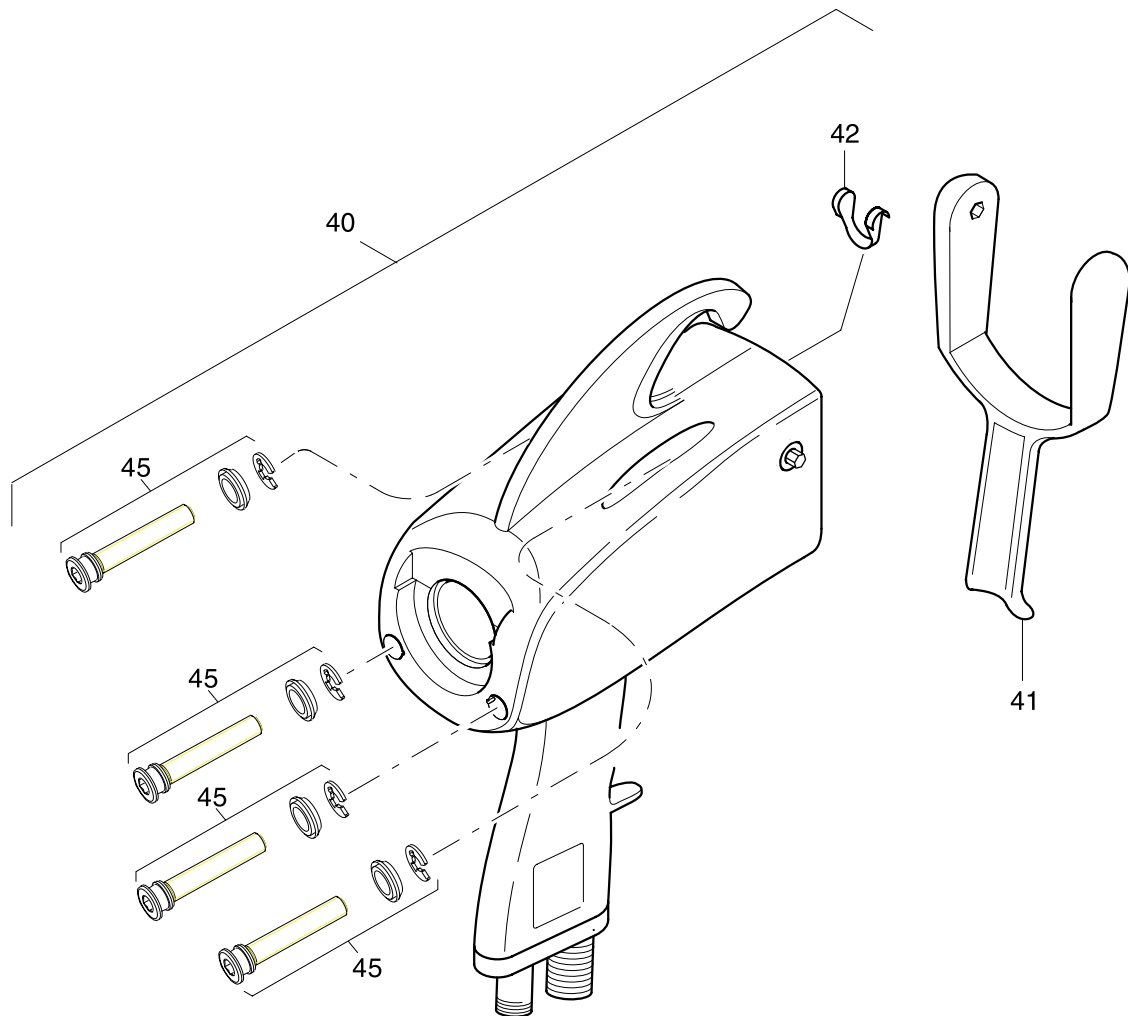


DES00564

Item	Part number	Description	Qty	Unit of sale
1	548007	Air cap nut	1	1
2	739302	Nozzle nut	1	1
3	745529	Seal packing assembly (with O-ring (4))	1	1
4	J3STKL005	O-ring - chemically inert	2	1
5	1407354	Complete high-voltage contact	1	1
6	640113	Spring	1	10
7	J2CRAN031	Sealing washer	1	10
8	1515290	Gun and seal packing assembly and O-rings, Round and Fan versions	1	1
9	J2FTDF472	O-ring - Viton	1	1
10	1402720	Gun paint union	1	1
15	1508783	High-voltage unit	1	1
16	737619	Distributor support fitted with seals (17) and (18)	1	1
17	J2CTCN436	O-ring - EPDM	1	1
18	J2FTDF248	O-ring - Viton	2	10
19	1407356	Air duct	1	1
20	J2FTDF121	O-ring - Viton	1	1
21	see § 13.2 page 44	Handle assembly	1	1
22	1302958	Air / low-voltage separator assembly	1	1
24	1515326	Needle + nylon nut*	1	1
25	X9NEHU003	Nylon nut, H M 3	1	1
26	X4CGFN001	Pin	1	1
27	744642	Delay box	1	1
28	737621	Round spray distributor assembly	1	1
	737620	Conventional fan spray distributor	1	1
29	313881	Packing nut	1	5
30	313882	Air seal	1	5
31	313886	Small ring	4	6
32	313887	Large ring	1	2
33	744237	Air needle	1	1
34	744000	Needle spring	1	2
35	548025	Air adjustment lever	1	1
36	548024	Distributor nut	1	1
37	549983	Lever nut	1	1
38	1406307	Nozzle support with O-ring (39)*	1	1
39	J2FENV094	O-ring - FEP	1	1
53	X2BVCB022	Screw, C M 4 x 2, galvanised steel	4	1
54	X2BDVX002	Washer, AZ 2, galvanised steel	4	1
		Air and paint hoses (see § 13.3 page 45)		
55	X7CVCB065	Brass slotted screw, CM 3 x 5	1	1
56	X3DDSP026	Dished spring washer, dia 3, galvanized steel	1	1
57	641554	Attach tab	1	1

Note: * Emergency parts, which must be changed once a year under normal operating conditions (preventive maintenance).

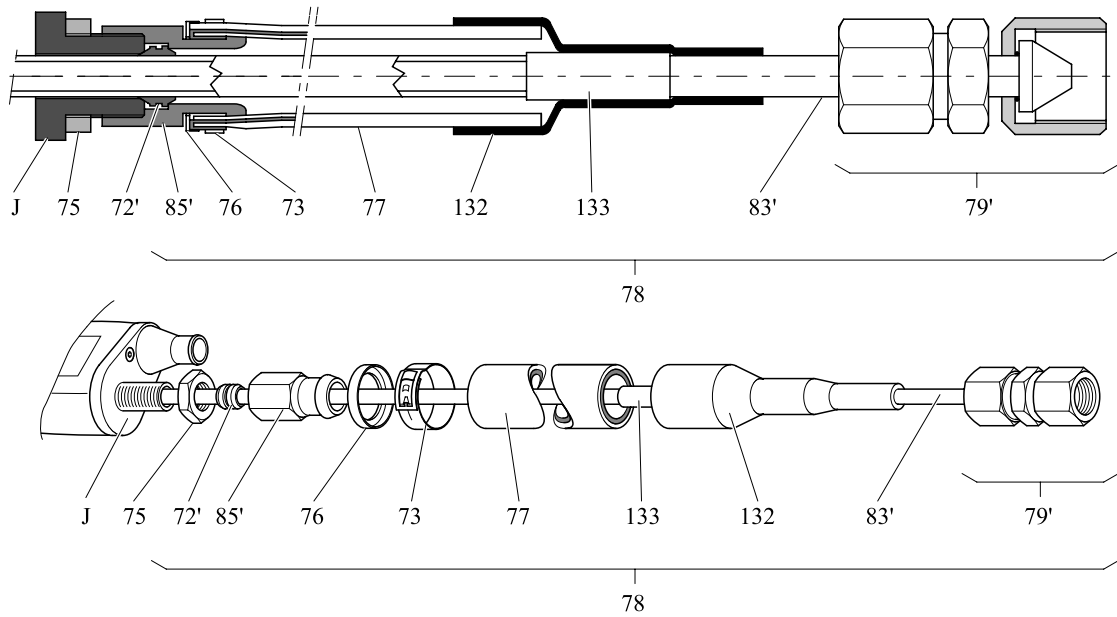
13.2. Handle Assembly



DES00565

Item	Part number	Description	Qty	Unit of sale
40	1515098	2-finger handle assembly		1
41	737257	2-finger trigger	1	1
42	643252	Stirrup guard	1	1
45	1411142	Special screw with seal and washer (set of 4)	4	1

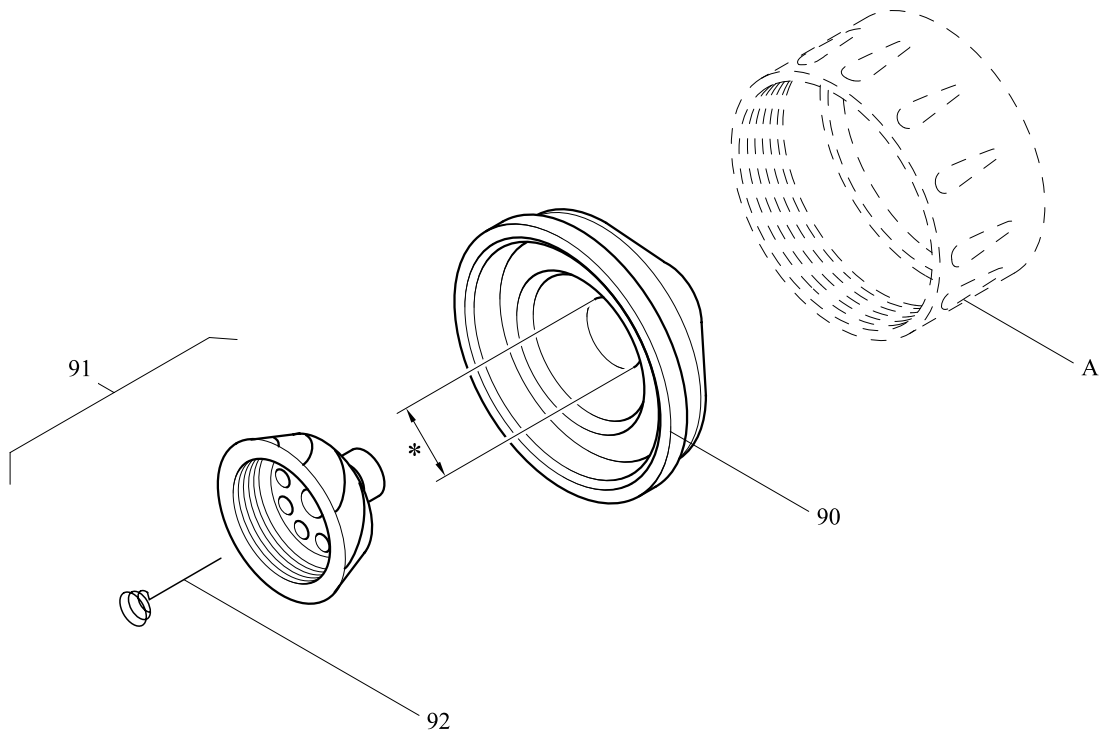
13.3. Paint Hose Assembly



DES00933

Item	Part number	Description	Qty	Unit of sale
72'	1402402	Compression ring	1	5
73	X4ECCV120	Collar	1	10
75	549411	Nut	1	1
76	744017	Small collar	1	1
77	J2CTTL162	Elastomer hose with ground braid	8 m	m
78	1506229	Paint hose assembly, length 9m	1	1
79'	1506317	Swivel fitting, 3/8" NPS	1	1
83'	U1GCBR084	Plastic hose, 5/9 mm	9.3 m	m
85'	1403255	Barbed union, M 14 female	1	1
132	E3GTRC014	Heat-shrinkable sheath	1	m
133	E3GTRC009	Heat-shrinkable sheath	1	m

13.4. Round Spray Nozzles and Air Caps

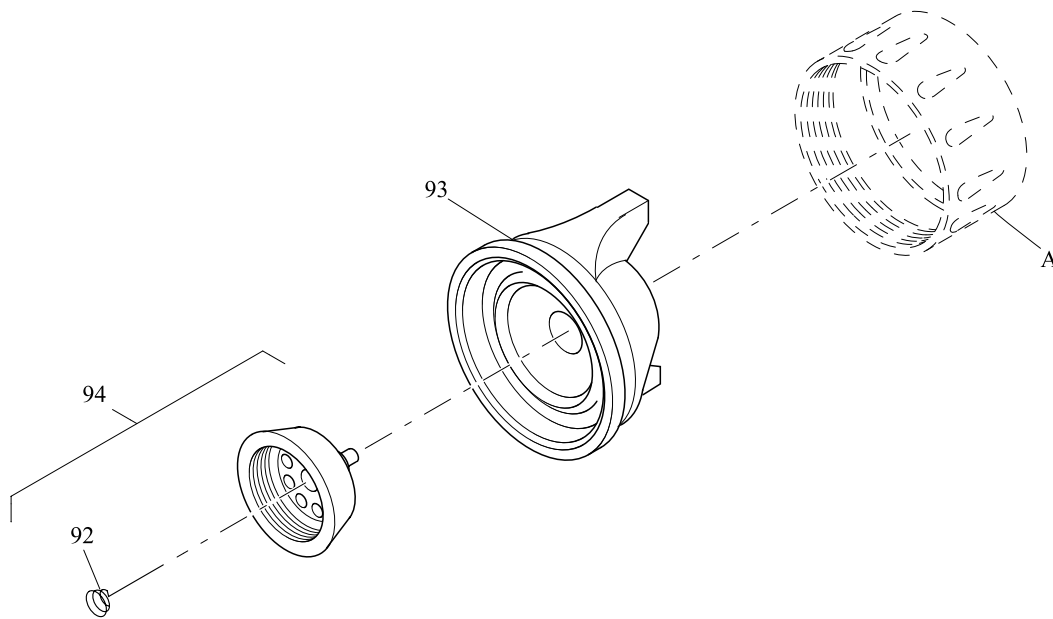


Item	Part number	Description	Qty	Unit of sale
90	1407431	Round air cap, calibre 6 *	1	1
	1406310	Round air cap, calibre 8 *	1	1
	1406507	Round air cap, calibre 12 *	1	1
91	1407430	Round spray nozzle, calibre 6 (with diffuser) *	1	4
	1406309	Round spray nozzle, calibre 8 (with diffuser) *	1	4
	1406506	Round spray nozzle, calibre 12 (with diffuser) *	1	4
92	446028	High-voltage electrode spring	1	5

* The calibre is the approximate diameter in mm of the end section of the nozzle and the central hole of the air cap.

Note: * Emergency parts, which must be replaced within 3 to 6 months under normal operating conditions (preventive maintenance).

13.5. Fan Spray Nozzles and Air Caps

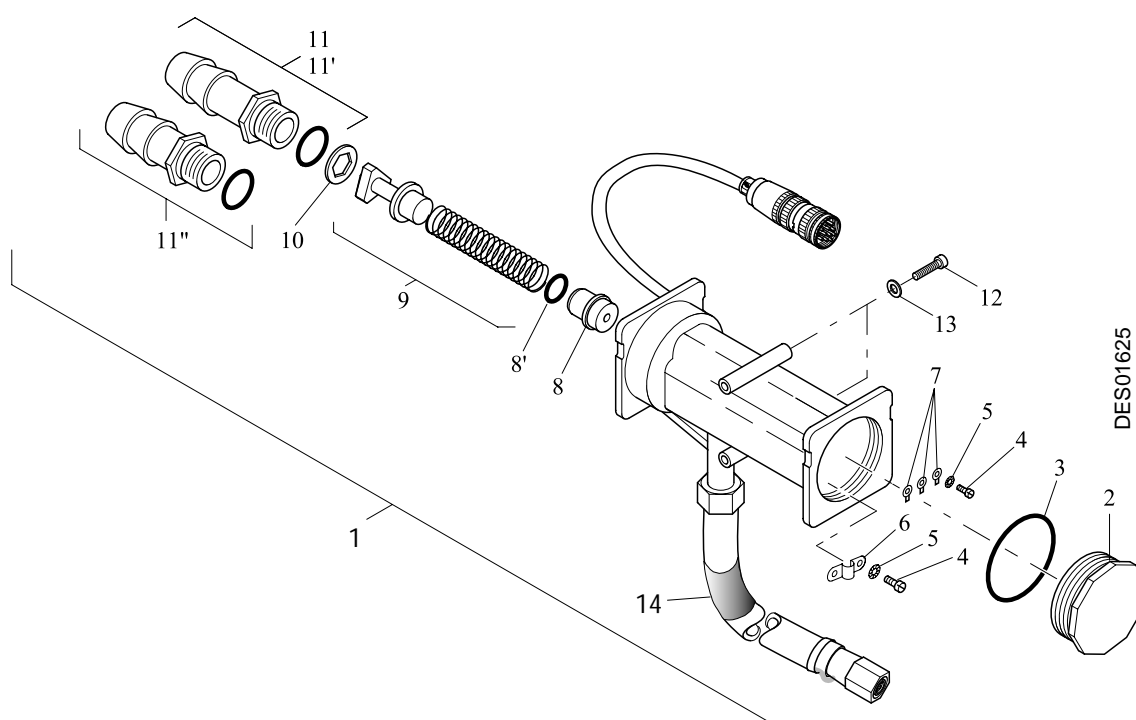


DES00934

Item	Part number	Description	Qty	Unit of sale
92	446028	High-voltage electrode spring	1	5
93	737549	Fan spray air cap, black *	1	1
	1313813	Fan spray air cap, orange *	Option	1
	1313814	Fan spray air cap, white *	Option	1
94	1406402	Standard fan spray nozzle *	1	1
A	see § 13.1 page 42	Air cap nut		

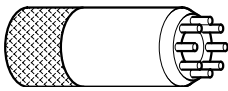
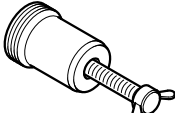
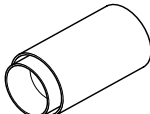
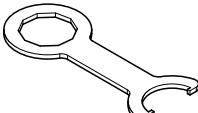

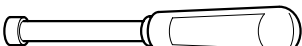
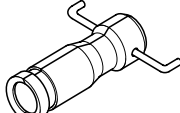
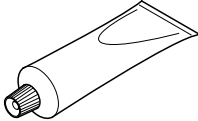
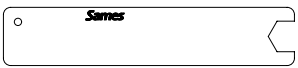
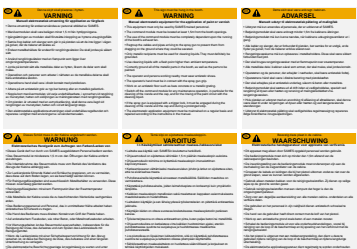
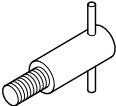
Note: * Emergency parts, which must be replaced within 3 to 6 months under normal operating conditions (preventive maintenance).


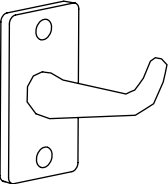

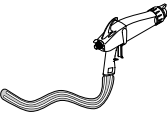
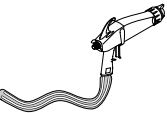
13.6. Flow Control Contact and Air / Low-voltage Hose



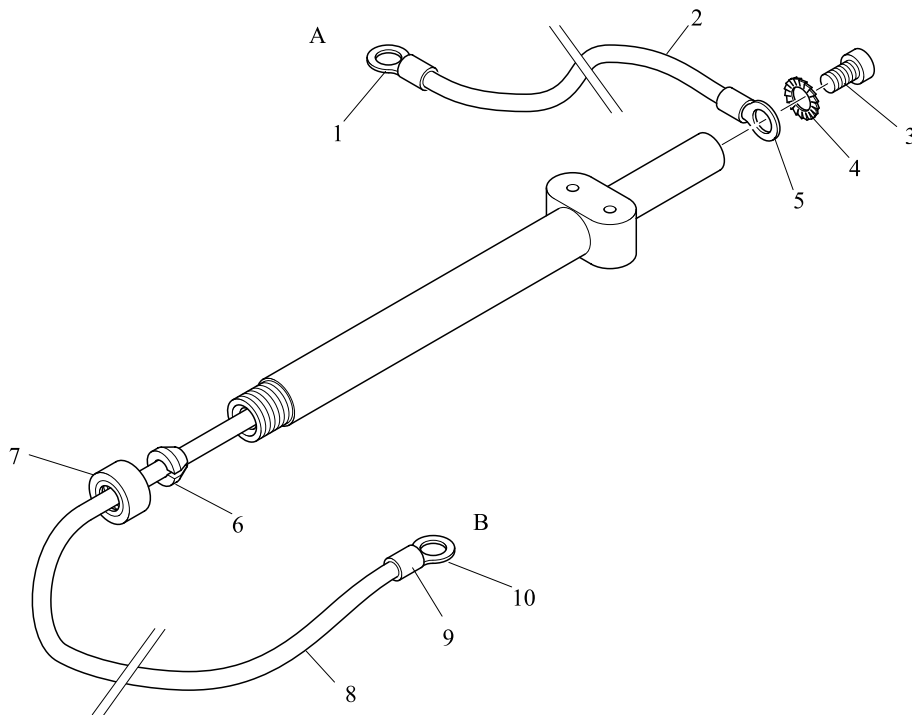
Item	Part number	Description	Qty	Unit of sale
1	1308416	Flow control contact fitted with 9 m-m hose	1	1
2	1402842	Flow control contact plug	1	1
3	J2CTPB305	O-ring - EPDM	1	1
4	X2BVCB023	Screw, C M 2 x 5, galvanised steel	5	1
5	X2BDVX002	Lock washer, AZ 2, galvanised steel	5	1
6	641093	Fastening strip	1	1
7	E4CSSP096	Terminal	3	10
8	742723	Damper	1	1
8'	J2CNRD129	Washer - HP 60	1	1
9	446698	Spring assembly	1	1
10	742456	Stop	1	1
11	F6RLQP292	Grooved union, 3/8" BSP + O-ring for air hose, int. Ø 12 mm	1	1
11'	F6RLQP294	Grooved union, 3/8" BSP + O-ring for air hose, int. Ø 8 mm	1	1
11''	1505717	Grooved union 1/4" NPS with O-ring	1	1
12	X3AVSY128	Screw, CHc M 4 x 45	1	1
13	X2BDMU004	Washer, M 4	1	1
14	E3RSAH025	Sleeve (in case of use with a CPH 600)	1	10

13.7. Tools and Accessories

Item in manual	P/N		Purpose
A	643156	 DES00557	Tool for: - Fitting/removing the nozzle - Fan Spray injector placing tool
B	1402015	 DES00558	Tool for removing Round Spray diffusers
C	444239 003008 003009	 DES00559	Round spray diffuser placing tool, calibre 6, 8 and 12.
D	739837	 DES00560	Wrench for fitting/removing the nozzle support nut and nozzle sup- port.
E	W6CVTC052	 DES00563	Hexagonal wrench, 3 mm.
F	W6CVTB058	 DES00561	Socket wrench for fitting/removing the high-voltage contact.
G	745560	 DES00562	Ring extractor. Option
H	H1GMIN017	 DES00685	Tube of dielectric grease.
I	1306985	 DES00791	Fitting/removal tool for the air /low- voltage hose.
J	1407684	 DES00790	Warning notice.
K	1405914	 DES00592	Plastic hose tapping tool. Option

	E3RSAH025	 DES 1629	Sleeve (in case of use with a CPH 600) see § 13.6 page 48
	324126	 DES01273	Fastening hook. The hook is fixed by 2 screws M6 + 2 washers + 2 nuts, drilled through the side of the booth.
	1202466	 DES01269	Gun cover Option
	B5SHPL052	 DES03781	Protective sheath for air and paint hoses (on request), length: 8 m
	100000041	 DES03781	Protective sheath for air and paint hoses (on request), length: 10 m

13.8. Discharge Resistor



DES00935

A	Connection, ground side
B	Connection, high-voltage / paint circuit side

Item	Part number	Description	Qty	Unit of sale
	1506262	Resistor assembly see § 7.1 page 13	1	
1	E4CSPR080	Terminal	1	10
2	E2AAJF005	Green/yellow cable	3 m	m
3	X3AVSY116	Screw, CHc M 4	1	1
4	X2BDVX004	Washer, M 4	1	1
5	E4CSPR085	Terminal	1	10
6	1403346	Stuffing box sleeve	1	1
7	745383	Stuffing box nut	1	1
8	E2DAXH108	High-voltage cable	1.5 m	m
9	E3GTRC006	Heat-shrinkable sleeve	0.03 m	m
10	E4CSPR161	Terminal	1	10