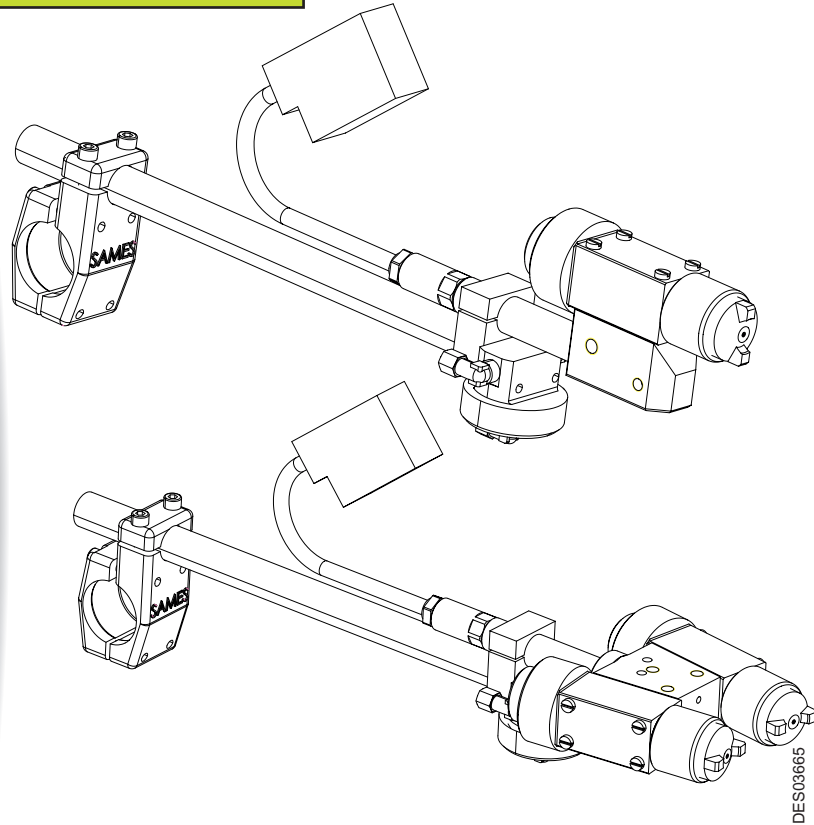




From February 1st, 2017 SAMES Technologies SAS becomes SAMES KREMLIN SAS
A partir du 1/02/17, SAMES Technologies SAS devient SAMES KREMLIN SAS

SAMES  **KREMLIN**



User manual

TRP 501 00 D / TRP 502 00 D with high voltage cable for solventborn paints

FRANCE

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TRP 501 00 D / TRP 502 00 D
with high voltage cable
for solventborn paints

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1. Health and Safety Instructions

This manual contains links to the following user manuals:

- [see RT Nr 7005](#) for the user manual of the TRP 500 spray gun.
- [see RT Nr 7010](#) for the user manual of the UHT 188 EEx e high voltage unit.
- [see RT Nr 7053](#) for the user manual of the UHT 180 EEx e high voltage unit.
- [see RT Nr 6028](#) for the user manual of the paint regulator.
- [see RT Nr 6213](#) for the user manual of the control module GNM 200.

1.1. Configuration of the certified equipment

The whole of these user manuals defines the configuration of the certified equipment.

1.2. Marking on the atomizer

SAMES Meylan France

CE 0080

TRP

P/N : *

ISSeP06ATEX032X**



II 2 G

EEx > 350mJ

(Serial number)

*ATEX TRP 501 00D configurations

| | | | | | | TRP for spraying on wood | | | | | |
|-----------------------------|----------------------|----------------------|------------------------------|--|----------------------------|-----------------------------|----------------------|----------------------|-----------------------------|--|----------------------------|
| Paint regulator P/N: 750016 | TRP 500 - P/N 752949 | TRP 500 - P/N 752991 | UHT 188 EEx e P/N: 910001759 | TRP 501 00D 1 TRP 500 (*) P/N | GNM 200A P/N 1517071 | Paint regulator P/N: 750016 | TRP 500 - P/N 752949 | TRP 500 - P/N 752991 | UHT 180EEx e P/N: 910005035 | TRP 501 00D 1 TRP 500 (*) P/N | GNM 200A P/N 1517071 |
| X | | X | X | 910002928 | X | X | | X | X | 910005916 | X |
| X | | X | X | 910002929 | X | X | | X | X | 910005917 | X |
| X | X | | X | 910002930 | X | X | X | | X | 910005918 | X |

These part numbers are standard equipped with plastic nozzles and caps.

On option, they can be fitted with metal nozzles and caps, but in this case, the atomization exclusion area is different (see page 8).

*ATEX TRP 502 00D configurations

| | | | | | TRP for spraying on wood | | | | | |
|-----------------------------|----------------------|------------------------------|---|----------------------------|--------------------------|-----------------------------|----------------------|-----------------------------|---|----------------------------|
| Paint regulator P/N: 750016 | TRP 500 - P/N 752949 | UHT 188 EEx e P/N: 910001759 | TRP 502 00D 2 TRP 500 (*) P/N | GNM 200A P/N 1517071 | | Paint regulator P/N: 750016 | TRP 500 - P/N 752949 | UHT 180EEx e P/N: 910005035 | TRP 502 00D 2 TRP 500 (*) P/N | GNM 200A P/N 1517071 |
| X | X | X | 910003451 | X | | X | X | X | 910005922 | X |

These part numbers are standard equipped with plastic nozzles and caps.

On option, they can be fitted with metal nozzles and caps, but in this case, the atomization exclusion area is different (see page 8).

** The sign "X" signifies that respecting the safety distance (between the parts of the sprayer that are under high voltage and the grounded parts) mentioned in this user's manual, ensures a safe use of the equipment.

1.3. Precautions for Use

This document contains information that all operators should be aware of and understand before using the **TRP 501** or **TRP 502 00D**. This information highlights situations that could result in serious damage and indicates the precautions that should be taken to avoid them. The equipment must only be used by personnel trained by SAMES Technologies.

1.4. Warnings



WARNING : Safety may be jeopardized if this equipment is not operated, disassembled and reassembled in compliance with the instructions given in this manual and in any European Standard or national safety regulations in force.



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



WARNING :

This equipment has to be used only within areas designed for spraying with respect to EN 50176, EN 50177, EN 50223, or with similar ventilation conditions. The equipment has to be used only within ventilated in order to reduce risks for the health of the operators, fire or explosion. The efficiency of the extraction ventilation system has to be daily checked.

Within explosive atmospheres produced by the spraying process, only appropriate explosion-proof electrical equipment has to be used.

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

The pressurised coating product or the pressurised air must not be directed towards people or animals.

Appropriate measures have to be taken to avoid, during periods when the equipment is not used and/or when the equipment is broken, the presence of potential energy (liquid or air pressure or electric) inside the equipment.

Using individual protection equipment will limit the risks of contact and/or inhalation of toxic product, gas, vapours, fog or dusts that can be produced while using the equipment. The user has to follow the coating product manufacturer's recommendations.

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

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

Only metal containers can be used for cleaning liquids and they must have a reliable ground connection.

Inside the booth it is forbidden to use a naked flame, glowing object or a device likely to produce sparks.

It is also forbidden to store inflammable products, or vessels that have contained them, close to the booth.

The surrounding area must be kept clear and clean.



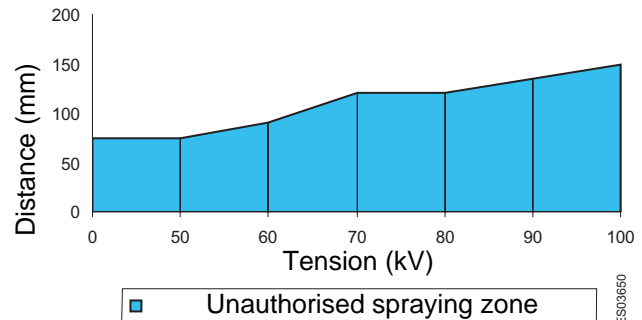
WARNING : The use of very high voltage increases the risk of sparks. SAMES Technologies atomizers and high-voltage electrostatic generators are designed to minimize this risk. Although the HV electrode is the only accessible part, a safety distance of X mm (refer to: Board) has to be maintained between the parts of the sprayer that are under high voltage and all the parts that are grounded.

TRP 501/ 502 00D with high voltage cable, with plastic nozzle and cap, and UHT 188 EEx e or UHT 180 EEx e

Authorised spraying distance

| Tension (kV) | Distance (mm) |
|--------------|---------------|
| 0 | 75 |
| 50 | |
| 60 | 90 |
| 70 | 120 |
| 80 | |
| 90 | 135 |
| 100 | 150 |

"X" safety distance depending on the voltage

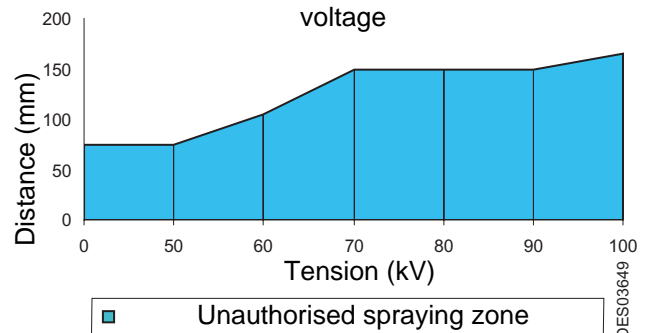


TRP 501/ 502 00D with high voltage cable, with metal nozzle and cap, and UHT 188 EEx e UHT 180 EEx e

Authorised spraying distance

| Tension (kV) | Distance (mm) |
|--------------|---------------|
| 0 | 75 |
| 50 | |
| 60 | 105 |
| 70 | 150 |
| 80 | |
| 90 | 165 |
| 100 | |

"X" safety distance depending on the voltage



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

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

All metal parts of the booth and parts to be painted must be correctly grounded. Ground resistance must be less than or equal to 1 MΩ (minimum measurement voltage 500 V). This must be checked regularly.

Grounding is mandatory for all the conductive envelopes of the electrical equipments and for all the conductive components within explosive atmospheres by conductive connection with the ground terminal.

Finally, for the same reasons, the spraying area must have an anti-static floor, such as concrete, metal duckboard, etc.

It is essential to provide sufficient ventilation in the spraying booths to avoid the build up of inflammable vapors.

The effectiveness of the overcurrent protection (di/dt) must be checked every day. This check must be carried out in an area with **no explosive atmosphere** by placing a ground device near the electrode of the atomizer when the atomizer is switched on (the operator must be connected to ground): the control module must switch to the fault state.

Additional equipment has to be placed outside the dangerous area and its starting device has to be servo-controlled to the running mode of the booth aspiration fan. The correct working of the servo-control has to be checked once a week.

A warning board has to be placed in full view close to the spraying area.

1.4.1. Installation rules

- The use of a UHT 188 (or 180) imposes a connection to a control module **GNM 200** whose version of program must be higher or equal to **V5.63**.
- **The UHT 188 (or 180) supplies only one atomizer:** high voltage cable should not exceed 9 m.
- **The UHT 188 (or 180) supplies two atomizers:** the length sum of HV cables should not exceed 8.5 m.

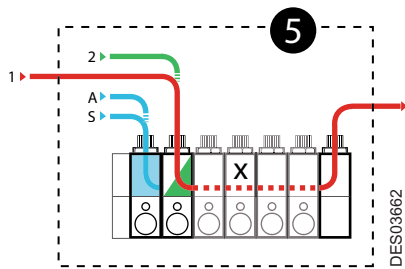
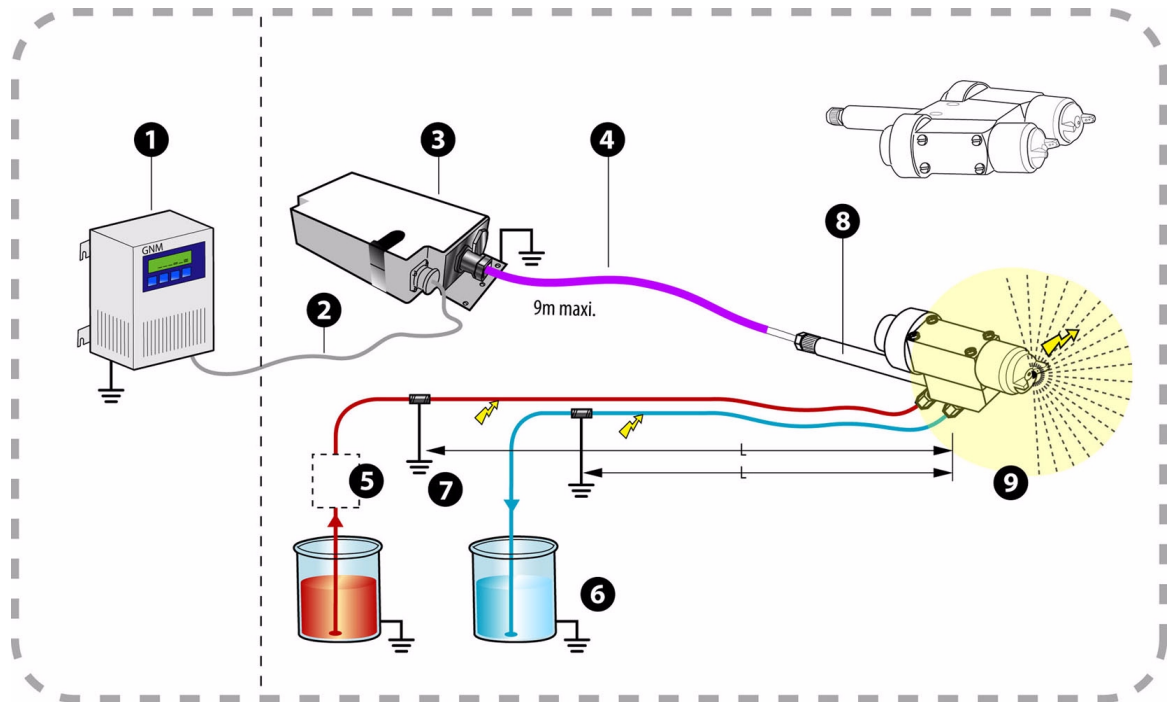
Exemple: if the two atomizers are placed at same distance of the UHT 188 (or UHT 180), the authorized length of each HV cable should not exceed 4.25 m ($8.5/2 = 4.25$ m).

In the case of use of two atomizers, it should be noted that with the approach of the part to be painted on the level of the first atomizer, the tension will fall simultaneously on the second atomizer.



WARNING : It is strictly forbidden to install an unspecified system not complying with the rules described above and below.

1.4.1.1. TRP 501 or 502 00 D using solvented paints with a resistivity > 0,5 MΩ.cm



S: Rinsing product
 A: Air supply
 1: Product 1 supply
 2: Product 2 supply

$\rho \geq 1$: L = 2.5 m
 $0,5 \leq \rho < 1$: L = 5 m

Nota: L Distance at which paint/solvent circuits and dump return are connected to the ground by a kit of ground connection (see § 10.5 page 32).



WARNING : All the conductive components must be connected to the ground potential (metallic fittings of Moduclean, gear pump, etc...).

| Paint Resistivity > 0,5 MΩ.cm | |
|-------------------------------|---|
| 1 | GNM 200 control module (out of the ATEX area) |
| 2 | Low voltage connection |
| 3 | High voltage unit UHT 188 or UHT 180 EEx e |
| 4 | High voltage cable (Length: see § 1.4.1 page 9) |
| 5 | Supplies of paints and rinsing products connected to the ground potential |
| 6 | Dump return line connected to the ground potential |
| 7 | Fittings paint/rinsing and dump return connected to the ground outside the atomizer by a kit of ground connection |
| 8 | TRP configuration |
| 9 | Safety distance (area around the atomizer from the parts with the high voltage, nozzle, etc...) |

1.5. Important Recommendations

1.5.1. Paint resistivity

[see RT Nr 7005](#)

1.5.2. Compressed Air Quality

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

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

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



WARNING : The guarantee does not cover damage caused by foreign matter such as paint, solvent or other substances entering the air circuits of the TRP 501 / 502 00D.

1.5.3. Product Quality

The paint must be filtered to prevent any damage to the atomizer.

The maximum permissible particle size in the atomizer is 200 µm.

1.5.4. High Voltage

Disable the high voltage if the atomizer is not operated for a prolonged period (conveyor shutdown, no objects to be painted, slack periods, etc.) to prevent ionization of the air.

1.5.5. O-ring Seals

Use the seals recommended in this manual. For solvent-based products, seals in contact with the product must be chemically inert seals resistant to swelling or chemical attack. The **TRP 501 or 502** is only guaranteed to operate correctly if it is used with seals whose size and material conform to this manual.

1.5.6. Ventilation

Do not begin applying paint with the **TRP 501 or 502** before starting up the ventilation system in the spraying booth. If the ventilation is cut, toxic substances such as organic solvents or ozone may remain in the spraying booth, resulting in a risk of fire, poisoning or irritation.

1.5.7. Residual pressure

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

1.5.8. Safety devices

During installation of the TRP 501 or 502, it is important to set up safety devices enabling high voltage power, paint, solvent and air supplies to be cut immediately if there is a problem.

- Detection of control system faults
- Detection of high voltage surges linked with the SAMES high voltage module.
- Detection of air pressure drops.
- Detection of ventilation failure.
- Detection of fire.
- Detection of turbine rotation speed faults.

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

1.5.9. Mechanical Collision

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

1.5.10. Ambient Temperature

The sprayer is designed to work normally under room temperature between 0°C and + 40°C.

In order to optimise application quality, it is advised to work under room temperature between + 15°C and + 28°C.

The storage temperature will never exceed +60°C.

1.5.11. Specific maintenance provisions

The access of the booth, near the atomizer in operation, will have to be proscribed and controlled by safety devices ([see § 1.5.8 page 12](#)) which will have to stop the equipment in case of intrusion of people in the area.

Nevertheless, for maintenance operation, these safety devices will have to be arranged in order to allow certain operations and checks (only for persons trained and entitled by Sames Technologies).

1.6. Guarantee

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

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

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

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

- the customer's negligence or inattentiveness,
- incorrect use,
- failure to follow the procedure
- use of a control system not designed by SAMES Technologies or a SAMES Technologies control system modified by a third party without written permission from an authorized SAMES Technologies technical agent,
- accidents such as: collision with external objects, or similar events,
- flooding, earthquake, fire or similar events,
- inadequately filtered paint and solvent,
- use of seals not complying with SAMES Technologies recommendations,
- pollution of air circuits by fluids or substances other than air.

SAMES Technologies atomizers **TRP 501 or 502 00 D** are covered by a one-year guarantee for use in two 8-hour shifts under normal operating conditions.

guarantee does not apply to wearing parts such as diaphragms, seals, etc...

The guarantee will take effect from the date of the first startup or of the provisional acceptance report.

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

2. Description

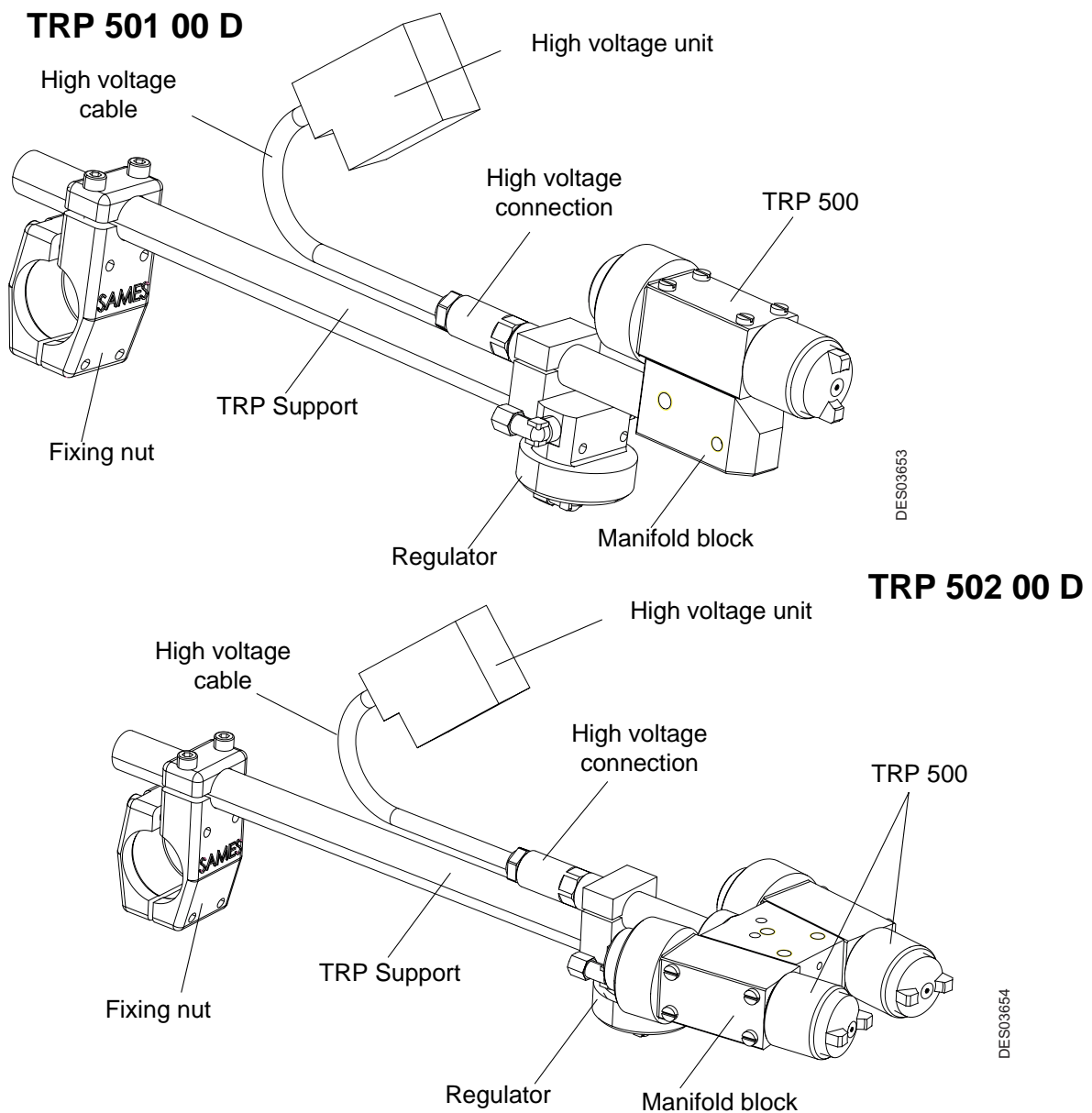
2.1. General

Air spray guns **TRP 501 00D** ou **502 00 D** with high voltage cable are designed for pneumatic electrostatic and automatic spraying of single-component or multi-component solvent or water-base liquid paints. They are equipped with one atomizing head: **TRP501** or two atomizing heads: **TRP 502**. Each atomizing head is fitted with an air cap and a flat spray nozzle that accurately adjusts the spraying angle by means of adjusting rings.

Dimensions of the fan spray can be adjusted according to fan-air and atomizing air values.

The two atomizing heads of the **TRP 502**, whose fan sprays converge on the object to be painted forming a single spray, are supplied in parallel and controlled simultaneously. The maximum paint atomizing rate of the assembly is twice that of the **TRP 501**, and it has a greater air consumption.

Main components:



2.2. Function of the parts

2.2.1. TRP 500 [see RT Nr 7005](#)

2.2.2. Manifold blocks

When only one atomizing head is fitted on a Manifold block, with assembly on an insulating arm by fixing with a tightening nut, it's a **TRP 501 00 D**.

- The manifolds have ducts for spraying air, trigger air, paint and the high voltage. They have a paint inlet, a paint dump outlet, four air inlets fitted with plastic unions and a high voltage connector. The air inlets are as follows:
 - pilot trigger, **(PT)**,
 - pilot dump, **(PD)**,
 - atomizing air (for the fan spray) or directional air (for the round spray) **(AA)**,
 - fan air (for the fan spray) or vortex air (for the round spray) **(FA)**.
- A paint circuit dump system is built into the manifold. It comprises a needle, a housing, a spring, a diaphragm support, a diaphragm and a cover.

In the dump valve, the spring is placed on the paint inlet side. The diaphragm is placed on the paint outlet. The chamber between the diaphragm and the cover is connected to the pilot dump air.

The valve remains closed until the air in its control circuit is pressurized. When the air is pressurized, the valve opens and the paint flows into the dump hose.

When two atomizing heads are fitted on the same Manifold block, with assembly on an insulating arm by fixing with a tightening nut, it's a **TRP 502 00D**. The fitting is the same one as the **TRP 501 00D**. These manifolds support two atomizer heads whose pattern converges at a single point (angle of convergence: 7°30" to the support axis).

This configuration provides, for example, wide patterns at a high paint flow rate, which cannot be obtained using a single atomizer head..

Each head atomizes half the total flow, with the same air settings, and the two patterns are superposed at the point of convergence

2.2.3. Paint Pressure Regulator

The SAMES paint pressure regulator ([see RT Nr 6028](#)) can be mounted on the paint circuit of any facility. It simply needs to be connected to a compressed air pressure release valve to keep the compressed air at a low flow rate (1 Nm³/h). A Rilsan dia. 2.7 x 4 hose is used to connect the regulator control chamber to the air pressure release valve. It uses very little compressed air. Manifolds with built-in regulators are available only for robotic applications.

The role of the pressure regulator is to balance the trigger air pressure (which is stable) and the paint outlet pressure (which may vary if the regulator is not used).

If the atomizer is stationary (not used with a reciprocating device), the regulator can be placed anywhere on the paint circuit and operates as follows:

- the paint supply (for example from a tank pressurized by compressed air from the network) may vary in pressure (the network compressed air pressure varies according to the number of users),
- the pressure release valve controlling the regulator absorbs this pressure variation and continues to deliver a constant trigger pressure (unless there is a large drop in the network compressed air pressure, caused by compressor failure for example),
- if the paint supply pressure does not drop too much and remains greater than the regulator trigger air, the pressure of the paint delivered to the atomizer by the regulator is equal to the trigger pressure (which is kept constant by the compressed air pressure release valve),
- since the pressure drop in the paint circuit between the paint regulator and the atomizer is constant (with constant hose length and diameter), for a paint of given viscosity and flow rate, the constant paint pressure at the regulator outlet delivers a constant supply flow rate to the atomizer.

The SAMES pressure regulator therefore has the important function of regulating the paint flow. If the atomizer is used with a robot or reciprocator, the regulator must always be placed at the circuit head (built into the manifold or fitted to the side of it) and operates in the following manner:

- it absorbs paint pressure variations generated by the paint supply, as in the case of the stationary atomizer,
- it absorbs paint pressure variations due to variations in the height of the paint column, which is in turn generated by reciprocation (height variation between the atomizer and the floor).

The following conditions must be complied with for the SAMES regulator to operate correctly:

- The regulator must be controlled by a compressed air release valve to establish a suitable air flow (1 Nm³/h under 6 bar). For an automatic facility requiring several different paint flow rates according to the colors used, the pressure release valve can be replaced by a voltage/air pressure converter, possibly driven by a PLC.
- The regulator trigger pressure must be less than the lowest pressure available on the compressed air network (normally 5 bar).
- The regulator paint inlet pressure must be greater than the trigger pressure (otherwise the regulator may be flooded). Maximum paint inlet pressure: 6 bar.
- The regulator must be used within its operating range:
 - Paint pressure range: 1 bar minimum to 4 bar maximum.
 - Paint flow rate range: 100 cm³/mn minimum to 1000 cm³/mn maximum.
 - Viscosity range: 1 cPs minimum to 250 cPs maximum.

The paint flow rate generated by a SAMES paint regulator is constant, provided conditions 1, 2 and 3 are satisfied, and depends on:

- the trigger pressure,
- the paint viscosity,
- pressure drops downstream of the regulator, on the paint circuit (atomizer head paint injector, restrictor, diameter and length of the paint hose),
- for a regulator not installed at the circuit head, the paint flow rate depends on the height difference between the atomizer and the regulator. The regulator trigger pressure must therefore be recalculated by testing each time the paint or color is changed.

2.2.4. Support

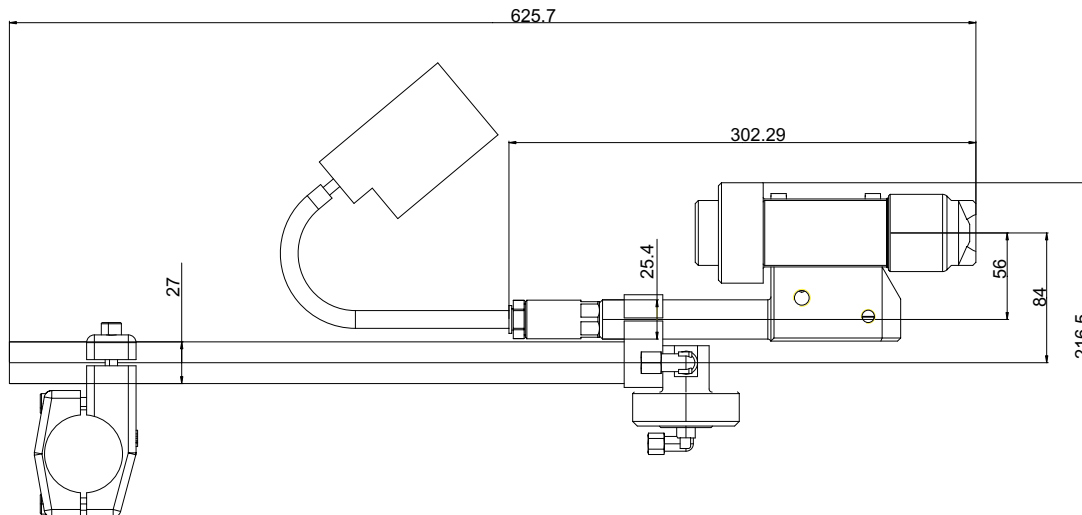
It is imperative to install an air spray gun on an adapted insulating support (sufficiently long), ([see § 10 page 24](#)).

2.2.5. UHT 188 EEx e or UHT 180 EEx e High Voltage Units [see RT Nr 7010](#) or [see RT Nr 7053](#).

3. Technical Characteristics

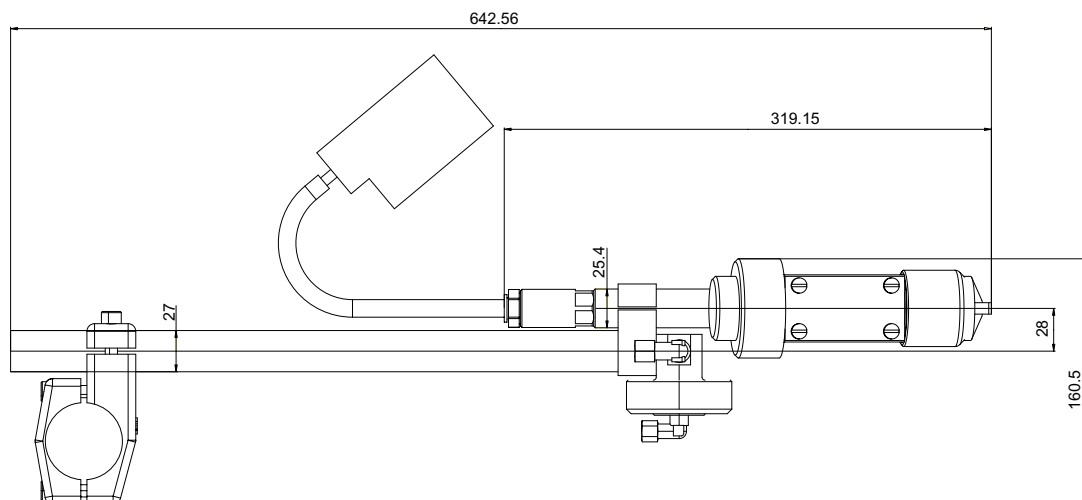
3.1. Dimensions

3.1.1. TRP 501 00D



DIES03651

3.1.2. TRP 502 00D



DIES03652

3.2. Working characteristics

[see RT Nr 7005](#)

3.3. Operating Principle

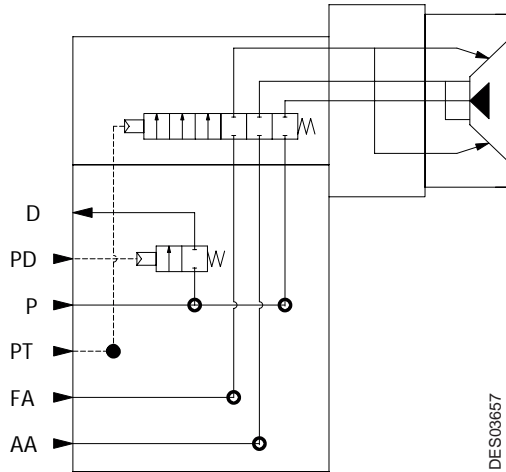
[see RT Nr 7005](#)

4. Diagrams

The trigger pilot air is used to start or stop spraying.

The atomizing air provides a fine spray and project the mist well clear of the air cap, avoiding soiling.

The fan air determines the impact spray diameter (wide or narrow).



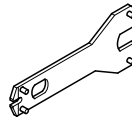
DES03657

| | |
|----|----------------------------------|
| PT | Pilot trigger - D: 4/6 or 2,7 /4 |
| D | Dump - D: 6/8 |
| PD | Dump pilot - D: 4/6 ou 2,7 /4 |
| P | Paint supply - D: 4/6 |
| FA | Fan air - D: 7/10 |
| AA | Atomizing air - D: 7/10 |

Note: Hose dimensions are in mm.

5. Tools

For the TRP 500: [see RT Nr 7005](#).



DES00659

| Part number | Description | Qty | Sale unit |
|-------------|-----------------------------------|-----|-----------|
| 741015 | Removal tool of the regulator nut | 1 | 1 |

6. Installation

6.1. Installation of the atomizer

6.1.1. Fitting the air connections to the manifold

Special case: round spray

As the two air circuits are connected, when only one type of atomization air is required, this air must be prevented from escaping through the unused circuit (via its pressure release valve outlet or its proportional adjustment valve).

Two cases arise:

- the operator wishes to shut off one of the two air circuits definitively: in this case, no air hose is installed on this circuit and the corresponding inlet on the manifold is plugged,



WARNING : to avoid any risk of fire, the plug must not contain any metal;

- the operator wishes to use the normally unused air circuit occasionally for painting certain types of parts: a large caliber check valve, ref. 457716, is fitted at the outlet of the pressure release valves or proportional adjustment valves to prevent any escape.



WARNING : This check valve must not be installed inside the booth as it is metallic and poses a fire risk.

6.1.2. Ground connection of parts to be painted

For electrostatic atomization, it is essential to connect all parts to be painted to a suitable electrical network ground to reduce the risks of fire, provide good electrostatic wraparound and transfer efficiency. This imposes the following requirements:

- the conveyor must have an electrical ground connection,
- the hangers on which the part is suspended must be metallic
- the hooking devices on the part to be painted must be clean and remain clean: arrangements must be made for their maintenance and cleaning.

The resistance between the part and the electrical ground must not exceed 1 MΩ. The ground connection of the parts must be checked frequently.

6.2. Shutdown and Startup Procedures

[see RT Nr 7005](#)

6.3. Air spray gun replacement procedure

- 1 Run a rinse cycle
- 2 Switch off the different air and paint supplies. If necessary, decrease the circuit pressure using the trigger pilot valve, but first switch off all feeds and power supplies (automatic or manual cycles).
- 3 Check that the main air indicator lamp is off.
- 4 Make sure that the atomizing air pressure switch is in the off position.
- 5 Remove the air spray gun.
- 6 Put in place the new air spray gun.



WARNING : Check that the correct restrictor are used. This is necessary because the restrictor must be exactly the same as on the previous installation if the paint application is correct.

- 7 Switch on the air feeds.
- 8 Run a functional test (cycles, application simulation).

7. Assembly / Disassembly

7.1. TRP air spray gun atomizing head

- Unscrew the four screws securing each atomizing head on the manifold block.
- Pull the TRP along the direction of the axis in order to separate it from the manifold.
- For instructions on removing and reassembling the TRP atomizing heads, the nozzle or the air cap ([see RT Nr 7005](#)).

- For the reassembly, proceed in reverse order.

7.2. Manifold block

- Remove the TRP head(s).
- Disconnect the hoses.
- Check the conditions of the different components (seals, unions) located on the manifold block. Replace them if necessary.

- For the reassembly, proceed in reverse order.



WARNING : Coat with dielectric grease the insulator located on the manifold block.

7.2.1. Regulator

[see RT Nr 6028](#)

- Using the tool (P/N #741015), unscrew the valve nut.
- With a small screwdriver, carefully remove the diaphragm then the diaphragm pusher.
- With the same tool (P/N #741015) unscrew the housing. Remove the needle and the spring.

8. Troubleshooting guide

8.1. Problems concerning the TRP 500

[see RT Nr 7005](#)

8.2. Problems concerning the Manifold block

| Symptoms | Possible Causes | Remedies |
|---|--|---|
| Paint leaks from the regulator trigger air hose. | The regulator nut is not tightened sufficiently and/or the diaphragm is damaged. | Tighten the nut and/or replace the diaphragm. |
| Paint leaks from the dump valve trigger air hose. | The nut of the dump valve is not tightened sufficiently and/or the diaphragm is damaged. | See above. |
| Paint leaks from the dump hose when the dump valve is not triggered | a) The seat holder is not tightened sufficiently. | a) Tighten it. |
| | b) The seat holder and the needle are soiled. | b) Tighten them |
| | c) The seat holder and/or the needle valve are worn. | c) Replace the nozzle or the needle. |

9. Cleaning

According to the frequency of use and in all the cases at the end of each cycle.

- Stop the atomizer and switch off the power supply.

Before any operation, please refer to the safety rules ([see § 1.4 page 6](#)).



WARNING : Always wear safety goggles.
Whenever solvent is handled, rubber gloves must be worn.
Work in a well ventilated area whenever solvent is used.



WARNING : It is imperative to pass a rag soaked with water on the atomizer before cleaning it using a rag and an approved cleaning product. Do not use a manual solvent gun.

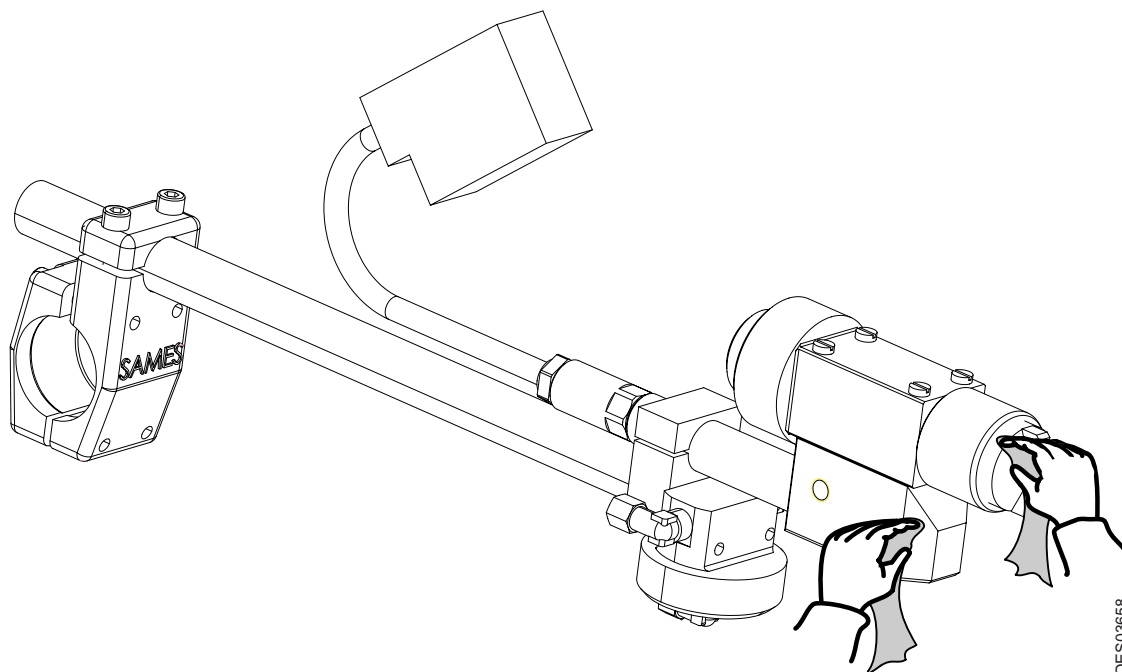
Under no circumstances must the atomizer or any of its components be sprayed with solvent or water at high or low pressure.



WARNING : SAMES Technologies disadvises the use of protective plastic sheets.
If, despite this warning, plastic sheets are used to protect the atomizer, do not choose "anti-static" sheets as these conduct electricity and will short-circuit the high voltage if they are used to protect insulating parts such as the atomizer body. Sames Technologies advises the use of textile cover or dielectric grease.



WARNING : In all the cases, the protections installed must be insulating to avoid any risk of over-consumption in current. This is why, these protections must be regularly replaced in order to keep an acceptable leakage current by the high voltage generator (of HV defaults will be able to appear if clogging in painting is too important).



- Every eight hours, clean the outside of the air spray gun with a clean cloth dampened with solvent.
- Make sure that the holes of the cap are not blocked.
- Dry carefully with compressed air.

9.1. Cleaning of the cap

- Remove the cap ([see RT Nr 7005](#)).
- Leave to soak the cap in solvent then clean with a clean close and soft brush.
- Dry carefully with compressed air.



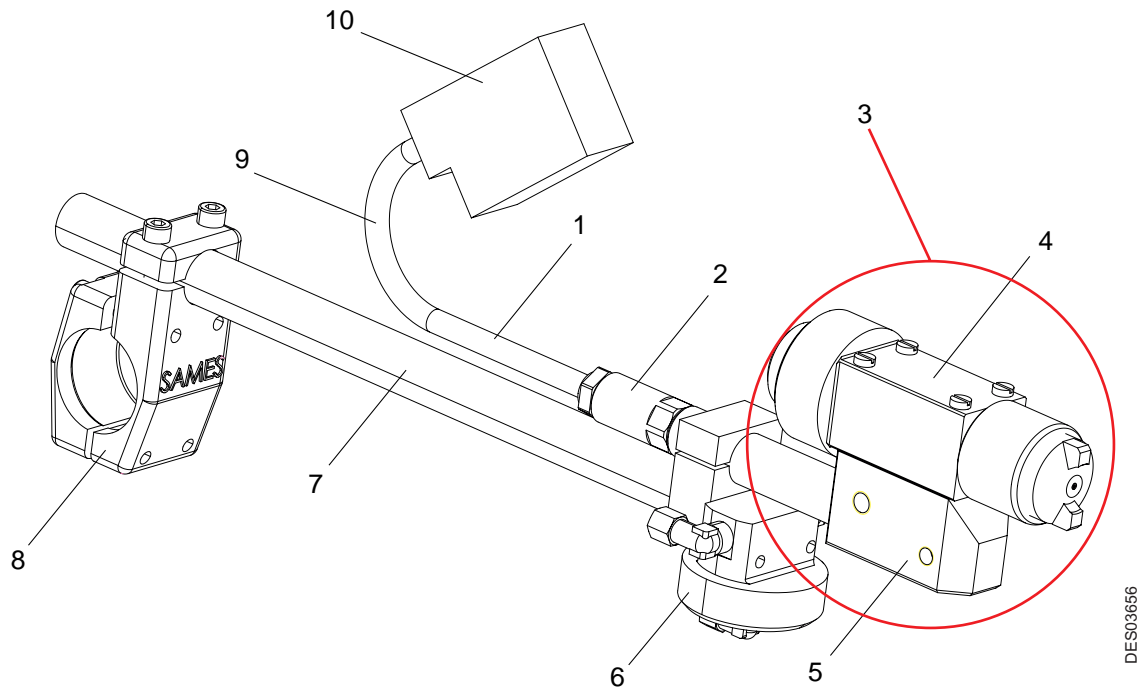
WARNING : The flat air sprays caps must be replaced daily with clean flat air spray caps.

9.2. Cleaning of the TRP

[see RT Nr 7005](#)

10. Spare parts list

10.1. TRP 501 00D

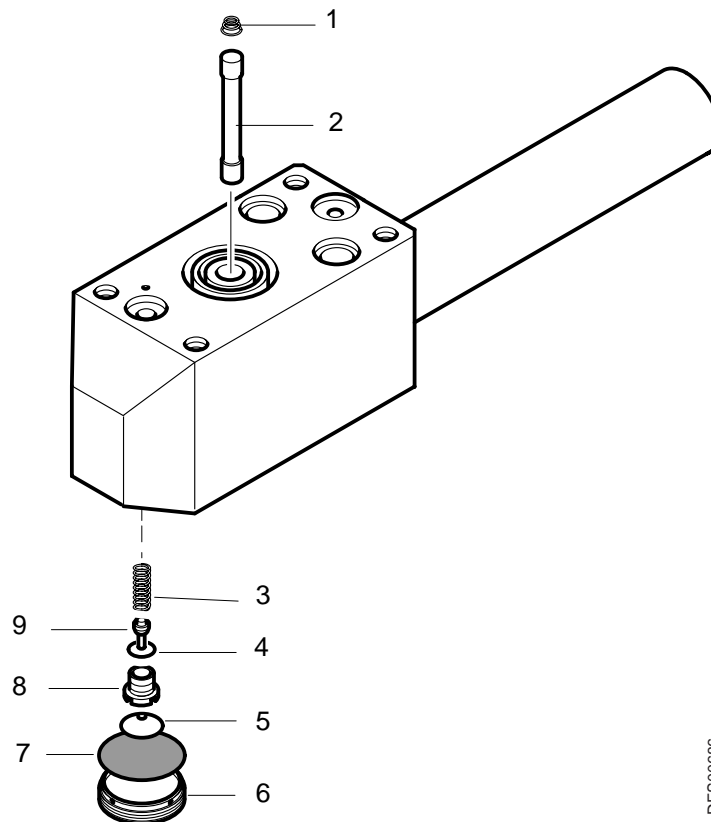


| Item | Part number | Description | Qty | Sale Unit | First Emergency | Consumable |
|------|------------------|---|----------|-----------|-----------------|------------|
| | 910002928 | TRP 501 00D, round spray, D: 8 | 1 | 1 | - | - |
| | 910005916 | TRP 501 00D, round spray, D: 8 (paint on wood) | 1 | 1 | - | - |
| 1 | E2DAVD101 | High voltage cable 100kV | 9 m | 1 | X | |
| 2 | 910002917 | High voltage connection (see § 10.3 page 30) | 1 | 1 | X | |
| 3 | 910003598 | TRP assy + Manifold block (included items 4 and 5) | 1 | 1 | X | |
| 4 | 752991 | TRP 500, round spray, injector D: 8 | 1 | 1 | X | |
| 5 | 910003601 | Manifold block TRP 501 00D (see § 10.1.1 page 27) | 1 | 1 | X | |
| 6 | 750016 | Paint regulator (see RT Nr 6028) | 1 | 1 | X | |
| | 437293 | Support of the TRP | 1 | 1 | - | - |
| | X9SVCB230 | Screw Chc M 6 x 40 glass filled nylon | 2 | 1 | X | - |
| | X9SVCB223 | Screw Chc M 6 x 16 glass filled nylon | 2 | 1 | X | - |
| | 732018 | Orthogonal nut D: 50/27 | 1 | 1 | - | - |
| | X3AVSY286 | Screw Chc M 8 x 35 steel | 6 | 1 | - | - |
| 9 | U1CBBR057 | Hose polyamide D: 10/12 colourless | 8,5m | m | | X |
| | 910001759 | High voltage unit UHT 188 EEx e (see RT Nr 7010) | 1 | 1 | X | |
| | 910005035 | High voltage unit UHT 180 EEx e (see RT Nr 7053) | 1 | 1 | X | |

| Item | Part number | Description | Qty | Sale Unit | First Emergency | Consumable |
|------|------------------|---|----------|-----------|-----------------|------------|
| | 910002929 | TRP 501 00D, round spray, D: 12 | 1 | 1 | - | - |
| | 910005917 | TRP 501 00D, round spray, D: 12 (paint on wood) | 1 | 1 | - | - |
| 1 | E2DAVD101 | High voltage cable 100kV | 9 m | 1 | X | |
| 2 | 910002917 | High voltage connection (see § 10.3 page 30) | 1 | 1 | X | |
| 3 | 910003603 | TRP assy + Manifold block (included items 4 and 5) | 1 | 1 | X | |
| 4 | 752992 | TRP 500, round spray, injector D: 12 (see RT Nr 7005) | 1 | 1 | X | |
| 5 | 910003601 | Manifold block TRP 501 00D (see § 10.1.1 page 27) | 1 | 1 | X | |
| 6 | 750016 | Paint regulator (see RT Nr 6028) | 1 | 1 | X | |
| 7 | 437293 | Support of the TRP | 1 | 1 | - | - |
| | X9SVCB230 | Screw Chc M 6 x 40 glass filled nylon | 2 | 1 | X | - |
| | X9SVCB223 | Screw Chc M 6 x 16 glass filled nylon | 2 | 1 | X | - |
| 8 | 732018 | Orthogonal nut D: 50/27 | 1 | 1 | - | - |
| | X3AVSY286 | Screw Chc M 8 x 35 steel | 6 | 1 | - | - |
| 9 | U1CBBR057 | Hose polyamide D: 10/12 colourless | 8.5m | m | | X |
| 10 | 910001759 | High voltage unit UHT 188 EEx e (see RT Nr 7010) | 1 | 1 | X | |
| | 910005035 | High voltage unit UHT 180 EEx e (see RT Nr 7053) | 1 | 1 | X | |

| Item | Part number | Description | Qty | Sale Unit | First Emer-gency | Con-sum-able |
|------|------------------|--|----------|-----------|------------------|--------------|
| | 910002930 | TRP 501 00D, jet plat, 1,4 mm | 1 | 1 | - | - |
| | 910005918 | TRP 501 00D, jet plat, 1,4 mm (paint on wood) | 1 | 1 | - | - |
| 1 | E2DAVD101 | High voltage cable 100kV | 5 m | 1 | X | |
| 2 | 910002917 | High voltage connection (see § 10.3 page 30) | 1 | 1 | X | |
| 3 | 910003599 | TRP assy + bloc d'alimentation (included items 4 and 5) | 1 | 1 | X | |
| 4 | 752949 | TRP 500, flat spray, 1,4 mm (see RT Nr 7005) | 1 | 1 | X | |
| 5 | 910003601 | Manifold block TRP 501 00D (see § 10.1.1 page 27) | 1 | 1 | X | |
| 6 | 750016 | Paint regulator (see RT Nr 6028) | 1 | 1 | X | |
| | 437293 | Support of the TRP | 1 | 1 | - | - |
| 7 | X9SVCB230 | Screw Chc M 6 x 40 glass filled nylon | 2 | 1 | - | - |
| | X9SVCB223 | Screw Chc M 6 x 16 glass filled nylon | 2 | 1 | - | - |
| 8 | 732018 | Orthogonal nut D: 50/27 | 1 | 1 | - | - |
| | X3AVSY286 | Screw Chc M 8 x 35 steel | 6 | 1 | - | - |
| 9 | U1CBBR057 | Hose polyamide D: 10/12 colourless | 4,6m | m | | X |
| | 910001759 | High voltage unit UHT 188 EEx e (see RT Nr 7010) | 1 | 1 | X | |
| 10 | 910005035 | High voltage unit UHT 180 EEx e (see RT Nr 7053) | 1 | 1 | X | |

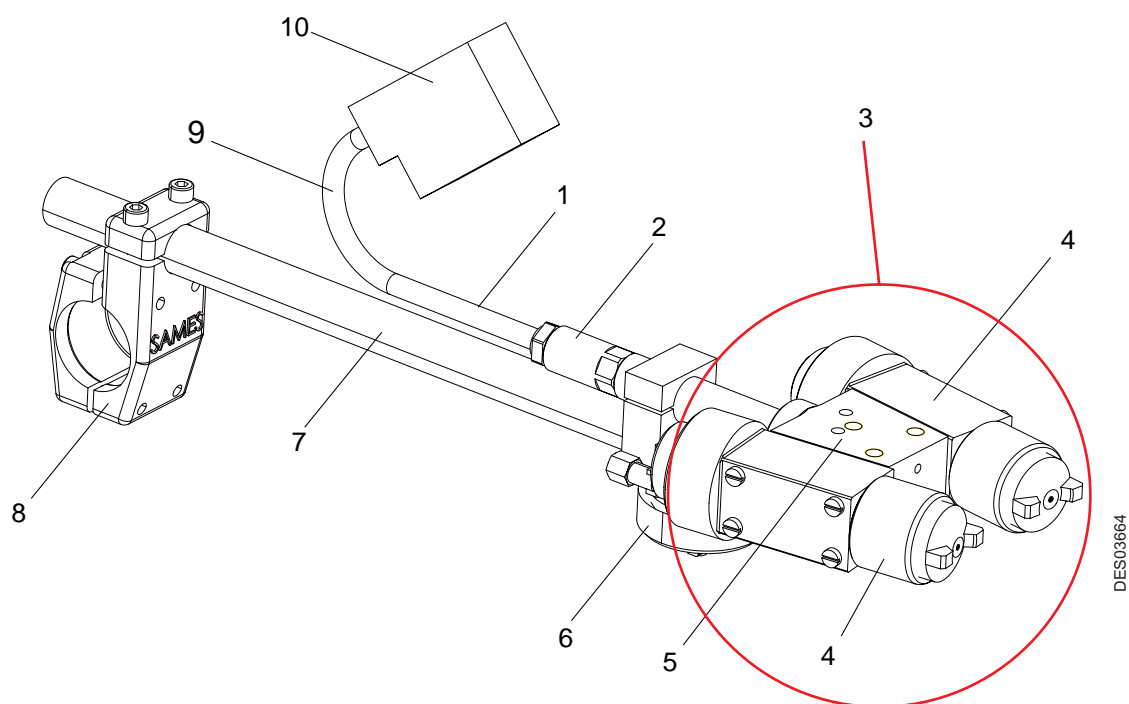
10.1.1. Manifold block of TRP 501 00D



DES00686

| Item | Part number | Description | Qty | Sale Unit | First Emergency | Consumable |
|------|------------------|--------------------------------------|----------|-----------|-----------------|------------|
| | 910003601 | Manifold block of TRP 501 00D | 1 | 1 | X | |
| 1 | 740018 | High voltage contact spring | 1 | 1 | | X |
| 2 | 740016 | Resistance | 1 | 1 | | X |
| 3 | 742760 | Valve spring | 1 | 2 | X | |
| 4 | J3TTCN007 | O-ring - PTFE | 1 | 2 | | X |
| 5 | 449546 | Diaphragm pusher of dump valve | 1 | 1 | X | |
| 6 | 449548 | Valve nut | 1 | 1 | - | - |
| 7 | 449549 | Diaphragm of dump valve | 1 | 5 | X | |
| 8 | 742761 | Needle housing | 1 | 1 | X | |
| 9 | 740511 | Needle | 1 | 1 | X | |

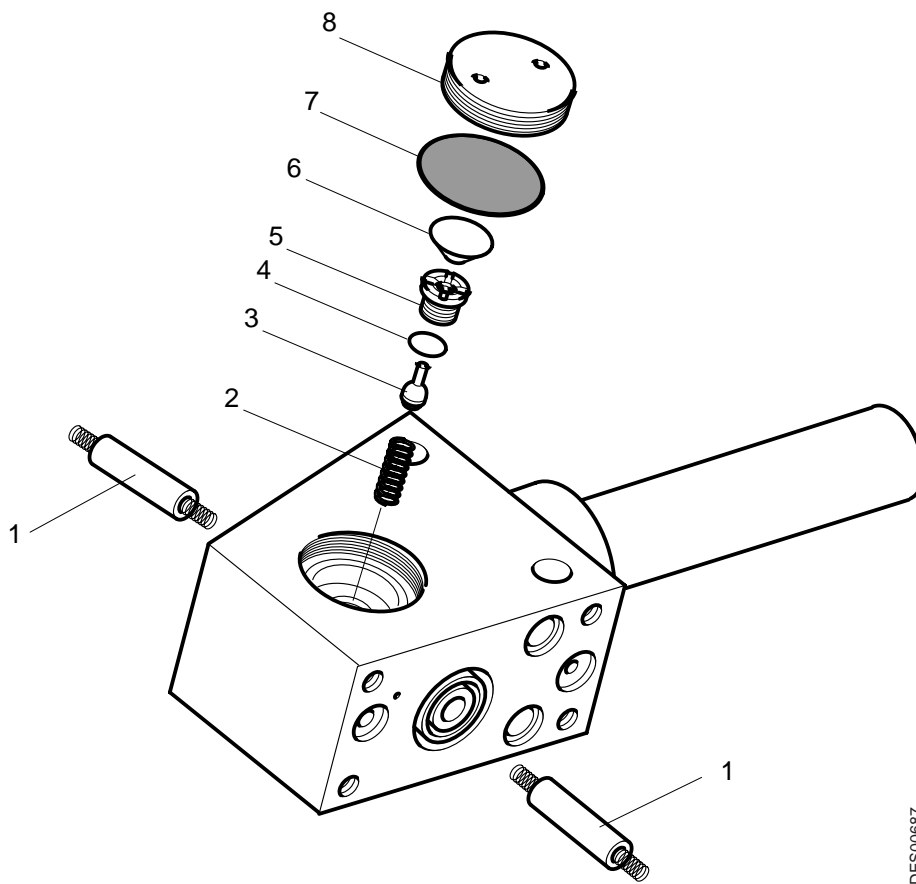
10.2. TRP 502 00 D



DES03664

| Item | Part number | Description | Qty | Sale Unit | First Emergency | Consumable |
|------|------------------|--|----------|-----------|-----------------|------------|
| | 910003451 | TRP 502 00D, flat spray, 1,4 mm | 1 | 1 | - | - |
| | 910005922 | TRP 502 00D, flat spray, 1,4 mm (paint on wood) | 1 | 1 | - | - |
| 1 | E2DAVD101 | High voltage cable 100kV | 9 m | 1 | X | |
| 2 | 910002917 | High voltage connection (see § 10.3 page 30) | 1 | 1 | X | |
| 3 | 910003600 | TRP assy +Manifold block (included items 4 and 5) | 1 | 1 | X | |
| 4 | 752949 | TRP 500, flat spray, 1,4 mm (see RT Nr 7005) | 2 | 1 | X | |
| 5 | 910003602 | Manifold blockTRP 502 00D (see § 10.2.1 page 29) | 1 | 1 | X | |
| 6 | 750016 | Paint regulator (see RT Nr 6028) | 1 | 1 | X | |
| 7 | 437293 | Support of TRP | 1 | 1 | - | - |
| | X9SVCB230 | Screw Chc M 6 x 40 glass filled nylon | 2 | 1 | X | - |
| | X9SVCB223 | Screw Chc M 6 x 16 glass filled nylon | 2 | 1 | X | - |
| 8 | 732018 | Orthogonal nut D: 50/27 | 1 | 1 | - | - |
| | X3AVSY286 | Screw Chc M 8 x 35 steel | 6 | 1 | - | - |
| 9 | U1CBBR057 | Hose polyamide D: 10/12 colourless | 8,5m | m | | X |
| 10 | 910001759 | High voltage unit UHT 188 EEx e (see RT Nr 7010) | 1 | 1 | X | |
| | 910005035 | High voltage unit UHT 180 EEx e (see RT Nr 7053) | 1 | 1 | X | |

10.2.1. Manifold block of TRP 502 00D



DIES00687

| Item | Part number | Description | Qty | Sale Unit | First Emergency | Consumable |
|------|------------------|--------------------------------------|----------|-----------|-----------------|------------|
| | 910003602 | Manifold block of TRP 502 00D | 1 | 1 | X | |
| 1 | 740532 | Resistance | 2 | 1 | | X |
| 2 | 742760 | Valve spring | 1 | 2 | X | |
| 3 | 740511 | Needle | 1 | 1 | X | |
| 4 | J3TTCN007 | O-ring - PTFE | 1 | 2 | | X |
| 5 | 742761 | Needle housing | 1 | 1 | X | |
| 6 | 449546 | Diaphragm pusher of dump valve | 1 | 1 | X | |
| 7 | 449549 | Diaphragm of dump valve | 1 | 5 | X | |
| 8 | 449548 | Valve nut | 1 | 1 | - | - |

10.3. High voltage connection

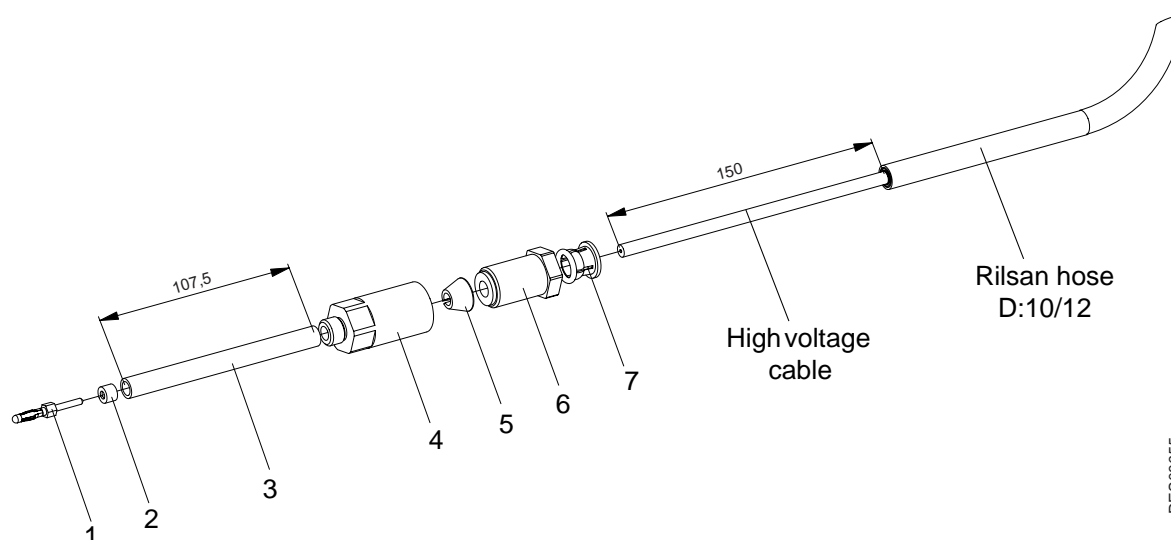
10.3.1. Preparing the high voltage cable



WARNING : Ensure not to wound the insulator. The least stripe or starts of notch on the surface of insulator will cause a breakdown of the cable.

Preparing:

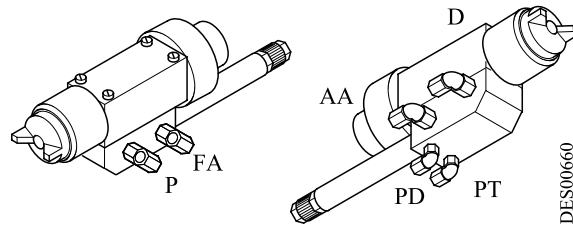
- Strip using a tool type strip-cable (rice grain) the external sheath of the high voltage cable. It is imperative not to use a standard tool slicing "cutter".
- Then strip the semiconductor sheath by peeling it and cut it using pliers.
- Pass the high voltage cable through the grip (Item 7) fitted on the grip holder nut (Item 6) then pass the cone (Item 2) and the adapter (Item 4) to fix the cable.
Place the PTFE hose (Item 3), install the insulating ring (Item 5) on the cable end, then screw the banana plug (Rep.1) in the core of the cable.
- Install the assy in the TRP501 manifold block, screw the adapter (Item 4) to secure the cable, pull slightly the high voltage cable and screw the grip holder nut.
- Ratch the rilsan hose D:10 /12.



DES03655

| Item | Part number | Description | Qty | Sale Unit | First Emergency | Consumable |
|------|------------------|--------------------------------------|----------|-----------|-----------------|------------|
| | 910002917 | High voltage connection | 1 | 1 | X | |
| 1 | E4CSHT181 | Banana plug | 1 | 1 | X | |
| 2 | 900000969 | Insulating ring of high voltage well | 1 | 1 | X | |
| 3 | U1GCBR041 | Hose PTFE - D: 7/10 | 1 | m | X | |
| 4 | 900002154 | Adapter for cable fixing | 1 | 1 | | X |
| 5 | 1411689 | Split cone | 1 | 1 | X | |
| 6 | 1315058 | Nut, grip holder | 1 | 1 | | X |
| 7 | F6RXZG085 | Stainless steel grip + seal | 1 | 1 | X | |

10.4. Unions



| | |
|-----------|---|
| P | Paint supply |
| PT | Pilot trigger (paint supply) |
| D | Dump |
| AA | Atomizing air (flat spray), directional air (round spray) |
| PD | Dump Pilot |
| FA | Fan air flat spray, Vortex air (round spray) |

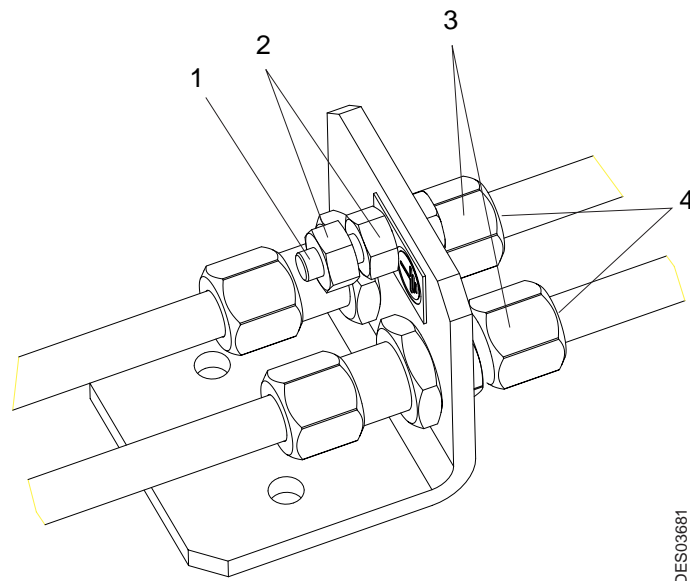
BSP- thread unions for manifold blocks (Europa)

| Item | Part number | Description | Quantity |
|--------------|-------------|-------------------------------|----------|
| AA-FA | 746549 | Elbow union 1/4" NPT - 8 x 10 | 2 |
| D-P | F6RPDK310 | Elbow union 1/8" NPT - 6 x 8 | 2 |
| PT-PD | F6RPDK308 | Elbow union 1/8" NPT - 4 x 6 | 2 |

NPT- thread unions for manifold blocks (USA)

| Item | Part number | Description | Quantity |
|--------------|-------------|--------------------------------|----------|
| AA-FA | 746550 | Elbow union 1/4" NPT - 1/2" OD | 2 |
| D-P | F6RPDQ212 | Elbow union 1/8" NPT - 3/8" OD | 2 |
| PT-PD | F6RPDQ206 | Elbow union 1/8" NPT - 1/4" OD | 2 |

10.5. Kit of ground connection



DES03681

| Item | Part number | Description | Qty | Sale Unit | First Emer-gency | Con-suma-ble |
|------|------------------|---------------------------------|----------|-----------|------------------|--------------|
| | 910003399 | Kit of ground connection | 1 | 1 | - | - |
| 1 | X7CVHA226 | Screw H M6 x 20 brass | 1 | 1 | - | - |
| 2 | X7CEHU006 | Nut H M 6 brass | 2 | 1 | - | - |
| 3 | F6RXGQ056 | Bulkhead union | 2 | 1 | - | - |
| 4 | F6RXZX061 | Stainless steel sleeve | 4 | 1 | - | - |