

SPRAY GUN WASHER INOX LINE SOL Mod. SLD

For automatic and manual washing with solvent

GBBefore use, adjustment or maintenance, it is important to read this instruction manual very carefully. The manual must be stored in a safe place for any future reference that may be necessary.



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TABLE OF CONTENTS

1.		3
1.1	GUARANTEE	3
1.2	APPLICATION	4
1.2.1	WASHING PRODUCTS	5
1.3	DESCRIPTION	
1.4	IDENTIFICATION	-
1.5	TECHNICAL SPECIFICATIONS	
1.6	SOUND LEVEL	-
1.7	DANGER SIGNS AND WARNING SIGNALS	
1.8	THE EC CERTIFICATION OF THE SPRAY-GUN WASHER	
2.	GENERAL SAFETY AND ACCIDENT PREVENTION REGULATIONS	11
2.1	LEVELS OF DANGER AND TERMINOLOGY	
2.2		
2.3	ECOLOGY AND POLLUTION	
2.4	STANDARDS FOR SAFE OPERATION	
2.5	DEMOLITION AND DECOMISSIONING	-
2.5		
3.	SHIPMENT AND UNLOADING	14
0.		
4.	POSITIONING	14
4.1	CHECKS BEFORE INSTALLATION	
4.2	INSTALLATION	-
7.6		
5.	INTERNAL VIEW OF THE WASHER	16
5.1	PREPARATION FOR USE OF THE SPRAY-GUN WASHER	
5.2	OPERATING INSTRUCTIONS	
5.3	WASHING GRAVITY FLOW GUN	
5.4	WASHING A SUCTION GUN	-
5.5	WASHING ACCESSORIES	-
5.6	FINAL AUTOMATIC WASHING	-
5.7	MANUAL WASHING	-
5.7		
6.	COLOUR TESTS	19
0.		
7.	PNEUMATIC MEMBRANE PUMP	20
8.	PNEUMATIC SYSTEM	21
8.1	OPERATION	
0.11		
9.	SAFETY DEVICES	22
•		
10.	MAINTENANCE AND PERIODICAL CHECKS	22
10.1	CLEANING THE SMALL VENTURI PUMP	
10.2		
11.	TROUBLES WITH THE MEMBRANE PUMP	
	·····	
12.	INSUFFICIENT VAPOUR EXHAUST	
13.	SPARE PARTS LIST	

When selling machines for use in countries where Italian is not the official language, ANEST IWATA EUROPE provides the original text translated into the language of the destination country. For any controversy, the legally binding text is the Italian source text. ANEST IWATA EUROPE waives any and all liabilities for damages by misinterpretations and/or incorrect use caused by imperfect or imprecise translations.

1. INTRODUCTION.

This manual contains instructions for the installation, use and maintenance of the INOX LINE SOL. In the following manual the INOX LINE SOL shall be referred to as Spray-gun washer. This manual is an integral part to the product and should be kept with due care in order to allow for its use and consultation during the life of the Spray-gun washer.

The regular operation, economy and safety of the **Spray-gun washer** depends on the compliance with the instructions given in this manual. It is mandatory to follow the procedures as described in this manual:



This manual must be read and understood perfectly prior to installing, using or performing any type of operation or maintenance on the machine. The Spray-gun washer must be used exclusively to wash spray-guns or small parts, using solvent, water or water-based solvents with specific characteristics. Use of the Spray-gun washer for processing other than the type indicated in this manual is considered improper use and is therefore prohibited. ANEST IWATA EUROPE declines any and all responsibilities for damages caused by the Spray-gun washer to persons, animals or property, due to use other than the use described herein, or for damages due to negligence or failure to observe the instructions contained in this manual.

The Spray-gun washer is manufactured according to the provisions contained in the following European Directives:

- Directive 98/37/CE (Machine Safety).
- Directive 94/9/CE (Equipment to be used in potentially explosive environments).

With reference to the Directive 94/9/CE ("ATEX" directive) the **Spray-gun washer** is a machine designed and built to work in compliance with the operating parameters fixed by **ANEST IWATA EUROPE** and guarantees a high level of protection in regard to the **appliances group II, category 2**. The machine supplied is accompanied by the following documents:

- CE Declaration of conformity.
- CE Mark.
- Manual for use and maintenance.

1.1 GUARANTEE.

Upon delivery of the **Spray-gun washer**, it is necessary to make sure that no damages have occurred during shipment and the supply of accessories is complete and undamaged. Claims must be filed within 8 days of delivery. The buyer is eligible for the guarantee coverage only when he has complied with the guarantee conditions listed below.

ANEST IWATA EUROPE guarantees its products under the following conditions:

- a) The Spray-gun washer is guaranteed for a period of two years from the date of purchase as certified by a delivery document issued by the Dealer. When the customer requests guarantee service he must specify the model, serial number and year of manufacture of the appliance.
- b) The guarantee covers free replacement or repair of the appliance component parts which are recognized to have manufacturing defects without any charge for labour.
- c) Guarantee services are performed at the manufacturer's factory or at authorized service centres. The appliance must be sent already prepaid to them and shall be returned to the customer at his own expense and risk. If any intervention by technicians is requested under guarantee coverage at the customer's installation site, then the customer shall be charged for the transfer time, for mileage and for all board and lodging expenses according to the valid fees applied by the Service Centre. No charge is made for the time required to repair and replace parts.
- d) The manufacturer waives all liability for any damage that may directly or indirectly be caused to persons or property resulting from failure to comply with all the provisions in the instruction manual. In particular, this regards failure to comply with warnings about placing, installing, operating and maintaining the appliance. The present guarantee does not cover any reimbursement for direct or indirect damage due to appliance down-time. Guarantee coverage is only valid when payments are all in due order.
- e) This agreement is governed by current law in the Republic of Italy. Any controversy deriving from this agreement shall be settled by the Court in Turin, Italy.

ANEST SPRAY-GUN WASHER INOX LINE SOL Mod. SLD $\mathbf{C} \in \mathbf{C}$

In addition to the cases stated above, guarantee coverage is waived in the following cases:

- Whenever the Spray-gun washer has been operated incorrectly by the operator.
- Whenever the damage is due to insufficient or poor maintenance.
- Whenever the **Spray-gun washer** has been damaged by modifications following repairs done without the consent of **ANEST IWATA EUROPE** or the installation of non-original spare parts.
- Whenever the owner fails to comply with the instructions given in this manual.
- Whenever corrosive solvents are used that do not correspond to legal standards or included among those listed by **ANEST IWATA EUROPE**.

1.2 APPLICATION.

The **Spray-gun washer** has been designed and built exclusively to wash spray-guns or small-sized parts, using solvent, clean water or special water-based solvents. The **Spray-gun washer** can be used only to wash parts that have been soiled with paint. Pieces must be made of metal, preferably steel or anti-static material, and their weight must not exceed 10 kg. Ensure that the pH of the water-based solvent ranges between 6.5 and 12 when used instead of water or solvent to wash.

PROHIBITED USES OF THE SPRAY-GUN WASHER:

All washing operations of objects or products that are not included in this manual, or of objects approved (spray-guns and small components) but with solvents with specifications other than those indicated in this manual, are expressly forbidden: In particular, it is forbidden to use flammable solvents that contain chlorinated or fluorocarbons, such as: trichloroethane, methylene chloride or other substances with halogenated hydrocarbon-based products.



WARNING

The Spray-gun washer must be used exclusively for the purpose for which it was designed and built. All other uses not covered by this manual are to be considered inappropriate and are strictly forbidden. ANEST IWATA EUROPE declines any and all responsibility for damage to persons, animals and property deriving from improper use of the Spray-gun washer and/or from failure to observe the instructions in this manual

The **Spray-gun washer** has been designed and built by **ANEST IWATA EUROPE** in order to guarantee a high level of protection, efficient operations and conformity to the working parameters provided for **devices group II**, **category 2** in explosive atmospheres caused by gas, vapour or mist in compliance with Directive 94/9/CE (ATEX).

The **Spray-gun washer** is fitted with protection systems that guarantee the required level of protection also when recurring troubles or working faults of the appliance itself are expected.

Thanks to such a design and manufacture, the **Spray-gun washer** can be used in environments where the atmosphere is potentially explosive. Environments are classified according to the following risk areas (Directive 1999/92/CE).

• **ZONE 1:** Area in which, during normal working activities, an occasional explosive atmosphere is to be expected which consists of a composition of air and flammable substances in form of gases, vapours or mists.

The device can always be used in areas where there is a lower risk of explosion, such as in zone 2.

WARNING: The diagram below shows the areas which can be endangered by potentially explosive atmosphere. The devices which are to be installed within these areas must comply with the technical specifications stated by the directive 84/9/CE (Atex):

- Compliance with device group II category 2 (zone 1) within (area) the distance of 1 metre from the machine.
- Compliance with device group II category 3 (zone 2) within the distance of 1 metre from the zone limit.

In compliance with directive 1999/92/CE, users must guarantee that the delimitation of the dangerous area as defined in the diagram be respected. According to the same directive, users must also classify the work environment in which there might be potentially explosive atmospheres.





1.2.1 WASHING PRODUCTS.

Spray guns and accessories can be washed with:

- Solvent.
- Clean water.
- Water-based solvent. In this case, the pH value of the mixture must range between 6.5 and 12.

The above products must comply with the anti-pollution legal requirements as provided for by the laws in force in the Country where the Spray-gun washer is being used



WARNING

It is prohibited to use solvents which contain chlorurate, fluorocarbons, such as: Trichloroethane, Methylene Chloride or other substances with a halogenated hydrocarbon based products.

ANEST SPRAY-GUN WASHER INOX LINE SOL Mod. SLD CE

1.3 DESCRIPTION.

The Spray-gun washer consists of:

- A steel structure (see figure 1).
- A stainless steel washing machine (pos.2 fig.1), with a door (pos.6 fig.1).
- A pneumatic pump (pos.32 fig.1) that sucks the dirty detergent from the drum (pos.27 fig.1) and is controlled by a timer (pos.14 fig.1).
- A pneumatic pump (pos.31 fig.1) that sucks the clean detergent from the drum (pos.28 fig.1) and is controlled by a push button (pos.13 fig.1).
- A nebulizer (pos.22 fig.1) that sucks the clean detergent from the drum (pos.28 fig.1) and is controlled by a valve (pos.18 fig.1).
- A Venturi pump (pos.21 fig.1) that sucks the clean detergent from the drum (pos.28 fig.1) and is controlled by a valve (pos.19 fig.1).

Solvent fumes and vapours sprayed into the air inside the working area conveyed and sucked automatically each time the operator opens the door (pos.6 fig.1) of the washer (pos.2 fig.1), and discharged outside thanks to the Venturi effect generated by the nozzle (pos.15 fig.1) inside the hose (pos. 16 fig. 1). An active carbon purifier (optional) can be installed on this vapour discharge hose to dampen the polluted gaseous particles.

Description of the Spray-gun washer (See fig. 1):

- 2 Stainless steel washing machine.
- 4 Gun air feeding hose.
- 5 Air and vapour conveyor.
- 6 Washing machine door.
- 10 Air outlet fitting.
- 11A Lower door.
- 12 Air inlet fitting with filter.
- 13 Control push button of the final washing pump.
- 14 Timer.
- 15 Vapour suction nozzle.
- 16 Vapour discharge hose (ø 150 mm).
- 18 Nebulizer control valve.
- 19 Pump control valve for clean solvent.
- 20 Dry filter.
- 21 Small pump for clean solvent.
- 22 Clean detergent nebulizer.
- 23 Nebulizer feeding hose.
- 24 Small pump feeding hose.
- 27 Dirty solvent drum.
- 28 Clean solvent drum.
- 29 Pump feeding hose for clean solvent.
- 29F Pump feeding hose for dirty solvent (filter only)
- 29S Pump feeding hose for dirty solvent.
- 31 Pneumatic membrane pump for clean solvent.
- 32 Pneumatic membrane pump for dirty solvent.
- 39 Safety valve for blocking the washer pump.
- 44 Spray-gun washer discharge hose for dirty solvent.
- 47 Collecting basin in galvanised sheet metal.
- 72 Control panel adhesive label.
- 72A Sheet metal front control holder.
- 74 Earthing cable.

CE SPRAY-GUN WASHER INOX LINE SOL Mod. SLD



Figure 1

N.B. : Whenever you order spare parts, always include: MODEL - SERIAL NUMBER and YEAR OF MANUFACTURE.

ANEST SPRAY-GUN WASHER INOX LINE SOL Mod. SLD CE

1.4 IDENTIFICATION (See fig. A).

Each Spray-gun washer has a CE identification plate that shows

- A Manufacturer's brand.
- B Manufacturer's name and address.
- C CE Mark.
- D Danger Group, Class, Type in compliance with the "ATEX" Directive
- E Amount of washing product.
- F Year of manufacture.
- G Serial number
- H Model.
- I Maximum Pressure.

N.B.: The H - G - F data listed in the identification plate must be always specified when calling for service and/or supply of spare parts.



1.5 TECHNICAL SPECIFICATIONS.

Description	Measuring unit	Value
Mass (Weight).	kg	63
Height.	mm	1490
Width.	mm	600
Depth.	mm	700
Max Pressure	bar	10
Feeding air operating pressure.	bar	6 ÷10
Recommended pressure when the Spray-gun washer is working.	bar	8
Diameter of the 3 holes in the suction nozzle (pos. 15 fig.1).	mm	0,8
Consumption of air of the intake nozzle (at 8 bar)	Nm3/h	9
Diameter of the vapour intake chute (pos. 16 fig.1).	mm	150
Air speed at the entrance of the suction hood (6 bar).	m/sec	0.53
Air capacity (chute).	m3/h	613.08
Number of pump strokes (pos.32 fig.1).	No. strokes/min	60 ÷ 70
Number of guns that can be washed in one cycle only.	No.	2
Capacity of each solvent drum (pos. 27 and 28 fig.1).	dm3 (litres)	25
Number of drums housed in the collecting basin (pos.27 fig.1)	No.	2

1.6 SOUND LEVEL

The sound level emitted by the **Spray-gun washer** has been measured under working conditions using a sound level meter with integrator.

Measures were taken by a skilled laboratory technician in accordance with EN ISO standard 3746/95. Results are as follows

 Acoustic pressure equivalent average level: 	LpAm = 77,4 dB (A).
 Conventional Acoustic pressure level: 	LwA = 83,2 dB (A).
 Acoustic pressure level at the operating post: 	LpA = 72,6 dB (A).

1.7 DANGER SIGNS AND WARNING SIGNALS.

The **Spray-gun washer** carries the manufacturer's identification plate as well as symbols (labels) that warn against residual hazards present on the machine. Figure 2 indicates the positions of the Manufacturer's identification plate and the warning signs. The signs have the following meanings:

- 1. Manufacturer's brand. CE Mark, Model, Serial number and Year of Manufacture, Maximum pressure, Danger Group, Class, Type in compliance with the "ATEX" Directive Group, Amount of washing product.
- 2. Generic hazard.
- 3. Read the instruction manual carefully before starting work with the Machine.
- 4. The use of open flames and smoking near the trolley are prohibited.
- 5. Put on a protective mask before working with the machine .
- 6. Put on solvent-proof rubber gloves before starting work.
- 7. Put on protective eyewear before starting work.
- 8. Disconnect the compressed air supply before starting any maintenance or repair operations in the machine.
- 9. Ensure that the hoses are well fitted in the drum.
- 10. Check the solvent level in the drum periodically to avoid overflows.







Figure 2

ANEST SPRAY-GUN WASHER INOX LINE SOL Mod. SLD CE

1.8. THE EC CERTIFICATION OF THE SPRAY-GUN WASHER.

Directive 98/37/EC stresses the minimum requirements machinery must be brought in line with in order to be placed on the European Union market. All machinery covered by this Directive may be placed on the market and put into service only if they do not endanger the health and safety of persons, domestic animals or property. The **Spray-gun washer** is a machine designed and built to wash spray-guns or small parts, and is not included in any of the categories indicated in the list attached to the Directive (Annex IV - highly dangerous machinery). Prior to placing its machines on the market and in order to demonstrate that the machines are in compliance with the provisions set forth by Directive 98/37/EC, **ANEST IWATA EUROPE** guarantees that all the tests and controls required by the reference regulations (including the risks analysis) have been conducted and meet the essential safety and health requirements as provided for by Annex I of the aforementioned Directive. The technical construction file that includes the fundamental project data and all the specifications relating to the machine safety has been drawn in compliance with **Annex V** of **Directive 98/37/EC**, and is made available to any controls by the inspection authorities - prior to detailed notification, as provided for by the ruling provisions in this matter.

Given that the machine has been designed and built in compliance with the provisions set forth by **directive 98/37/EC**, and can be safely operated under the conditions stated by this manual, **ANEST IWATA EUROPE** puts the **Spray-gun washer** on the market provided with:

- CE Mark
- EC Declaration of Conformity
- Instructions for use (User's Manual)

The **Directive 94/9/EC** defines the minimum conditions required to design, build and put on the European Union market a machine to be operated in an environment where there might form potentially explosive atmospheres. The above Directive includes the measures that must be adopted to operate the machine preventing any ignition sources or causes of potentially explosive atmosphere. According to Directive 94/9/EC, the **Spray-gun washer** is a device of **group II**, **category 2 G**, and can be safely operated in environments with potentially explosive atmospheres classified in **Zone 2**. **ANEST IWATA EUROPE** has conducted all the controls and tests required and has submitted all the requested documentation to the notified body as provided for by **art. 8**, **para. 1**, **letter b**, **under-letter II**) of **Directive 94/9/EC**. For this reason, **ANEST IWATA EUROPE** guarantees that the **Spray-gun washer** complies with the following directives given that its design and construction comply with the requirements provided for by the legal provisions referring to this matter:

- Directive 98/37/EC (Machine safety).
- Directive 94/9/EC (ATEX).

The following European standards and technical norms have been used by the manufacturer and can be a reference in order to verify the conformity with the legal European provisions:

- EN 294:1992: MACHINE SAFETY Safety distances to inhibit that dangerous areas can be reached by upper limbs.
- EN 414:1993: MACHINE SAFETY Design and safety norms provisions.
- EN 626-1:1996: MACHINE SAFETY Decreasing safety risks from dangerous substances emitted by the machine. Part 1: Principles and specifications for machine manufacturers.
- EN 983:1996: MACHINE SAFETY Safety requirements for the fluid energy system and its components Pneumatics.
- EN 1050:1996: MACHINE SAFETY Principles for risks assessment.
- EN 1127-1:1997: EXPLOSIVE ATMOSPHERE Explosion prevention and explosion protection Fundamental concepts and methodology.
- EN ISO 3746:1995: ACOUSTIC Determination of noise level of sound emissions by means of sound pressure- control method: above a reflective platform measured on an enveloping surface.

- ISO 7000:1995: GRAPHICAL SYMBOL FOR USE ON EQUIPEMENT Index and synopsis.
- EN ISO 11202: 1995ACOUSTIC Noise emissions from machines and equipments Noise emission measures by means of a sound pressure on work stations and other special positions Control method On-site survey.
- EN ISO 12100-1:2003: MACHINE SAFETY Fundamental concepts; General design principles Part 1: Terminology, basic methodology.
- EN ISO 12100-2:2003: MACHINE SAFETY Fundamental concepts; General design principles Part 2: Specifications and technical principles.
- EN 12921-1:2005: Washing machinery and for the pre-treatment of products that use liquid substances and with the presence of vapour Part 1: General safety requirements.
- EN 12921-2:2005: Washing machinery and for the pre-treatment of products that use liquid substances and with the presence of vapour Part 2: Safety of machinery that use water-based solvents.
- EN 12921-3:2005: Washing machinery and for the pre-treatment of products that use liquid substances and with the presence of vapour Part 3: Safety of machinery that use inflammable substances.
- EN 13463-1:2001: Non-electric appliances for potentially esplosive atmospheres Basic methods and requirements.

2. GENERAL SAFETY AND ACCIDENT PREVENTION REGULATIONS 2.1 LEVELS OF DANGER AND TERMINOLOGY

The safety of both the operator and the persons exposed to the machinery is the primary concern of the designer and builder of the machine. In designing a new **Spray-gun washer**, every attempt is made to prevent any possible situations of danger and risks connected with use of the machine, by applying the appropriate solutions to make the equipment as safe as possible. It is therefore recommended that you read this manual carefully, especially this section, which concerns the safety norms, and that you avoid inopportune behaviour or behaviour that is contrast with the instructions contained herein.

Pay attention to danger signals when these are indicated in this manual. Comply with all safety regulations. There are three danger level signals:



DANGER

This signal warns that incorrectly executed procedures can cause severe harm, death or long-term health risks. This is the maximum risk warning.



CAUTION

This signal warns that incorrectly executed procedures can cause damage to the machine. The hazard level is lower than the previous one (danger).



WARNING

Read the following instructions carefully. Failure to apply them can cause harm to the machine operator, other persons, animals or property. ANEST IWATA EUROPE declines all liability for damages caused by failure to comply with the following safety and accident prevention rules and regulations. ANEST IWATA EUROPE further declines all liability for damage caused by improper use of the Spray-gun washer and/or caused by adjustments carried out without the manufacturer's authorization.

ANEST SPRAY-GUN WASHER INOX LINE SOL Mod. SLD CE

TERMINOLOGY: The following definitions are provided for the terminology used in this manual. The correct explanation of this terminology is necessary to ensure perfect understanding of situations of danger that could arise in using the machine and therefore directly concerns the operator and persons exposed to the machine:

- **OPERATOR:** In a general sense, the person in charge of transporting, installing, adjusting, operating, cleaning and performing ordinary maintenance on the **Spray-gun washer** (Art. 1.1.1., para. 1, attachment I, directive 98/37/EC).
- EXPOSED PERSON: any person next to or inside a dangerous area, for any reason whatsoever (Art. 1.1.1., para 2, attachment I, directive 98/37/EC).
- DANGEROUS AREA: Any area next to or inside the machine, where the presence of an exposed person constitutes a risk for the safety and health of said person (Art. 1.1.1., para 3, attachment I, directive 98/37CE).
- **OPERATOR:** The person, organisation or company responsible for the training of workers who must operate the equipment, which has purchased the **Spray-gun washer** in any form or has rented the equipment, which must be used only for the purposes intended by the manufacturer.
- SPECIALISED TECHNICIAN: An especially trained and qualified person to perform maintenance intervention or repairs, which require special in-depth knowledge of the machine, its operation, safety devices, dangerous areas and methods of intervention, who is therefore capable of recognising and avoiding dangers arising from use of the machine.
- AREAS AT RISK OF EXPLOSION: An area in the environment where the Spray-gun washer is operated, where atmospheres with a mixture of gas or explosive vapours could develop under certain atmospheric conditions (Art. 7, directive 1999/92/EC).
- **ZONE 1:** An area in which the formation of an explosive atmosphere, consisting of a mixture of air and flammable substances in the form of gas, vapour or mist, is likely to occur in normal operation occasionally (Attachment I, directive 1999/92/EC).
- EXPLOSIVE ATMOSPHERE: A mixture of air under atmospheric conditions, with flammable substances in a gaseous state, vapours or mists, whose combustion after ignition propagates together with the unburnt mixture (Art. 1, para 3, letter c), directive 94/9/EC.
- POTENTIALLY EXPLOSIVE ATOMOSPHERE: Atmosphere which is likely to transform into an explosive atmosphere due to local operational conditions (Art. 1, para 3, letter c), directive 94/9/EC.
- FLAMMABLE SUBSTANCE: A liquid preparation having a flame or ignition point equal to or greater than 21° C and lower or equal to 55° C (directive 67/548/EC).
- **pH:** Measurement that expresses the acidity of a solution. The pH scale ranges from 0 to 14. For pure water the pH value = 7. When pH is above 7 the solution in alkaline; when it is less than 7 the solution is acid.

2.2 CLOTHING.

The type of clothing depends on the work that must be carried out. When using the **Spray-gun washer** and relevant products, comply with the regulations below:

- It is forbidden to use cell phones in environments where a mixture of flammable gasses or vapours may be present. It is advisable not to have a cell phone with you. If you have a cell phone with you, it must be turned off.
- The operator must wear solvent-proof rubber gloves to prevent contact between his hands and the products used for washing.
- The operator **must** always wear protective eyewear to prevent the solvent coming into contact with his eyes.
- The operator **must** use a protective mask to avoid inhaling gas and dust.
- It is mandatory that all operators within the risk area where an explosion may occur wear suitable clothes and shoes that prevent any accumulation of dangerous electrostatic charges.

2.3 ECOLOGY AND POLLUTION.

- The Spray-gun washer must not be used to wash or degrease objects designed to come into contact with foodstuffs.
- Comply with Laws in the country where the **Spray-gun washer** is installed regarding use and disposal of washing products. Comply with the recommendations given by the manufacturer of these products.

2.4 STANDARDS FOR SAFE OPERATION.

- The **Spray-gun washer** has been designed and built to be used in an environment in which an explosive atmosphere, consisting of a mixture of air and flammable substances in the form of gas, vapour or mist, is likely to occur in normal operation occasion-ally: the **Spray-gun washer** guarantees a normal level of protection in conformity with **equipment group II, category 2, in accordance with directive 94/9/EC.**
- It is forbidden to use the Spray-gun washer following instructions which are not included in the final application: the appliance must be use exclusively to wash spray guns, small containers and objects stained with paint
- It is prohibited to use solvents or products that are not in conformity with the specifications indicated in this manual, or which do not comply with legal norms.
- It is prohibited to use water-based products that have a pH value of less than 6.5 or greater than 12 for washing operations. If the mixture contains flammable substances, the concentration must not exceed 8%.
- It is forbidden to use solvents that contain chlorurate or fluorocarbons, such as: Trichloroethane, Methylene Chloride or other substances with halogenated hydrocarbon-based products.
- The use of the **Spray-gun washer** is strictly **forbidden** to anyone who has not fully read and understood the contents of this instruction manual.
- It is strictly forbidden to let the Spray-gun washer be used by anyone who is not properly skilled or duly trained or is not in perfect health.
- It is forbidden to run the pneumatic diaphragm pump (pos. 31-32 fig. 1) without solvent in the drums (pos. 27 28 fig. 1).
- It is forbidden to continually disconnect and reconnect the air supply hose from its connection (pos.12 fig.1).
- It is forbidden to puncture, scratch or scrape metal on the sides of the Spray-gun washer, as it could cause sparks.
- It is forbidden to have nylon, plastic, glass wool, GRP or similar products next to or over the Spray-gun washer to avoid electrostatic charges.
- It is forbidden to use plastic drums. (pos.27 e 28 fig.1).
- It is forbidden to use welders of open flame equipment and incandescent materials in the same area housing the Spray-gun washer.
- Before using the Spray-gun washer all safety devices must be checked for integrity.
- It is mandatory to verify that at the beginning of the washing cycle the solvent being used is not corrosive. If traces of corrosion are detected on the internal hoses of the wash basin or on the grid top, suspend the wash cycle and immediately replace the solvent.
- Before using the Spray-gun washer it is mandatory to connect the external earth cable (pos. 74 fig. 1) to the workshop plant.
- Before using the Spray-gun washer it is mandatory that the operator has eliminated all electrostatic charges accidentally accumulated.
- It is mandatory that while loading and unloading the bins you do not spill their contents on the workshop floor.
- Before using the **Spray-gun washer**, it is mandatory that the solvent loading and unloading hoses (pos.23-24-29-29S-44 fig.1) are firmly inserted in their respective bins, be careful not to bend them and make sure they are not damaged. Also check that the discharge hose (pos.44 fig.1) is always downwardly placed and that the end of the hose is not immersed in the solvent.
- It is mandatory that you periodically clean the dry filter (pos.20 fig.1).
- It is mandatory that you periodically clean the work top (pos.25 fig.1) and the conveyor (pos.5 fig.1).
- Spray guns, covers and containers to be washed **must only be** inserted in the nozzles and in the positions shown in figures 3A 3B.
- The spray guns to be washed **must be only** made of metal or antistatic material.
- It is mandatory that, to avoid an overflow, you periodically check the level of solvent in the drum making sure it is not excessive (pos.27 28 fig.1).
- Before you start working it is recommended that you are familiar with the control devices and their functions.
- Should skin or eyes come in contact with washing products, rinse abundantly with water.
- When you start the Spray-gun washer it is recommended that you pour 8 litres of solvent in the drum. (pos.27 fig.1)

SPRAY-GUN WASHER INOX LINE SOL Mod. SLD $\mathbf{C} \in \mathbf{C}$

- It is recommended that you periodically replace the used solvent when it is necessary and deliver it to a company specialized in disposing of it.
- If you plan not to use the use the **Spray-gun washer** for an extended period, **it is recommended** that you rinse inside the washer (pos. 2 fig. 1) with clean solvent, start the pump (pos.32 fig.1) by means of the timer (pos. 14 fig. 1), empty the two drums (pos. 27-28 fig. 1) and cut off air supply.
- If pieces are not washed well, it is recommended that you check and, if necessary, clean the nozzles inside the washing machine (see fig.3).



DANGER

It is forbidden to spray and/or blow with the gun aimed at the operator or other persons: THIS COULD CAUSE SERIOUS DAMAGE TO HEALTH.

Before using the Spray-gun washer, ensure that the following measures are taken:

- Suitable fire extinguishing systems, including portable fire extinguishers for first aid purposes, must be installed depending on the conditions in which they will be used. These appliances must be kept in working order and inspected at least every six months by an expert.
- It is mandatory that in case of an emergency that personnel get easily and quickly away from danger zones.
- It is forbidden to use water to extinguish fires. If the materials come in contact with water, it could generate noxious or flammable gases or greatly increase in temperature.

2.5 DEMOLITION AND DECOMISSIONING.

Upon demolition or decommissioning of the **Spray-gun washer**, we recommend that you take the necessary precautions to avoid danger to exposed persons and the risk of environmental pollution:

- Disconnect the **Spray-gun washer** from the pneumatic energy source and discharge the residual energy accumulated.
- Residual liquid possibly left in the sink and hoses of the equipment must be carefully drained.
- The other parts of the **Spray-gun washer** must be treated in accordance with the regulations for special waste. Proceed by disassembling the machine: group the various units and parts into homogeneous lots and provide for their disposal separately, in accordance with environmental protection laws in the country where the machine is installed. In general, please bear in mind that:
- Plastic or rubber parts are special waste.
- Ferrous scrap and carpentry are special waste.

3. SHIPMENT AND UNLOADING.

The **Spray-gun washer** is shipped in a palletized carton with the warnings <fragile> and <do not turn over>. With the use of a cart, move the **Spray-gun washer** near to where it is to be installed, take it out of the carton and pallet and make sure that no damages have occurred during shipment.

4. POSITIONING.

It is obligatory to place the Spray-gun washer on a smooth, horizontal surface, in an environment with a temperature between 0° C and 60° C. The Spray-gun washer was designed and built to be used in an environment in which an explosive atmosphere, consisting of a mixture of air and flammable substances in the form of gas, vapour or mist, is likely to occur in normal operation occasionally: the Spray-gun washer guarantees a normal level of protection in conformity with equipment group II, category 2, in accordance with directive 94/9/EC.



WARNING

The Spray-gun washer operates at a minimum or 6 and a maximum of 10 bar. If the power supply of the workshop is above 10 bar, install a filter-regulator-reducer unit regulating the pressure at: 9 bar if the Spray-gun washer is not in operation (static) or at 8 bar if it is in operation.

4.1 CHECKS BEFORE INSTALLATION.

Before installation, make sure that the pressure and the quality of the air supply to the **Spray-gun washer** is suitable. If this is not the case, be sure to install a compressed air tank, in order to guarantee the minimum level of autonomy of the **Spray-gun washer**.



WARNING

All the following operations of installation, adjustment and testing must be carried out exclusively by qualified and responsible personnel who can guarantee the safety standards in the mechanical and pneumatic fields.

4.2 INSTALLATION.

In order to install the **Spray-gun washer** correctly, it is useful to bear in mind that the inlet air speed into the suction hood, indicated in table <1.5 TECHNICAL DATA> is influenced by the length and shape of the fume exhaust pipe. An extremely long or curved pipe, with section reductions or long horizontal sections will inevitably cause a drop in air flow to the exhaust stack, with consequently greater concentrations of vapour in the washing area. Therefore, follow instructions carefully. Comply with the following instructions when installing the **Spray-gun washer**:

• Extend the discharge hose (pos. 16, fig. 1) and insert it into the hole on top of the **Spray-gun washer** positioning it perfectly vertical for at least 1 meter and connect it to the outside of the work room. If the outlet hole is farther than 2 metres away, it is advised to use a diam. 15 cm galvanized pipe (not plastic), and mount it at the angle farthest away from the **Spray-gun washer** (see figure AS).

Example: if the outlet hose is 5 metres long, put at least 3-4 metres vertically and 2-1 metres horizontally, rather than 1 metre vertically and 4 metres horizontally.

- Connect the gun feeding hose (pos. 4 fig.1) to the fitting (pos. 10 fig.1).
- Connect the filtered air feeding hose to the fitting (pos. 12 fig.1), through at least an 8 mm hole. It is recommended that you use a fast-on air inlet fitting, to facilitate periodical lubrication (3-4 times yearly) with oil for nebulizers.
- Connect the external ground cable (pos. 74 fig.1) to the workshop system.
- Before using the **Spray-gun washer**, it is recommended the you spread peel-off paint on the conveyer (pos. 5, fig. 1) and side walls inside to simplify periodic cleaning.



Figure AS

INATA SPRAY-GUN WASHER INOX LINE SOL Mod. SLD CE

5. INTERNAL VIEW OF THE WASHER (See fig. 3)

- H Support for washing cups and covers.
- M Aluminium pipe kit for the washer including nozzles.
- M1 Pierced screw.
- M2 Cross fitting with plug and reducers
- PQ Special clamp with conic plug.
- R Net knob.
- T Washer nozzles.
- U Net.
- V Sprayer for washing gravity guns.
- Z Internal sprayer for suction gun.



Figure 3

CE SPRAY-GUN WASHER INOX LINE SOL Mod. SLD





Figure 3A

PQ1 PQ2 PQ3



WARNING

Read the instructions given in the chapter <GENERAL SAFETY AND ACCIDENT PREVENTION>. Before opening the washer door (pos. 6 fig.1), it is mandatory to verify that the timer indicator (pos. 14 fig.1) is in position <0>. If this is not the case, turn the knob counter-clockwise until the timer is set on zero.

5.1 PREPARATION FOR USE OF THE SPRAY GUN WASHER.

- Take a 25 I drum full of clean solvent (pos.28 fig.1) and an empty one of the same capacity (pos.27 fig.1).
- Pour approx. 8 litres of clean solvent from the drum 28 to the drum 27.
- Position the two drums in the collecting basin (pos. 47 fig.1) inside the Spray-gun washer.
- Insert the three hoses 23-24 and 29 in the drum 28 and the two hoses 29S e 44 in the drum 27. This later will be used also to recuperate the dirty solvent after washing.
- Check the operation of the membrane pump (pos. 32 fig.1) of the automatic wash and if it is necessary, adjust it, turning the screw (pos.56 fig.PA) located on the pump itself. The pump must carry out 60 ÷ 70 pulses/min.

5.2. OPERATING INSTRUCTIONS.

All the following instructions must be read and fully understood before starting to work with the **Spray-gun washer**. With the **Spray-gun washer**, it is possible to wash the spray guns in several ways:

- Washing one gravity gun.
- Washing one suction gun.
- Washing two guns at a time.
- Washing various containers and accessories.
- Final automatic washing.
- Manual washing.
- Colour tests.

5.3 WASHING ONE GRAVITY-FLOW GUN (See fig. 3A).

Remove the gun cover. Empty the residual content to an external container and dismantle the cup. Pull the gun trigger using hook (P) and close the air inlet hole with plug (Q) (see fig.PQ1-PQ2-PQ3). Insert the airbrush on the side where the paint enters, in nozz-le (V); connect its cup upside down and the cover in upright position on support (H) next to the nozzle (T). Once you have completed these operations, close the door (pos.6 fig.1) of the washer and actuate the pump membrane, setting the timer on its maximum position (pos. 14 fig. 1).

At the end of the wash cycle the pump will stop automatically.

5.4 WASHING ONE SUCTION-FLOW GUN (See fig. 3B).

Remove the gun cup. Empty the residual content to an external container. Pull the gun trigger using hook (P) and close the air inlet hole with plug (Q) (see fig.PQ1-PQ2-PQ3). Insert the airbrush on the side where the paint enters, in nozzle (Z); connect its cup upside down on support (H) or on the grip top next to the nozzle (T). Once you have completed these operations, close the door (pos.6 fig.1) of the washer and actuate the pump membrane, setting the timer on its maximum position (pos. 14 fig. 1). At the end of the wash cycle the pump will stop automatically.

5.5 WASHING ACCESSORIES (See fig. 3 - 3A - 3B).

Together with the spray guns, some accessories can be washed, for example:

- Paint containers.
- Rods for mixing the paint.
- Gun filter.

5.6 FINAL AUTOMATIC WASHING (inside the washer).

Press the push button (pos.13 fig.1) 4-5 times with an interval of approximately one second between one impulse and the other. Once this operation has come to an end, we recommend that you ensure that all pieces have been thoroughly cleaned, above all the airbrushes. If needed, hand rinse with the nebulizer (pos.22 fig.1).

5.7 MANUAL WASHING.

Open the washer door (pos.6 fig.1) and remove the parts inside the washer. If needed, perform the final washing of the pieces using the atomizer (pos. 22 fig.1) activated by the control lever (pos. 18 fig.1) or the small Venturi pump (pos.21 fig.1) activated by the control lever (pos. 19 fig.1). With the same pump (pos. 21 fig.1), put the solvent in the gun cup, connecting it to the hose (pos.4 fig.1) and spray the cover (pos.6 fig.1) of the washer (pos.2 fig.1). At the end of each wash, with a clean rag, dry the washed pieces.

6. COLOUR TESTS.

- Connect the spray-gun to the air hose (pos.4 fig.1).
- Open the washer cover. (pos. 6 fig.1).
- Spray the paint by jerks on the cardboard next to the cover (pos.6 fig.1) and test the colour you want to use.
- The washer cover (pos.6 fig.1) will be automatically washed with the next washing.

7. PNEUMATIC MEMBRANE PUMP PA.

- PA-38 Inlet air valve.
- PA-39 Inlet spring valve.
- PA-40 Inlet/outlet calve washer.
- PA-41 Spheres with support.PA-42 Outlet spring valve.
- PA-43 Inlet/outlet calve washer.
- PA-44 Outlet valve.
- PA-45 Pump body.
- PA-46 Stainless steel spring.
- PA-47 Brass spring.
- PA-48 Teflon membrane.

PA-49 Armoured rubber membrane.

- PA-50 Stainless steel membrane.
- PA-51 Membrane lock screw.
- PA-52 Pump body cover.
- PA-53 Pump body cover screw.
- PA-54 Oscillator.
- PA-56 Impulse adjustment screw.
- PA-57 Outlet
 - PA-58 Air inlet fitting.
 - **PA-80** Atex CE identification plate.
 - PA-81 Self-threading rivet 2.5x6.5 UNI 7346



Figure PA

8. PNEUMATIC SYSTEM.

Figure 5 shows the functional diagram of the pneumatic system.

- 1 Air filter
- 2 5-way valve (washer door).
- 3 3-way NC valve (timer activated).
- 4 3 way continuous motor valve
- 5 Membrane pump.
- 6 Dirty solvent drum.
- 7 Washer basin.
- 8 Final washing push button.
- 9 Membrane pump.

- 10 Nebulizer control valve to Venturi.
- 11 Pump control valve to Venturi.
- 12 Blower (fume intake).
- 13 Throttle valve.
- 14 Spray-gun (if included).
- 15 Venturi nebulizer.
- 16 Small Venturi pump.
- 17 Clean solvent drum.



Figure 5

8.1 OPERATION. (See fig. 5)

Compressed air enters through the filter (1), feeding valve (2). With the door of the washer closed (pos.6 fig.1), valve (2) feeds valve (3) of the timer and final washing button (8). With the timer set, valve (3) feeds valve (4) through the continuous motor, this generates the impulses to the membrane pump (5) that takes the used solvent from the drum (6) and sprays it into the washer basin (7). When you press button (8) you actuate membrane pump (9) that sucks the clean solvent from drum (17) and sprays it into washer (7). With the washer door open (pos.6 fig. 1), valve (2) feeds the control valves (10) and (11) and blower (12); moreover the air passes through the throttle valve (13) and allows you to use one spray gun (14). With valve (10) open, the Venturi effect actuates the nebulizer (15). With the valve (11) open, the venturi effect actuates the small pump. Both take clean solvent from drum (17).



9. SAFETY DEVICES.



WARNING

The following devices must never be tampered with or excluded from operation. They must always be kept in perfect working order.

- The safety valve (pos. 39 fig.1) that stops the pump
- Connection of the ground wire supplied
- Vapour suction nozzle (pos. 15 fig. 1)
- Collecting basin (pos. 47 fig.1).

10. MAINTENANCE AND PERIODICAL CHECKS.

To guarantee safe maintenance on the Spray-gun washer, the following procedures must be employed:

- Disconnect the air when making repairs or maintenance.
- · Periodically check the efficiency and the state of the safety devices.
- Safety devices must never be tampered with or removed.
- The maintenance must be carried out by skilled or qualified individuals, according to the instructions given in this manual.
- The labels (pictograms) on the Spray-gun washer provide information to the operator to avoid accidents. These labels must be kept clean and must be replaced if even partially damaged or detached. Use of the Spray-gun washer is forbidden if even only one of the labels is missing from the point where it was placed by the manufacturer.
- Use only original spare parts during repair work and maintenance.
- Make sure the machine is always connected to the ground wire.
- Lubricate the compressed air system 3-4 times per year as follows: Disconnect the air supply at the air inlet fitting (pos.12 fig.1) and pour approx. 2-3 spoonful of oil for atomizers into the same fitting.
- Connect the air and set the timer
- Clean or replace the dry filter (pos. 20 fig. 1)
- Clean the air and vapour conveyer (pos. 5 fig. 1) .
- Clean the collecting basin (pos. 47 fig.1).
- Clean solvent inlet filter (pos.29F fig.1).
- Inspect and clean from time to time the air inlet filter inside the fitting (pos. 12 fig. 1) if possible without disassembling the fitting.
- Check that the solvent level in the containers (pos. 27 and 28 fig. 1) is not too high to prevent overflowing.
- Check that hoses (pos. 23-24-29-29S-44 fig. 1) are not bent, worn or broken and are well inserted into the containers (pos. 27 and 28 fig.1).
- Check that the pump strokes (pos. 32 fig. 1) are 60-70 per minute.
- Dismantle and clean the pump silencer PA57 with compressed air, or replace it.
- Make sure that the discharge hose (pos.44 fig.1) is always positioned down and the end of the tube is not immersed in the solvent.
- When removing the dirty solvent from the drum, (pos.27 fig.1) clean and rinse the bottom of the drum.

10.1 CLEANING THE SMALL VENTURI PUMP.



- 1. Ensure that the discharge hose A IS NOT obstructed.
- 2. Unscrew the nut **B**.
- 3. Dismantle the hose C.
- 4. Dismantle the fitting **D**.
- 5. Clean the nozzle **E** with an iron thread.

10.2 CLEANING THE NEBULIZER.



- 1. Dismantle the fitting A.
- 2. Dismantle the hose **B**.
- 3. Dismantle the fitting C.
- 4. Clean the nozzle **D** with an iron thread.

ANEST WATA SPRAY-GUN WASHER INOX LINE SOL Mod. SLD CE

11 TROUBLES WITH THE MEMBRANE PUMP.

- Make sure incoming air pressure is at least 6 bar.
- Disconnect the pump air feeding hose and with the timer activated, check that the compressed air is exiting.
- In case air continues to escape from the vent (pos.57 fig.PA) and there are no pump strokes, remove valve 54 from the pump and thoroughly clean the middle shutter.
- Ensure that the pump rotates steadily at 60-70 strokes per minute. If not, adjust the screw PA 56 as necessary.
- If the pump does not prime and no solvent is delivered, check and clean the filter (pos. 29F fig.1) and ensure that the drums (pos. 27 and 28 fig. 1) contain at least 8 litres of solvent.
- If the pump speed is normal (60-70 strokes per minute) and no solvent is delivered, check that the inlet ball PA41 is not stuck to its seat. If so, gently hit the inlet valve body located under the pump PA38-39-40-41-43 with a small hammer while the pump is in operation. If the ball does not move from its seat, dismantle from this pump the hose (pos. 29F fig. 1) and blow inside with air after you have closed the washer door (pos. 6 fig.1), or blow and hit simultaneously.
- If solvent comes out of the valve silencer PA57, then the membranes PA 48 and 49 are broken. Replace the membranes and the complete oscillator PA54.

12. INSUFFICIENT VAPOR EXHAUST.

- Check that the inlet air pressure is at least 6 bars.
- Check that the exhaust tube (pos. 16 fig. 1) is perfectly vertical for at least 1 meter and that there are no reductions in diameter or junctions or obstructions badly constructed.
- Dismantle and clean the air inlet filter placed inside the connection fitting (pos. 12 fig. 1).
- Clean or replace the dry filter (pos. 20 fig. 1)
- Dismantle the nozzle (pos. 15 fig.1) and check that all the 3 holes ø 0.8, are not obstructed.

This machine may be combined to the distiller D 12 A supplied by Formeco s.r.l. For further information concerning assembling, please read carefully the distiller instruction manual.

13. SPARE PARTS LIST.

When ordering spares, always quote the code number and the data on the CE plate: MODEL - SERIAL NUMBER - YEAR OF CONSTRUCTION.

Code GENERAL SPRAY-GUN WASHER (See fig. 1)

4	Gun air feed hose.
5	Air and vapour conveyer.
11A	Lower door.
12	Air inlet fitting with filter.
13	Pump control button for final washing.
14	Timer
15	Vapour suction nozzle.

- 16 Vapour exhaust hose (ø 150 mm).
- 18 Nebulizer control valve.
- 19 Small pump control valve clean solvent.
- 20 Dry filter.
- 21 Clean solvent small pump.
- 22 Clean solvent nebulizer.
- 23 Feeding nebulizer hose.
- 24 Feeding pump hose.
- 29 Feeding hose of solvent pump, with filter.
- 29F Feeding filter dirty clean solvent (filter only).
- 29S Feeding hose of the dirty solvent pump.
- 31 Pneumatic membrane pump for clean solvent.
- 32 Pneumatic membrane pump for dirty solvent.
- 39 Safety valve for blocking the washer pump.
- 44 Tubo flessibile di scarico detergente sporco della lavapistole.
- 47 Collecting basin.
- 72 Control panel adhesive label.
- 72A Front control holder in sheet metal.
- 74 Earthing cable.

Code INSIDE THE WASHER (See fig. 3)

- H Support for washing cups and covers.
- M Aluminium pipe kit for the washer including nozzles.
- M1 Pierced screw.
- M2 Cross fitting with plug and reducers
- PQ Special clamp with conic plug.
- R Net aluminium knob.
- T Washer nozzles.
- U Aluminium net.
- V Sprayer for washing gravity guns.
- Z Internal sprayer for suction gun

Code PNEUMATIC MEMBRANE PUMP (See fig. PA)

PA46 Stainless steel spring.

- PA57 Discharge silencer.
- PA58 Air inlet fitting.
- PA38K Inlet valve complete with: PA38-39-40-41-43.
- PA44K Outlet valve complete with: PA40-41-42-43-44.
- PA48K Membrane complete with: PA47-48-49-50-51.
- PA54K Oscillator complete with: PA54-56-57-58.



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