

SAGOLA 4600

Pistola aerográfica • Spray gun • Pistola de pulverização
Spritzpistole • Pistolet pulvérisateur • Pistola a spruzzo • 噴槍 • スプレーガン



manual de instrucciones
instruction manual
manual de instruções
gebrauchsanleitung
manuel d'utilisation
libretto di istruzioni
操作手冊
取扱説明書

SAGOLA [®]
an Elcometer company



Original version in Spanish

**OPERATING AND MAINTENANCE INSTRUCTIONS
FOR SPRAYING EQUIPMENT**

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01. Warning



Before starting the unit you must read, take into consideration and comply with all the indications described in this Manual.

This manual must be kept in a safe place, accessible to all users of the unit.

The unit must be started and handled exclusively by personnel instructed in its use and must be employed only for the purpose for which it was designed.

Likewise, accident prevention standards, regulations, work centre directives and current legislation and restrictions must be taken into consideration at all times.

The logotypes of SAGOLA and other SAGOLA products mentioned in this manual, are registered trademarks or brand names of the company **SAGOLA S.A.U.**

02. Meaning of the pictograms

			
Refer to the manual/ instruction leaflet	Important information	Danger (user)	Safety glasses is mandatory
			
Hearing protection	Mandatory respiratory protection	Gloves required	Sprayed product

03. Introduction

This unit belongs a the family of devices designed to spray products with compressed air with a spray gun, providing a high level of product transfer ($T > 65\%$) and excellent quality finish, as well as low levels of contamination.

The equipment consists of the following:

- Spray gun
- Cleaning brush
- Case
- Accessory wrench
- Instruction manual Web



04. Technical details

Spraygun with **product-feed by gravity** (hereinafter the Gun) with Tip and Air Nozzle of the type described in the packaging.

Product cups:

Plastic cup with non-drip cap  650 ml	Metal cup with lid  1 litro	SAGOLA DPC disposable paint cups  100 ml 200 ml 400 ml 600 ml 800 ml
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SAGOLA 4600 Technical details		
	SAGOLA 4600	SAGOLA 4600 Digital
Weight (without cup)	468 g. 1.03 lb.	493 g. 1.08 lb.
Weight (with cup)	650 g. 1.43 lb.	675 g. 1.48 lb.
Weight (with metal cup)	712.5 g. 1.57 lb.	738 g. 1.62 lb.
Dimensions	161 x 19 x 187 mm. 6.33 x 0.74 x 7.36 inches	161 x 19 x 178 mm. 6.33 x 0.74 x 7 inches
Air inlet	BSP 1/4" M	
Temperature range	from 0 to 60 °C from 32 to 140 °F	from 0 to 50 °C from 32 to 122 °F
Product inlet	M18 x 1,5" M	
Maximum Air pressure	8 bar 116 psi	
Recommended air pressure	from 1.4 to 2.2 bar from 20.3 to 31.9 psi	
Recommended air pressure HVLP	1.8 bar 26 psi	
Materials in contact with product	Anodized aluminum, STAINLESS steel, PTFE, POM and Nylon	
Recommended EPA aircaps application distance	from 15 to 20 cm. from 5.9 to 7.9 inches	
Recommended HVLP aircaps application distance	from 12 to 15 cm. from 4.7 to 6 inches	

Specifications Digital pressure gauge battery

Lithium Cell	Duracell or Varta (type CR-1/3N)
Voltage	3 Volt
Capacity	160 mAh

ATEX Normative

Electric equipments	UE 0163  II 2G Ex ia IIC T4 Gb (*)
NON Electric equipments	UE  II 2G T4 x (*)

(*) Non electric gun in explosion hazard areas (ATEX) must have the earthing connections and/or static-free feed hoses.

Noise emissions

Two-digit noise emission values declared according to the **UNE-EN ISO 4871:2010** standard for series production, standardized for the reference meteorological conditions.

Emission **sound pressure** level A-Weighted at the workplace.

	DVR HVLP	DVR CLEAR PRO	DVR CLEAR	DVR BASE
Measured value <i>L_{pA,0}</i>	85 dB (re 20 µPa)	84 dB (re 20 µPa)	84 dB (re 20 µPa)	84 dB (re 20 µPa)
Uncertainty <i>U_{pA}</i>	2.4 dB	2.4 dB	2.4 dB	2.4 dB

Emission **sound power** level A-Weighted:

	DVR HVLP	DVR CLEAR PRO	DVR CLEAR	DVR BASE
Measured value <i>L_{pA,0}</i>	96 dB (re 1 p W)	95 dB (re 1 p W)	96 dB (re 1 p W)	95 dB (re 1 p W)
Uncertainty <i>U_{pA}</i>	2.4 dB	2.4 dB	2.4 dB	2.4 dB

Values determined according to the acoustic test code of Standard **UNE-EN 14462:2015, Annex A, A 2.1**, using the basic standards:

UNE-EN ISO 11201 V2:2010 + ERRATUM:2011 precision grade 2 (fully compliant) and **UNE-EN ISO 3744:2011** precision grade 2 (fully compliant), during the application cycle with the manufacturer's recommended settings corresponding to the highest noise emission level.



The sum of a measured noise emission value and its associated uncertainty represents an upper limit of the range of values that can occur in measurements.

The sound values indicated are tests in accordance with established codes and standards and are not a sufficient risk assessment for all exposure scenarios.

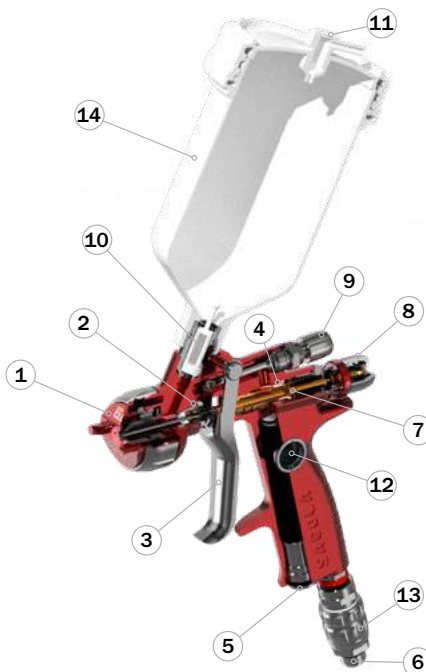


Values measured at a workplace may be higher than declared values. The actual exposure of securities and the amount of risk or harm occurred to an individual are unique to each situation and depends on the surrounding environment, the way the individual works, the material being used, the design of the workplace, as well. such as the exposure time and the physical condition of the user.

SAGOLA S.A.U. can not be held responsible for the consequences of using declared values instead of actual exposure values for any individual risk assessment.

05. Components

- 1 Air nozzle
- 2 Head packing gland
- 3 Trigger
- 4 Valve packing gland
- 5 Digital pressure gauge access plug
- 6 Air inlet
- 7 Air valve
- 8 Product regulator
- 9 Spray width regulator
- 10 Product filter
- 11 Non drip plug
- 12 Pressure gauge sight glass
- 13 Air flow regulator
- 14 Product Cup



06. Warnings

Before putting the unit into operation, and especially after each cleaning and/or repair operation, a check must be made that the gun **components** are **securely tightened** and that the air and/or product **hoses** are **airtight** (no air leaks). Faulty parts must be replaced or repaired as appropriate.

The gun is **easy to handle** thanks to its design and the simplicity of its mechanisms. **No special training** is required for handling the gun. Use the gun according to the **operating, maintenance and safety instructions** indicated in this manual and follow the **application methods** indicated to obtain the required quality of finish.

Before putting the unit into operation, we recommend you to **clean the gun** as this has been subjected to functional tests and before packaging it is treated internally with a protective coating, some of which may still remain. **Apply thinner** to eliminate this. Remove any residual grease applied during assembly.

Ensure that the products to be applied are chemically compatible with the components these come into contact with (aluminium, stainless steel, polythene and acetylene resin).

Do not use corrosive or abrasive products.

The gun has been designed for long service and can be used with the majority of the products available on the market. **Its use with highly aggressive products will quickly increase the need for maintenance and spares.** If you need to apply special products, please contact **SAGOLA S.A.U.**

Read and apply all the **information, instructions and safety measures** indicated by the **manufacturer of the products to be applied** (thinners, etc.) as these may **provoke chemical reactions, fires and/or explosions, or be toxic, irritant or harmful** and in all cases **dangerous for the health and personal safety of the user and of other persons nearby** (see chapter on Safety and Health).

Mix, prepare and filter the product to be applied in accordance with the manufacturer's instructions, ensuring that any foreign bodies are prevented from spoiling the quality of finish and application. Should there be any doubt relating to the purity of the product, its composition, etc., please contact your supplier.

Control the **viscosity of the product** to be applied with the SAGOLA Viscosimeter - Código 56418001

Ford No.4



07. Useful tips

07.1.- General advice

You are recommended to **use the gun with the product regulator open (without removing it completely from its housing)** in order to minimise wear to the fluid tip and needle and to ensure maximum amplitude.



Use the lowest spray pressure in the nozzle that allows you to obtain the required finish. Not all products require the maximum pressure for correct spraying. With a lower pressure, less air is consumed and there is an additional increase in product transfer.

The gun leaves the factory ready to spray products correctly with the air nozzle corresponding to each application. It is adjusted to an air inlet pressure of 2 bar to ensure maximum performance.

Pay special **attention to the application speed**. The thickness of the film deposited may be greater than planned if the application speed is low, and the opposite is also true..

If the thickness of the layer is very thin, this is due to the fact that the **air pressure is excessive** for the amount of product being applied. **Reduce the air pressure** in the gun in order to ensure that the solvent in the paint does not evaporate during spraying and that this is not dry when it reaches the surface to be painted. **Increase the amount of product, correct its viscosity or use a larger fluid tip in the gun.**

If the film is thick, this is due to the fact that the air pressure is excessive for the amount of product to be applied. **Decrease the amount of product, reduce its viscosity** or use a smaller fluid tip in the gun.

If sagging occurs, this is due to the fact that the amount of product to be applied is excessive for the air pressure used, that the viscosity is not correct or the application speed is not adequate. **Decrease the amount of product, adjust its viscosity or increase the application speed** until the required finish is obtained.

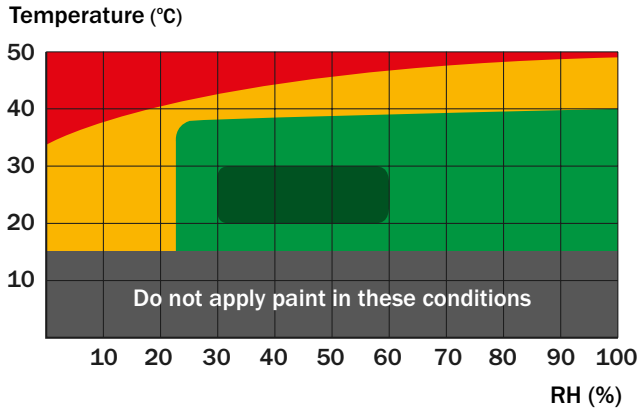
The **spraying width** (spraying pattern) obtained **will depend on the air nozzle used**. If nozzles are required for other applications, contact the Technical Service of SAGOLA S.A.U.

The **size** or **amplitude** of the spraying pattern **can be modified with the spray width regulator**, by turning the control anticlockwise to increase this or clockwise to reduce this.



07.2.- Tips for application in different climatic zones

Paint application, especially waterborne paints.



Extreme climate fan pattern

- **Extreme climate conditions:** The use of additives in the paint may be required (see paint manufacturer specifications).

- **Recommendations:**

- Increase the peak size from 0.1 to 0.2 mm. compared to the one used in normal conditions.
- Reduce the size of the fan by making it more rounded and with a central core more loaded with product.

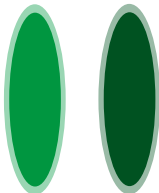


Critical climate fan pattern

- **Critical climate conditions:** The use of additives in the paint may be required (see paint manufacturer specifications). Reduction of the fan and increase of the spray core in a critical climate.

- **Recommendations:**

- Reduce the dynamic pressure between 0.2 and 0.5 bar compared to that used in normal conditions.
- Increase the size of the peak from 0.1 to 0.2 compared to that used in normal conditions.
- Increase the product load in the central core of the fan.



Standard fan pattern Optimum fan pattern

- **Non-critical climate conditions:** The use of additives in the paint may be required (see paint manufacturer specifications).

- **Recommendations:** Standard fan pattern.

- **Optimum climate conditions:**

- **Recommendations:** Optimum fan pattern.

08. Functional Description of the Equipment

The **SAGOLA 4600** gun model can be used for applying appropriately diluted products (paints, lacquers, varnishes, adhesives, etc.), used widely in the **automotive industry, timber industry, plastics, etc.**

Compressed air for spraying is connected to the **air input connector** under the gun grip.

The **product** to be applied is placed in the **cup** provided for this purpose, from which it flows by **gravity** to the **fluid tip** and is then mixed with spraying air in a way that can be controlled from outside the air nozzle.

When the trigger is pulled back to the first position, it engages the air valve stem, opening this and allowing **air to flow through**.

When the trigger is pulled back fully, the product needle is retracted, **allowing the product to flow out**. This is then sprayed in the form of a fan.

When the trigger is released, the needle returns to its **initial position**, first closing off the product outlet and then the air valve and **application stops**.

09. Digital Pressure Gauge

The **digital pressure gauge**, built into the gun body, **indicates the internal air pressure** with a precision of ± 0.16 bar or ± 1.6 psi (psi version), **when the trigger is pulled back to the first position**. The indicator can measure up to 9.9 bar. When the gun is disconnected from the compressed air distribution network, pressure measurement is deactivated, thereby increasing the service life of the battery that powers the gauge (between 1 and 3 years according to use).



The **digital pressure gauge** is sealed hermetically against external inferences (maximum temperature 60°C). Should the gauge not indicate any pressure, you must replace the battery and the gasket fitted to the plug.

The housing of the digital pressure gauge must be opened only to replace the battery. If necessary, also replace the gasket mounted in the plug of the device. Should this not be done, the warranty will be rendered null and void.

For correct operation, the digital pressure gauge continuously measures the pressure inside the pistol, while there is a power supply through the battery.



The battery can not be replaced in hazardous areas. See Atex regulations about explosion risk areas. The digital pressure gauge must not be handled in potentially explosive areas.

In order to make any check, repair or operation, first disconnect the unit from the compressed air network.

Should there be any malfunction in the pressure gauge, its sight glass or any of its components, the gun must be disconnected and repaired by the Technical Services of SAGOLA. If this not be done, ATEX approval will be lost.

The digital pressure gauge has been subjected to a conformity check and has been developed and manufactured in accordance with Community Directive 2014/34/UE.

It was assembled according to:  II 2G Ex ia IIC T4 Gb

In explosion areas 1 and 2 it can be used in temperatures of up to 60°C.

10. Tips and Needles Kits

SAGOLA supplies **Nozzle Kits** and **Tip and Needle Kits** of different sizes for a variety of different applications. In order to replace these, proceed as follows:

With the gun fully depressurised, remove the air nozzle.

Remove the **Product Regulator** with the **spring** and the **spring stop** and extract the needle to be replaced. Remove the **tip** with the wrench supplied.

Fit the new tip and tighten. Now fit, in this order, the **new needle**, the **spring** and **spring stop** and the **product regulator**. Lastly, fit the appropriate **air nozzle**.

There are **Tip + needle Kits** for this model of Ø 1.20, 1.20XL, 1.30, 1.30XL and 1.40.



11. Air Nozzle Kits

Air Nozzle Kits: **DVR CLEAR PRO**, **DVR BASE**, **DVR HVLP** and **DVR CLEAR**.



	DVR HVLP	DVR CLEAR PRO	DVR CLEAR	DVR BASE
Air consumption <i>L/min</i>	425 L/min	320 L/min	305 L/min	290 L/min
Pressure <i>Bar</i>	1,8 bar (*)	2 bar	2 bar	2 bar

(*) **PRESSURE FOR TEST CHECKER:** With the HVLP nozzle You must not exceed the maximum inlet pressure of 1.8 bar. An excess pressure will create an additional over spray and will reduce the transfer.

12. Start-up

Before each start-up and especially after cleaning or repairing the unit, a check must be made that all its **elements** are **securely tightened**.

If **maintenance or repair work is to be carried out**, the **gun** must be **depressurised** before work begins (without air pressure). Should this **safety** measure **not be observed**, this **may lead to malfunctions, personal injury and accidents, which may prove to be fatal**. SAGOLA S.A.U. does not accept any responsibility for the consequences of any non-compliance with these safety regulations.

Open the spray width (No.10) and product regulators (No.20) completely (without removing these from their housing) by turning these anticlockwise. (See Fig.01 and Fig.02)

Place the gun on a support so that the axis of the tank is vertical.



Fig.01



Fig.02

Pour the product to apply into the tank. Until the level is a maximum of **20-25 mm. below the edge** of the tank.

Tighten the filler cap firmly. In the version with the non-drip cap, tip it forward (paint up) or back (paint down) as necessary.

Connect the gun to the compressed air network. (See Fig.03)

Adjust the air pressure in the network regulator in order to compensate for any pressure drop in the network (estimated at 0.6 bar for each 10 m of hose).

Adjust the air pressure in the air nozzle by operating the flow regulator (see Fig.04), until the required quality of finish is obtained (better finishes are not obtained with higher spraying pressures and these lead to lower performance and worse product transfer).

Position the air nozzle spraying orifices appropriately (when an imaginary line is drawn through the 2 lugs (see Fig.05), this must be parallel or perpendicular to the floor).

Fully close the product regulator by turning it clockwise (see Fig.06).

Turn the product regulator until the "0" coincides with the arrow (see Fig.07); and perform the desired application test, adjusting the product regulators (see Fig.08) and range as follows:



Fig.03



Fig.04



Fig.05



Fig.06



Fig.07



Fig.08

Open the product regulator until the appropriate amount of product comes out. Now you have the maximum spraying width (spraying pattern). You can reduce this according to your needs by closing the spray width regulator.

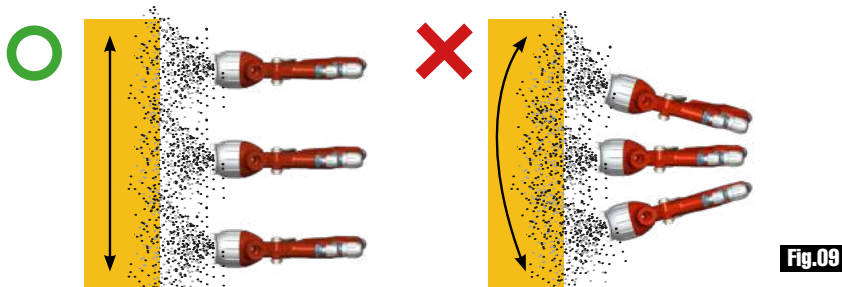


Fig.09

Please be sure that you **put the spray gun properly by keeping its perpendicularity to the piece to be painted** in order to achieve the maximum transfer of the sprayed product and obtain the best finishing quality (See Fig.09).

12.1.- Clean Air

The **air used for spraying** must reach the gun **free of impurities, aerosols, oil, silicone and solid particles**. To do this you must eliminate these with coalescent filter units.

The use of **air treatment equipment** with built-in pressure regulators is recommended (SAGOLA 5200X, 5300X or 5300X Plus models).

12.2. Sufficient volume of air

A **sufficient volume of air can be supplied to the gun by means of an air compressor of adequate power** (1HP equals 110 L/min approximately), a good compressed air network and by avoiding pressure drops through the use of **antistatic, silicon-free air hoses** with a minimum inside diameter of 8 mm. and **resistant to the spraying air pressure (minimum 20 bar)** and to the **aggressive effects of paint solvents**. Before assembling the air network, you must check on the air tightness of the hose.



Use antistatic air hoses. Should an antistatic air hose not be available, you must attach the unit to a ground connection in order to eliminate any static electricity.

The **total derivative resistance** must be <1 million Ohms.

12.3. Adjusting Air Pressure



Digital Pressure Gauge Version

The gun leaves the factory ready to work at an input pressure of 2 bar. In order to change this adjustment, turn the flow regulator clockwise until the pressure indicated in the internal pressure gauge coincides with the required working pressure.



Analogue Pressure Gauge Version

The gun leaves the factory ready to work at an input pressure of 2 bar. In order to change this adjustment, turn the regulator control, clockwise in order to reduce the pressure and anticlockwise to increase this, until the pressure indicated in the pressure gauge coincides with the required working pressure.



Version without Pressure Gauge

The gun leaves the factory with the internal flow regulator fully open. In order to adjust this to the required pressure, turn the regulator clockwise to reduce the inlet pressure and anticlockwise to increase this.

12.4. Amount of Product to be applied

Once the **product to be applied** has been adequately **diluted**, turn the **Product Regulator** clockwise to reduce the amount of product and anticlockwise to increase this.

During application, the **amount of product** applicable in areas that are small or difficult to access **can be reduced** by reducing the pressure applied with one's finger.



12.5. Application distance

Adjust the distance between the air nozzle and the object to cover to between 10 and 20 cm., depending on the application, in accordance with this, the product to be applied and working conditions, in order to increase transfer and obtain a reduction in the amount of mist in accordance with the air nozzle used in each case.



13. Maintenance

In order to carry out maintenance, repairs or cleaning, first **disconnect the unit from the compressed air distribution network**.

Do not apply excessive force or inadequate tools for maintaining and cleaning the unit. Some repairs must be done with special tools on some occasions.

In these cases, you must contact the **Customer Service of SAGOLA**. Any handling of this product by non-authorised personnel would render the warranty null and void.

The unit must be overhauled on a periodic basis to check the status of its components and replace these when they are not in perfect condition.



In order to obtain the best possible results, always use ORIGINAL SPARES. ensure total interchangeability, safety and operation.

13.1. Changing the self-adjusting Packing gland

The **needle gaskets** (packing gland) that form part of the packing gland are gun components that should be **replaced when malfunctions occur or when there is a loss of air tightness**.

• **Gun head packing gland:** In order to replace the packing gland, remove the product regulator (No.20) (see Fig.01), and extract the product needle and spring fitted with its stop (see Fig.02). With a 13 mm. fixed wrench, remove the packing gland (No.09) to be replaced. Replace the packing gland and reassemble in the reverse order (see Fig.03).



Fig.01



Fig.02



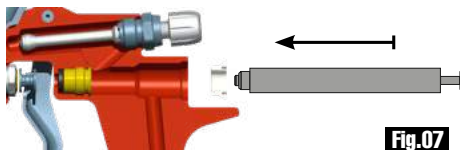
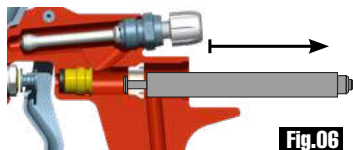
Fig.03

• **Changing seat valve:** For removal of the valve seat; remove the product regulator (No.20) and extract the product needle and spring fitted with its stop. (See Fig.04). With a 9 mm Allen wrench, remove the guide box (No.22), extracting the valve spring and the valve (see Fig.04 and Fig.05).



After take the key assembly (No.27) supplied with the gun and proceed to remove the valve seat (No.23) with hook key. (See Fig.06)

For **assembly**, follow the **reverse procedure**. (see Fig.07)



• **Packing gland of the air valve:** Follow the above procedure to remove the valve seat. Then with a 6 mm. Allen wrench, remove the packing gland (No.25) and extract the gasket (No.24) (see Fig.08). Replace the packing gland and the washing support gasket (supplied in the specific kit) (see Fig.09) and follow the reverse procedure.



13.2. Changing the battery



YOU SHOULD NOT REPLACE THE BATTERY if there is a possibility of being in an explosive atmosphere.

The electric **battery** must be Li/Mn mod. **CR1/3N and 3v** (Duracell or Varta)

With a 7 mm Allen wrench, remove the pressure gauge housing plug (No.13) and locking seal (No.11). Extract the dead battery and replace with a new one. Make sure the polarity is correct!!



Replace the gasket with the one supplied with the battery in Kit 56418440. Fit the new gasket in the plug and fit both in the gun, closing the housing hermetically.



Environmental damage by depositing the battery you have repaced in the battery recycling container.



13.3. Cleaning or replacement of the product filter

If there is any cleaning liquid or product remaining in the tank, return it to its corresponding containers. To avoid any spillage, **keep the pistol in a vertical position** and clean as thoroughly as possible.

Holding the pistol firmly by the handle, **disassemble the tank by unscrewing it from the body of the pistol.**

Extract the product filter (No.29) and if there is any cleaning liquid or product remaining in the body of the pistol, return it to its corresponding container.



Clean or replace the product filter as needed, taking into account that the impurities will cause defects in the finish and/or obstructions.

Assemble the product filter again, inserting it all the way into the hole in the input connector.

Fit the tank by screwing it firmly onto the body of the pistol, to avoid product leaks.

Tighten the filler cap firmly.

In the version with the non-drip cap, tip it forward (paint up) or back (paint down) as necessary.

Check there are no leaks.



14. Parts list

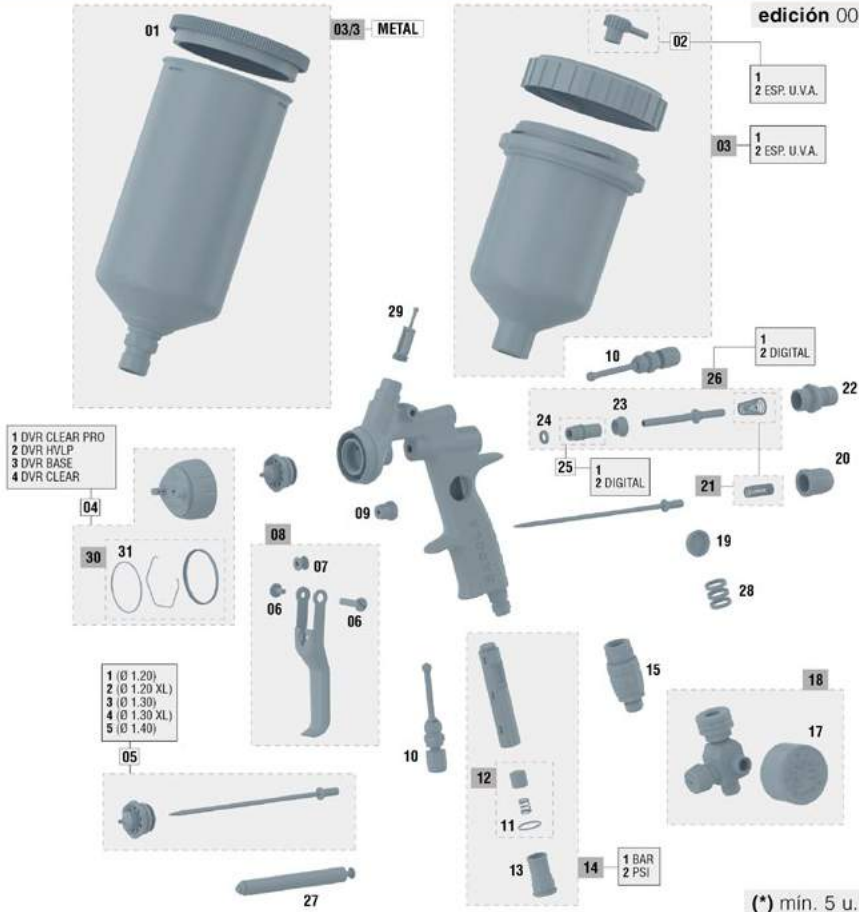
This drawing is not the bill of materials.

SAGOLA
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Pistola de gravedad / Gravity spraygun

SAGOLA4600

edición 00



Nº	Código	Ud
01	57111513	1
02/1	55712157	1
02/2	55712170	1
03/1	56418432	1
03/2	56418433	1
03/3	56418505	1
04/1	56418760	1
04/2	56418761	1
04/3	56418759	1

Nº	Código	Ud
04/4	56418762	1
05/1	10011137	1
05/2	10011145	1
05/3	10011138	1
05/4	10011139	1
05/5	10011140	1
06	56418631	1
07	51910607	1
08	56418632	1

Nº	Código	Ud
09	56411616	1
10	56415258	2
11	54250985	1
12	56418440	1
13	55710004	1
14/1	56418442	1
14/2	56418559	1
15	56418519	1
17	54550009	1

Nº	Código	Ud
18	56418020	1
19	56410065	1
20	56415121	1
21	56418633	1
22	56411624	1
23	54110012	1
24	56418441	1
25/1	57212205	1
25/2	57212223	1

Nº	Código	Ud
26/1	56418634	1
26/2	56418636	1
27	50210214	1
28	56418635	1
29	56418438	1
30	56418677	1
31	56418681	1

15. Cleaning

When work has been completed, both the gun and the product cup must be cleaned with the appropriate thinner, in order to remove any remaining product.

Empty the product cup and pour in the thinner, fit and close the cup cover.

Operate the mechanisms and spray the thinner until the application is clean. Repeat the operation as many times as may be necessary. Remove any remains of product from the gun and cup with a cloth soaked in thinner.

Keep air gasket areas free of accretions and foreign bodies.

The air nozzle is a precision component. Any deformation, especially in the air outlet orifices, may cause malfunctions in its operation and incorrect or deficient quality spraying. If necessary, **dip the air nozzle in thinner in order to soften the remains of product or dirt. Once softened, blow the nozzle with compressed air until any remains of product and thinner are eliminated.**

Should it be necessary to remove the air nozzle, do this with an appropriate, soft object, with great care and avoiding any marking or scratching.

Release the elastic ring that holds its components together.

Once disassembled, clean with thinner, using the cleaning brush supplied.



DO NOT USE any hard or metallic object. The blocked orifices of the nozzle must not be cleaned with a sharp or hard object under any circumstances.



Assemble the nozzle.

For automatic cleaning of the gun, tools and accessories used in the mixing and preparation of the product to be applied, **we recommend the use of SAGOLA washing machines.**

The gun can be cleaned with thinners or detergents in a **gun washing machine**. If you opt for this cleaning system, we advise you to **remember the following considerations**, which, if not applied, may damage the gun and render the warranty null and void:



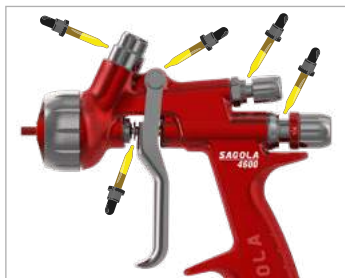
- Do not submerge the gun in solvent or detergents longer than the time required for cleaning.
- Do not use the gun immediately after cleaning has been completed.
- Ensure that there is no thinner or detergent inside and that it is completely free of these substances. Other cleaning systems can be used (ultrasound).
- Do not open the sight glass of the digital pressure gauge.
- If you open the housing of the digital pressure gauge battery, fit a new gasket.
- Do not clean the digital pressure gauge sight glass with sharp, pointed or rough objects.

16. Lubrication

The original lubrication of the gun is eliminated through use and cleaning. In order to guarantee perfect operation, **it is necessary to grease the regulating or fastening threads, friction areas, etc.**, on a periodic basis, especially after each cleaning session and with greater care if the gun has been cleaned in a machine. **Moving parts must be lubricated lightly after cleaning has been completed.**

We recommend you to use a light SAE 10 oil or natural grease or vasoline.

It is important to **check that the lubricant used does not contain components that might impair the spraying quality** (Silicones, etc.).



17. Health and Safety

In order to carry out maintenance, repairs or cleaning, **first disconnect the unit from the compressed air distribution network.**

• Safe disconnection from the compressed air network:

If there is any cleaning liquid or product remaining in the tank, return it to its corresponding container. If the pneumatic connector is fitted in the air inlet, disconnect the hose from the pistol. If it is not, depressurise the air hose properly and, using a spanner, unscrew the end of the hose from the air inlet connector, holding the pistol firmly.

• Safe connection to the compressed air network:

If the pneumatic connector is fitted in the air inlet, connect the hose to the pistol. If it is not, hold the pistol firmly and, using a spanner, screw the end of the hose into the air inlet connector. Check there are no leaks.

• Safe disconnection of the product tank:

Carry out the cleaning according to point 15. Disconnect the tank by unscrewing the product inlet connector, holding the body of the pistol firmly.

• Safe connection of the product tank:

Connect the tank by screwing on the product inlet connector, holding the body of the pistol firmly. Check there are no leaks.



Never point the unit towards yourself, others or animals. The thinners and dilution media used can cause serious injury.

We recommend using this unit in premises with forced ventilation and in accordance with the current standards and provisions on the matter.

Near the unit, only keep the amount of **product and thinner required** for the work being done at that time. After work has been completed, thinners and the product to be applied must be returned to their corresponding storage location.

Keep the working area clean and free of potentially dangerous waste (thinners, rags, etc...).



While work is in progress, there must not be any source of ignition (naked flames, lighted cigarettes, etc.) in the working area as these might generate easily flammable gases. Likewise, the approved protective means must be used (breathing, hearing, etc.) in accordance with the regulations established in this regard.

If the unit is used in an inadequate manner or its components are altered in any way severe material damage may occur and bodily harm may be caused to the operator, other personnel and/or animals and may even cause death. **SAGOLA S.A.U.** accepts no responsibility in for any damage caused through the incorrect use of the unit.

The battery must not be replaced in hazardous areas. See Atex regulations about explosion risk areas.

The battery housing and the pressure measurements sight glass must not be opened in a location where there is any danger of explosion. (UNE EN 60079-11:2013 standard. Do not change batteries in a dangerous location Ex).



Always use approved breathing units in accordance with current Standards and Regulations in order to protect yourself from emissions produced during application.

Never exceed the maximum air inlet pressure (8 bar). Excessive pressure will cause greater environmental contamination. To provide the hose with compressed air for the pistol, fit a pressure regulator and a safety valve.



As a general, preventive measure we advise you to **wear goggles** in accordance with the specific environmental regulations and characteristics for the work centre.



Wear gloves when handling the product (see the manufacturer's recommendations) and clean the gun.



If, when the gun is in use, the ambient noise level exceeds 85 dB (A) **the use of approved ear protectors is required.**

The gun in itself does not propitiate any mechanical risk of perforations, impact or pinching, except those deriving from incorrect installations and handling.

While work is in progress, no vibrations are transmitted from the gun to any part of the body of the operator and reaction forces are minimal.



Use SAGOLA ANTISTATIC HOSES to eliminate possible electrical discharges that might create the risk of fire or explosion.

Pay adequate attention when handling the gun in order to prevent any damage that might lead to dangerous situations for the user or personnel standing near the unit, as a consequence of leaks, breakages, etc. Do not use it if your mental capacity, perceptions and reactions are altered due to substances such as alcohol, drugs, medicines, etc., or by tiredness or for any other reason.

The gun has been designed for use at ambient temperature. Its maximum service temperature is 60°C. Although the air temperature of the compressed air or product is higher, this must not exceed the maximum average temperature in the body of the gun. If the temperature exceeds 43°C, it is necessary to use personal protective equipment, such as gloves to thermally insulate your hands from the unit.



The use of solvents and/or detergents that contain halogenated hydrocarbons (trichloroethane, methyl chloride, etc.), may cause chemical reactions in the unit as well as in its zinc-coated components (trichloroethane mixed with small amounts of water produces hydrochloric acid). For this reason, these components may rust and in extreme cases the chemical reaction caused may be explosive. We recommend you to use products that do not contain the aforementioned components. Do not use acids, soda (alkalis or pickling substances, etc.) for cleaning under any circumstances.

In general, precautions must be taken whenever the gun is handled, in order to prevent any damage to this.

Connectors must be securely tightened and in good condition. If pneumatic connectors are fitted, they must comply with the standard ISO 4414:2010.

Safety standards must be understood and applied.

Any non-compliance with the indications set out in this manual may lead to incidents affecting the physical integrity of the user or other personnel or animals.

Respect and comply with indications relating to the conservation of the environment.

Always keep the safety sheets for the products to apply and the cleaning liquids to hand in case you need to consult them.

18. Observations

By following the instructions set out in this manual you will ensure good spraying and quality of finish. Should you have any doubt, please contact the **Technical Service of SAGOLA**.

19. Warranty Conditions

This device has been manufactured with great precision and has been subjected to a large number of controls before leaving the factory.

The WARRANTY is valid for 3 years, counted as of the date of purchase, which will be indicated by the seller in the place provided for this purpose, together with his stamp. Once the unit has been received, please complete the warranty and send this to the manufacturer for validation

This WARRANTY covers any manufacturing defect, which will be repaired without charge. However, any malfunction resulting from the incorrect use of the unit, such as inadequate connections, breakage due to dropping, or similar, the normal wear of components and in general any deficiency not attributable to the manufacturer of the device, are expressly excluded. Likewise, **the WARRANTY shall be rendered null and void when it is evident that the unit has been handled by persons other than our Technical Assistance Service.**

This **WARRANTY** does not support any undertaking made by anyone outside our Technical Service.

In the case of any breakdown during the guarantee period, please attach the completed warranty certificate to the unit and deliver this to the nearest Technical Assistance Service or get in touch with the factory.

Any demand of greater importance against the supplier, in particular compensation for damages, is excluded. This is also applicable to any damages that might arise during counselling, while acquiring practice and during demonstration.

Consequently, the services rendered under guarantee do not involve an extension of the warranty period.

The manufacturer reserves the right to make technical modifications.

20. Disposal



For complete and correct disposal of the gun, when it has reached **the end of its useful life**, it must be completely dismantled so it can be **recycled**, separating the metal components, the plastics, the electronics, the glass and lithium.

Take into account that the battery and the digital pressure gauge are made up of substances and preparations that are harmful to the environment, as well as human health. These components must be removed at reuse centres or waste treatment and recycling facilities, for neutralisation or reus.

21. Troubleshooting

ANOMALIES	CAUSES	REMEDY
Bubbles in the product cup	Loose fluid tip	Tighten
	Tip-gun body seat and dirty or damaged	Clean or replace
Spray width regulator does not operate	Tip-gun body seat and dirty or damaged	Clean or replace
	Loose spray nozzle	Tighten the nozzle
	Damaged spray width regulator	Replace
	Tip-Nozzle joint dirty or damaged	Clean or replace
The unit does not spray	No product	Check and correct
	No air pressure or insufficient	Check and correct
	Product too dense	Dilute
	Product regulator closed	Adjust
	Clogged fluid conductor	Clean
Intermittent spraying	Insufficient amount of product	Fill adequately
	Product not filtrated (impurities)	Filter
	Loose fluid tip	Tighten
	Cracked fluid tip	Replace
	Worn packing gland in head	Replace
Faulty spray width 	Loose spray nozzle	Tighten nozzle
	Worn spray width regulator	Replace
	Dirty or damaged Tip - Nozzle joint	Clean or replace
	Blockages or dents in the air nozzle or fluid tip 	Turn the nozzle. If it turns check the nozzle. If not, check the fluid tip

ANOMALIES	CAUSES	REMEDY
Incorrect spraying 	Dirty air nozzle	Clean the nozzle
	Inadequate air pressure	Adjust the pressure
	Inadequate amount of product	Adjust the amount of product
	Inadequate viscosity	Adjust the viscosity
	Spray width opening	Adjust
The fluid needle does not close	Foreign bodies in fluid tip	Eliminate particles and clean
	Dirty packing gland in head	Clean and/or lubricate
	Inadequate Tip + needle combination	Replace
	Product regulator excessively open	Adjust adequately
	Needle spring worn or not fitted to gun	Replace or fit
	Product with foreign bodies	Filter

22. US Approvals

Approval for **SCAQMD Rule 1151**:

Sagola 4600 Paint spray gun is **approved** for operations subject to **South Coast Air Quality Management District Rule 1151(d)(6)(A)(v)**, Motor vehicle and mobile equipment non assembly line coating operations.

All versions of **Sagola 4600** spray guns sold or distributed for use within the jurisdiction of the **SCAQMD**, or **HVLP** mandated areas within the USA subject to **Rule 1151**.



Shall be attached the **RC1 mechanical pressure gauge** (Industrial Model No. 200100036) or **digital pressure gauge** (Patent Model No. 559018) and be in good working condition.

The Sagola **RC1 air flow regulator with analog pressure gauge** must be connected to the gun, except in the digital versions that have the **digital pressure gauge** integrated into the body of the spray gun, with a maximum working pressure at the inlet that can **not exceed 29 psi (2 bar)**.



**RC1 air flow regulator
with analog pressure gauge**



**Air flow regulator
with digital pressure gauge**

For your commercial reference, see the chart below.

	Commercial reference	SAGOLA 4600	SAGOLA 4600 digital
Air flow regulator RC1	56418020	✓	
Digital gauge Bar	56418442		✓
Digital gauge psi	56418559		✓

23. Conformity Declaration

Manufacturer: SAGOLA, S.A.U.

Address: Urartea, 6 • 01010 VITORIA-GASTEIZ (Álava) SPAIN

Hereby declares that the product: AEROGRAPHIC SPRAY GUN

Brand: SAGOLA

Range: 4600

Versions: Sagola 4600



UE Conformity declaration

The product conforms with the standards:

- **Directive of machines (2006/42/CE)** and the corresponding transposition into national law 1644/2008.
- **EN 1953:2013** - Atomising and spraying equipment for coating materials. Security requirements.
- **UNE EN-1127-1:2020**
- Prevention and protection against explosion. Part 1: Basic concepts and methodology.

ATEX Directive (Directive 2014/34/UE) UE  II 2G T4 x

Protection Level II 2G Suitable for use in Zones 1 and 2

"X" marking. The equipment must be connected to ground. All static electricity is discharged through air pipes. The air hoses must be "**STATIC-FREE**"

• **UNE EN ISO 80079-36:2017 / AC:2020**

- Non electrical equipment used for potentially explosive atmospheres.

UKCA Conformity declaration

In accordance with the Essential Security Provisions on the Annex of the **Directive 2016 No1107** and it can be used in potentially explosive atmospheres (ATEX).



The product conforms with the standards:

- Directive of machines (**UKSI 2008 No.1597**).
- **BS EN 1953:2013** - Atomising and spraying equipment for coating materials. Security requirements.
- **BS EN-1127-1:2012**. Prevention and protection against explosion. Part 1: Basic concepts and methodology.

These also meets the following Directive and Regulations:

ATEX Directive (Directive UKSI 2016 No 1107)  II 2G T4 x

Protection Level II 2G Suitable for use in Zones 1 and 2

"X" marking. The equipment must be connected to ground. All static electricity is discharged through air pipes. The air hoses must be "**STATIC-FREE**"

BS EN 80079-36:2016. Explosive atmospheres. Non-electrical equipment for explosive atmospheres. Basic method and requirements.

Full technical documentation and service instructions are available for 10 years.

In Vitoria-Gasteiz on 01/01/2024

Signed:

Enrique Sánchez Uriondo
Technical Manager

Manufacturer: SAGOLA, S.A.U.

Address: Urartea, 6 • 01010 VITORIA-GASTEIZ (Álava) SPAIN
Hereby declares that the product: AEROGRAPHIC SPRAY GUN

Brand: SAGOLA

Range: 4600

Versions: Sagola 4600 Digital



UE Conformity declaration

The product conforms with the standards:

- **Directive of machines (2006/42/CE)** and the corresponding transposition into national law 1644/2008.
- **EN 1953:2013** - Atomising and spraying equipment for coating materials. Security requirements.
- **UNE EN-1127-1:2020**
 - Prevention and protection against explosion. Part 1: Basic concepts and methodology.
- **ATEX Directive (Annex II of Directive 2014/34/UE).**
- **UNE EN-60079-0:2021 (EN IEC 60079-0:2018)**
 - Material eléctrico para atmósferas de gas explosivas.
 - Parte 0: Requisitos generales.
- **UNE EN-60079-11:2013 (EN 60079-11:2012)**
 - Explosive environments.
 - Part 11: Protection of the equipment for its intrinsic security.

The model is TEXT CERTIFIED **UE** of type **LOM 05ATEX2091**
and the NORMATIVE MARK  **II 2G Ex ia IIC T4 Gb**

Has been manufactured by SAGOLA S.A.U. Urartea,6 • Vitoria-Gasteiz (Spain) with **MANUFACTURERS NOTIFICATION No. LOM07ATEX9037** supplied by **LOM No.0163**.

Full technical documentation and service instructions are available for 10 years.

In Vitoria-Gasteiz on 01/01/2024

Signed:



Enrique Sánchez Uriondo
Technical Manager



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Ex II 2G Ex ia IIC T4 Gb
II 2G T4 x

