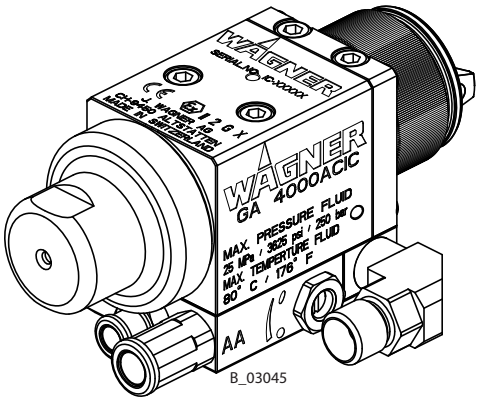
WAGNER

Translation of the original Operating manual

GA 4000ACIC

Edition 08/ 2010

AirCoat
Automatic spray gun



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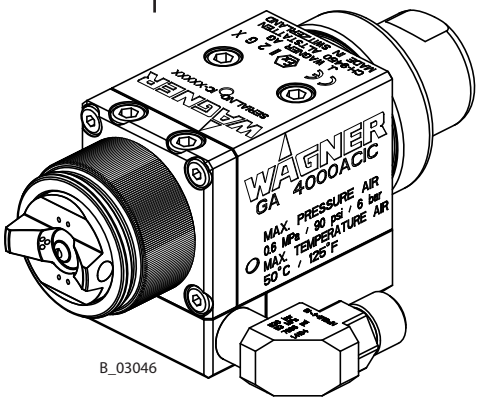

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CE

Ex **II 2GX (Atex 95)**

Contents

Contents

1 ABOUT THESE INSTRUCTIONS

This operating manual contains information on the operation, repair and maintenance of the unit.
→ Always observe these instructions when operating the unit.
This equipment can be dangerous if it is not operated in accordance with this manual.
Compliance with these instructions constitutes an integral component of the warranty agreement.

1.1 LANGUAGES

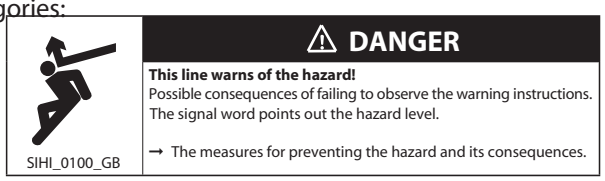
This operating manual is available in the following languages:

Language:	Part No.	Language:	Part No.
German	2312955	English	2312956
French	2312957	Dutch	---
Italian	2312958	Spanish	2312959

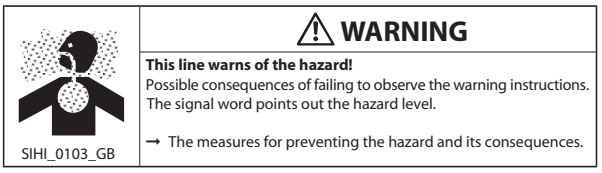
1.2 WARNINGS, NOTES AND SYMBOLS IN THESE INSTRUCTIONS

Warning instructions in this manual point out particular dangers to users and equipment and state measures for avoiding the hazard.
These warning instructions fall into the following categories:

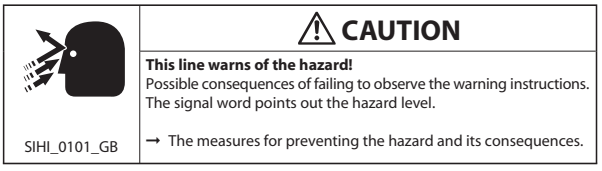
Danger - imminent danger. Non-observance will result in death, serious injury and serious material damage.



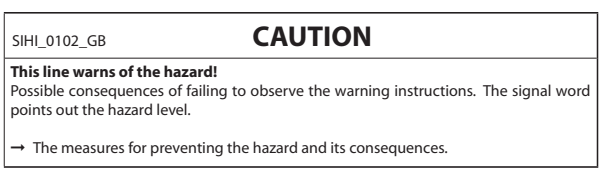
Warning - possible danger. Non-observance can result in death, serious injury and serious material damage.



Caution - a possibly hazardous situation. Non-observance can result in minor injury.



Caution - a possibly hazardous situation. Non-observance can cause material damage.



Note - provide information on particular characteristics and how to proceed.

2 GENERAL SAFETY INSTRUCTIONS

2.1 SAFETY INSTRUCTIONS FOR THE OPERATOR

→ Keep these operating instructions to hand near the unit at all times.
→ Always follow local regulations concerning occupational safety and accident prevention.

2.1.1 ELECTRICAL EQUIPMENT

Electrical plant and unit
→ To be provided in accordance with the local safety requirements with regard to the operating mode and ambient influences.
→ May only be maintained by skilled electricians or under their supervision.
→ Must be operated in accordance with the safety regulations and electrotechnical regulations.
→ Must be repaired immediately in the event of problems.
→ Must be put out of operation if they pose a hazard.
→ Must be de-energized before work is commenced on active parts. Inform staff about planned work, observe electrical safety regulations.

2.1.2 PERSONNEL QUALIFICATIONS

→ Ensure that the unit is operated and repaired only by trained persons.

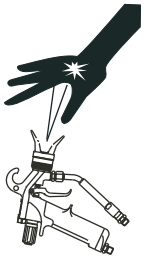
2.1.3 A SAFE WORK ENVIRONMENT

→ Ensure that the floor of the working area is anti-static in accordance with EN 50053 Part 1, §7-2, measurement in accordance with DIN 51953.
→ Ensure that all persons within the working area wear anti-static shoes, e.g. shoes with leather soles.
→ Ensure that during spraying, persons wear anti-static gloves so that they are earthed via the handle of the spray gun.
→ Customer to provide paint mist extraction systems conforming to local regulations.
→ Ensure that the following components of a safe working environment are available:
  – Material/air hoses adapted to the working pressure
  – Personal safety equipment (breathing and skin protection)
→ Ensure that there are no ignition sources such as naked flame, glowing wires or hot surfaces in the vicinity. Do not smoke.

2.2 SAFETY INSTRUCTIONS FOR STAFF

→ Always follow the information in these instructions, particularly the general safety instructions and the warning instructions.
→ Always follow local regulations concerning occupational safety and accident prevention.

2.2.1 SAFE HANDLING OF WAGNER SPRAY UNITS



The spray jet is under pressure and can cause dangerous injuries.
Avoid injection of paint or cleaning agents:
- → Never point the spray gun at people.
- → Never reach into the spray jet.
- → Before all work on the unit, in the event of work interruptions and functional faults:
  - – Switch off the energy/compressed air supply.
  - – Secure the spray gun against actuation.
  - – Relieve the pressure from the spray gun and unit.
  - – By functional faults: Identify and correct the problem, proceed as described in chapter „Trouble shooting".

In the event of skin injuries caused by paint or cleaning agents:
- → Note down the paint or cleaning agent that you have been using.
- → Consult a doctor immediately.

Avoid danger of injury through recoil forces:
- → Ensure that you have a firm footing when operating the spray gun.
- → Only hold the spray gun briefly in any one position.

2.2.2 EARTH THE UNIT

Electrostatic charges can occur on the unit due to the electrostatic charge and the flow speed involved in spraying. These can cause sparks and flames upon discharge.
- → Ensure that the unit is always earthed.
- → Earth the work pieces to be coated.
- → Ensure that all persons inside the working area are earthed, e.g. that they are wearing antistatic shoes.
- → When spraying, wear antistatic gloves to earth yourself via the spray gun handle.

2.2.3 MATERIAL HOSES

- → Ensure that the hose material is chemically resistant to the sprayed materials.
- → Ensure that the material hose is suitable for the pressure generated in the unit.
- → Ensure that the following information is visible on the high pressure hose:
  - – Manufacturer
  - – Permissible operating overpressure
  - – Date of manufacture.
- → The electrical resistance of the complete high pressure hose must be less than 1 MOhm.

2.2.4 CLEANING

- → De-energize the unit electrically.
- → Disconnect the pneumatic supply line.
- → Relieve the pressure from the unit.
- → Ensure that the flash point of the cleaning agent is at least 5 K above the ambient temperature.
- → To clean, use only solvent-free cloths and brushes. Never use hard objects or spray on cleaning agents with a gun.

An explosive gas/air mixture forms in closed containers.
- → When cleaning units with solvents, never spray into a closed container.
- → Earth the container.

2.2.5 HANDLING HAZARDOUS LIQUIDS, VARNISHES AND PAINTS

- → When preparing or working with paint and when cleaning the unit, follow the working instructions of the manufacturer of the paints, solvents and cleaning agents being used.
- → Take the specified protective measures, in particular wear safety goggles, protective clothing and gloves, as well as hand protection cream if necessary.
- → Use a mask or breathing apparatus if necessary.
- → For sufficient health and environmental safety: Operate the unit in a spray booth or on a spraying wall with the ventilation (extraction) switched on.
- → Wear suitable protective clothing when working with hot materials.

2.2.6 TOUCHING HOT SURFACES

- → Touch hot surfaces only if you are wearing protective gloves.
- → When operating the unit with a coating material with a temperature of > 43 °C; 109.4 °F:
  - Identify the unit with a warning label that says „Warning - hot surface“.

Order No.
9998910 Information label
9998911 Safety label

2.3 CORRECT USE

WAGNER accepts no liability for any damage arising from incorrect use.
- → Use the unit only to work with the materials recommended by WAGNER.
- → Operate the unit only as an entire unit.
- → Do not deactivate safety equipment.
- → Use only WAGNER original spare parts and accessories.

2.4 USE IN AN EXPLOSION HAZARD AREA

2.4.1 CORRECT USE

The unit is suitable for working liquid materials in accordance with the classification into explosion classes.

2.4.2 EXPLOSION PROTECTION IDENTIFICATION

As defined in the Directive 94/9/CE (ATEX 95), the unit is suitable for use in areas where there is an explosion hazard.

CE Ex II 2G X

CE: Communautés Européennes
Ex: Symbol for explosion protection
II: Unit class II
2: Category 2 (Zone 1)
G: Ex-atmosphere gas
X: See: "Special Notes" in the operating manual

2.4.3 "X" SPECIAL NOTES

X: The maximum surface temperature corresponds to the permissible material temperature. This and the permissible ambient temperature can be found in the Technical Data.

2.4.4 SAFETY INSTRUCTIONS

Safe handling of WAGNER spray units
Mechanical sparks can form if the unit comes into contact with metal.

In an explosive atmosphere:
→ Do not knock or push the unit against steel or rusty iron.
→ Do not drop the spray gun.
→ Use only tools that are made of a permitted material.

Ignition temperature of the coating material
→ Ensure that the ignition temperature of the coating material is above the maximum surface temperature.

Medium supporting atomizing
→ To atomize the material, use only weakly oxidizing gases, e.g. air.

Cleaning
If there are deposits on the surfaces, the unit may form electrostatic charges. Flames or sparks can form if there is a discharge.
→ Remove deposits from the surfaces to maintain conductivity.

3 GUARANTEE AND CONFORMITY DECLARATIONS

3.1 IMPORTANT NOTES ON PRODUCT LIABILITY

As a result of an EC regulation, effective as from January 1, 1990, the manufacturer shall only be liable for his product if all parts come from him or are approved by him, and if the devices are properly fitted , operated and maintained.
If other makes of accessory and spare parts are used, the manufacturer's liability could be fully or partially null and void.
The usage of original WAGNER accessories and spare parts guarantees that all safety regulations are observed.

3.2 GUARANTEE CLAIM

Full guarantee is provided for this device:
We will at our discretion repair or replace free of charge all parts which within 24 months in single-shift, 12 months in 2-shift or 6 months in 3-shift operation from date of receipt by the Purchaser are found to be wholly or substantially unusable due to causes prior to the sale, in particular faulty design, defective materials or poor workmanship.
The type of guarantee provided is such that the device or individual components of the device are either replaced or repaired as we think fit. The resulting costs, in particular shipping charges, road tolls, labour and material costs will be borne by us except where these costs are increased due to the subsequent shipment of the unit to a location other than the address of the purchaser.

We do not provide guarantee for damage that has been caused or contributed to for the following reasons:
Unsuitable or improper use, faulty installation or commissioning by the purchaser or a third party, normal wear, negligent handling, defective maintenance, unsuitable coating products, substitute materials and the action of chemical, electro chemical or electrical agents, except when the damage is attributable to us.
Abrasive coating products such as red lead, emulsions, glazes, liquid abrasives, zinc dust paints and similar reduce the service life of valves, packings, spray guns, tips, cylinders, pistons etc. Signs of wear and tear due to such causes are not covered by this guarantee.

Components that have not been manufactured by WAGNER are subject to the original guarantee of the manufacturer.
Replacement of a component does not extend the period of guarantee of the device.
The unit should be inspected immediately upon receipt. To avoid losing the guarantee, we or the supplier company are to be informed in writing about obvious faults within 14 days upon receipt of the device.

We reserve the right to have the guarantee compliance met by a contracting company.
The services provided by this guarantee depend on evidence being provided in the form of an invoice or delivery note. If an examination discovers that no guarantee claim exists, the costs of repairs are charged to the purchaser.

It is clearly stipulated that this guarantee claim does not represent any constraint to statutory regulations or regulations agreed contractually in our general terms and conditions.

J. Wagner AG

3.3 CE-CONFORMITY

Herewith we declare that the supplied version of

2312132	AirCoat Automatic gun GA 4000ACIC
2312144	Base plate
2308810	Base plate

Complies with the following guidelines:
2006/42/EG
94/9/EG

Applied standards, in particular:
DIN EN ISO 12100-1: 2004-04
DIN EN ISO 12100-2: 2004-04
DIN EN ISO 14121: 2007-12
DIN EN 1127-1: 2008-02
DIN EN 1953: 1998-12
DIN EN ISO 3746: 1995-12
DIN EN 13463-1: 2002-04
DIN EN ISO 13732-1: 2006-12

Identification:
CE Ex II 2G X

CE Certificate of Conformity
The certificate is enclosed with this product. The certificate of conformity can be reordered from your WAGNER representative, quoting the product and serial number.

Part number:

GA 4000AC 2315627

3.4 NATIONAL TECHNICAL SPECIFICATIONS

a) BGR500 Part 2, chap. 2.36 „Working with liquid ejection devices“
b) BGR 500 Part 2, chap. 2.29 „Processing with coating materials“
c) BGR 104 Explosion protection rules
d) TRBS 2153 Avoiding ignition risks
e) BGI 740 Painting rooms and equipment
f) ZH 1/406 Guidelines for liquid ejection devices

Note: All titles can be ordered from Heymanns Publishing House in Cologne or of the Internet download.

4 DESCRIPTION

4.1 FIELD OF APPLICATION, USING IN ACCORDANCE WITH THE INSTRUCTIONS

The gun is suitable for atomizing liquid materials, particularly coating materials, using the AirCoat process.

4.1.1 PROCESSABLE MATERIALS

Top-coat paints, primer paints, corrosion protection solvents, textured paints, lyes, staining solvents, clear paints, separating fluid, etc. on a solvent or water basis.

Note:
In the event of application problems, contact your WAGNER branch and the paint manufacturer.

4.2 DELIVERY SCOPE

4.2.1 TYPE DESCRIPTION

GA	4000	AC	XX
①	②	③	④

① GA = Automatic gun

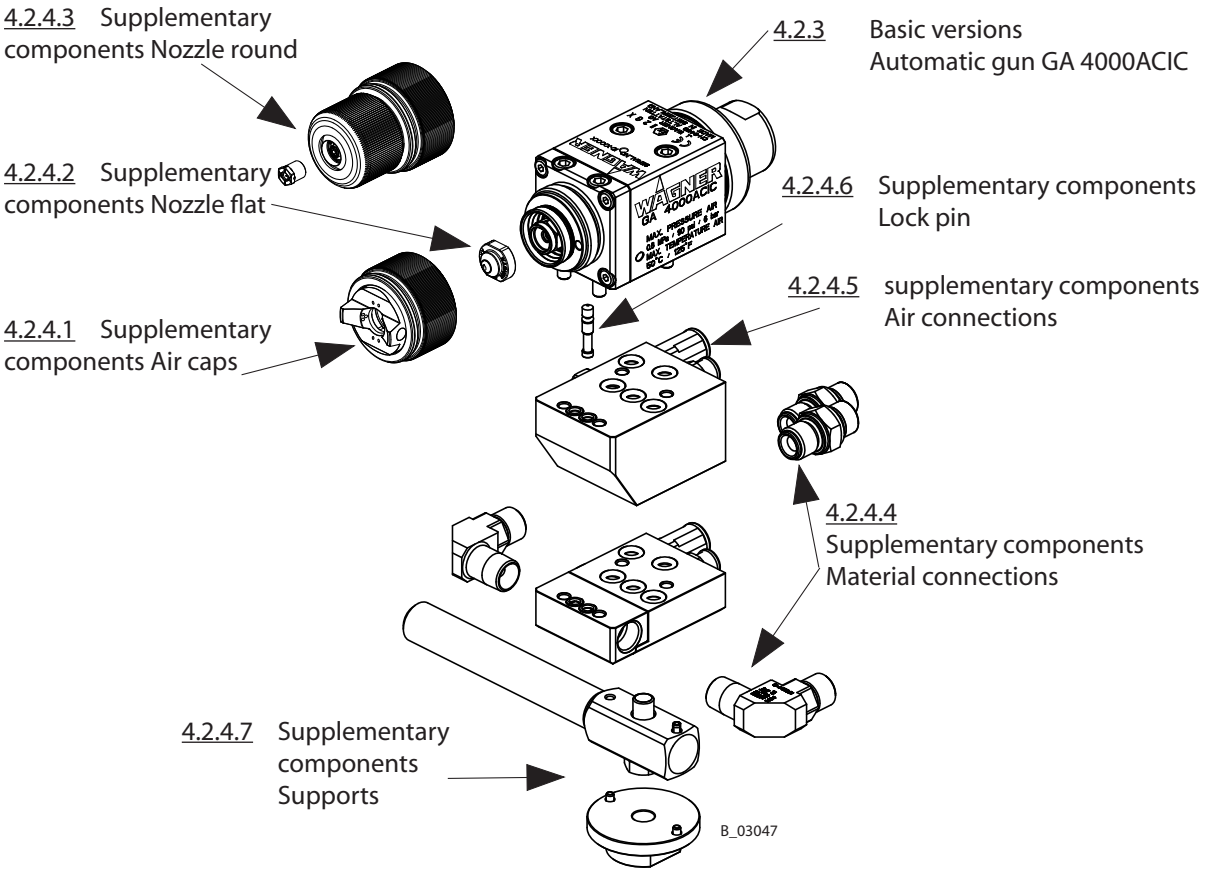
② 4000 = Type of gun

③ AC = AirCoat spray procedure

④ IC = Shaping and atomizing air controlled via valve within gun
EC = Shaping and atomizing air controlled via valve outside of gun

4.2.2 OVERVIEW

The Aircoat automatic spray gun is composed of a gun and the base plate and supplementary components. Circulation operating mode is possible.



4.2.3 BASIC VERSION

Part No.	Description
2312132	AirCoat Automatic gun GA 4000ACIC
2312144	Base plate
2308810	Base plate

The standard equipment includes:

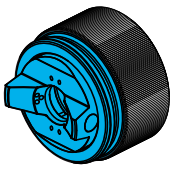
Part No.	Description
2312132	AirCoat Automatic gun GA 4000ACIC
2315627	CE-Conformity
2312955	Operating manual German
2312956	Operating manual English
See chap. 1	An operating manual in the local language

For special versions the delivery note applies.

4.2.4 SUPPLEMENTARY COMPONENTS

4.2.4.1 AIR CAPS

Part No.	Description
2308809	Air cap HV plus (blue) for high viscosity paints
2308808	Air cap LV plus (red) for low viscosity paints
2313493	Air cap LA plus (bronze)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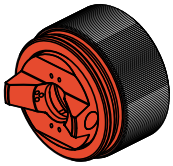
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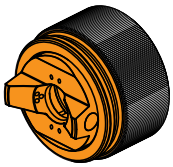
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4.2.4.2 AIRCOAT FLAT JET NOZZLE ACF3000

Part No.	Description
379XXX	For a nozzle list look in chapter 8


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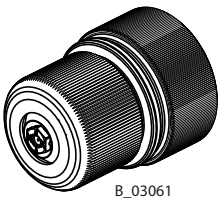
4.2.4.3 AIRCOAT ROUND JET NOZZLE ACR3000

Part No.	Description
379XXX	For a nozzle list look in chapter 8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4.2.4.4 MATERIAL CONNECTIONS

Part No.	Description
350550	Connection nipple straight
2314065	Connection nipple 90°


B_03074


B_03097

4.2.4.5 AIR CONNECTIONS

Part No.	Description
9998090	Screw-in screw connection, straight ø 6 mm - 1/8“; ø 0.24 inch - 1/8“ * Standard
9998993	Screw-in screw connection, straight ø 8 mm - 1/8“; ø 5/16“ - 1/8“


B_00507


B_00508

4.2.4.6 LOCK PIN

Part No.	Description
2310534	Lock pin assy.


B_03050

4.3 DATA

4.3.1 TECHNICAL DATA

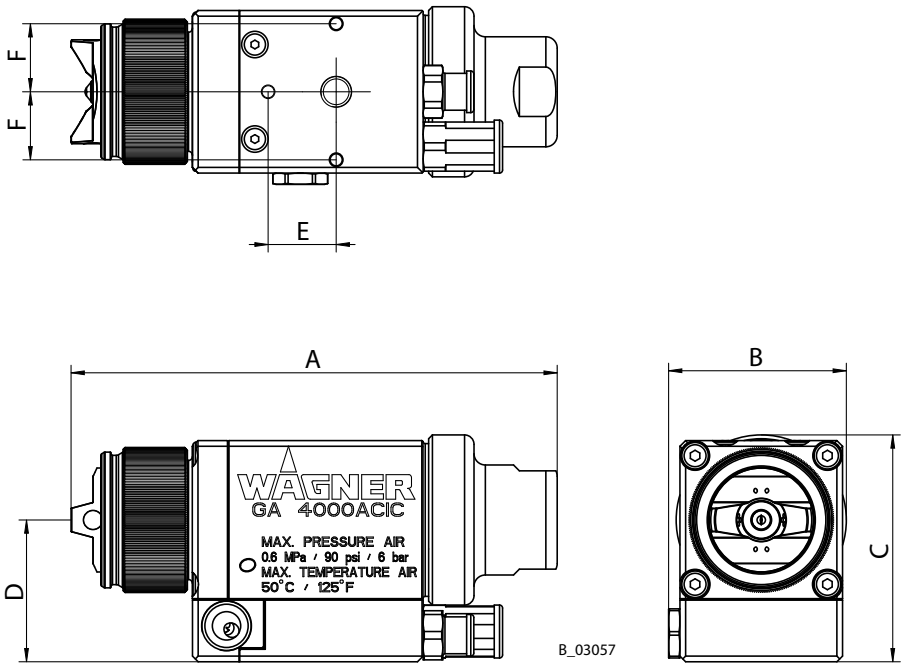
Description	Units	AirCoat Automatic gun
Maxi. air inlet pressure	MPa; bar; psi	0.8; 8; 116
Maxi. material pressure	MPa; bar; psi	25; 250; 3625
Material volume	l/min; cc/min.	*
Material connection (internal thread)	Inch	G1/4“
Air connection (internal thread)	Inch	G1/8“
Weight (basic version)	g; oz	880; 31
Maxi. temperature material	°C; °F	80; 176
Maxi. temperature air	°C; °F	50; 122
Maxi. ambient temperature	°C; °F	+5 - +40; +41 - +104
Sound level at 0.3 MPa; 3 bar; 43.5 psi air pressure and 11 MPa; 110 bar; 1549 psi material pressure ***	dB(A)	82,0
Dimension Length (A)	mm; inch	129; 5.08
Dimension Width (B)	mm; inch	47; 1.85
Dimension High (C)	mm; inch	60; 236
Dimension (D)	mm; inch	37.5; 1.48
Dimension (E)	mm; inch	18±0.1; 0.71±0.004
Dimension (F)	mm; inch	18±0.1; 0.71±0.004

* According to nozzle, see chapter 8.1

** Filter types see chapter 8.4

*** A rated sound pressure level measured at 0.5 m distance according to DIN EN ISO 3746 -1995.

4.3.2 MEASUREMENTS AND CONNECTIONS

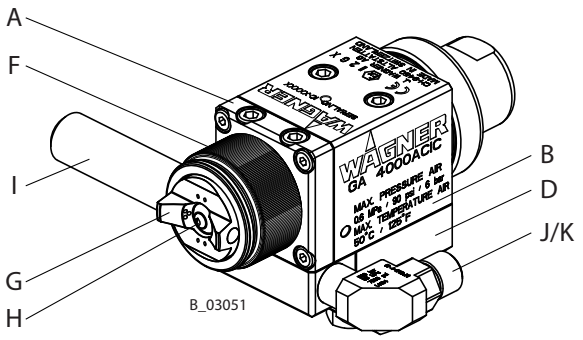


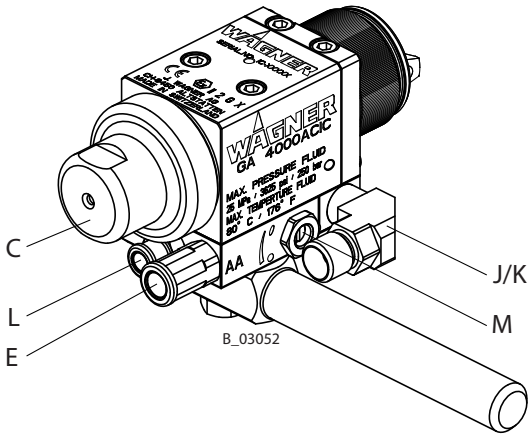
4.3.3 MATERIALS OF PAINT WETTED PARTS

Metals	**Plastic**
Hard metal	UHMW-PE
Stainless steel 1.4310	PTFE
Stainless steel 1.4305	FPM
Stainless steel 1.4104	POM
	PA 6.6
	EPDM

4.4 FUNCTIONAL DESCRIPTION

4.4.1 DESIGN OF SPRAY GUN





	Description
A	Gun head
B	Gun body
C	Drive Clamping sleeve
D	Base plate
E	Connection atomizing air (blue)
F	Union nut
G	Air cap (blue, red or bronze)
H	Nozzle
I	Holder Standard
J	Connection nipple (Material)
K	Connection nipple (material circulation)
L	Connection control air (red)
M	Shaping air throttle

The device consists of a gun head (A), gun body (B), the drive (C) and a base plate (D). At the gun head (A) is cultivated the air cap (G), the appropriate nozzle (H) and diverse sections for the sealing and attachment. In the gun head (A) the material valve and the packing are accommodated. In the gun body (B) the clamping mechanism for the packing is inserted. The gun body serves besides as connecting piece between the drive (C) and the gun head (A). The drive (C) consists a diaphragm and a pressure spring for the material valve. The base plate (D) contains all connections (E, J, K) and the shaping air throttle (M). It can be used to mount the gun at a movement device system or at the standard gun holder.

4.4.2 CIRCULATION OPERATING MODE

Retrofitting to circulation operation:

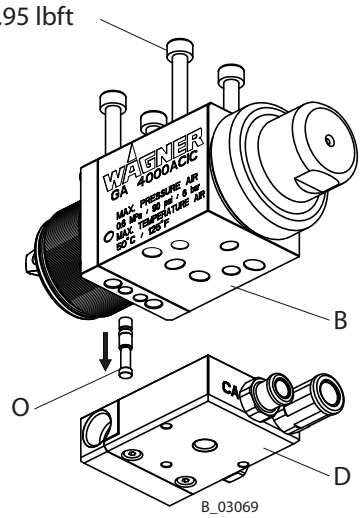
⚠WARNING

The plug (P) is under high pressure!
The plug can fly off like a projectile

→ In NC mode (without material circulation), connect the gun only with the closing pin (O) fitted.

SIHI_0007_GB

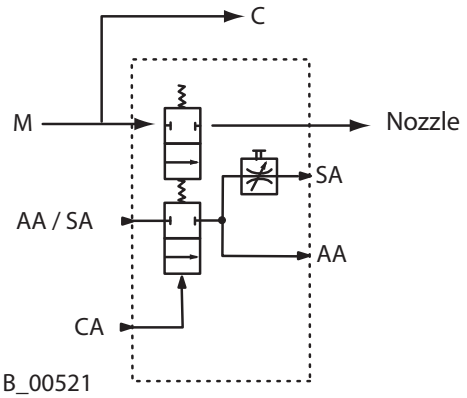
1. Detach gun body (B) from base plate (D).
2. Replace plug (P) with connection nipple (L).
3. Remove lock pin (O) from gun body.
4. Screw gun body (B) and base plate (D) together. Ensure correct position of seals when doing so.
5. Tighten four screws to 4 Nm; 2.95 lbft.



4.4.3 FUNCTIONS OF THE SPRAY GUN

Diagram:

SA = Fan air
AA = Atomizing air
CA = Control air
M = Material
C = Circulation



Open:
The piston in the drive is then charged with control air and moves toward the rear. This ensures that the air valve which releases the shaping and atomizing air is opened first. The material valve is then opened mechanically delayed. In this position, the coating material which is under pressure is applied to the workpiece.

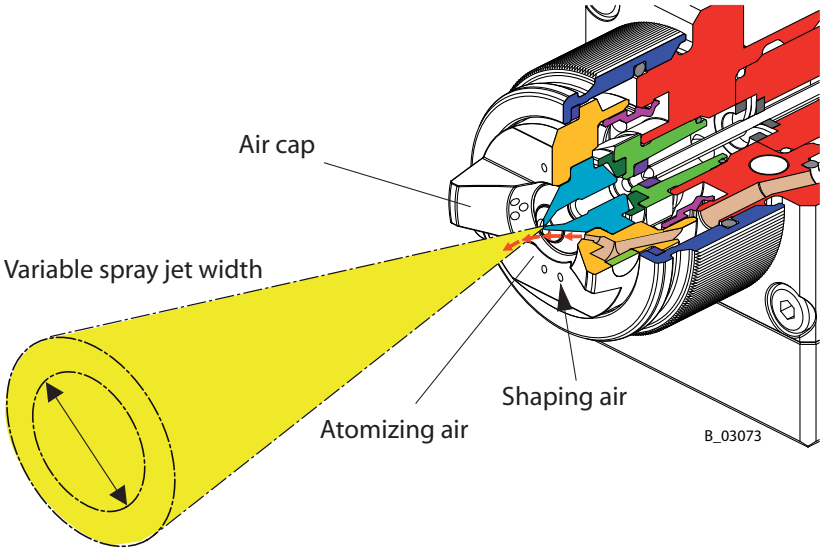
Close:
The piston is relieved, and the material valve closes due to the pressure spring which presses against the material valve tappet. The air valve is then closed, again delayed by spring force and mechanically.

Additional functions:
The shaping air throttle is used to regulate the shaping air volume, while the atomizing air is adjusted via an external pressure regulator. The two air streams do not flow separately until after the air valve, so that the pressure of the shaping air corresponds approximately to that of the atomizing air and so that they influence each other during adjustment.
The material connections and the colour channels in the base plate are arranged so that several guns can be used in circulation operation.

4.5 SPRAYING PROCESS

4.5.1 AIRCOAT ATOMIZING FLAT JET SPRAY PROCESS

In the AirCoat process, high pressure of 3-15 MPa; 30-150 bar; 435-2176 psi is used to atomize the material. A soft, flat spray is achieved with help of the atomizing air, which has a pressure of 0.05-0.25 MPa; 0.5-2.5 bar; 7.2-36 psi. The shaping air (C) provides the potential to make the width of the spray jet larger and smaller.

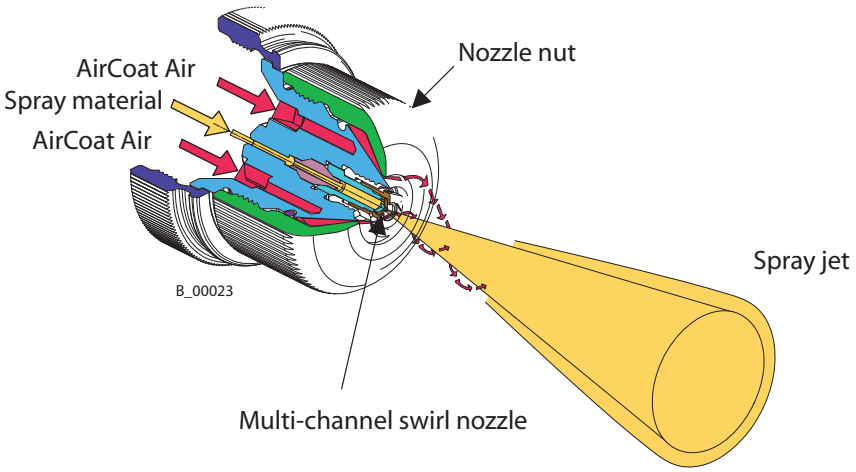


Advantages:
- High painting capacity
- Low fogging tendency
- Good finish
- High viscosity paints can easily be applied
- Change in width the jet

4.5.2 AIRCOAT ROUND JET SPRAY PROCESS

With the AirCoat round jet process the spray material is atomized at a pressure of 3-12 MPa; 30-120 bar; 435-1740 psi.
The air at 0.05-0.25 MPa; 0.5-2.5 bar; 7.2-36 psi produces a soft jet (used standard). The spray jet can be adjusted by turning the nozzle nut.

The multi-channel swirl nozzle produces fine paint particles, while at the same time reducing their forwards speed and swirling them to produce a rotating motion. The result is a soft, extremely well atomized spraying cloud.

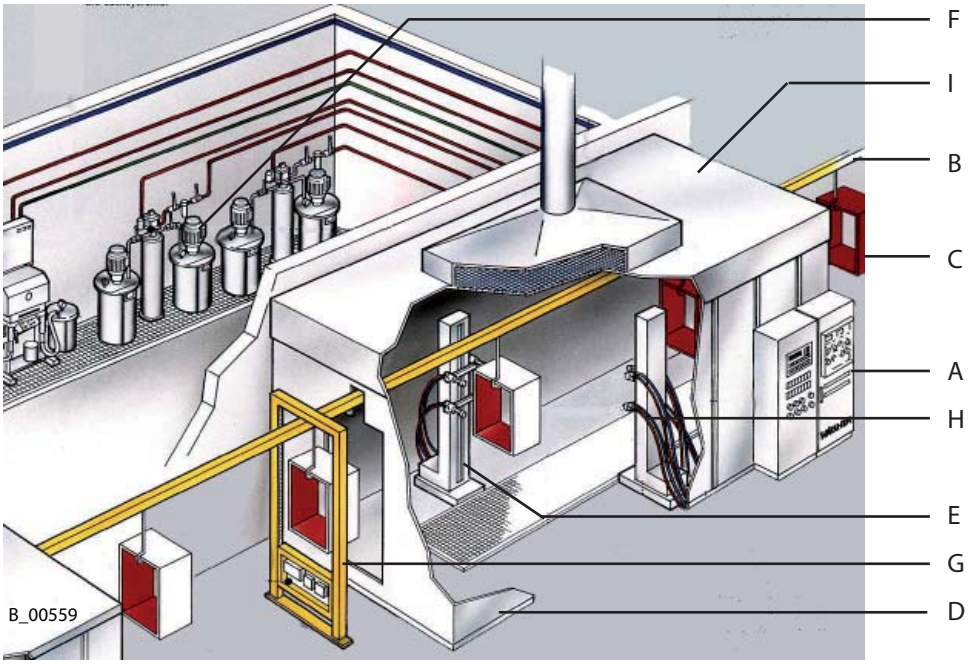


Advantages:
- High painting capacity
- Low fogging tendency
- Good finish
- High viscosity paints can easily be applied

5 STARTING WORK AND HANDLING

5.1 INSTALLATION AND CONNECTION

5.1.1 TYPICAL AUTOMATIC SPRAYING SYSTEM



	Description
A	Switching cabinet
B	Conveyor
C	Work piece
D	Spray booth
E	Automatic movement system
F	Paint supply
G	Detection of part
H	Spray guns
I	Supply air system and exhaust air-system

The pray gun must be used a part of an spraying system. The spraying system shown in the figure is only one example. Contact your Wagner distributor for assistance in designing a system to meet your needs.
The operating instructions and the safety regulations for the additional system components used must be read before starting-up.

5.1.2 VENTILATION OF THE SPRAY BOOTH

⚠WARNING

Toxic and/or flammable vapor mixtures!
Risk of poisoning and burns

→ Operate the unit in a spraying booth approved for the working materials.
-or-
→ Operate the unit on an appropriate spraying wall with the ventilation (extraction) switched on.
→ Observe national and local regulations for the outgoing air speed.

SIHI_0028_GB

5.1.3 AIR SUPPLIES

The use of an air filter with the air regulator ensures that only dry, clean atomising air gets into the spray gun. Dirt and moisture in the atomizing air reduce the spraying quality and the appearance of the finished piece.

5.1.4 PAINT SUPPLIES

CAUTION

Impurities in the spraying system!
Spray gun blockage, materials harden in the spraying system

→ Flush the spray gun and paint supply with a suitable cleaning agent.

SIHI_0001_GB

⚠ DANGER

Bursting hose, bursting threaded joints!
Danger to life from injection of material

→ Ensure that the hose material is chemically resistant.
→ Ensure that the spray gun, threaded joints and material hose between the unit and the spray gun is suitable for the pressure generated in the unit.
→ Ensure that the following information can be seen on the high pressure hose:
- Manufacturer
- Permissible operating pressure
- Date of manufacture.

SIHI_0029_GB

5.1.5 EARTHING THE SYSTEM

⚠WARNING

Discharge of electrostatically charged components in atmospheres containing solvents!
Explosion hazard from electrostatic sparks or flames

→ Earth all unit components.
→ Earth the workpieces being painted.

SIHI_0027_GB

⚠WARNING

Heavy paint mist if earthing is insufficient!
Risk of poisoning
Insufficient paint application quality

→ Earth all unit components.
→ Earth the workpieces being painted.

SIHI_0003_GB

Any material containers and the unit must be connected by a potential equalisation (earth) cable.

5.2 PREPARATION OF PAINTS

The viscosity of the paints is of great importance. The best results are obtained for paints of 80 and 150 mPas.

Processing of up to 260 mPas is generally possible without problem, if high coating thicknesses are required. It is important for the optimal coating quality that the lacquer temperature is kept constant during the coating.

In the case of application problems contact the paint producer.

5.2.1 VISCOSITY CONVERSION TABLE

milli Pascal x Sec mPas	Centipoise	Poise	DIN Cup 4 mm ; 0.16 inch	Ford Cup 4	Zahn 2
10	10	0.1		5	16
15	15	0.15		8	17
20	20	0.2		10	18
25	25	0.25	14	12	19
30	30	0.3	15	14	20
40	40	0.4	17	18	22
50	50	0.5	19	22	24
60	60	0.6	21	26	27
70	70	0.7	23	28	30
80	80	0.8	25	31	34
90	90	0.9	28	32	37
100	100	1	30	34	41
120	120	1.2	33	41	49
140	140	1.4	37	45	58
160	160	1.6	43	50	66
180	180	1.8	46	54	74
200	200	2	49	58	82
220	220	2.2	52	62	
240	240	2.4	56	65	
260	260	2.6	62	68	
280	280	2.8	65	70	
300	300	3	70	74	
320	320	3.2			
340	340	3.4			
360	360	3.6	80		
380	380	3.8			
400	400	4	90		

5.3 STARTING-UP

5.3.1 GENERAL RULES FOR HANDLING THE SPRAY GUN

→ Observe **safety instructions** in chapter 2.

The following rules must be observed before all work on the unit, in the event of work interruptions and functional faults:

⚠WARNING

Unintentional putting into operation!
Risk of injury

Before all work on the unit, in the event of work interruptions and functional faults:
→ Switch off the energy/compressed air supply.
→ Relieve the pressure from the spray gun and unit.
→ Secure the spray gun against actuation.
→ By functional faults: Identify and correct the problem, proceed as described in chap„Trouble shooting“.

SIHI_0065_GB

CAUTION

Solvent in air conduit!
Problems

→ By cleaning the spraygun use with min. 0.05 MPa; 0.5 bar; 7.25 psi shaping air. Cleaning solvent must not get into the air ducts.

SIHI_0064_GB

5.3.2 PREPARATION FOR STARTING UP

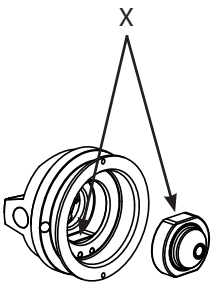
⚠WARNING

The plug (P) is under high pressure!
The plug can fly off like a projectile

→ In NC mode (without material circulation), connect the gun only with the closing pin (O) fitted.

SIHI_0007_GB

1. Mount the spray gun on the automatic movement system.
2. Connect material hoses to spray gun and to material supply system.
3. Place the nozzle into the nozzle seal. Fit the air cap over the nozzle. Take care that the nozzle fitted is correctly (see flat side X). Fit the air cap nut and tighten by hand.
4. Connect control air hose and atomizing air hose to spray gun and to oil-free, dry air supply with regulator.
5. Visually check the permissible pressures for all the system components.
6. Make sure that the unit and all other conductive parts within the work area are earthed.
7. Set material pressure 10 MPa; 100 bar; 1450 psi and use a suitable medium to check that connections do not leak.
8. Relieve spray gun and unit pressure.



B_03071

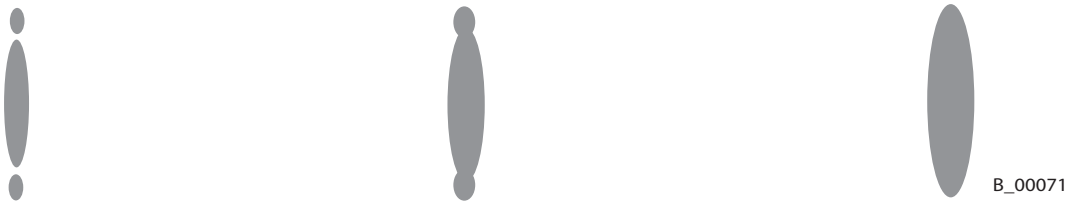
5.4 WORKS

5.4.1 START-UP FOR SPRAYING AIRCOAT

1. Set material pressure approx. 8 MPa; 80 bar; 1160 psi at material pump.
2. Spray (release trigger safety catch and pull trigger) and check the atomisation.
3. Set the fluid pressure to the point where a further increase in fluid pressure would significantly improve fluid atomization.
4. Now open air on the atomizing air regulator and set.
5. Adjust the pressure to get the optimum spraying finish. Relation between spray pattern and shaping air see illustration.

Note:
Repeat point 4 and 5 until the optimum spray pattern is reached (process iterative).

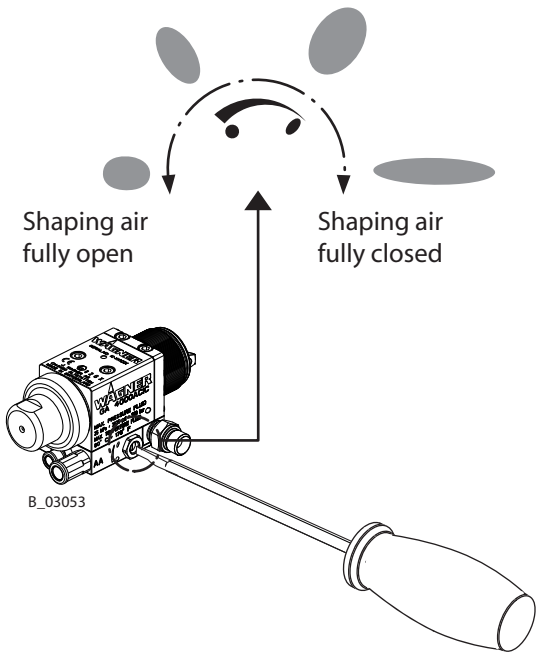
Spray pattern



No shaping air/ atomizing air | Too little shaping air/ atomizing air | Correct amount of shaping air/ of atomizing air

5.4.2 ADJUSTING THE SPRAY PATTERN

The spray pattern can be adjusted to suit the object being sprayed using the shaping air throttle valve. The illustration shows the influence of the shaping air regulator on the spraying pattern. Other nozzle sizes can be used to obtain larger or smaller spraying patterns.



Note
The paint output volume can be changed by:

- Changing the material pressure or
- Using a different flat jet nozzle (see accessories).

5.4.3 CHANGING AIRCOAT NOZZLE

CAUTION

Defective AirCoat nozzle!
Insufficient paint application quality

→ Do not use sharp-edged objects to treat hard metal on the AirCoat nozzle.

SIHI_0020_GB

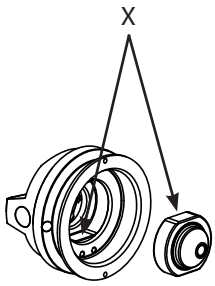
CAUTION

Defective nozzle seal!
Material sprays into the air cap next to the nozzle
Risk of contamination

→ Do not clean the nozzle seal with sharp-edged objects.
→ Replace the nozzle seal if the sealing surface is damaged.

SIHI_0021_GB

1. Relieve the pressure of gun and unit.
2. Secure gun (Remove the control air hose).
3. Screw off the union nut (A).
4. Remove air cap (B).
5. Press AirCoat nozzle (C) out of the air cap (B) by hand and brush with cleaning solvent until all remaining paint has been dissolved.
6. **Assembly:**
   Place AirCoat nozzle (C) in nozzle seal (D).
7. Fit the air cap (B) over the nozzle (C).Take care that the nozzle fitted is correctly (see flat side X).
8. Fit the union nut (A) and tighten by hand.



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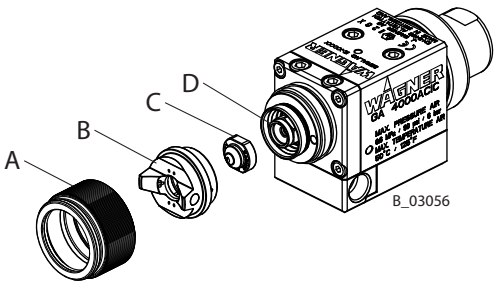

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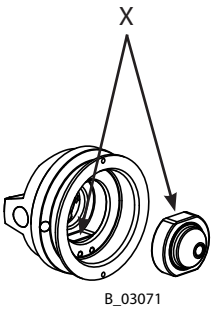
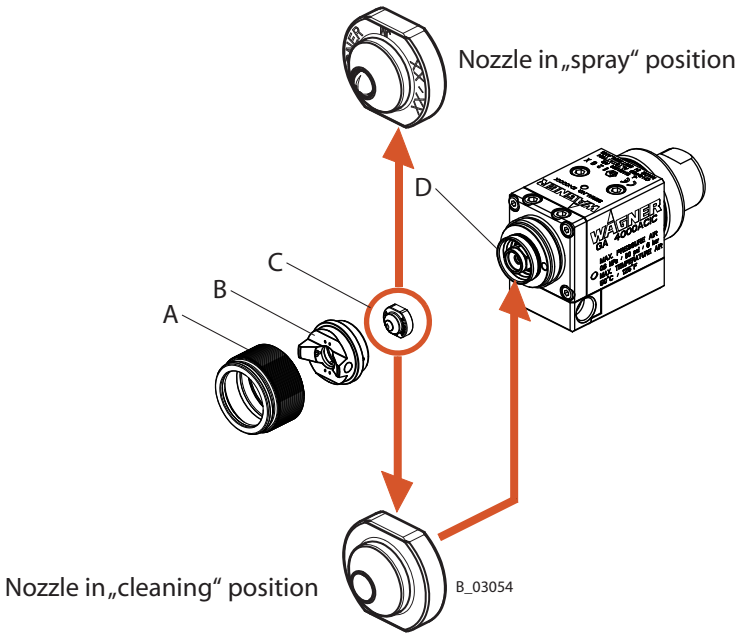
5.4.4 CLEANING AIRCOAT NOZZLE

For disassembly and assembly see AirCoat nozzles section 5.4.3.
The AirCoat nozzle (C) can be placed into a cleaning solvent which has been recommended by the paint manufacturer.

5.4.5 ELIMINATE NOZZLE CLOGGING

1. Relieve the pressure of gun and unit.
2. Secure gun (Remove the control air hose).
3. Screw off the union nut (A).
4. Remove air cap (B).
5. Pull out the clogged nozzle (C) from the air cap (B), reverse it and replace it into nozzle seal (D).
6. Refit air cap (B) on the nozzle (C). Take care that the nozzle fitted is correctly (see flat side X).
7. Fit the union nut (A) over the air cap (B) onto the spray gun and tighten by hand.
8. Switch the material pressure back on.
9. Spraying (Connect control air hose).
10. When the blockage has been flushed out secure the spray gun.
11. Relieve the pressure of gun and unit.
12. Secure gun (Remove the control air hose).
13. Screw off the union nut (A).
14. Remove air cap (B) and reverse AirCoat nozzle (C) by hand again. Nozzle and nozzle seal clean and to nozzle in spraying position the nozzle seal (D) put on.
15. Refit air cap (B) on the nozzle (C).
    Take care that the nozzle fitted is correctly (see flat side X).
16. Fit the union nut (A) over the air cap (B) onto the spray gun and tighten by hand.
17. Connect control air. Switch the material pressure and the air pressure back on.

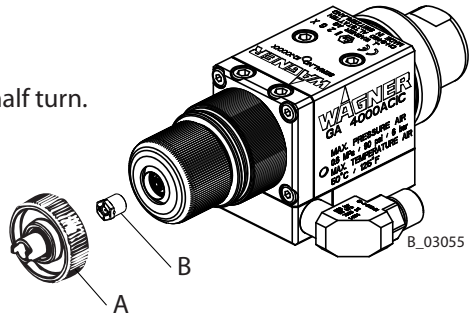




5.4.6 EXCHANGE OF ROUND JET NOZZLE INSERT

1. Relieve the pressure of gun and unit.
2. Secure gun (Remove the control air hose).
3. Remove nozzle insert (B) with nozzle spanner (A).
4. Fit the new nozzle insert in reverse order (see chapter 8.3).

Note:
Cleaning of clogged round jet nozzle.
1. By means of nozzle spanner (A), loosen nozzle insert (B) by a half turn.
2. Remove the nozzle spanner and press the gun briefly.
3. After cleaning the nozzle, re-tighten the nozzle insert.



6 MAINTENANCE

→ Observe **safety instructions** in chapter 2.

The spray gun and the unit must be cleaned every day. The cleaning agent used for cleaning must be suitable for the coating material.

CAUTION

Impurities in the spraying system!
Spray gun blockage, materials harden in the spraying system

→ Flush the spray gun and paint supply with a suitable cleaning agent.

SIHI_0001_GB

CAUTION

Cleaning agent in the air duct!
Functional faults caused by swollen seals

→ Never immerse the spray gun in cleaning agent.

SIHI_0066_GB

⚠WARNING

Incorrect maintenance/repair!
Risk of injury and damage to the equipment

→ Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center.
→ Before all work on the unit and in the event of work interruptions:
- Switch off the energy/compressed air supply.
- Relieve the pressure from the spray gun and unit.
- Secure the spray gun against actuation.
→ Observe the operating and service instructions when carrying out all work.

SIHI_0004_GB

6.1 SHUTTING DOWN AND CLEANING

CAUTION

Solvent in air conduit!
Problems

→ By cleaning the spraygun use with min. 0.05 MPa; 0.5 bar; 7.25 psi shaping air. Cleaning solvent must not get into the air ducts.

SIHI_0064_GB

⚠ DANGER

Exploding gas/ air mixture!
Danger to life from flying parts and burns

→ Never spray into a closed container.
→ Earth the container.

SIHI_0008_GB

⚠ WARNING

Explosive atmosphere!
Explosive gases are produced when aluminium comes into contact with halogenized hydrocarbons

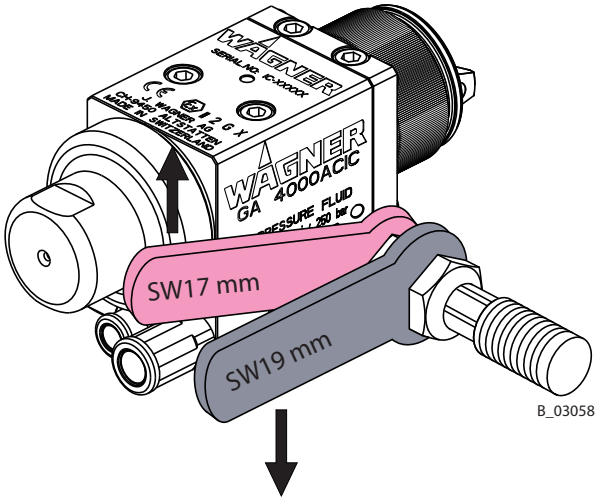
→ To clean aluminium, do not use liquids containing halogenized hydrocarbons.

SIHI_0009_GB

1. Relieve the pressure of gun and unit.
2. Secure gun (Remove the control air hose).
3. Connect up the supply of cleaning solvent.
4. Remove AirCoat nozzle and clean separately (see chapter 5.4.3).
5. Pressurize the cleaning supply to approx. 4 MPa; 40 bar; 580 psi and thoroughly flush the spray gun.
6. Relieve the pressure of gun and unit.
7. Secure gun (Remove the control air hose).
8. Clean external the spray gun with a cleaning agent recommended by the manufacturer and dry with a cloth or blow gun.

6.2 REPLACING THE PAINT HOSE

1. Finishing work and cleaning.
2. Relieve the pressure of gun and unit and remove the detergent supply.
3. Secure gun (Remove the control air hose).
4. Place open-ended wrench SW 17 mm; 0.67 inch on flats of paint connection and counter hold.
5. Turn nut to the right with open-ended wrench SW 19 mm; 0.75 inch and unscrew material hose.
6. **Assembly:**
   Fit material hose by hand and tighten with 2 open-ended wrenches.



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6.3 REPLACING THE NOZZLE SEAL

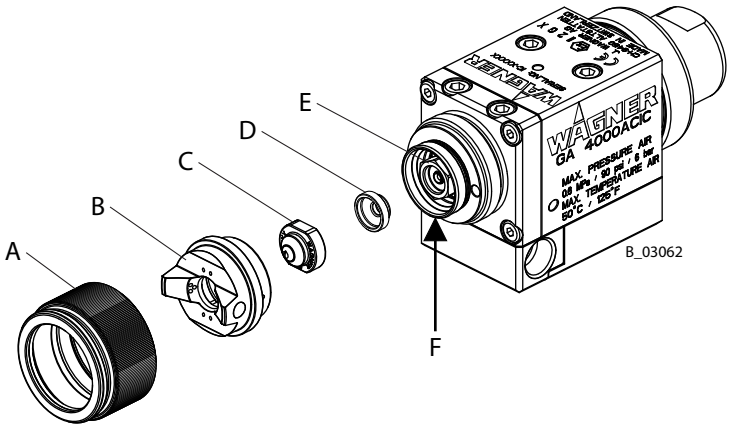
CAUTION

Forming air and atomizer air not separate!
Poor spray pattern
Spray jet cannot be adjusted

→ Treat the distributor seal (F) with care.

SIHI_0030_GB

1. Finishing work and cleaning.
2. Relieve the pressure of gun and unit.
3. Secure gun (Remove the control air hose).
4. Screw off the union nut (A).
5. Remove air cap (B) and nozzle (C).
6. Release the nozzle seal (D) with the help of a screwdriver.
7. Fit new nozzle seal to valve housing (E).
8. Assemble in reverse order.



B_03062

6.4 CHANGING ROUND JET SEALING NIPPLE

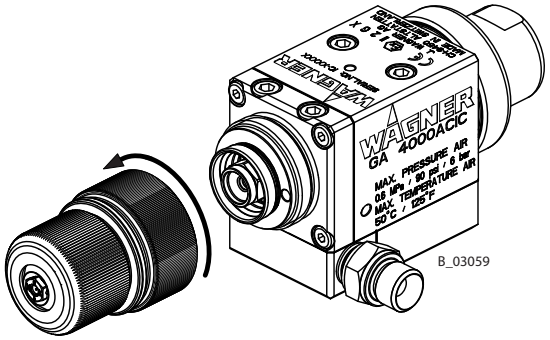
CAUTION

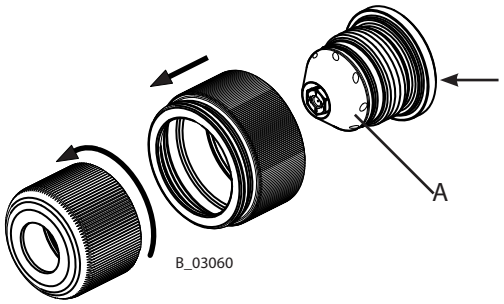
Defective nozzle body!
Poor spray pattern

→ Handle the nozzle body (A) with care.

SIHI_0042_GB

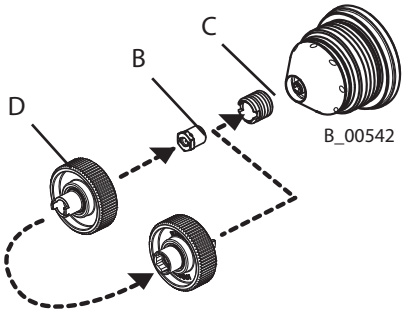
Unscrew by hand the nozzle



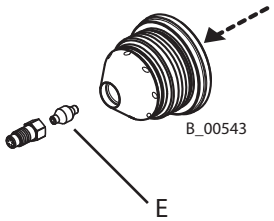


Counter hold with socket spanner size 13 mm; 0.51 inch

Nozzle spanner (D)
Part No. 128901



Remove with pin Ø 1.5 mm; 0.06 inches



Note:
The sealing nipple (E) can be unscrewed from the nozzle housing using a small eye wood bolt pushed into it.

6.5 REPLACING PARTS OF THE GUN BODY

6.5.1 DISMANTLING GA 4000ACIC

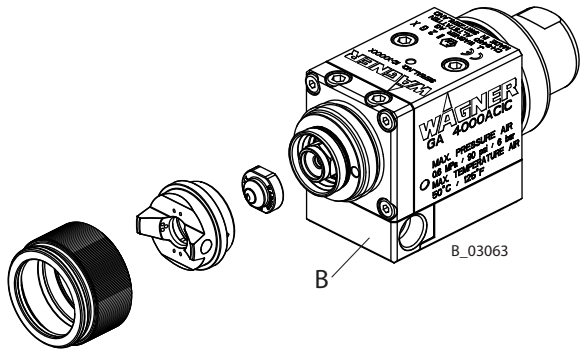
CAUTION

Defective plunger shaft!
Packing leaks
Greater wear on the packing

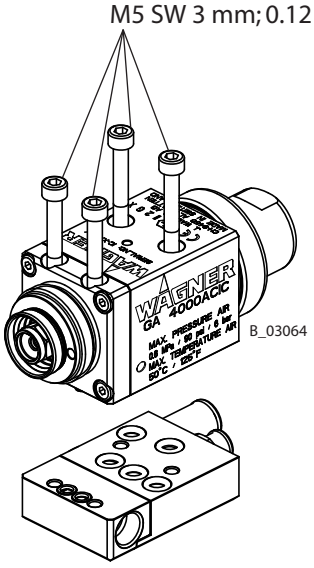
→ Handle the plunger shaft (K) with care.
The plunger shaft has the function of a sliding surface.

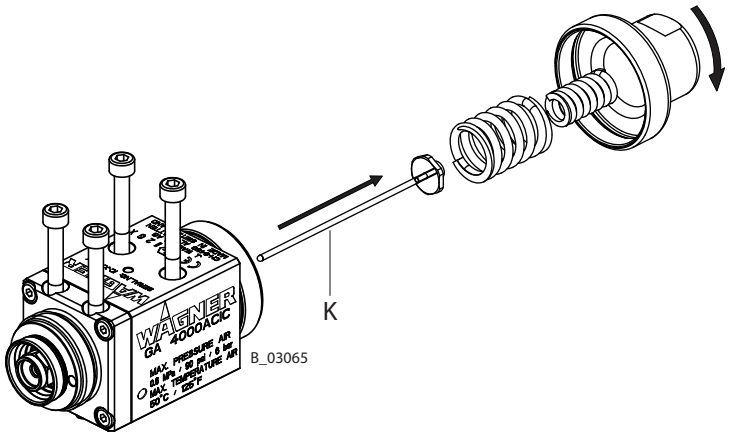
SIHI_0043_GB

Note:
Base plate assy. (B) must not dismounted.

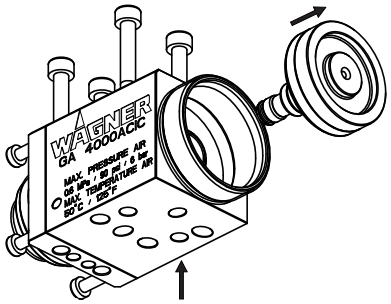


M5 SW 3 mm; 0.12 inch

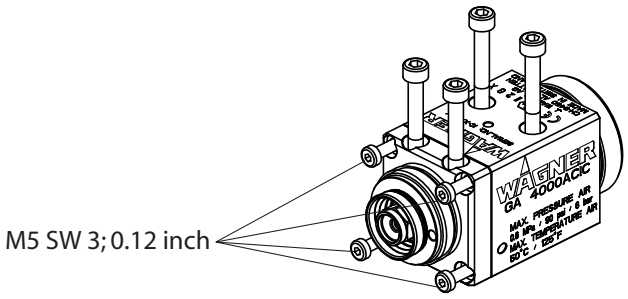




Note:
Circulation mode without lock pin

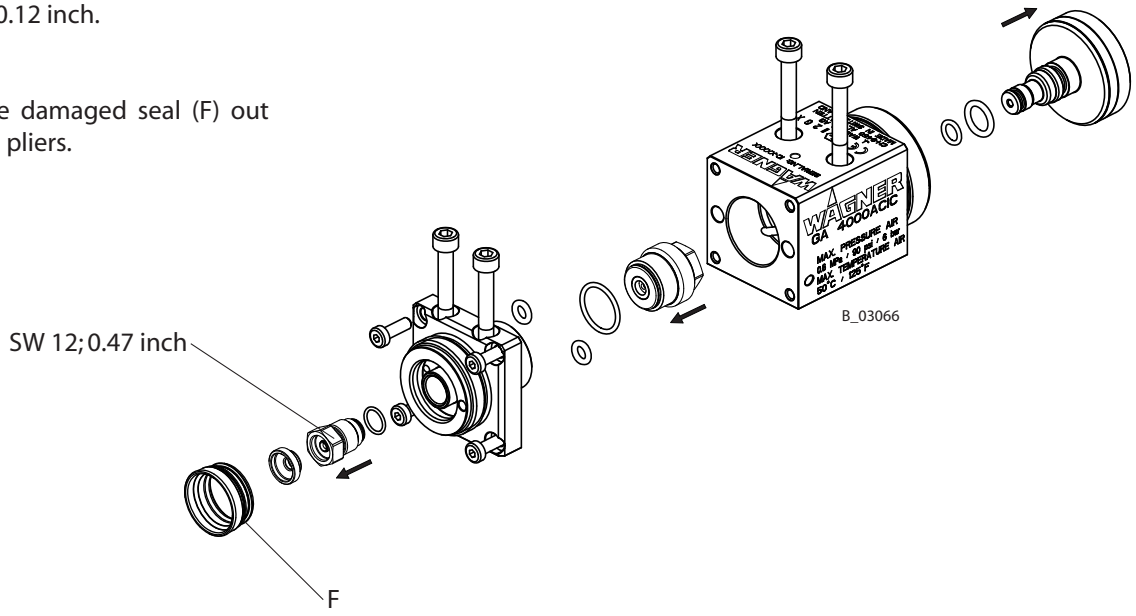


Blow gun



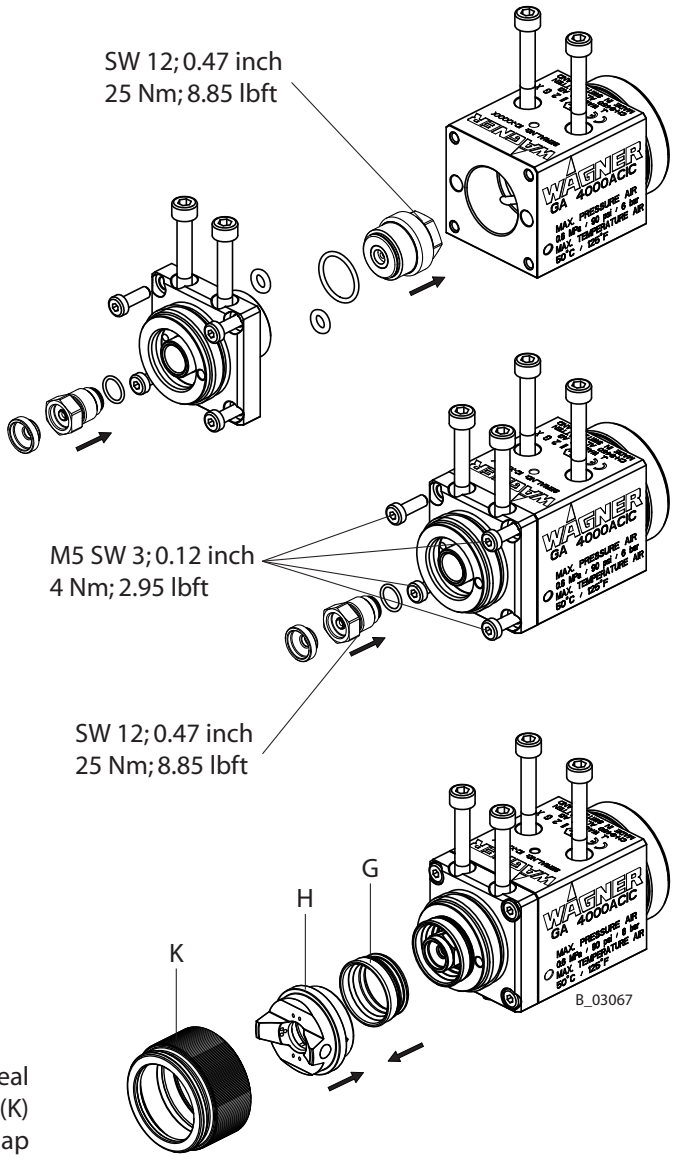
Note:
Stuck components can be pushed out with a drift maxi. Ø 3 mm; 0.12 inch.

Note:
Pull the damaged seal (F) out using a pliers.



6.5.2 RE-ASSEMBLE GA 4000ACIC

General note:
Lightly greased o-rings and sliding surfaces with vaseline white PHV II



Note:
Put the seal (G) on the Air-cap (H) and place seal and air cap into gun housing. Screw union nut (K) in as far as the seal ring in the groove catches (Snap hearable).

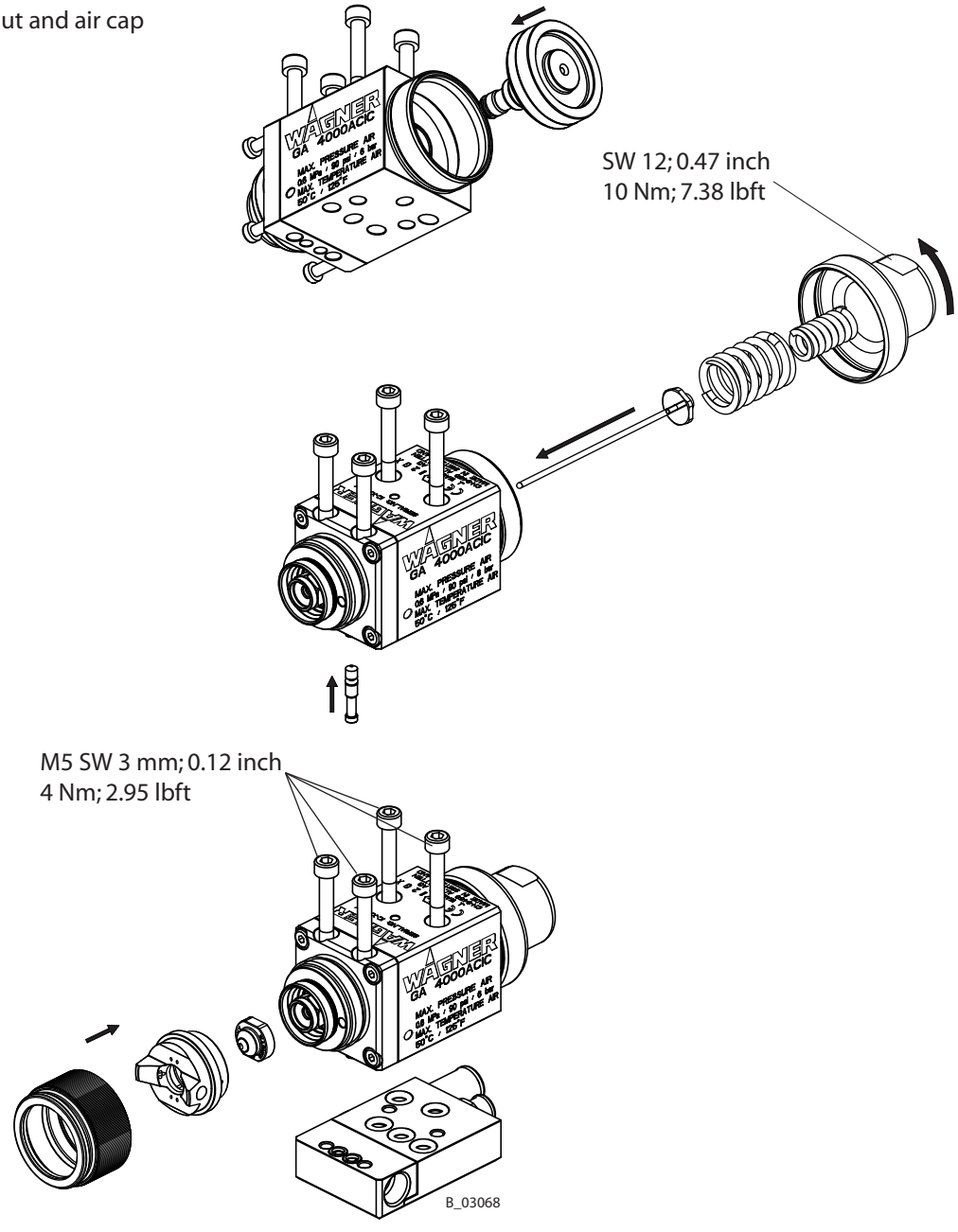
⚠WARNING

The plug (P) is under high pressure!
The plug can fly off like a projectile

→ In NC mode (without material circulation), connect the gun only with the closing pin (O) fitted.

SIHI_0007_GB

Dismount union nut and air cap



7 TROUBLE SHOOTING AND SOLUTION

Functional faults	Cause	Remedy
Insufficient material output	Nozzle too small	Select larger nozzle (see paragraph 8.1)
	Material pressure too low	Increase material pressure
	Gun filter blocked or high pressure filter at pump clogged	Clean or replace filter
	Nozzle is clogged	Nozzle cleaning (see paragraph 5.4.5)
	Valve stem defective	Increase the control air pressure Replace valve rod
Poor spray pattern	Wrongly adjusted atomizing air	Readjust the atomizing air (see paragraph 5.4.1)
	Nozzle too large	Select smaller nozzle (see paragraph 8.1)
	Material pressure too low	Increase pressure at pump
	Material viscosity too high	Thin material in accordance with the manufacturer's instructions
	Partial nozzle blockage	Nozzle cleaning (see paragraph 5.4.5)
	Wrongly adjusted shaping air	Readjust shaping air
	Air cap faulty (blocked holes, damaged seal)	Clean or replace air cap
	Wrong air cap type	Replace as required air cap (high viscosity/ low viscosity)
Air valve leaks/ Air-leakage	Air valve seals damaged	Replace air valve seals (see paragraph 6.3)
Packing leaks	Packings worn	Insert a new packing
Spray gun will not shut-off correctly / Material valve leaks	Worn valve seat / valve ball	Replace parts

8 ACCESSORIES

8.1 AIRCOAT NOZZLES ACF3000


B_00021

Part No.	Marking	Size inch; mm	Spraying angle	Recommended gunfilter	Recommended edge filter	Application
379107	07/10	0.007-0.18	10°	red (200 Meshes)	200 Meshes	Natural paint
379207	07/20	0.007-0.18	20°			
379209	09/20	0.009-0.23	20°			Transparent paint Oil
379309	09/30	0.009-0.23	30°			
379409	09/40	0.009-0.23	40°			
379509	09/50	0.009-0.23	50°			
379609	09/60	0.009-0.23	60°			
379111	11/10	0.011-0.28	10°			Synthetic resin paint PVC paint
379211	11/20	0.011-0.28	20°			
379311	11/30	0.011-0.28	30°			
379411	11/40	0.011-0.28	40°			
379511	11/50	0.011-0.28	50°			
379611	11/60	0.011-0.28	60°			
379113	13/10	0.013-0.33	10°			Paint, undercoat Priming paint Filler
379213	13/20	0.013-0.33	20°			
379313	13/30	0.013-0.33	30°			
379413	13/40	0.013-0.33	40°			
379513	13/50	0.013-0.33	50°			
379613	13/60	0.013-0.33	60°			
379813	13/80	0.013-0.33	80°			
379115	15/10	0.015-0.38	10°	yellow (100 Meshes)	100 Meshes	Filler Rustproofing paint
379215	15/20	0.015-0.38	20°			
379315	15/30	0.015-0.38	30°			
379415	15/40	0.015-0.38	40°			
379515	15/50	0.015-0.38	50°			
379615	15/60	0.015-0.38	60°			
379815	15/80	0.015-0.38	80°			
379217	17/20	0.017-0.43	20°		60 Meshes	Rustproofing paint Latex paint
379317	17/30	0.017-0.43	30°			
379417	17/40	0.017-0.43	40°			
379517	17/50	0.017-0.43	50°			
379617	17/60	0.017-0.43	60°			
379817	17/80	0.017-0.43	80°			

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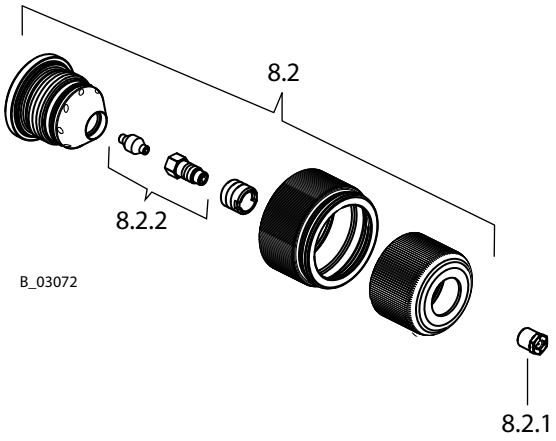
Part-No.	Marking	Size inch-mm	Spraying angle	Recommended gunfilter	Recommended edge filter	Application
379219	19/20	0.019-0.48	20⁰	white (50 Meshes)	60 Meshes	Rustproofing paint Latex paint
379319	19/30	0.019-0.48	30⁰	yellow (100 Meshes)		
379419	19/40	0.019-0.48	40⁰			
379519	19/50	0.019-0.48	50⁰			
379619	19/60	0.019-0.48	60⁰			
379819	19/80	0.019-0.48	80⁰			
379221	21/20	0.021-0.53	20⁰			Distemper paint Zinc dust coating Rustproofing paint Mica paint
379421	21/40	0.021-0.53	40⁰			
379521	21/50	0.021-0.53	50⁰			
379621	21/60	0.021-0.53	60⁰			
379821	21/80	0.021-0.53	80⁰			
379423	23/40	0.023-0.58	40⁰			
379623	23/60	0.023-0.58	60⁰			
379823	23/80	0.023-0.58	80⁰			
379425	25/40	0.025-0.64	40⁰			
379625	25/60	0.025-0.64	60⁰			
379825	25/80	0.025-0.64	80⁰			
379427	27/40	0.027-0.69	40⁰			
379627	27/60	0.027-0.69	60⁰			
379827	27/80	0.027-0.69	80⁰			
379429	29/40	0.029-0.75	40⁰			
379629	29/60	0.029-0.75	60⁰			
379829	29/80	0.029-0.75	80⁰			
379431	31/40	0.031-0.79	40⁰			
379631	31/60	0.031-0.79	60⁰			
379831	31/80	0.031-0.79	80⁰			
379435	35/40	0.035-0.90	40⁰			
379635	35/60	0.035-0.90	60⁰			
379835	35/80	0.035-0.90	80⁰			

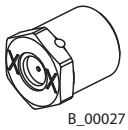
8.2 ROUND-JET NOZZLE CAP

Part No.	Description
394180	Round-jet nozzle cap (without nozzle insert)



8.2.1 NOZZLE INSERTS RXX

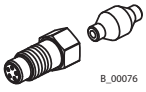
Part No.	Description	Marking	Jet-ø **
132720	Nozzle insert R11	11	approx. 250; 9.84
132721	Nozzle insert R12	12	approx. 250; 9.84
132722	Nozzle insert R13	13	approx. 250; 9.84
132723	Nozzle insert R14	14	approx. 250; 9.84
132724	Nozzle insert R15	15	approx. 250; 9.84
132725	Nozzle insert R16	16	approx. 250; 9.84
132726	Nozzle insert R17	17	approx. 250; 9.84
132727	Nozzle insert R18	18	approx. 250; 9.84
132728	Nozzle insert R19	19	approx. 250; 9.84
132729	Nozzle insert R20	20	approx. 250; 9.84
132730	Nozzle insert R21	21	approx. 250; 9.84
132731	Nozzle insert R22	22	approx. 250; 9.84



** Jet width in mm; inches at a distance of 30 cm; 11.8 inches from the object and at a pressure of 10 MPa; 100 bar; 1450 psi, synthetic resin paint, 20 DIN4 seconds.

8.2.2 NOZZLE SCREWED CONNECTION COMPLETE

Part No.	Description
132922	Nozzle screwed connection complete

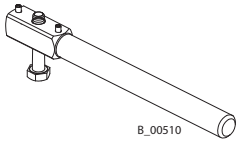


8.3 HOSES

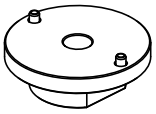
Part No.	Description
9984405	High pressure hose M16x1.5, 1 m; 3.28 ft, DN 4 mm; ID 0.16 inch, 27 MPa; 270 bar; 3916 psi
9984507	High pressure hose M16x1.5, 15 m; 98.4 ft, DN 6 mm; ID 0.24 inch, 27 MPa; 270 bar; 3916 psi
9984510	High pressure hose M16x1.5, 7.5 m; 24.6 ft, DN 4 mm; ID 0.16 inch, 27 MPa; 270 bar; 3916 psi
9984573	High pressure hose NPSM1/4“, 7.5 m; 24.6 ft, DN 4 mm; ID 0.16 inch, 27 MPa; 270 bar; 3916 psi
9984574	High pressure hose NPSM1/4“; 15 m; 98.4 ft, DN 6 mm; ID 0.24 inch, 27 MPa; 270 bar; 3916 psi
9982035	Air hose red A-ø 6 mm; AD 0.24 inch, I-ø 4 mm; ID 0.16 inch polyamide, order by the meter
9982061	Air hose blue A-ø 6 mm; AD 0.24 inch, I-ø 4 mm; ID 0.16 inch polyamide, order by the meter
9982033	Air hose green A-ø 6 mm; AD 0.24 inch, I-ø 4 mm; ID 0.16 inch polyamide, order by the meter
9982062	Air hose blue A-ø 8 mm; AD 0.32 inch, I-ø 5.5 mm; ID 0.22 inch polyamide, order by the meter

8.4 MISCELLANEOUS

Part No.	Description
9997001	Nozzle cleaning brush
8612001	Nozzle cleaning needle set (12 pieces)
123446	Double nipple M16x1.5 (for extension for material hose)
367560	Double nipple NPS 1/4” (for extension for material hose)
380925	Grease packing set
380941	Standard gun holder 180 mm; ø 16 mm, 7.1 inch; ø 0.63 inch



Part No.	Description
2314079	Adapter plate Cefla
380942	Gun holder turnable (standard)
380945	Gun holder turnable 40/40/5
380943	Swivel drive assy.
380944	Cross attaching piece for swivel drive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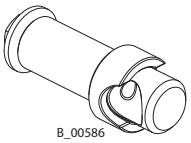
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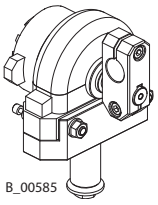
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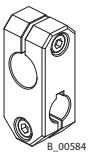
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9 SPARE PARTS

9.1 HOW TO ORDER SPARE PARTS?

Always supply the following information to ensure delivery of the right spare part:

Part Number, description and quantity

The quantity need not be the same as the number given in the „Quantity“ column. This number merely indicates how many of the respective parts are used in each subassembly.

The following information is also required to ensure smooth processing of your order:

- Address for the invoice
- Address for delivery
- Name of the person to be contacted in the event of any queries
- Type of delivery required (air freight or mail, sea route or overland route, etc.)

Marks in spare parts lists

Note to column „K“ in the following spare parts lists.

◆ = Wearing parts
Note: No liability is assumed for wearing parts

● = Not part of standard equipment, available, however, as additional extra.

⚠WARNING

Incorrect maintenance/repair!
Risk of injury and damage to the equipment

→ Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center.
→ Before all work on the unit and in the event of work interruptions:
- Switch off the energy/compressed air supply.
- Relieve the pressure from the spray gun and unit.
- Secure the spray gun against actuation.
→ Observe the operating and service instructions when carrying out all work.

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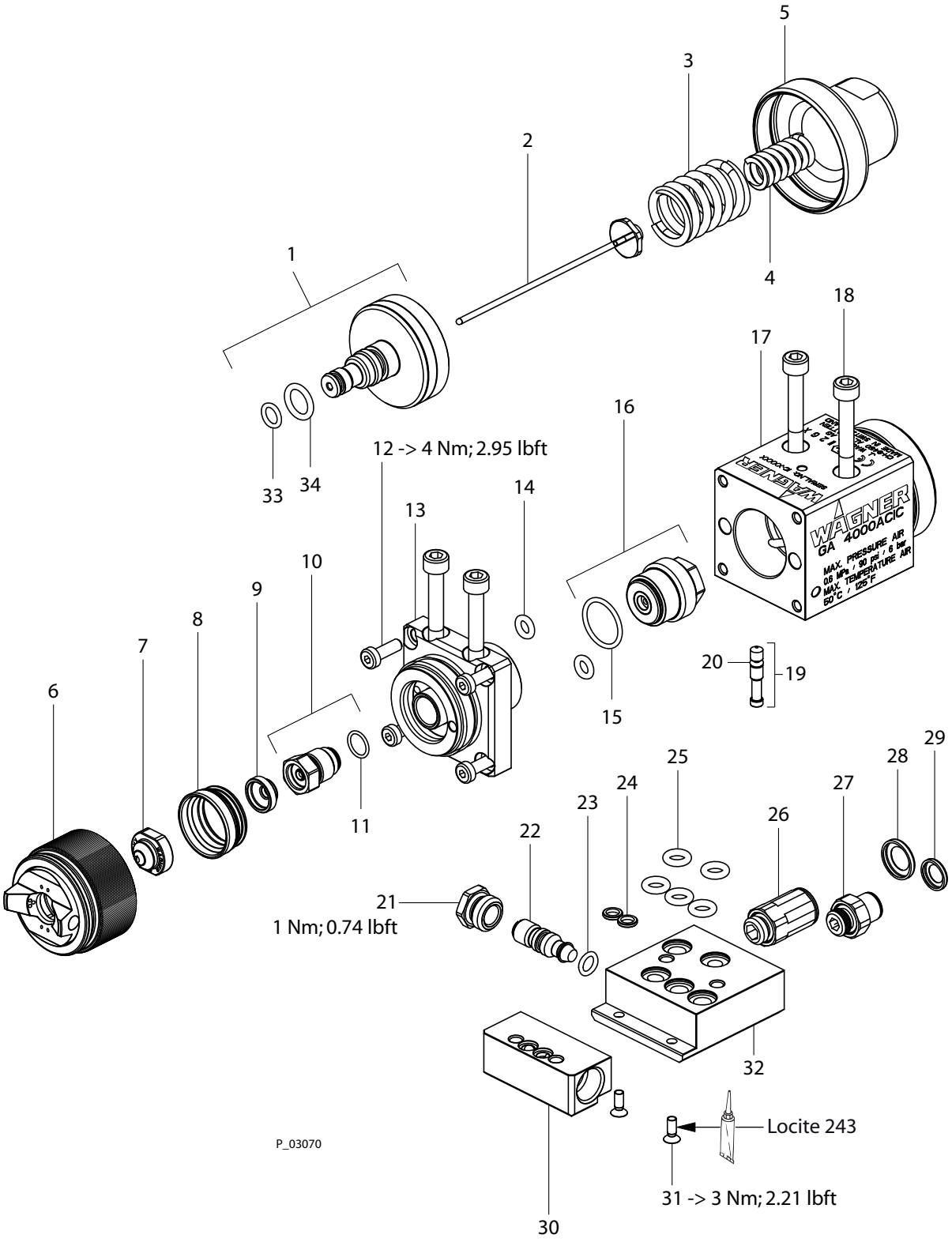
9.2 SPARE PARTS LIST GA 4000ACIC



Pos	K	Qty	Part No.	Description
1	◆	1	2313501	Piston IC assy.
2	◆	1	2313512	Valve rod IC assy.
3		1	9998991	Screw spring
4		1	2309945	Screw spring
5		1	2313515	End cap short
6	●	1	2308808	Air cap LV plus (red)
6	●	1	2308809	Air cap HV plus (blue)
6	●	1	2313493	Air cap LA plus (bronze)
7	●	1	379…	Nozzle AC
8	◆	1	394339	Sealing ring
9	◆	1	364328	Seal Nozzle
10	◆	1	2309031	Valve housing assy.
11	◆	1	9974245	O-ring
12		4	2307893	Cheese head screw
13		1	2313513	Head piece
14	◆	2	9974158	O-ring
15	◆	1	367528	O-ring
16	◆	1	2313516	Standard packing
17		1	2313514	Piston housing IC
18		4	2308292	Cheese head screw
19	●	1	2310534	Lock pin material channel assy.
20	◆	1	2307873	O-ring
21		1	2307739	Mounting nut
22		1	2307868	Round spray jet reducing
23	◆	1	9971388	O-ring
24	◆	2	2310473	Seal Material
25	◆	5	9974265	O-ring
26		1	9998993	Straight screw in connection
27		1	9998090	Straight screw in connection
28		1	9998618	Coding ring blue
29		1	9998995	Coding ring red
30		1	2313517	Material adapter plate
31		2	2310556	Countersunk head screws with female hexagon
32		1	2313518	Adapter plate IC
33	◆	1	248314	O-ring
34	◆	1	9971025	O-ring

◆ = Wearing part

● = Included are not in the basic equipment, available, however, as additional extra

Service Sets see chapter 9.7

9.3 SERVICE SETS AND SPARE PARTS GROUPS

Part No.	Description	Consisting of spare parts positions
2314355	Service set Base plate GA 4000ACIC	23, 24, 25

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