

Translation of the original Operating manual

GM 4600AC GM 4600AC-H

Edition 04/2009

AirCoat Spray gun

for flat - and round jet nozzles





Part No. DOC394861



OPERATING MANUAL

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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	394860	English	394861
French	394862	Dutch	2301130
Italian	2301151	Spanish	2301153
Danish	2301154	Swedish	2301155

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-obser-

vance can result in minor injury.



🛆 DANGER

This line warns of the hazard! Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.

 \rightarrow The measures for preventing the hazard and its consequences.



This line warns of the hazard! Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.

→ The measures for preventing the hazard and its consequences.



SIHL 0102 GB

This line warns of the hazard! Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.

→ The measures for preventing the hazard and its consequences.

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

CAUTION

This line warns of the hazard! Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.

→ The measures for preventing the hazard and its consequences.

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

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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.
- \rightarrow 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.







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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:

- \rightarrow Never point the spray gun at people.
- \rightarrow 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 chap. "Trouble shooting".

In the event of skin injuries caused by paint or cleaning agents:

- \rightarrow 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.
- \rightarrow 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.

- \rightarrow Ensure that the unit is always earthed.
- \rightarrow 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 PAINT HOSES

- \rightarrow 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.







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2.2.4 CLEANING

- \rightarrow De-energize the unit electrically.
- → Disconnect the pneumatic supply line.
- \rightarrow Relieve the pressure from the unit.
- → Ensure that the flash point of the cleaning agent is at least 5 K above the ambient temperature.

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→ 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.
- \rightarrow 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.
- \rightarrow 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.







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2.4 USE IN HAZARDOUS LOCATIONS

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.

€ € € ∥ 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 MAXIMUM SURFACE TEMPERATURE

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.
- \rightarrow 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.

2.5 GERMAN REGULATIONS AND GUIDELINES

See chapter 3.3



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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

This equipment is covered by the following manufacturing warranty

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 terms of the warranty are met at our discretion by the repair or replacement of the unit or parts thereof. 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.

This warranty does not cover damage caused by:

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. Any wear resulting from the aforementioned causes is not covered by this warranty.

Components not manufactured by Wagner are subject to the warranty terms of the original maker.

The replacement of a part does not extend the warranty period of the unit. The unit should be inspected immediately upon receipt.

To avoid loss warranty, any apparent defect should be notified to us or the dealer in writing within 14 days from date of sale of the unit.

We reserve the right to assign warranty performances to a contractual partner. Warranty claims are subject to proof of purchase by submitting an invoice or delivery note. If an inspection finds damage not covered by the present warranty, the repair will be carried out at the expense of the purchaser.

Note that this warranty does not in any way restrict legally entitled claims or those contractually agreed to in our general terms and conditions.

J.Wagner AG

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3.3 CE-CONFORMITY

Herewith we declare that the supplied version of

GM 4600AC 16 MPa
GM 4600AC 25 MPa
GM 4600AC-H 25 MPa

Complies with the following guidelines:

98/37/EG	
94/9/EG	

Applied standards, in particular:

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

Applied national technical standards and specifications, in particular:

- a) BGR 500 Part 2, Chap. 2.29 "Using coating materials"
- b) BGR 500 Part 2, Chap. 2.36, Working with liquid ejection devices"
- c) BGR 104 Explosion protection rules
- d) BGR 132 Avoiding ignition risks
- e) BGR 180 Setting up for cleaning with solvents for cleaning workpieces with solvents
- f) BGI 740 Painting rooms and equipment
- g) 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.

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: 394891



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4 DESCRIPTION

4.1 FIELDS OF APPLICATION, USING IN ACCORDANCE WITH THE INSTRUCTIONS

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

4.1.1 PROCESSIBLE MATERIALS

Top-coat paints, primer paints, corrosion protection solvents, textured paints, lyes, staining solvents, clear paints, parting solvents, etc. on a solvent or water basis. If you want to spray other working materials than the aforementioned, turn please to a Wagner agency.

WARNING
Hot coating substances! Burns
 → Wear antistatic protective gloves. → When operating the unit with a coating material with a temper- ature greater than 43°C; 109.4°F: Identify the unit with a warning sticker "Warning - hot surface".

Note: In the event of application problems consult your Wagner branch and/ or the paint manufacturer.

4.2 SCOPE OF DELIVERY

These AirCoat gun is available in two different variants. The nozzle size depends on the paint and on the application. Therefore the air cap and the nozzle are not included in the scope of supply. For a gun accessories look in chapter 9.

4.2.1 VARIANT FOR APPLICATION RANGE UP TO 16 MPA; 160 BAR; 2320 PSI

Qty	Part No.	Description			
1	394004	GM 4600AC 16 MPa; NPSM 1/4" Paint connection			

4.2.2 VARIANT FOR APPLICATION RANGE UP TO 25 MPA, 250 BAR, 3625 PSI

Qty	Part No.	Description					
1	394014	GM 4600AC 25 MPa ; NPSM 1/4" Paint connection					
1	2303491	GM 4600AC-H 25 MPa ; NPSM 1/4" Paint connection					

4.2.3 STANDARD EQUIPMENTS

The standard equipment includes:

394004	394014	AirCoat hand gun GM 4600AC				
Qty	Qty	Part No.	Description			
1	1	394891	CE-conformity			
1	1	394860	Operating manual German			
1	1	see chap. 1	Operating manual for the other language			

For special versions the delivery note applies.

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4.2.4 SPRAY GUN CONFIGURATION



Basis number GM 4600AC					-	Α	В	С	С	С	-> Key		
0	3	9	4	0	2	0	-	1	1	4	1	1	-> For example: Part number

Table A: Maxi. materia	pression selection
------------------------	--------------------

- 1 160 bar; 16 MPa; 2320 psi
- 2 250 bar; 25 MPa; 3625 psi

Table B: Air cap selection

- 1 Suitable for low viscosity paints (red)
- 2 Suitable for high viscosity paints (blue)

Table CCC: AirCoat nozzle selection ACF3000

CCC = the last three digits of the article number -> 379CCC			
107	1 = Spray angle x 10 = 10°.07 = Diameter of bore in mm/1000 (0.007 mm)		
411	4 = Spray angle x 10 = 40°. 11 = Diameter of bore in mm/1000 (0.011 mm)		
317	3 = Spray angle x 10 = 30°. 17 = Diameter of bore in mm/1000 (0.017 mm)		
625	6 = Spray angle x 10 = 60°. 25 = Diameter of bore in mm/1000 (0.025 mm)		
835	8 = Spray angle x 10 = 80°. 35 = Diameter of bore in mm/1000 (0.035 mm)		

The complete flat-jet nozzle range is described in chapter 9.2.

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4.3 DATA

4.3.1 MATERIALS OF THE PARTS TRANSPORTING PAINT

Metal		Plastics		
Tungsten carbide	Stainless steel 1.4305	POM	FPM	
Stainless steel 1.4301	Stainless steel 1.4104	PTFE	PA	

4.3.2 TECHNICAL DATA

	AirCoat	spray gun
Units	394004	394014; 2303491
MPa/ psi/ bar	0.8/ 1	120/8
MPa/ psi/ bar	16/ 2320/ 160	25/3625/250
Inches	NPS	M1/4
Inches	G1	/4"
Mesh	100	
g/ oz	526 g/ 18.6 oz	
рН	3.5 - 9.0	
°C/ °F	55/ 131	
°C/ °F	43/ 109	
dB(A)	<	82
	Units MPa/ psi/ bar MPa/ psi/ bar Inches Inches Mesh g/ oz pH °C/ °F °C/ °F dB(A)	AirCoat s Units 394004 MPa/psi/bar 0.8/1 MPa/psi/bar 16/2320/160 Inches 16/2320/160 Inches 0.8/1 Mesh 16/2320/160 Mesh 3.5 °C/°F 55/ °C/°F 43/ dB(A) <

** Filter types see chapter 9.6

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

Dimensions

Dim.	mm	inches
А	173	6.81
В	216	8.50
С	48	1.89
D	152	5.98
E	39	1.54
F	-	NPSM1/4"
G	-	G1/4"





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4.4 FUNCTIONAL DESCRIPTION

4.4.1 DESIGN OF SPRAY GUN



	Description
Α	Suspension hook
В	Fan air regulator
C	Tension nut
D	Trigger
E	Trigger safety
F	Air connection
G	Paint connection
Н	Union nut with nozzle guard
I	Nozzle / Air cap
J	Gun housing
Κ	Filter housing

4.4.2 FUNCTIONS OF THE GUN

Pulling the trigger (D) approximately 1/2 way opens the air valve allowing atomising and shaping-air to flow through the air cap. When the trigger is pulled further, more resistance is felt and the material valve is opened. The atomising air control (B) adjusts the total quantity of air flowing trough the spray gun.

The spray gun is rendered safe with the trigger safety catch (E). (Turn the trigger safety catch in the spraying direction and fasten in the groove).

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5 STARTING UP AND OPERATING

5.1 INSTALLATION AND CONNECTION

5.1.1 TYPICAL AIRCOAT SPRAYING SYSTEM



Incorrect installation/operation!

Risk of injury and damage to equipment

→ When putting into operation and for all work, read and follow the operating instructions and safety regulations for the additionally required system components.

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The pray gun GM 4600AC must be used a part of a spraying system. The spraying system shown in the figure is only one example of an electrostatic Aircoat spraying system. It is not an actual system design. 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.

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5.1.2 VENTILATION OF THE SPRAY BOOTH



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5.1.3 AIR SUPPLY

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

5.1.4 FLUID (PAINT) HOSES

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

Δ	
	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	

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5.1.5 EARTHING



WARNING
Heavy paint mist if earthing is insufficient! Risk of poisoning Insufficient paint application quality
 → Earth all unit components. → Earth the workpieces being painted.

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 usually obtained with paints between 80 and 260 milli Pascal x Sec (mPas).

Please also read the technical data sheet for the paint for optimal processing, viscosity adjustment and intermixing of the material.

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OPERATING MANUAL

5.3 START-UP

5.3.1 GENERAL RULES FOR HANDLING THE SPRAY GUN

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



SIHI_0065_GB

CAUTION

Cleaning agent in the air duct!

Functional faults caused by swollen seals

- \rightarrow Always point the spray gun down when cleaning.
- \rightarrow Ensure that neither paint nor cleaning agent enters the air duct.

SIHI_0005_GB



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OPERATING MANUAL



5.3.2 PREPARATION FOR STARTING UP

- 1. Secure the spray gun.
- 2. Connect material hose to the spray gun and material supply system.
- 3. Connect air hose to spray gun and to oil-free, dry air supply with regulator.
- 4. Insert suitable gun filter
- 5. Place the nozzle into the nozzle seal. Fit the air cap over the nozzle, ensuring that the location flats (X) are in line. Fit the union nut with nozzle guard and tighten by hand.
- 6. Visually check the permissible pressures for all the system components.
- 7. Make sure that the unit and all other conductive parts within the work area are earthed.
- 8. Set material pressure 100 bar; 10 MPa; 1450 psi and use a suitable medium (solvent or water) to check that connections do not leak.

Note:

Pull the trigger and then release, checking that the gun closes cleany.

9. Relieve spray gun and unit pressure and secure the spray gun.



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5.4 WORKS

5.4.1 START-UP FOR SPRAYING AIRCOAT

- 1. Start up with material supply set to approx. 8 MPa; 80 bar; 1160 psi operating pressure.
- 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. Open air pressure controller for the atomizer air and adjust so as to achieve optimal atomization. (The interrelation between spray pattern and atomizer air is shown in the figure below).
- 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).



too little atomizing air



Note

The paint output volume can be changed by:

- Changing the material pressure or
- Fitting another flat jet nozzle (see chap. 5.4.3 and chap. 9).

5.4.2 ADJUSTING THE SPRAY PATTERN

The spray pattern can be adjusted to suit the object being sprayed using the fan air regulator. The illustration below 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.



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OPERATING MANUAL

5.4.3 REPLACING 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

- 1. Relieve spray gun and unit pressure.
- 2. Secure gun with trigger safety catch.
- 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), ensuring that the location flats (X) are in line.
- 8. Fit the union nut with nozzle guard (A) and tighten by hand.





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5.4.4 CLEANING AIRCOAT NOZZLE

For disassembly and assembly of AirCoat nozzles see chapter 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 spray gun and unit pressure.
- 2. Secure gun with trigger safety catch.
- 3. Unscrew the union nut with nozzle guard (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. Fit the air cap (B) over the nozzle (C), ensuring that the location flats (X) are in line.
- 7. Fit the union nut with nozzle guard (A) over the air cap (B) onto the spray gun and tighten by hand.
- 8. Switch the material pressure back on.
- 9. Turn the safety catch to the spraying position and briefly pull trigger.
- 10. When the blockage has been flushed out secure the gun with safety catch.
- 11. Relieve spray gun and unit pressure.
- 12. Unscrew the union nut with nozzle guard (A).
- 13. Remove air cap (B) and reverse nozzle (C) again. Clean nozzle and replace on the nozzle seal (D) in spray position.
- 14. Fit the air cap (B) over the nozzle (C), ensuring that the location flats (X) are in line.
- 15. Fit the union nut with nozzle guard (A) over the air cap (B) onto the spray gun and tighten by hand.
- 16. Switch the material pressure and the air pressure back on.

Nozzle in "spray" position

Nozzle in "cleaning" position



GM 4600AC

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OPERATING MANUAL

6.0 MAINTENANCE

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

The spray gun and the unit must be cleaned every day. Use only the cleaning solvent recommended by the material manufacture.



- → 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

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OPERATING MANUAL

6.1 FINISHING WORK AND CLEANING



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

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

CAUTION

Cleaning agent in the air duct!

Functional faults caused by swollen seals

- → Always point the spray gun down when cleaning.
- \rightarrow Ensure that neither paint nor cleaning agent enters the air duct.

SIHI_0005_GB



Note:

Methylene chloride is not recommended as a flushing or cleaning solvent with this gun or any system components.

- 1. Relieve spray gun and unit pressure.
- 2. Secure gun with trigger safety catch.
- 3. Connect cleaning supply.
- 4. Remove AirCoat jet 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 spray gun and unit pressure.
- 7. Secure gun with trigger safety catch.
- 8. Clean gun body with a cleaning agent recommended by the manufacturer, and dry with a cloth.

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OPERATING MANUAL

6.2 REPLACING THE MATERIAL HOSE OR AIR HOSE

- 1. Finishing work and cleaning.
- 2. Relieve spray gun and unit pressure.
- 3. Secure gun with trigger safety catch.

Paint hose

- 4. Place open-ended wrench SW A on flats of paint connection and counter hold.
- 5. Turn nut to the right with open-ended wrench SW D and unscrew material hose.

Air hose

- 4. Place open-ended wrench SW D on flats of air connection and counter hold.
- 5. Turn nut to the right with open-ended wrench SW C and unscrew air hose.
- 6. Assembly:

Fit the material hose respectively air hose by hand and tighten with 2 open-ended wrenches.



Description	Key A	Key B	Key C	Key D
GM 4600AC with filter NPS1/4"	SW 17 mm	SW 19 mm	SW 17 mm	SW 14 mm
	0.669 inch	0.748 inch	0.669 inch	0.551 inch

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OPERATING MANUAL



6.3 CHANGING OR CLEANING FILTER INSERT

- 1. Finishing work and cleaning.
- 2. Relieve spray gun and unit pressure.
- 3. Secure gun with trigger safety catch.
- 4. Place open-ended wrench A on flats of filter housing (30) and counter hold.
- 5. Turn nut to the right with open-ended wrench B and unscrew pivot joint (67) with material hose.
- 6. Remove the filter insert (64), seal (65) and compression spring (66).
- 7. Thoroughly clean all parts with cleaning agent.
- 8. Assembly:
 - Push cleaned or new filter insert (64) with cone upwards into the filter housing (30)
- 9. Insert compression spring (66) into filter connection piece (67). Screw on the filter connection piece with seal (65) and material hose by hand and tighten using the two open-end wrenches A and B.



Description	Key A	Key B
GM 4600AC with filter NPS1/4"	SW 15 mm 0.590 inches	SW 17 mm 0.669 inches

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OPERATING MANUAL

6.4 REPLACING PARTS ON THE VALVE ROD

6.4.1 DISASSEMBLING

- 1. Finishing work and cleaning.
- 2. Relieve spray gun and unit pressure.
- 3. Secure gun with trigger safety catch.
- 4. Unscrew spring cover (5) and remove compression springs (2) and (3).
- 5. Loosen screw (22) and remove together with nut (20).
- 6. Remove trigger (21).
- 7. Loosen sealing screw (10) with single open-end wrench SW 7 mm; 0.28 inches.

CAUTION

Unsuitable tool!

Damage to seals and sealing surfaces

 \rightarrow Do not hold the valve rod with pliers or a similar tool.

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- 8. Carefully pull the complete valve rod (B) together with sealing screw out of the gun housing (A) toward the rear.
- 9. Hold the clamping sleeve (4) with open-end wrench SW 6 mm; 0.24 inches and loosen the collet chuck (18) with socket SW 2 mm; 0.08 inches.
- 10. Carefully pull the valve rod (34) out toward the front. Replace the relevant parts.



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6.4.2 REPLACEMENT OF VALVE ROCKER SEALS

- 1. Support valve tappet (50) with single open-end wrench SW 13 mm; 0.51 inches and unscrew cover (53) with single open-end wrench SW 7 mm; 0.28 inches.
- 2. Remove air valve seal (51) and seal (52) and replace with new seals.
- Screw valve tappet (50) and cover (53) together by hand. Carefully tighten in small increments with open-end wrench SW 7 mm; 0.28 inches and SW 13 mm; 0.51 inches until a slight resistance is perceptible when moving the valve rod (34) in the valve tappet.

Note:

The seal (52) can be pulled out of the cover (53) with the help of an eye bolt.

6.4.3 REPLACING THE ROD SEAL (35)

- 1. Carefully pull the rod seal (35) out of the gun housing.
- 2. Clean sealing surfaces in the gun housing.
- 3. Mount new rod seal (35) to the rod seal tool (84).

Note: Note installation position of the rod seal (35).

- 4. Insert rod seal tool (84) together with rod seal (35) into the hole.
- 5. Fit trigger guard (21) with screw (22) to body of gun and
- 6. Carefully push the tool with the rod seal (35) over the trigger guard (21) into the recess in the housing.
- 7. Remove trigger guard (21), screw (22) and rod seal tool (84).

6.4.4 ASSEMBLING

- 1. Fit seal collar (11) to valve rod (34), together with inserted O-ring (12) and sealing screw (10).
- 2. Push completely assembled valve tappet (19) onto valve rod (34).
- 3. Insert preassembled valve rod into the collet chuck (18) as far as the stop.
- 4. Fix clamping sleeve (4) with wrench size 6 mm; 0.24 inches, screw the preassembled valve rod to the clamping sleeve and tighten. (Socket SW 2 mm; 0.08 inches).
- 5. Carefully insert the complete valve rod (B) into the gun housing.
- 6. Screw in sealing screw (10) but do not tighten yet.
- 7. Position trigger guard (21) and secure with screw (22) and nut (20).
- 8. Insert compression springs (3) and (2) and screw on the spring cover (5).
- 9. Carefully tighten the seal collar (11, 12) with the sealing screw (10). Ensure that the trigger guard moves easily.
- 10. Start-up in accordance with chapter 5.3.

Note:

Only use silicone and resin free grease.





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OPERATING MANUAL

6.5 REPLACING THE NOZZLE SEAL

CAUTION

Defective nozzle seal!

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

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

SIHI_0021_GB

- 1. Finishing work and cleaning.
- 2. Relieve spray gun and unit pressure.
- 3. Secure gun with trigger safety catch.
- 4. Unscrew the union nut with nozzle guard (33).
- 5. Remove air cap (36) and nozzle (13).
- 6. Carefully release the nozzle seal (17) with the help of a screwdriver.
- 7. Fit new nozzle seal to valve housing (16).
- 8. Continue assembly in the reverse order.



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6.6 REPLACING THE "AIR" SEALING RING

CAUTION

Forming air and atomizer air not separate!

Poor spray pattern Spray jet cannot be adjusted

 \rightarrow Treat the distributor seal (F) with care.

SIHI_0030_GB

- 1. Finishing work and cleaning.
- 2. Relieve spray gun and unit pressure.
- 3. Secure gun with trigger safety catch.
- 4. Unscrew the union nut with nozzle guard (33).
- 5. Remove air cap (36) and nozzle (13).
- 6. Remove defective sealing ring (14/F) with the help of pipe tongs or with a large screwdriver.
- 7. **Assembly:** Fit new distributor seal (14/F) to air cap (36).
- 8. Place air cap in body of gun together with sealing ring (14).
- 9. Attach union nut (33) and screw in until the sealing ring snaps into place in the mounting groove (snap hear able).
- 10. Demount union nut (33) and air cap (36) and complete spray gun according to paragraph 5.4.3.



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7 TROUBLE SHOOTING AND SOLUTION

Malfunction	Cause	Remedy	See chapter
Insufficient material	Nozzle too small	Select larger nozzle	9
discharge	Material pressure to low	Increase material pressure	
	Filter of gun or high- pressure filter at pump clogged	Clean or replace filter	6.1
	Nozzle is clogged	Nozzle cleaning	5.4.5
	Valve stem defective	Replace valve rod	6.4
Poor spray pattern	Wrongly adjusted atomizing air	Readjust the atomizing air	5.4.1
	Nozzle to large	Select smaller nozzle	9.1
	Material pressure to low	Increase pressure at pump	
	Material viscosity to high	Thin material in accordance with the manufacturer's instructions	
	Partial nozzle blockage	Nozzle cleaning	5.4.5
	Wrongly adjusted atomizing air	Readjust the atomizing air	5.4.1
	Air cap faulty (blocked holes, damaged seal)	Clean or replace air cap	5.4.5
	Wrong air cap type	Replace as required air cap (solvent / water based)	5.4.5
Valve rod leaks (Paint- or air path)	Paint seal (packing) damaged or worn, valve stem damaged	Adjust or replace packing or replace valve stem complete	6.4
	Air valve seals damaged	Replace air valve seals	6.4
	Pretension to low	Re tighten sealing screw	
Spray gun will not shut-off correctly	Worn valveseat / valve ball	Replace parts	6.4
	Packing-screw too tight, or packing stuck with dried paint	Replace the seals	6.4

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9.1

OPERATING MANUAL

9 ACCESSORIES

9.1 ROUND-JET NOZZLE CAP

Part No.	Description		
394180	Round-jet nozzle cap (without nozzle insert)	9.1.2 B_02276	



Part No.	Description	Marking	Volume flow*	Jet ø **
132720	Nozzle insert R11	11	0.16;160	approx. 250; 9.84
132721	Nozzle insert R12	12	0.22; 220	approx. 250; 9.84
132722	Nozzle insert R13	13	0.27; 270	approx. 250; 9.84
132723	Nozzle insert R14	14	0.34; 340	approx. 250; 9.84
132724	Nozzle insert R15	15	0.38; 380	approx. 250; 9.84
132725	Nozzle insert R16	16	0.43;430	approx. 250; 9.84
132726	Nozzle insert R17	17	0.48; 480	approx. 250; 9.84
132727	Nozzle insert R18	18	0.53; 530	approx. 250; 9.84
132728	Nozzle insert R19	19	0.59; 590	approx. 250; 9.84
132729	Nozzle insert R20	20	0.65;650	approx. 250; 9.84
132730	Nozzle insert R21	21	0.71;710	approx. 250; 9.84
132731	Nozzle insert R22	22	0.77;770	approx. 250; 9.84



Ø

9.1.1

* Volume flow in l/min; cc/min water at 10 MPa; 100 bar; 1450 psi.

** 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 ps with synthetic enamel 20 DIN4 - Sek.

9.1.2 NOZZLE SCREWED CONNECTION COMPLETE

Part No.	Description
132922	Nozzle screwed connection complete



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9.2 AIRCOAT NOZZLES ACF3000



Davit Na	Maulain a	Size	Recommend Spraying			nend	ed gunfilter	
Part-No.	Marking	mm; inch	angle				Application	
379107	07/10	0.007-0.18	10º				Natural paint	
379207	07/20	0.007-0.18	20º					
379209	09/20	0.009-0.23	20 ⁰				Transparent paint	
379309	09/30	0.009-0.23	30°				Oil	
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 ⁰	es)			Synthetic resin paint	
379211	11/20	0.011-0.28	20 ⁰	lesh			PVC paint	
379311	11/30	0.011-0.28	30 ⁰	N O				
379411	11/40	0.011-0.28	40°	(20				
379511	11/50	0.011-0.28	50°	red				
379611	11/60	0.011-0.28	60°					
379113	13/10	0.013-0.33	10°				Paint, undercoat	
379213	13/20	0.013-0.33	20 ⁰				Priming paint	
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	10º		nes)		Filler	
379215	15/20	0.015-0.38	20 ⁰		Aes		Rustproofing paint	
379315	15/30	0.015-0.38	30 ⁰		00			
379415	15/40	0.015-0.38	40°		v (1			
379515	15/50	0.015-0.38	50°		llov			
379615	15/60	0.015-0.38	60°		у			
379815	15/80	0.015-0.38	80°					
379217	17/20	0.017-0.43	20º				Rustproofing paint	
379317	17/30	0.017-0.43	30°				Latex paint	
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°					

+ + 00153 CD

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Part-No	Marking	Size	Spraying	Recomme		nded gunfilter
1 41 (-110.	Marking	inch-mm	angle			Application
379219	19/20	0.019-0.48	20 ⁰		es)	Rustproofing paint
379319	19/30	0.019-0.48	30 ⁰		esh	Latex paint
379419	19/40	0.019-0.48	40 ⁰		M O	
379519	19/50	0.019-0.48	50°		(10	
379619	19/60	0.019-0.48	60°		MO	
379819	19/80	0.019-0.48	80°		<mark>yel</mark>	
379221	21/20	0.021-0.53	20°			Distemper paint
379421	21/40	0.021-0.53	40°			Zinc dust coating
379521	21/50	0.021-0.53	50°			Mica paint
379621	21/60	0.021-0.53	60°			
379821	21/80	0.021-0.53	80°			
379423	23/40	0.023-0.58	40°			
379623	23/60	0.023-0.58	60°	les)		
379823	23/80	0.023-0.58	80°	Aesh		
379425	25/40	0.025-0.64	40°	50 N		
379625	25/60	0.025-0.64	60°	te (
379825	25/80	0.025-0.64	80°	whi		
379427	27/40	0.027-0.69	40°			
379627	27/60	0.027-0.69	60°			
379827	27/80	0.027-0.69	80°			
379429	29/40	0.029-0.75	40°			
379629	29/60	0.029-0.75	60°			
379829	29/80	0.029-0.75	80°			
379431	31/40	0.031-0.79	40°			
379631	31/60	0.031-0.79	60°			
379831	31/80	0.031-0.79	80°			
379435	35/40	0.035-0.90	40°			
379635	35/60	0.035-0.90	60°			
379835	35/80	0.035-0.90	80°			

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9.3 AIR CAPS

Part No.	Description
394910	Air cap LV complete (red) for low viscosity paints
394911	Air cap HV complete (blue) for high viscosity paints

9.4 FILTER INSERT

Part No. for 1 piece	Part No. for 10 piece	Filter types	Mesh	Use for nozzles
34383	97022	Gun filter red	200	0.007" - 0.015"
43235	97023	Gun filter yellow	100	0.015" - 0.019"
34377	97024	Gun filter white	50	0.017" - 0.021"







9.5 SWIVELS

Part No.	Description
394933	Set Swivel for paint- (NPSM 1/4") and for air connection (G1/4")
394928	Swivel for paint connection (NPSM 1/4")
364938	Swivel for air connection G1/4"







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9.6 HOSES

Part No.	Description
394100	Hose set AC Material DN3; Air DN6 Consisting of paint- air- and protective hose. <i>Material:</i> NPSM1/4"; 7.5 m; 24.6 ft; DN 3 mm; ID 0.12 inch; 27 MPa; 270 bar; 3916 psi <i>Air:</i> G1/4"; 7.5 m; 24.6 ft; DN 6 mm; ID 0.24 inch; 0.8 MPa; 8 bar; 116 psi
394101	Hose set AC Material DN4; Air DN6 Consisting of paint- air- and protective hose. <i>Material:</i> NPSM1/4"; 7.5 m; 24.6 ft; DN 4 mm; ID 0.16 inch; 27 MPa; 270 bar; 3916 psi <i>Air:</i> G1/4"; 7.5 m; 24.6 ft; DN 6 mm; ID 0.24 inch; 0.8 MPa; 8 bar; 116 psi
9987136	Protective hose per meter

9.7 MISCELLANEOUS

Part No.	Description
9997001	Nozzle cleaning brush
394941	Service-Set GM 4600AC
394904	Conversion kit 16 MPa; 160 bar; 2320 ps
394905	Conversion kits 25 MPa; 250 bar; 3625 psi
367560	Double connector NPSM1/4" (outside thread) for paint hose extension
9985720	Double nipple G1/4" (outside thread) for air hose extension





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OPERATING MANUAL

10 SPARE PARTS

10.1 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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10.2 SPARE PARTS LIST GM 4600AC

Spui	c purts		16 MD>	25 MD2	
Ρος	к	Otv	Part No	Part No	Description
1		1	394004	3940014	GM 4600AC; XX MPa; NPSM1/4"
2		1	9999501	9999501	Screw spring Material
3		1	9999500	9999500	Screw spring Air
4		1	394256	394256	Tension sleeve compl.
5		1	394335	-	Spring cap 16 MPa; 160 bar: 2320 psi
5		1	-	394333	Spring cap 25 MPa; 250 bar: 3625 psi
6		1	394924	394924	Air tappet assy.
8	•	1	2311320	2311320	Valve rod unit assy.
10		1	394327	394327	Sealing screw
11	★ ♦	1	394328	394328	Sealing collar
12	* •	1	9971445	9971445	O-ring
13	• •	1	379xxx	379xxx	AC nozzle (see chapter 9.2)
14	★ ♦	1	394339	394339	Sealing ring
15	* •	1	9974245	9974245	O-ring
16	* •	1	394922	394922	Valve seat compl.
17	* •	1	394338	394338	Nozzle seal
18		1	394330	394330	Chuck
19		1	394257	394257	Valve tappet compl.
20		1	394318	394318	Nut
21		1	394601	394601	Trigger
22		1	394319	394319	Screw
23		1	394334	394334	Safety catch
24		1	9935088	9935088	Cylindrical shaft
34	* •	1	394920	394920	Valve rod compl.
35	★ ♦	1	394323	394323	Valve rod seal
36	• •	1	394910	394910	Air cap LV complete (red)
36	• •	1	394911	394911	Air cap HV complete (blue)
50		1	394309	394309	Valve tappet
51	* •	1	179338	179338	Air valve seal
52	★ ♦	1	179395	179395	Seal
53	* •	1	394322	394322	Сар
55	•	1	394336	394336	Nozzle body

Spare parts list GM 4600AC

◆ = Wearing part

 \star = Included in service set

• = Not part of standard equipment for spray gun. Available, however, as additional extra

Part No. DOC394861



OPERATING MANUAL



Part No. DOC394861



OPERATING MANUAL

_ <u> </u>			16 MD2	25 MD-	
Pos	к	Qty	Part No.	Part No.	Description
56	••	1	128327	128327	Sealing nipple
57	••	1	132516	132516	Nozzle screwed connection compl.
58	•	1	132351	132351	Nozzle screwed connection holder
59	•	1	394308	394308	Union nut
60	•	1	394337	394337	Nozzle nut
61	*•	1	132	132	Nozzle insert R (various dimensions see chapter 9.1.1)
62	٠	1	394180	394180	Round-jet nozzle cap (see chapter 9.1)
63	••	1	132922	132922	Nozzle screwed connection compl.
64	*	1	43235	43235	Filter insert yellow, 100 mesh (other filter types see chapter 9.2)
65	* •	1	128389	128389	Seal
66	* •	1	43590	43590	Compression spring
67		1	394610	394610	Pivot joint NPS 1/4"
68		1	34041	34041	Connector assy. A=M16x1.5/I=NPSM1/4"
		1	394941	394941	Service-Set GM 4600AC

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Part No. DOC394861



OPERATING MANUAL

10.3 SPARE PARTS LIST GM 4600AC-H

Pos		Κ	Qty	25 MPa	Description	
				Part No.		
1			1	2303491	GM 4600AC-H; 25MPa; NPSM1/4"	
2			1	9999501	Screw spring Material	
3			1	9999500	Screw spring Air	
4			1	394256	Tension sleeve compl.	
5			1	394333	Spring cap 25 MPa; 250 bar: 3625 psi	
6		•	1	394924	Air tappet assy.	
8		•	1	2311320	Valve rod unit assy.	
10			1	394327	Sealing screw	
11	*	٠	1	394328	Sealing collar	
12	*	•	1	9971445	O-ring	
13		• •	1	379xxx	AC nozzle (see chapter 9.2)	
14	*	•	1	394339	Sealing ring	
15	*	•	1	9974245	O-ring	
16	*	•	1	394922	Valve seat compl.	
17	*	•	1	394338	Nozzle seal	
18			1	394330	Chuck	
19			1	394257	Valve tappet compl.	
20			1	394318	Nut	
21			1	394601	Trigger	
22			1	394319	Screw	
23			1	394334	Safety catch	
24			1	9935088	Cylindrical shaft	
34	*	•	1	394920	Valve rod compl.	
35	*	•	1	394323	Valve rod seal	
36		• •	1	394910	Air cap LV complete (red)	
36		• •	1	394911	Air cap HV complete (blue)	
50			1	394309	Valve tappet	
51	*	•	1	179338	Air valve seal	
52	*	•	1	179395	Seal	
53	*	•	1	394322	Сар	
55		•	1	394336	Nozzle body	

Spare parts list GM 4600AC-H

◆ = Wearing part

 \star = Included in service set

• = Not part of standard equipment for spray gun. Available, however, as additional extra

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OPERATING MANUAL



Part No. DOC394861



OPERATING MANUAL

Pos		Κ	Qty	25 MPa	Description
				Part No.	
56		••	1	128327	Sealing nipple
57		••	1	132516	Nozzle screwed connection compl.
58		٠	1	132351	Nozzle screwed connection holder
59		٠	1	394308	Union nut
60		•	1	394337	Nozzle nut
61		••	1	132	Nozzle insert R (various dimensions see chapter 9.1.1)
62		٠	1	394180	Round-jet nozzle cap (see chapter 9.1)
63		• •	1	132922	Nozzle screwed connection compl.
64		•	1	43235	Filter insert yellow, 100 mesh (other filter types see chapter 9.2)
65	*	•	1	128389	Seal
66	*	•	1	43590	Compression spring
67			1	394610	Pivot joint NPS 1/4"
68			1	34041	Connector assy. A=M16x1.5/I=NPSM1/4"
69	٠		1	9998910	Instruction sticker "Hot surfaces"
70	٠		1	9998911	Protection sticker for 9998910
			1	394941	Service-Set GM 4600AC

Spare parts list GM 4600AC-H

 \bullet = Wearing part

 \star = Included in service set

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Part No. DOC394861



OPERATING MANUAL



Part No. DOC394861

GM 4600AC

WÂGNER

OPERATING MANUAL

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