



The Coating Experts

GB

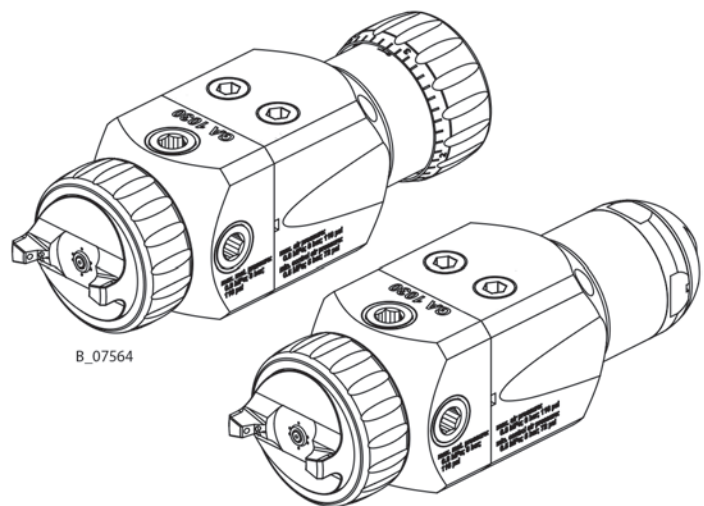
Translation of the Original Operating Manual

For professional use.
Always follow the information in this manual,
particularly the safety instructions and the warning
instructions. Store the manual in a safe place.

Version 10/2022

**PILOT GA 1020 / 1030
PILOT GA 1020 / 1030 ADH**

Automatic spray gun



B_07564

CE Ex II 2G X



Table of Contents

1	ABOUT THESE INSTRUCTIONS	6
1.1	Preface	6
1.2	Warnings, Notices and Symbols in these Instructions	6
1.3	Languages	7
1.4	Abbreviations	7
1.5	Terminology for the Purpose of this Manual	7
2	CORRECT USE	8
2.1	Device type	8
2.2	Type of Use	8
2.3	For Use in Potentially Explosive Areas	8
2.4	Processible Working Materials	8
2.5	Misuse	8
3	IDENTIFICATION	9
3.1	Explosion Protection Identification	9
3.2	Identification "X"	9
3.3	Type plate	10
4	BASIC SAFETY INSTRUCTIONS	11
4.1	Safety Instructions for the Operator	11
4.1.1	A Safe Work Environment	11
4.1.2	Personnel Qualifications	12
4.2	Safety Instructions for the Personnel	12
4.2.1	Personal Safety Equipment	12
4.2.2	Safe Handling of WAGNER Spray Devices	13
4.2.3	Grounding the Device	13
4.2.4	Product Hoses	14
4.2.5	Cleaning and Flushing	14
4.2.6	Touching Hot Surfaces	15
4.2.7	Maintenance and Repair	15
4.2.8	Protective and Monitoring Equipment	16
5	DESCRIPTION	17
5.1	Components	17
5.2	Distinguishing Features	18
5.3	Configurations	18
5.4	Scope of delivery	18
5.5	Data	19
5.5.1	Materials of Paint-wetted Parts	19
5.5.2	Technical data	19
5.5.3	AIR FLOW (AA)	20
5.5.4	AIR FLOW (SA)	21
5.5.5	Connections	22
5.5.6	Options for Product Supply	23
6	ASSEMBLY AND COMMISSIONING	24
6.1	Training of Assembly/Commissioning Personnel	24
6.2	Storage Conditions	24
6.3	Installation Conditions	24

OPERATING MANUAL

6.4	Connecting Automatic Spray Gun	24
6.4.1	Typical AirSpray Spraying System	24
6.4.2	Ventilation of the Spray Booth	25
6.4.3	Air Supply Lines	25
6.4.4	Product supply lines	25
6.5	Grounding	25
6.6	Safety Checks	25
6.7	Material Preparations	26
6.7.1	Viscosity Conversion Table	26
6.8	Commissioning	27
6.8.1	Preparation Before Commissioning	27
6.8.2	Procedure	27
6.8.3	Verifying a Safe Operational Condition	27
7	OPERATION	28
7.1	Training the Operating Personnel	28
7.2	Tasks	28
7.3	Adjusting the Spray Pattern	28
7.3.1	Adjusting Spray Pattern	29
7.3.2	Setting the Product Flow Rate	29
7.4	Pressure Relief / Work Interruption	30
7.5	Basic Flushing	30
8	CLEANING AND MAINTENANCE	31
8.1	Cleaning	31
8.1.1	Cleaning Personnel	31
8.1.2	Flushing and Cleaning the Automatic Spray Gun	31
8.2	Maintenance	31
8.2.1	Maintenance Personnel	31
8.2.2	Maintenance Instructions	31
8.2.3	Safety Checks and Maintenance Intervals	32
8.3	Changing the Nozzle	34
8.4	Changing the Piston	36
8.5	Replacing the Needle Packing (Only PILOT GA 1030)	38
8.6	Converting from EC to IC	40
8.7	Converting from a Distribution Line to a Circuit	41
9	TROUBLESHOOTING AND RECTIFICATION	42
10	REPAIR WORK	43
10.1	Repair Personnel	43
10.2	Repair Notes	43
10.3	Tools	44
10.4	Disassembly	44
10.5	Assembly	46
10.6	Supporting Bar Assembly	48
10.6.1	On Spray Gun	48
10.6.2	On Adapter Plate	48
11	FUNCTION TEST AFTER REPAIR WORK	49
12	DISPOSAL	49



13	ACCESSORIES	50
13.1	Nozzle Needle Sets	50
13.2	Air caps	51
13.3	Connection Plates with Adapter	53
14	SPARE PARTS	54
14.1	How Can Spare Parts Be Ordered?	54
14.2	Gun versions	55
14.3	Exploded view PILOT GA 1020/1030	56
14.4	Spare parts list PILOT GA 1020/1030 Automatic Spray Gun	57
14.4.1	Spare parts Adapter Plate "Product Connections at Side"	58
14.4.2	Spare parts Adapter plate "Product connections at rear"	58
14.4.3	Spare parts Adapter plate "Flushing valve"	59
15	EU DECLARATION OF CONFORMITY	60



1 ABOUT THESE INSTRUCTIONS

1.1 PREFACE

The operating manual contains information about safely operating, maintaining, cleaning and repairing the device.


The operating manual is part of the device and must be available to the operating and service personnel.


The device may only be operated by trained personnel and in compliance with this operating manual.


Operating and service personnel should be instructed according to the safety instructions. This equipment can be dangerous if it is not operated according to the instructions in this operating manual.


1.2 WARNINGS, NOTICES AND SYMBOLS IN THESE INSTRUCTIONS

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

 **DANGER** Immediate risk of danger.
Non-observance will result in death or serious injury.

 **WARNING** Potential danger.
Non-observance may result in death or serious injury.

 **CAUTION** Potentially dangerous situation.
Non-observance may result in minor injury.

 **NOTICE** Potentially dangerous situation.
Non-observance may result in damage to property.

Note: Provides information about particular characteristics and how to proceed.

Explanation of warning notice:

LEVEL OF DANGER

This notice warns you of a danger!

Possible consequences of not observing the warning notice.

→ The measures for preventing the hazard and its consequences.





1.3 LANGUAGES

The operating manual is available in the following languages:

Original operating manual

Language	Order no.
German	2422840

Translation of the original operating manual

Language	Order no.	Language	Order no.
English	2422842	Spanish	2422846
French	2422844	Russian	2422847
Italian	2422845	Chinese	2422848
Polish	2432161		

Additional languages on request or at: www.walthers-pilot.de

1.4 ABBREVIATIONS

Bestellnr.	Order number
ET	Spare part
K	Marking in the spare parts lists
Pos	Position
Stk	Number of pieces
SW	Wrench size
ADH	Adhesive

1.5 TERMINOLOGY FOR THE PURPOSE OF THIS MANUAL

Cleaning	
Cleaning	Manual cleaning of devices and device parts with cleaning agent.
Flushing	Internal flushing of paint-wetted parts with flushing agent.
Product pressure generator	Pump or pressure tank.
Personnel qualifications	
Trained person	Is instructed in the tasks assigned to him/her, the potential risks associated with improper behavior as well as the necessary protective devices and measures.
Electrically trained person	Is instructed by an electrician about the tasks assigned to him/her, the potential risks associated with improper behavior as well as the necessary protective devices and measures.
Electrician	Can assess the work assigned to him/her and detect possible hazards based on his/her technical training, knowledge and experience in relevant provisions.
Skilled person in accordance with TRBS 1203 (2010/Revision 2012)	A person who, based on his/her technical training, experience and recent vocational experience, has sufficient technical knowledge in the areas of explosion protection, protection from pressure hazards and electric hazards (if applicable) and is familiar with the relevant and generally accepted rules of technology so that he/she can inspect and assess the status of devices and coating systems based on workplace safety.



2 CORRECT USE

2.1 DEVICE TYPE

Automatic spray gun for automatic coating of work pieces.

2.2 TYPE OF USE

The automatic spray gun is suitable for atomizing liquid products, particularly coating products, using the AirSpray process.

WALTHER explicitly prohibits any other use!

Due to its compact construction and its low weight, the automatic spray gun is especially suitable for use on automatic coating machines and robots.

The device may only be operated under the following conditions:

- Use the device only to work with the products recommended by WALTHER.
- Only operate the device as a whole.
- Do not deactivate safety fixtures.
- Use only WALTHER original spare parts and accessories.
- Follow the instructions in the operating manual.

2.3 FOR USE IN POTENTIALLY EXPLOSIVE AREAS

The device is suitable for use in potentially explosive areas as defined in Directive 2014/34/EU (ATEX), (see Explosion protection marking Chapter [3.1](#)).



2.4 PROCESSIBLE WORKING MATERIALS

Top-coat lacquers, primer paints, corrosion protection, textured lacquers, lyes, staining solvents, clear lacquers, separating agents, etc. with a solvent or water base. If you want to process working materials other than the aforementioned, please contact a WALTHER Spritz- und Lackiersysteme representative.

When operating the device with a coating product with a temperature of > 43 °C; 109.4 °F, identify the device with a warning label that says "Warning - hot surface" according to Chapter [4.2.6](#).

Note:

Contact your local WALTHER dealer and the material manufacturer if you encounter application problems.

2.5 MISUSE

Misuse can lead to physical injury and/or property damage!
Special attention must be paid that:

- no dry coating products, e.g. powder are processed;



3 IDENTIFICATION

3.1 EXPLOSION PROTECTION IDENTIFICATION

As defined in the Directive 2014/34/EU (ATEX), the device is suitable for use in potentially explosive areas.

Device type: PILOT GA 1020 / 1030 automatic spray gun
 Manufacturer: WALTHER Spritz- und Lackiersysteme GmbH
 Kärntner Str. 18-30
 D-42327 Wuppertal



  II 2G X

CE European Communities
 Ex Symbol for explosion protection
 II Device class II
 2 Category 2 (zone 1)
 G Ex-atmosphere gas
 X Special notice



3.2 IDENTIFICATION "X"

The maximum surface temperature corresponds to the permissible product temperature. This and the permissible ambient temperature can be found in Chapter [5.5.2](#).

Safe Handling of WALTHER Spray Devices

Mechanical sparks can form if the device comes into contact with metal.
 In an explosive atmosphere:

- knocking or pushing metal against metal is to be avoided;
- do not drop the device.

Ignition temperature of the coating product

- Ensure that the ignition temperature of the coating product is above the maximum surface temperature.

Medium supporting atomizing

- To atomize the product, use only weakly oxidizing gases, e.g., air.

Cleaning

If there are deposits on the surfaces, the device may form electrostatic charges. Flames or sparks can form during discharge.

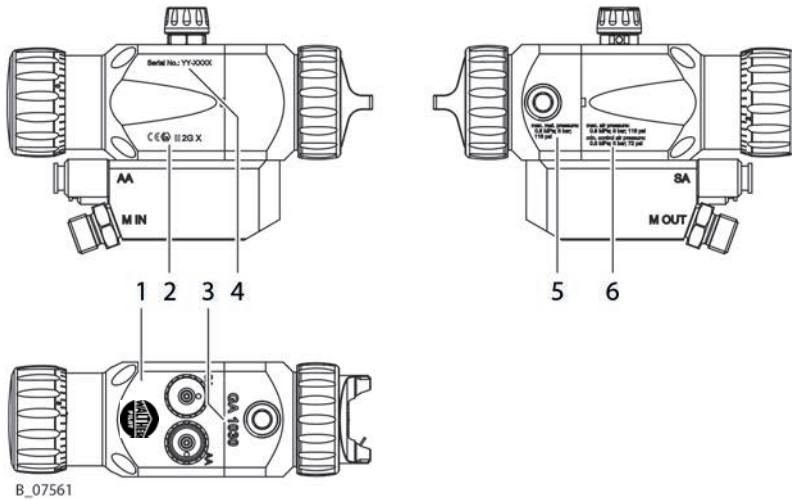
- Remove deposits from the surfaces to maintain conductivity.
- Use only a damp cloth to clean the device.



OPERATING MANUAL



3.3 TYPE PLATE



B_07561

Pos	Designation
1	WALTHER logo
2	CE and explosion protection identification
3	Type description, PILOT GA 1020 or GA 1030
4	Serial number, year
5	Maximum product pressure
6	Maximum air inlet pressure / minimum control air pressure



4 BASIC SAFETY INSTRUCTIONS

4.1 SAFETY INSTRUCTIONS FOR THE OPERATOR

- Keep this operating manual at hand near the device at all times.
- Always follow local regulations concerning accident prevention regulations.



4.1.1 A SAFE WORK ENVIRONMENT

Danger due to dangerous fluids or vapors!

Severe or fatal injuries due to explosion danger or inhalation, swallowing or contact with the skin or eyes.

- Ensure that the floor in the working area is static dissipative in accordance with EN 61340-4-1 (resistance must not exceed 100 MΩ).
- Paint mist extraction systems/ventilation systems must be fitted on site according to local regulations.
- Make sure that the ground connection and potential equalization of all system parts are reliable and continuous and can withstand the expected stress (e.g., mechanical stress, corrosion).
- Ensure that product hoses/air hoses adapted to the working pressure are used.
- Ensure that personal protective equipment (see Chapter [4.2.1](#)) is available and is used.
- Ensure that all persons within the working area wear static dissipative shoes. Footwear must comply with EN 20344. The measured insulation resistance must not exceed 100 MΩ.
- Ensure that during spraying, persons wear static dissipative gloves. The grounding takes place via the spray gun's handle or its trigger.
- Protective clothing, including gloves, must comply with EN 1149-5. The measured insulation resistance must not exceed 100 MΩ.
- Ensure that there are no ignition sources such as naked flames, sparks, glowing wires, or hot surfaces in the vicinity. No smoking.
- Ensure that the pipe joints, hoses, equipment parts and connections are permanently, technically leak-proof:
 - Periodic preventative maintenance and service (replacing hoses, checking tightness of connections, etc.).
 - Regular monitoring of leaks and defects via visual inspection and odor testing, e.g., daily before commissioning, at the end of work or weekly.
- Ensure that maintenance and safety checks are performed regularly.
- In the event of defects, immediately bring the device or system to a stop and arrange to have repairs carried out immediately.





4.1.2 PERSONNEL QUALIFICATIONS

Danger due to incorrect use of device!

Risk of death due to untrained personnel.

- Ensure that the operating personnel has been instructed by the operator in accordance with the operating manual and the operating instructions. The device must only be operated, maintained and repaired by trained personnel. Refer to the operating instructions for information about the required personnel qualifications.

4.2 SAFETY INSTRUCTIONS FOR THE PERSONNEL

- Always follow the information in this manual, particularly the safety instructions and the warning instructions.
- Always follow local regulations concerning accident prevention regulations.

- In electrostatics applications: anyone who belongs to a risk group according to EMF Directive 2013/35/EU (e.g., those with active implants), must not enter the high-voltage area.



4.2.1 PERSONAL SAFETY EQUIPMENT

Danger due to dangerous fluids or vapors!

Serious or fatal injuries due to inhalation, swallowing or contact with the skin or eyes.

- When preparing or working with material and when cleaning the device, follow the working instructions of the manufacturer of the lacquers, 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 device in a spray booth or on a spraying wall with the ventilation (extraction) switched on.
- Wear suitable protective clothing when working with hot products.





4.2.2 SAFE HANDLING OF WALTHER SPRAY DEVICES

Hazard due to injection of material or flushing agent into the skin!

The spray jet is under pressure and can cause dangerous injuries. Avoid injection of material or flushing agents:

- Never point the spray gun at people.
- Never reach into the spray jet.
- Before any work on the device, in the event of work interruptions and malfunctions:
 - Switch off the energy/compressed air supply.
 - Relieve the pressure from the spray gun and device.
 - Secure the spray gun against actuation.
 - Disconnect the control unit from the mains.
 - In the event of functional faults: remedy the fault as described in the "Troubleshooting" chapter.
- If necessary or at least every 12 months, the liquid ejection devices must be checked for safe working conditions by an expert (e.g., WALTHER Service Technician) in accordance with the guidelines for liquid ejection devices (ZH 1/406 and DGUV 100-500 Chapters 2.29 and 2.36).
 - For shut down devices, the examination can be suspended until the next start-up.



In the event of skin injuries caused by material or flushing agents:

- Note the material or flushing agent that you have been using.
- Consult a doctor immediately.

4.2.3 GROUNDING THE DEVICE

Danger due to electrostatic charge!

Explosion hazard and damage to the device.

Friction, flowing liquids and air or electrostatic coating processes create charges. Flames or sparks can form during discharge.

Correct grounding of the entire spraying system prevents electrostatic charges.

- Ensure that all devices and tanks are grounded before each spraying process.
- Ground the work pieces to be coated.
- Ensure that all persons inside the working area are grounded, e.g., that they are wearing static dissipative shoes.
- The spray substance supply (spray substance tank, pump, etc.) must be grounded.





4.2.4 PRODUCT HOSES

Hazard due to bursting of product hose!

The product hose is under pressure and may cause dangerous injuries.

- Ensure that the hose material is chemically resistant to the sprayed products and the flushing agents used.
- Ensure that the product hose and the fittings are suitable for the pressure generated.
- Ensure that the following information can be seen on the high-pressure hose:
 - manufacturer,
 - permissible operating pressure,
 - date of manufacture.
- Make sure that the hoses are laid only in suitable places. Hoses should not be laid in the following places under any circumstances:
 - in high-traffic areas,
 - on sharp edges,
 - on moving parts or
 - on hot surfaces.
- Ensure that the hoses are never run over by vehicles (e.g., fork lift trucks), or that the hoses are never put under pressure from the outside in any other way.
- Ensure that the hoses are never kinked. Observe maximum bending radii.
- Ensure that no work is ever performed with a damaged hose.
- Make sure that the hoses are never used to pull or move the device.
- The electrical resistance of the product hose, measured at both valves, must be less than 1 MΩ.
- Suction hoses may not be subjected to pressure.



4.2.5 CLEANING AND FLUSHING

Danger due to cleaning and flushing!

Explosion hazard and damage to the device.

- Preference should be given to non-ignitable cleaning and flushing agents.
- When carrying out cleaning work with flammable cleaning agents, make sure that all equipment and resources (e.g., collection tank, funnel, transport cart) are conductive or static dissipative and grounded.
- Observe the specifications of the material manufacturer.
- Ensure that the flash point of the cleaning agent is at least 15 K above the ambient temperature or that cleaning is undertaken at a cleaning station with technical ventilation.
- Never use chloride or halogenated solvents (such as trichloroethane and methylene chloride) with devices containing aluminium or galvanized/zinc-plated parts. They may react chemically thus producing an explosion danger.
- Take measures for workplace safety (see Chapter [4.1.1](#)).



OPERATING MANUAL



- When commissioning or emptying the device, please note that:
 - depending upon the coating product used,
 - depending on the flushing agent (solvent) used.
 an explosive mixture may temporarily exist inside the lines and components of equipment.
- Only electrically conductive tanks may be used for cleaning and flushing agents.
- The tanks must be grounded.

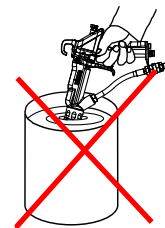
An explosive gas/air mixture forms in closed tanks.

- Never spray into a closed tank when using solvents for flushing.

External Cleaning

When cleaning the exterior of the device or its parts, also observe the following:

- Relieve the pressure from the device.
- De-energize the device electrically.
- Disconnect the pneumatic supply line.
- Use only moistened cloths and brushes. Never use abrasive agents or hard objects and never spray cleaning agents with a gun. Cleaning the device must not damage it in any way.
- Ensure that no electric component is cleaned with or immersed into solvent.



4.2.6 TOUCHING HOT SURFACES

Hazard due to hot surfaces because of hot coating products!

Risk of burn injuries

- Only touch hot surfaces if you are wearing protective gloves.
 - When operating the device with a coating product with a temperature of > 43 °C; 109 °F:
 - Identify the device with a warning label "Warning - hot surface".
- Order no.**
 9998910 instruction label
 9998911 protection label
- Note:** Order the two stickers together.



4.2.7 MAINTENANCE AND REPAIR

Danger due to improper maintenance and repair!

Danger to life and equipment damage.

- Only a WALTHER Spritz- und Lackiersysteme service center or a suitably trained person may carry out repairs and replace parts.
- Use only WALTHER original spare parts and accessories.
- Do not change or modify the device; if change is necessary, contact WALTHER.
- Only repair and replace parts that are listed in Chapter 13 and Chapter 14 that are assigned to the device.
- Do not use any defective components.
- Before all work on the device and in the event of work interruptions:
 - Relieve the pressure from the spray gun, high-pressure hoses and all devices.
 - Secure the spray gun against actuation.
 - Switch off the energy and compressed air supply.
 - Disconnect the control unit from the mains.
- Observe the operating and service manual for all work.



4.2.8 PROTECTIVE AND MONITORING EQUIPMENT

Danger due to removal of protective and monitoring equipment!

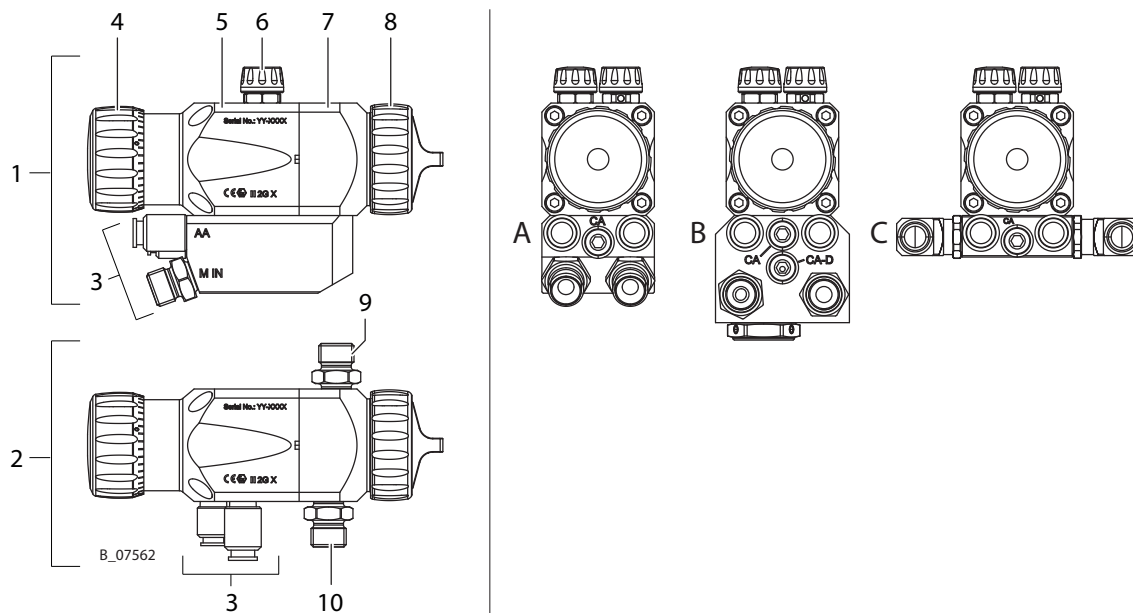
Danger to life and equipment damage.

- Protective and monitoring equipment must not be removed, modified or rendered unusable.
- Regularly check for perfect functioning.
- If defects are detected on protective and monitoring equipment, the system must not be operated until these defects are remedied.



5 DESCRIPTION

5.1 COMPONENTS



Pos	Designation	Internal control	
		with	without
A	Spray gun with adapter plate "Product connections at rear"	-	-
B	Spray gun with adapter plate "Flushing valve"	-	-
C	Spray gun with adapter plate "Product connections at side"	-	-
1	Spray gun, version with adapter plate (see Chapter 5.5.6)	X	X
2	Spray gun, version without adapter plate (see Chapter 5.5.6)	X	X
3	Control air, atomizing air and product connections (see Chapter 5.5.5)	-	-
4	Control dial to regulate product flow rate	-	-
5	Rear side of spray gun body (fixed or adjustable needle stroke)	-	-
6	Regulating screws for adjusting the spray pattern	X	-
7	Front side of spray gun body (PILOT GA 1020 or GA 1030)	-	-
8	Air cap / nozzle	-	-
9	Product connection (without adapter plate, see Chapter 5.5.6)	X	-
10	Product connection (without adapter plate, see Chapter 5.5.6)	X	X

MODE OF OPERATION

The automatic spray guns **PILOT GA 1020** and **GA 1030** operate fully automatically via a compressed air controller.

GA 1020: Version with diaphragm seal for abrasive products such as UV lacquers and max. of 2.5 bar.

GA 1030: Version with needle packing up to 8 bar.

As soon as the required compressed air for the controller is available, the atomizing air and shaping air channels are opened. Then the product feed is opened.

If the control air is interrupted, the product needle is pressed back into the initial position and closes the product and atomizing air supply.



5.2 DISTINGUISHING FEATURES

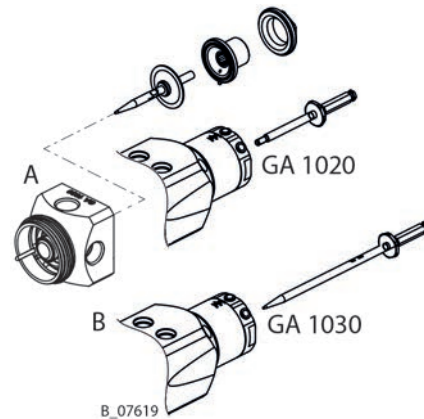
PILOT GA 1020 spray gun (A):

The GA 1020 version has a 2-part needle with diaphragm in the front gun area. The rear part of the needle is screwed in and cannot be easily pulled out, as with the GA 1030. This version is especially suitable for abrasive products such as UV lacquers. Here, the top of the pressure range is 2.5 bar.

PILOT GA 1030 (B) spray gun:

The GA 1030 version has a continuous needle with needle packing and is permissible up to 8 bar.

Note: The spray gun version (GA 1020 or GA 1030) is printed, respectively, on the gun body.



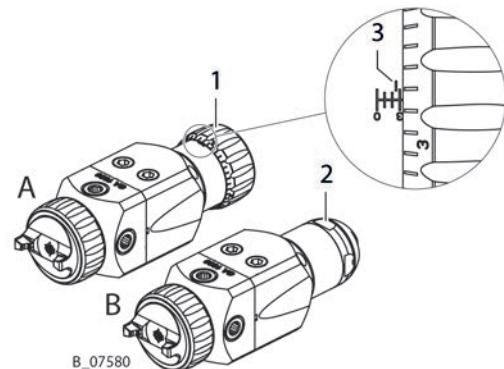
Adjustable needle stroke (A):

The version with adjustable needle stroke has an adjusting cap (1) with grid and scale, in order to adjust the needle stroke. The markings on the scale (3) show the maximum needle stroke that can be set with the GA 1020 spray gun (version with diaphragm). The adjusting screw can be turned back further, but this has no further effect on the needle stroke.

Fixed needle stroke (B):

The version with fixed needle stroke has an end cap (2) and cannot be adjusted.

Note: Both versions are available for the GA 1020 and the GA 1030.



5.3 CONFIGURATIONS

The following configurations are possible:

- PILOT GA 1020 or GA 1030 spray gun variants (see Chapter [5.2](#))
- Adjustable or fixed needle stroke (see Chapter [5.2](#))
- Combination with supporting bar (see Chapter [10.6](#))
- Combination with diverse adapter plates (see Chapter [13.3](#))
- Combination of diverse needles and nozzles (see Chapter [13.1](#)), as well as different air caps depending on the area of application (see Chapter [13.2](#))

5.4 SCOPE OF DELIVERY

Stk	Designation
1	PILOT GA 1020/1030 automatic spray gun
The standard equipment includes:	
1	CE Declaration of Conformity
1	Operating manual, in German
1	Operating manual in local language see Chapter 1.3
Accessories:	
--	Accessories see Chapter 1.3

The exact scope of delivery corresponds to the configured spray gun and is shown in the delivery note.



5.5 DATA

5.5.1 MATERIALS OF PAINT-WETTED PARTS

Paint-wetted parts	Product
Nozzle	Stainless steel
Valve needle	Stainless steel, hardened

5.5.2 TECHNICAL DATA

Description	Units	Value
Maximum pressure for atomizing air	MPa; psi; bar	0.8; 116; 8
Maximum pressure for horn air / shaping air	MPa; psi; bar	0.8; 116; 8
Maximum pressure for control air	MPa; psi; bar	0.8; 116; 8
Minimum pressure for control air	MPa; psi; bar	0.5; 72.5; 5
Maximum product pressure - PILOT GA 1020	MPa; psi; bar	0.25; 36; 2.5
Maximum product pressure - PILOT GA 1030	MPa; psi; bar	0.8; 116; 8
Compressed air quality: free from oil and water	Quality standard 7.5.4 according to ISO 8573.1: 2010	
	7: Particle concentration 5 – 10 mg/m ³	
	5: Humidity: pressure dew point: ≤ +7 °C	
	4: Oil content ≤ 5 mg/m ³	
Maximum product temperature	°C; °F	80; 176
Maximum air temperature	°C; °F	50; 122
Weight	g; oz	approx. 650; 22.9
Maximum ambient temperature	°C; °F	5–40; 41–104

WARNING

Exhaust air containing oil!

Risk of poisoning if inhaled.

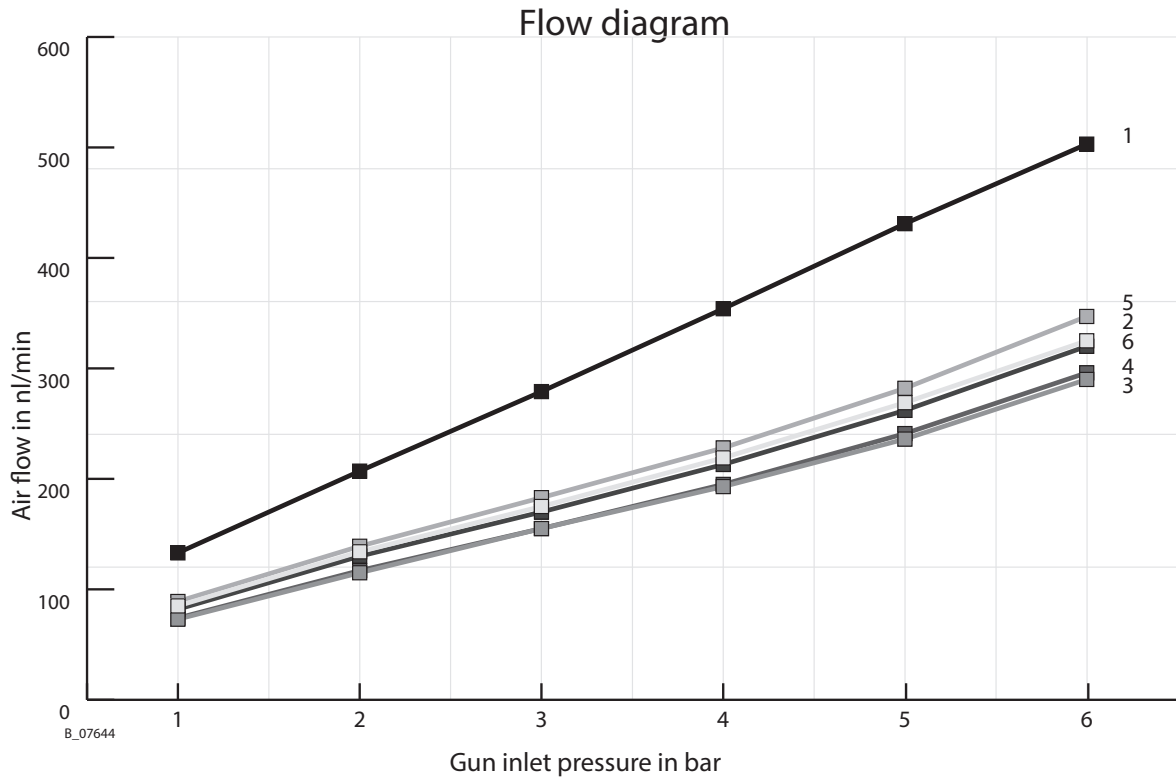
→ Provide compressed air free from oil and water.





5.5.3 AIR FLOW (AA)

AA = Atomizer air
SA = Shaping air



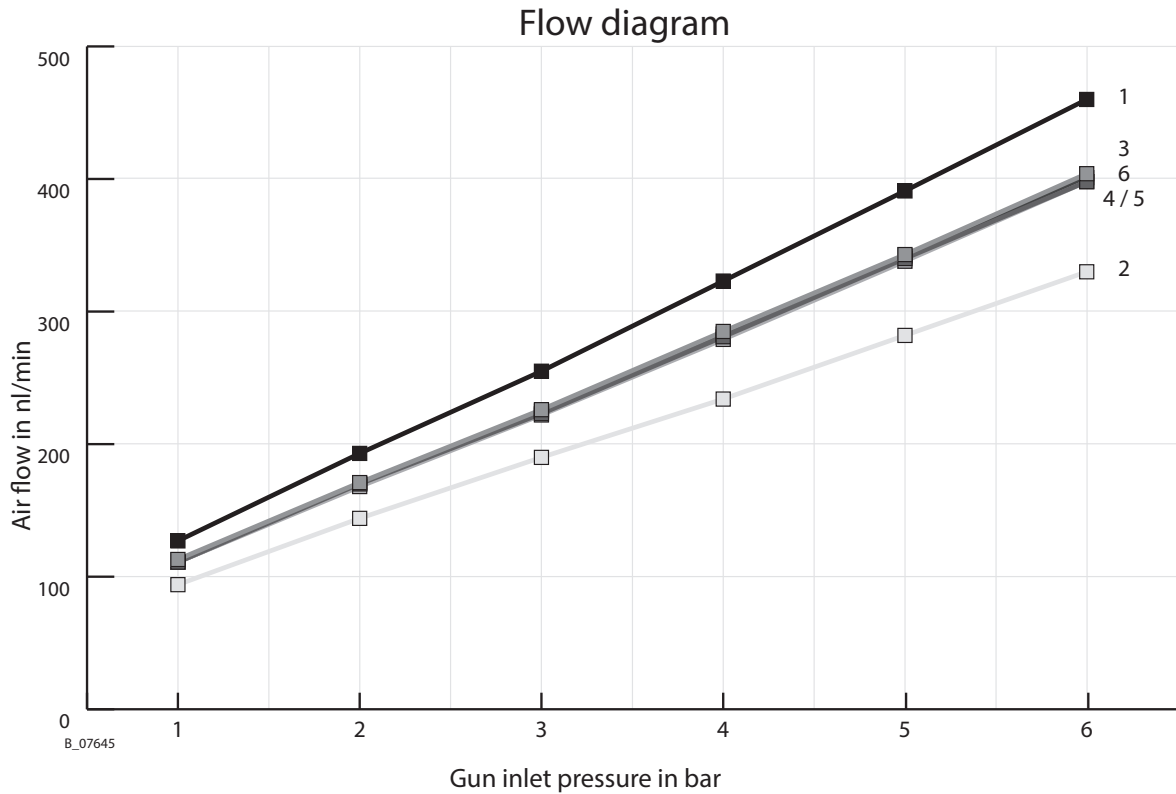
Inlet pressure (MPa; bar; psi)		0.1; 1; 14.5	0.2; 2; 29.0	0.3; 3; 43.5	0.4; 4; 58.0	0.5; 5; 72.5	0.6; 6; 87.0
HVLP	1	133	207	279	354	431	503
HVLP+	2	85	134	175	219	269	325
CONV8	3	73	115	155	193	236	290
CONV10	4	74	117	155	195	241	296
CONV12	5	89	139	183	228	282	347
CONV14	6	82	130	170	213	262	320

Information on air flow in nl/min with an inlet pressure between 0.1; 1; 14.5 and 0.6; 6; 87.0 (MPa; bar; psi).



5.5.4 AIR FLOW (SA)

AA = Atomizer air
SA = Shaping air

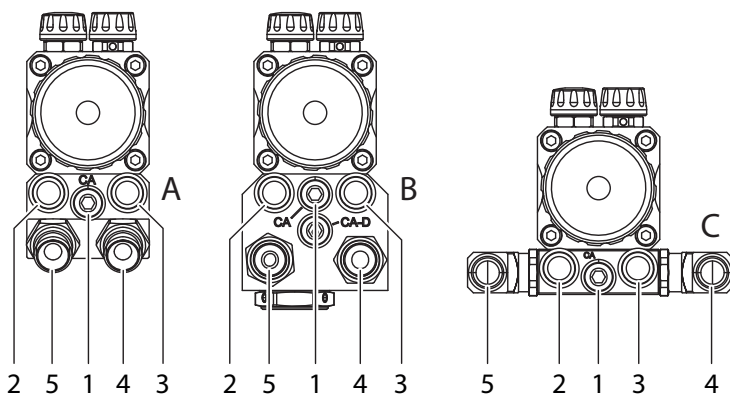
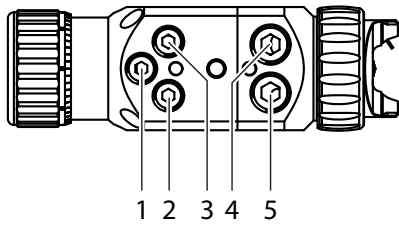


Inlet pressure (MPa; bar; psi)	0.1; 1; 14.5	0.2; 2; 29.0	0.3; 3; 43.5	0.4; 4; 58.0	0.5; 5; 72.5	0.6; 6; 87.0	
HVLP	1	127	193	255	323	391	460
HVLP+	2	94	144	190	234	282	330
CONV8	3	113	171	226	285	343	404
CONV10	4	111	170	223	281	340	398
CONV12	5	111	168	222	279	338	398
CONV14	6	111	170	225	283	342	401

Information on air flow in nl/min with an inlet pressure between 0.1; 1; 14.5 and 0.6; 6; 87.0 (MPa; bar; psi).



5.5.5 CONNECTIONS

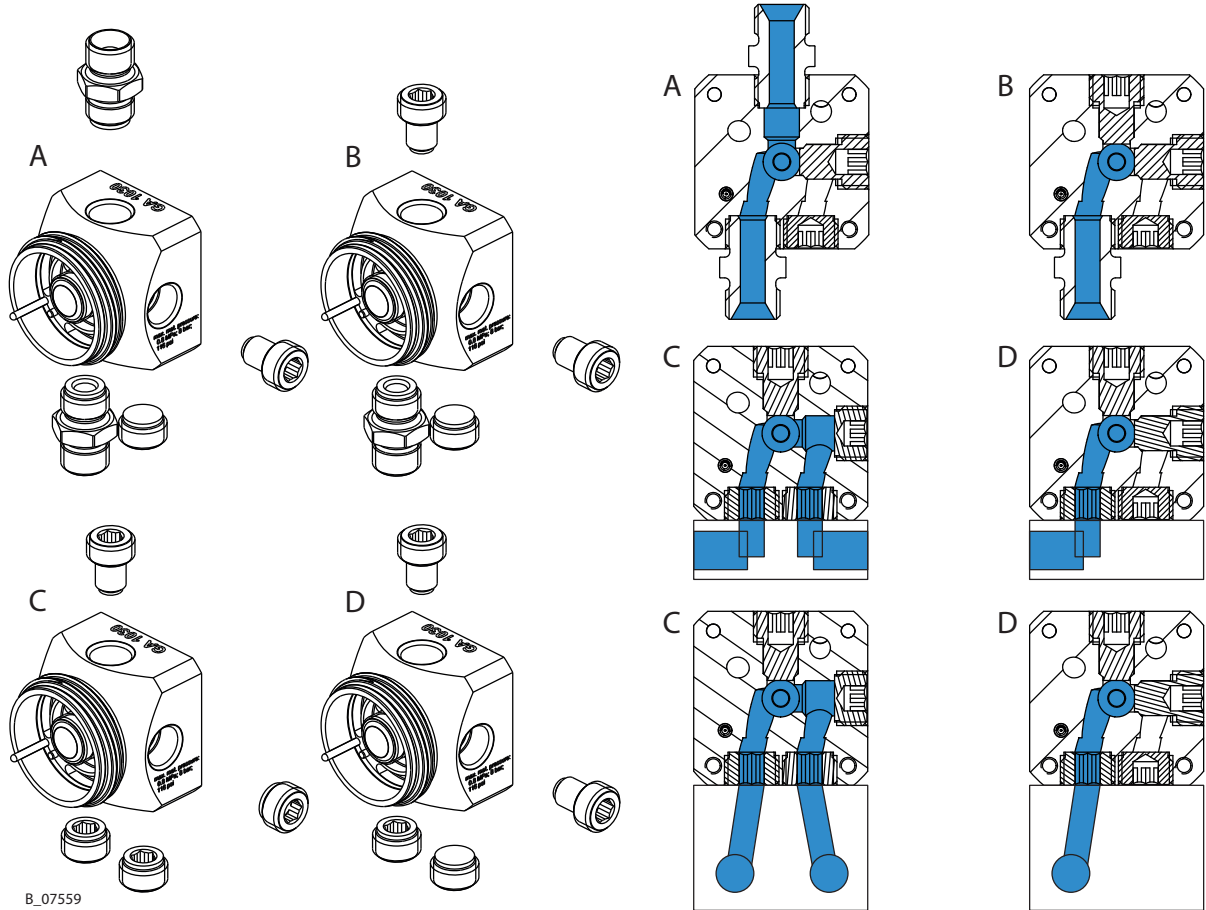


B_07560

Pos	Designation
A	Adapter plate "Product connections at rear"
B	Adapter plate "Flushing valve"
C	Adapter plate "Product connections at side"
1	Control air connection "CA"
2	Shaping air connection / round-/ wide jet "SA"
3	Atomizer air connection "AA"
4	Product connection (G 1/4") "M IN"
5	Alternative product connection circulation (G 1/4") "M OUT"



5.5.6 OPTIONS FOR PRODUCT SUPPLY



B_07559

Pos	Description
A	Product supply without adapter plate, with circulation.
B	Product supply without adapter plate, without circulation.
C	Product supply with adapter plate, with circulation
D	Product supply with adapter plate, without circulation



6 ASSEMBLY AND COMMISSIONING

6.1 TRAINING OF ASSEMBLY/COMMISSIONING PERSONNEL

- The assembly and commissioning personnel must have the technical skills to safely commission the device.
- When assembling, commissioning and carrying out all work, read and follow the operating manuals and safety regulations for the additionally required system components.

A skilled person must check to ensure that the device is in a reliable state after it is assembled and commissioned.

6.2 STORAGE CONDITIONS

Until the point of assembly, the device must be stored in a dry location, free from vibrations and with a minimum of dust. The device must be stored in closed rooms.

The air temperature at the storage location must be between -20 °C and 60 °C (-4 °F and 140 °F).

The relative air humidity at the storage location must be between 10 and 95% (without condensation).

6.3 INSTALLATION CONDITIONS

The air temperature at the installation site must be in a range between 0 °C and 40 °C (32 °F and 132 °F).

The relative air humidity at the installation site must be between 10 and 95% (without condensation).

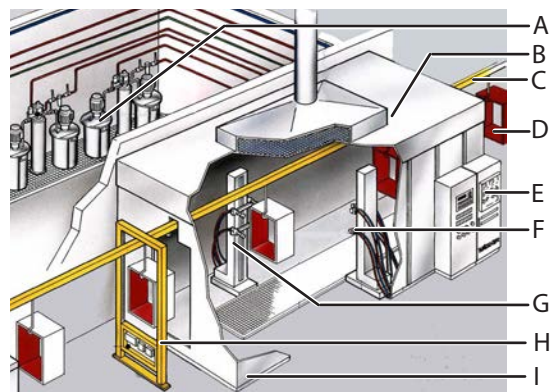
6.4 CONNECTING AUTOMATIC SPRAY GUN

The PILOT GA 1020/GA 1030 automatic spray gun must be combined with various components to make up a spraying system. The automatic spray gun is usually mounted using an adapter plate on the movement arm of the spraying system. The operating manuals and safety regulations of all additional system components must be read and understood before starting with the commissioning.

6.4.1 TYPICAL AIRSPRAY SPRAYING SYSTEM

The automatic spray gun is combined with various components to make up a spraying system. The system shown in the figure is only one example of an AirSpray spraying system.

Pos	Designation
A	Paint supply
B	Supply air system and exhaust air system
C	Conveyor
D	Work piece
E	Control cabinet
F	Spray guns
G	Reciprocator
H	Part recognition
I	Spray booth





6.4.2 VENTILATION OF THE SPRAY BOOTH

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

6.4.3 AIR SUPPLY LINES

Ensure that only dry, clean atomizing air is used in the spray gun! Dirt and moisture in the atomizing air worsens the spraying quality and spray pattern.

WARNING

Hose connections!

Risk of injury and damage to the device.

- Do not mix up hose connections of product hose and air hose.



6.4.4 PRODUCT SUPPLY LINES

NOTICE

Impurities in the spraying system!

Spray gun blockage, products harden in the spraying system.

- Flush the spray gun and paint supply with a suitable flushing agent.

DANGER

Bursting hose, bursting threaded joints!

Danger to life from injection of product.

- Ensure that the hose material is chemically resistant to the sprayed products.
- Ensure that the spray gun, fittings and product hose between the device and the spray gun are suitable for the pressure generated in the device.
- Ensure that the following information can be seen on the high-pressure hose:
 - manufacturer
 - permissible operating pressure
 - date of manufacture



6.5 GROUNDING

A conductive connection (potential equalization cable) must be established between original tank and the equipment.

- Ground all device components.
- Ground the work pieces to be coated.

6.6 SAFETY CHECKS

- Carry out safety checks in accordance with Chapter [8.2.3](#).



6.7 MATERIAL PREPARATIONS

The viscosity of the material is of great importance. The best spraying results are obtained with values between 25 and 150 millipascals (mPas) × sec. It is important for the optimum coating quality that the paint temperature is kept constant during coating. Further information can be found in the product's technical datasheets. Please contact your local WALTHER Spritz- und Lackiersysteme dealer and the material manufacturer if you encounter application problems.

6.7.1 VISCOSITY CONVERSION TABLE

Millipascal × sec	Centipoise	Poise	DIN cup 4 mm	ISO cup			Ford cup Number 4	Zahn cup Number 2
				4 mm	5 mm	6 mm		
mPa s	cP	P	sec	sec	sec	sec	sec	sec
10	10	0.1		14			5	16
15	15	0.15		17			8	17
20	20	0.2		20			10	18
25	25	0.25	14	23			12	19
30	30	0.3	15	26			14	20
40	40	0.4	17	33			18	22
50	50	0.5	19	40			22	24
60	60	0.6	21	47			26	27
70	70	0.7	23	54			28	30
80	80	0.8	25	62	28		31	34
90	90	0.9	28	70	31		32	37
100	100	1	30	78	34		34	41
120	120	1.2	33	90	40		41	49
140	140	1.4	37	105	46		45	58
160	160	1.6	43		52		50	66
180	180	1.8	46		58	28	54	74
200	200	2	49		63	31	58	82
220	220	2.2	52		69	34	62	
240	240	2.4	56		75	37	65	
260	260	2.6	62		82	40	68	
280	280	2.8	65		89	43	70	
300	300	3	70		95	46	74	
320	320	3.2				48		
340	340	3.4				51		
360	360	3.6	80			54		
380	380	3.8				57		
400	400	4	90			60		



6.8 COMMISSIONING

6.8.1 PREPARATION BEFORE COMMISSIONING

⚠ NOTICE

Impurities in the spraying system!

Spray gun blockage.

→ Flush the spray gun and paint supply with a suitable flushing agent before commissioning.

6.8.2 PROCEDURE

1. Correctly mount the desired paint nozzle and air cap on the automatic spray gun (see Chapter [8.3](#)).
2. Mount the automatic spray gun on the matching adapter plate and the movement arm.
3. Make sure that all system components and all other conductive parts within the work area are grounded.
4. Visually check the permissible pressures (see Chapter [5.5](#)) for all the system components.
5. Before commissioning, the automatic spray gun must be flushed with a solvent. Keep the flushing process as short as possible. Observe the superordinate operating manual.

6.8.3 VERIFYING A SAFE OPERATIONAL CONDITION

A skilled person must check to ensure that the device is in a reliable state after it is assembled and commissioned.

This includes:

- Carry out safety checks in accordance with Chapter [8.2.3](#).





7 OPERATION

7.1 TRAINING THE OPERATING PERSONNEL

- The operating personnel must be qualified to operate the entire system.
- The operating staff must be familiar with the potential risks associated with improper behavior as well as the necessary protective devices and measures.
- Before work commences, the operating personnel must receive appropriate system training.

7.2 TASKS

Ensure that:

- the regular safety checks are carried out in accordance with Chapter [8.2.3](#),
- commissioning is carried out in accordance with Chapter [6.8](#).
- the superordinate operating manual is observed.

7.3 ADJUSTING THE SPRAY PATTERN

Desired spraying result



Rectifying defects in a spray pattern

Spray pattern	Deviation	Required setting
	Spray pattern is too wide in the middle	– Set a wider spray shape
	Spray pattern is too wide on the ends	– Set a rounder spray shape
	Spray pattern has very coarse droplet distribution	– Increase the atomizing air pressure
	Material application is very thin in the middle of the spray pattern	– Reduce the atomizing air pressure
	The spray pattern is divided in the middle	– Increase the nozzle diameter – Reduce the atomizing air pressure – Increase the product pressure
	Spray patter is too round	– Reduce product pressure – Increase the atomizing air pressure

Note:

The flow rate can be changed by:

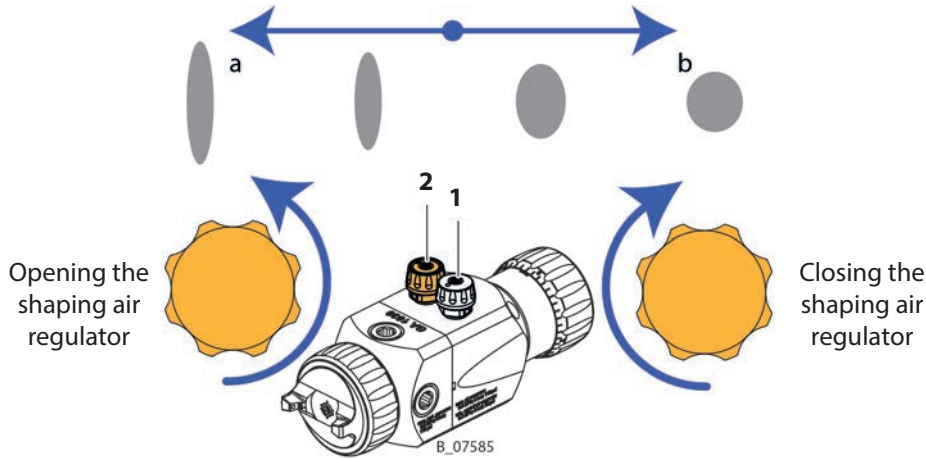
- changing the product pressure or limiting the needle stroke,
- Use of another nozzle (see Chapters [8.3](#) and [13.1](#)).



7.3.1 ADJUSTING SPRAY PATTERN

The spray pattern can be optimally adjusted to suit the object being sprayed using the shaping air regulator (1). The illustration shows the influence of the shaping air regulator (1) on the spray pattern.

The spray jet can be adjusted using the atomizing air regulator (2).

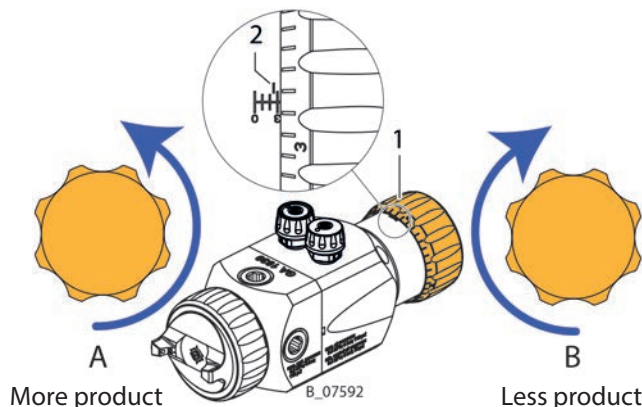


Pos	Description
a	If the shaping air regulator (1) is rotated counterclockwise, the spray pattern is widened and increasingly oval shaped.
b	If the shaping air regulator (1) is rotated clockwise, the spray pattern is narrowed and increasingly round.

7.3.2 SETTING THE PRODUCT FLOW RATE

Note: the desired flow rate is primarily to be specified by selecting the corresponding nozzle. The needle stroke regulator (1) only serves to make fine adjustments.

Needle stroke variant:	Procedure:
Fixed	Here, the needle is completely opened by the spring force and is controlled externally using compressed air.
Adjustable	The flow rate can be set by screwing the needle stroke regulator (1) in or out. The flow rate is increased by rotating it in a counterclockwise direction and is decreased by rotating it in a clockwise direction. The marking on the scale (2) shows the maximum needle stroke that can be set with the GA 1020 spray gun (see Chapter 5.2).





7.4 PRESSURE RELIEF / WORK INTERRUPTION

The pressure must always be relieved:

- after the spraying tasks are finished,
- before servicing or repairing the spraying system,
- before carrying out cleaning tasks on the spraying system,
- before something must be checked on the spraying system,
- before the nozzle is removed from the automatic spray gun.

Pressure Relief Procedure:

- Observe superordinate operating manual.

7.5 BASIC FLUSHING

Regular flushing

- Regular flushing, cleaning and maintenance ensure the high spraying quality of the automatic spray gun and spraying system.
- Observe superordinate operating manual.
- The cleaning and flushing agents used must be compatible with the working material.

 **WARNING**

Incompatibility of flushing / cleaning agent with the working medium!

Risk of explosion and danger of poisoning by toxic gases.

- Examine the compatibility of the flushing and cleaning agents and working media on the basis of the safety data sheets.





8 CLEANING AND MAINTENANCE

8.1 CLEANING

8.1.1 CLEANING PERSONNEL

Cleaning work should be undertaken regularly and carefully by qualified and trained personnel. They should be informed of specific hazards during their training.

The following hazards may arise during cleaning work:

- risk to health from inhaling solvent vapors,
- use of unsuitable cleaning tools and aids.

8.1.2 FLUSHING AND CLEANING THE AUTOMATIC SPRAY GUN

The automatic spray gun or spray system must be regularly cleaned and flushed. The cleaning/flushing agents used for cleaning or flushing must correspond with the working material.

- Carry out basic flushing in accordance with Chapter [7.5](#).
- Clean the outside of the automatic spray gun with a damp cloth.

8.2 MAINTENANCE

8.2.1 MAINTENANCE PERSONNEL

Maintenance work should be undertaken regularly and carefully by qualified and trained personnel. They should be informed of specific hazards during their training.

The following hazards may arise during maintenance work:

- risk to health from inhaling solvent vapors,
- use of unsuitable tools and aids.

A skilled person must ensure that the device is checked for being in a reliable state after maintenance work is completed.

8.2.2 MAINTENANCE INSTRUCTIONS

DANGER

Incorrect maintenance/repair!

Danger to life and equipment damage.

- Only a WALTHER Spritz- und Lackiersysteme service center or a suitably trained person may carry out repairs and replace parts.
- Use only WALTHER original spare parts and accessories.
- Only repair and replace parts that are listed in the "Spare parts" chapter and that are assigned to the unit.
- Before all work on the device and in the event of work interruptions:
 - Relieve the pressure from the spray gun, high-pressure hoses and all devices.
 - Secure the spray gun against actuation.
 - Switch off the energy and compressed air supply.
 - Disconnect the control unit from the mains.
- Observe the operating and service manual for all work.



**Prior to maintenance**

It should be ensured that the device is in the following state before carrying out any work on it:

- Carry out basic flushing in accordance with Chapter [7.5](#).
- Relieve the pressure from the spraying system, product hose and spray gun.
- Interrupt the air supply.

After maintenance

- Carry out safety checks in accordance with Chapter [8.2.3](#).
- Put the system into operation and check for leaks as described in Chapter [6.8](#).
- Have the system checked for safe condition by a skilled person.
- If necessary, carry out a function test in accordance with Chapter [11](#).

8.2.3 SAFETY CHECKS AND MAINTENANCE INTERVALS**Every day**

- Check grounding: see Chapter [6.5](#).
- Check hoses, tubes and couplings: see Chapter [8.2.3.1](#).
- Carry out basic flushing in accordance with Chapter [7.5](#).

Weekly

- Check spray guns for damage.
- Check that the safety fixtures function properly.

Yearly or as required

- In accordance with DGUV regulation 100-500 Chapter 2.29 and 2.36:
 - The liquid ejection devices should be checked by an expert (e.g., WALTHER service technician) for their safe working conditions as required and at least every 12 months.
 - For shut down devices, the examination can be suspended until the next start-up.



8.2.3.1 PRODUCT HOSES, PIPES AND COUPLINGS

The service life of the complete hoses between product pressure generator and application device is reduced due to environmental influences even when handled correctly.

- Check hoses, pipes, and couplings every day and replace if necessary.
- Before every commissioning, check all connections for leaks.
- Additionally, the operator must regularly check the complete hoses for wear and tear as well as for damage at intervals that he/she has set. Records of these checks must be kept.
- The complete hose is to be replaced as soon as one of the two following intervals has been exceeded:
 - 2 years from the date of the hose crimping (see fitting embossing).
 - 2 years from the date of the hose imprinting.

Fitting embossing	Meaning
xxx bar	Pressure
yymm	Crimping date (year/month)
XX	Internal code

Hose imprinting	Meaning
WALTHER	Name/manufacturer
yymm	Date of manufacture (year/month)
xxx bar (xx MPa) e.g., 8 bar (0.8 MPa)	Pressure
XX	Internal code
DNxx (e.g., DN10)	Nominal diameter



8.3 CHANGING THE NOZZLE

⚠ NOTICE

Defective nozzle!

Insufficient paint application quality.

- Do not use sharp-edged objects on the carbide on the nozzle.
- Carry out basic flushing in accordance with Chapter [7.5](#).
- Depressurization in accordance with Chapter [7.4](#).
- Clean the outside of the automatic spray gun with a damp cloth.

Disassembly:

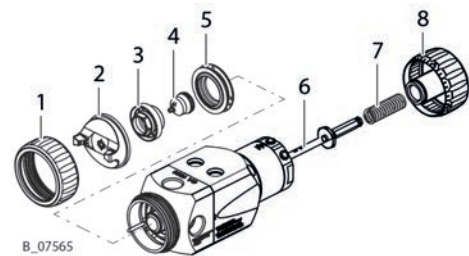
Note: For the PILOT GA 1020 spray gun, the needle (6) is screwed on and must be loosened, but not removed, in order to change the nozzle!

1. Unscrew the adjusting cap (8) by hand and carefully pull out the needle (6) together with the pressure spring (7).
2. Unscrew air cap nut (1) and remove air cap (2).

Note: Note the position of the air manifold ring (5).

3. Unscrew nozzle nut (3) with a size 13, open-end wrench and remove nozzle (4) and air manifold ring (5).

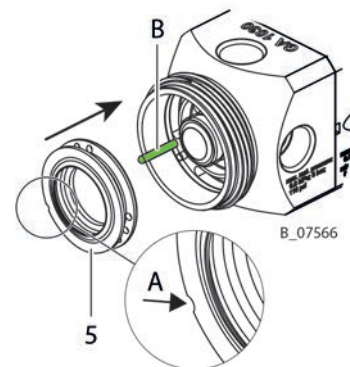
Treat parts with cleaning agent until all remaining paint has been dissolved.



Assembly:

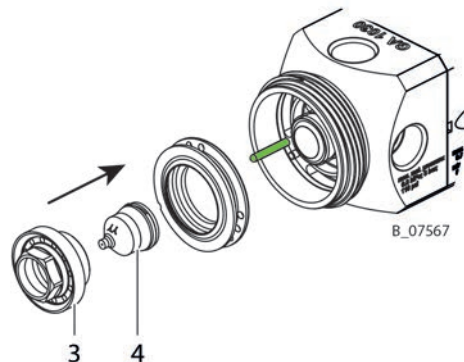
Visual control: Check that the positioning pin (B), alignment pin, air manifold ring (5) and drilled hole in air manifold ring (5) are free of defects.

4. Insert the air manifold ring (5) in the front side.
 - Align the groove (A) of the air manifold ring (5) with the positioning pin (B) on the front side (see Disassembly, Note, step 2).



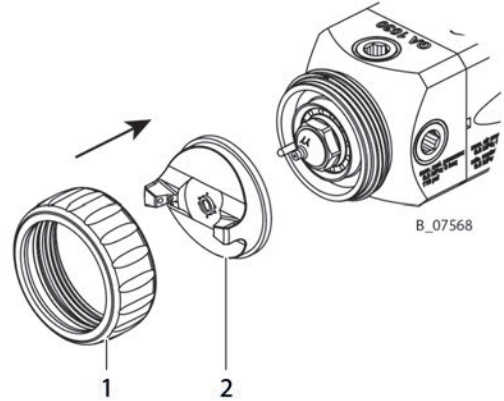
Visual control: Check that the nozzle (4) is free of defects.

5. Insert nozzle (4) and nozzle nut (3) with an open-end wrench (size 13) with 12 Nm torque.





- Visual control:** Check that the air cap (2) is free of defects.
6. Insert air cap (2).
 7. Put on the air cap nut (1) and tighten by hand.
 8. Turn the air cap (2) to the desired position.



- Carry out basic flushing in accordance with Chapter [7.5](#).
- Carry out safety checks in accordance with Chapter [8.2.3](#).
- Put the system into operation and check for leaks as described in Chapter [6.8](#).



8.4 CHANGING THE PISTON

- Carry out basic flushing in accordance with Chapter 7.5.
- Depressurization in accordance with Chapter 7.4.
- Clean the outside of the automatic spray gun with a damp cloth.

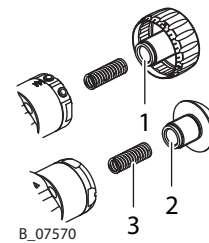
Disassembly:

1. Adjustable needle stroke:

Unscrew the adjusting cap (1) from the rear side of the body and remove the pressure spring (3).

Fixed needle stroke:

Unscrew the end cap (2) from the rear side of the body and remove the pressure spring (3).

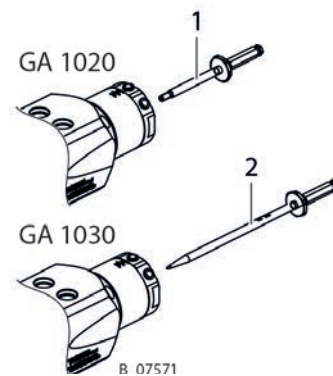


2. PILOT GA 1020:

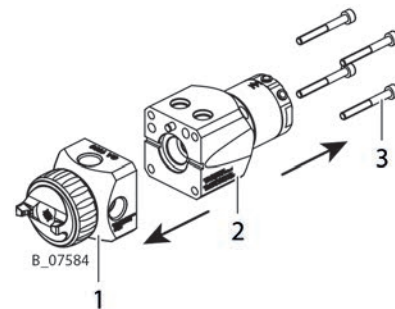
Unscrew rear part of needle (1) with a size 5, open-end wrench.

PILOT GA 1030:

Carefully pull out needle (2) from the rear.

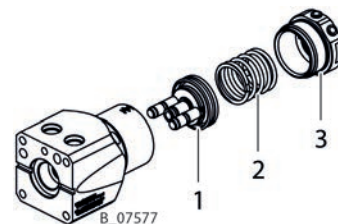


3. Remove front side (1) and rear side (2) of the body using the four socket cap screws (3).



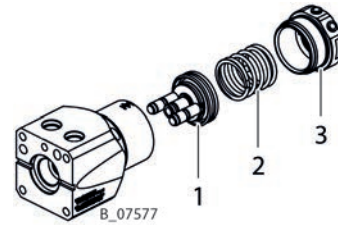
Note: Rear side of the body is under spring tension!

4. Unscrew threaded bushing (3) with a size 32, open-end wrench and remove the piston spring (2). Push piston (1) through the hole in the rear side of the body.

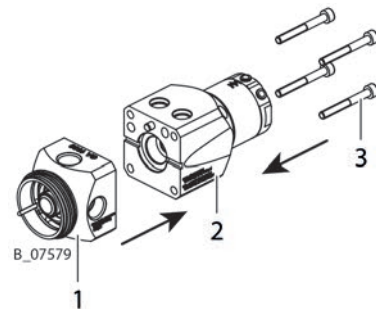


**Assembly:**

1. Lightly grease the piston (1) with gun grease and insert it into the rear side of the body.
Grease the piston spring (2) with gun grease and insert it into the rear side of the body. Put on threaded bushing (3) and tighten it with a size 32, open-end wrench.



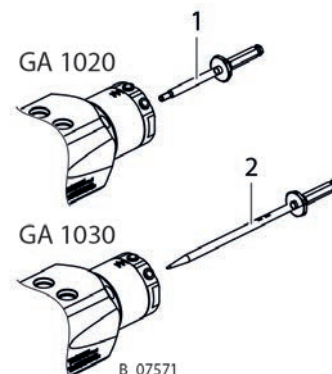
2. Screw together the front side (1) and rear side (2) of the body using the four socket cap screws (3) with a torque of 1.8 Nm.



3. **PILOT GA 1020:**
Tighten the rear part of the needle (1) by hand with a size 5, open-end wrench.

PILOT GA 1030:

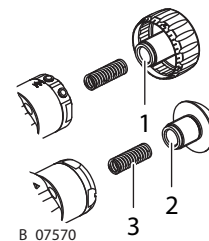
Lightly grease the needle (2) in the front side and carefully insert it.

**7. Adjustable needle stroke:**

Lightly grease the pressure spring (3) with gun grease and insert it in the adjusting cap (1). Put on the adjusting cap (1) straight and screw it in by hand until the engagement points can be felt.

Fixed needle stroke:

Lightly grease the pressure spring (3) with gun grease and insert it in the end cap (2). Then tighten the end cap with a size 15, open-end wrench.



- Carry out basic flushing in accordance with Chapter [7.5](#).
- Carry out safety checks in accordance with Chapter [8.2.3](#).
- Put the system into operation and check for leaks as described in Chapter [6.8](#).



8.5 REPLACING THE NEEDLE PACKING (ONLY PILOT GA 1030)

- Carry out basic flushing in accordance with Chapter 7.5.
- Depressurization in accordance with Chapter 7.4.
- Clean the outside of the automatic spray gun with a damp cloth.

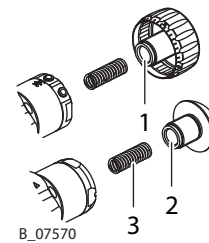
Disassembly:

1. Adjustable needle stroke:

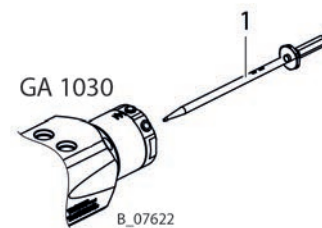
Unscrew the adjusting cap (1) from the rear side of the body and remove the pressure spring (3).

Fixed needle stroke:

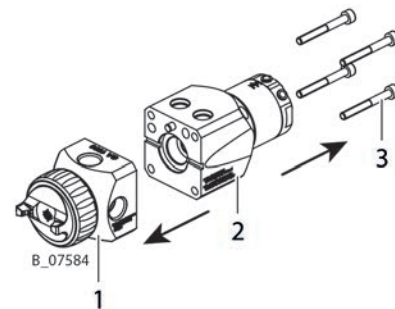
Unscrew the end cap (2) from the rear side of the body and remove the pressure spring (3).



2. Carefully pull out needle (1) from the rear.

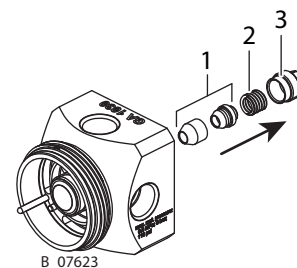


3. Remove front side (1) and rear side (2) of the body using the four socket cap screws (3).



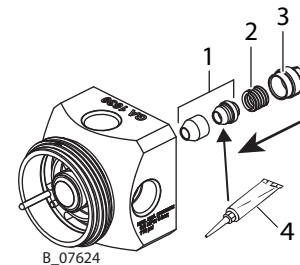
Note: Needle packing is under spring tension!

4. Unscrew clamping sleeve (3) with a size 7, open-end wrench and remove the pressure spring (2). Remove the front and rear parts of the needle packing (1) or carefully blow them out from the front using compressed air.

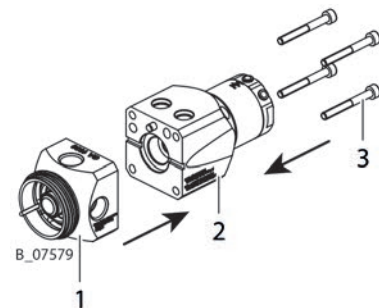


**Assembly:**

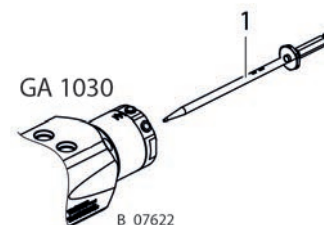
1. Lightly grease the rear needle packing (1) with gun grease and insert it into the front side.
Grease the pressure spring (2) with gun grease and place in on the rear part. Put on clamping sleeve (3) and tighten it with a size 7, open-end wrench.



2. Screw together the front side (1) and rear side (2) of the body using the four socket cap screws (3) with a torque of 1.8 Nm.



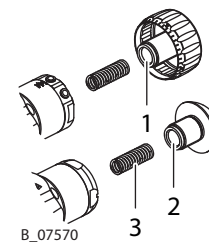
3. Lightly grease the needle (1) in the front side and carefully insert it.

**7. Adjustable needle stroke:**

Lightly grease the pressure spring (3) with gun grease and insert it in the adjusting cap (1). Put on the adjusting cap (1) straight and screw it in by hand until the engagement points can be felt.

Fixed needle stroke:

Lightly grease the pressure spring (3) with gun grease and insert it in the end cap (2). Then tighten the end cap with a size 15, open-end wrench.



- Carry out basic flushing in accordance with Chapter [7.5](#).
- Carry out safety checks in accordance with Chapter [8.2.3](#).
- Put the system into operation and check for leaks as described in Chapter [6.8](#).



8.6 CONVERTING FROM EC TO IC

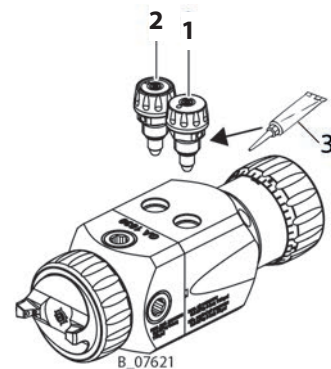
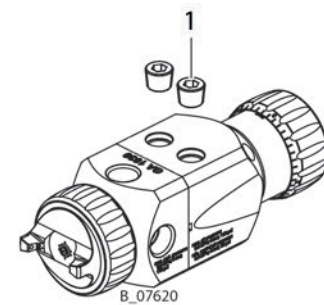
The following described conversion instructions are only valid for the conversion of IC to EC. When doing so, the procedure is to remove the shaping air regulator and the atomizing air regulator and replace them with screw plugs.

Abbreviation	Description
IC	Internal controller
EC	External controller

- Carry out basic flushing in accordance with Chapter [7.5](#).
- Depressurization in accordance with Chapter [7.4](#).
- Clean the outside of the automatic spray gun with a damp cloth.

Procedure:

1. Unscrew sealing plugs (1) using a size 5 Allen wrench.
If the sealing plugs are hard to unscrew, warm the sealing plugs up to approx. 150 °C to loosen the Loctite® 542 thread sealant.
2. Coat the threads for the shaping air regulator (1) and atomizing air regulator (2) with Loctite® 542 (3).
Tighten shaping air regulator (1) and atomizing air regulator (2) with a size 12, open-end wrench.



- Carry out basic flushing in accordance with Chapter [7.5](#).
- Carry out safety checks in accordance with Chapter [8.2.3](#).
- Put the system into operation and check for leaks as described in Chapter [6.8](#).



8.7 CONVERTING FROM A DISTRIBUTION LINE TO A CIRCUIT

- Carry out basic flushing in accordance with Chapter [7.5](#).
- Depressurization in accordance with Chapter [7.4](#).
- Clean the outside of the automatic spray gun with a damp cloth.

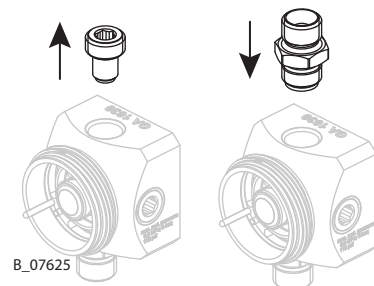
Procedure:

1. Version without adapter plate

Unscrew screw plugs using a size 5 Allen wrench.

If the sealing plugs are hard to unscrew, warm the sealing plugs up to approx. 150 °C to loosen the Loctite® 542 thread sealant.

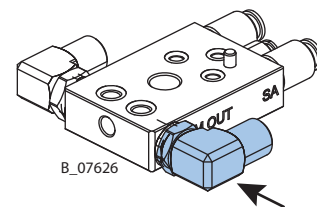
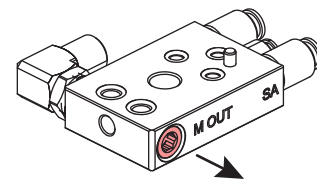
Use a connection fitting instead. Coat thread with Loctite® 542 and tighten using a size 16, open-end wrench.



2. Version with adapter plate:

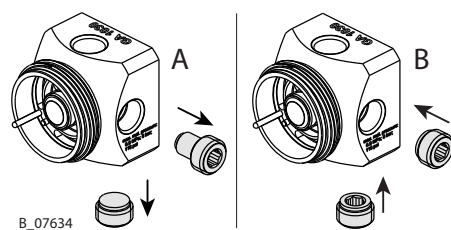
Unscrew sealing plugs using a size 5 Allen wrench.

Use a connection fitting instead. Coat thread with Loctite® 542 and tighten using a size 16, open-end wrench.



Unscrew plug screw and sealing plugs, as shown (A), using a size 5 Allen wrench.

Instead, use two open G1/4" fittings, as shown (B). Coat thread with Loctite® 542 and tighten using a size 5 Allen wrench.



Note: To switch from a distribution line to a circuit, the sealing plug at the connection marked with MOUT must be replaced with a hose connection. For the version with adapter plate, the front part of the spray gun must also be converted accordingly (see point 2 above).

For further information on circuits and distribution lines, see Chapter [5.5.6](#).

- Carry out basic flushing in accordance with Chapter [7.5](#).
- Carry out safety checks in accordance with Chapter [8.2.3](#).
- Put the system into operation and check for leaks as described in Chapter [6.8](#).



9 TROUBLESHOOTING AND RECTIFICATION

Functional fault	Cause	Remedy	Chapter
Spray gun drips	Product needle or nozzle soiled.	Clean or replace product needle or nozzle.	8.3
	Product needle or nozzle damaged.	Replace product needle or nozzle.	8.3
	Packing worn	Replace packing.	14.4
Insufficient product output	Nozzle too small	Select larger nozzle.	13.1
	Product pressure too low.	Increase product pressure.	5.5
	Nozzle clogged.	Clean or replace nozzle.	8.3
	Filter on product pressure generator clogged.	Clean or replace filter	
	Needle stroke set too small.	Increase needle stroke by turning the adjusting screw.	7.3.2
Insufficient spray pattern.	Nozzle worn.	Replace the nozzle.	8.3
	Viscosity of material too high.	Thin the product in accordance with the manufacturer's instructions.	6.7
		The product temperature is too low.	5.5
	Nozzle partially clogged.	Clean or replace nozzle.	8.3
	The drilled holes in the air cap are damaged or clogged.	Clean or replace air cap.	8.3
Air cap selected incorrectly.	Using matching air cap.	13.2	
Gun does not open.	Control air too low.	Increase control air to a minimum of 5 bar.	
Product leaks out of the leakage hole.	Needle packing leaky.	Replace packing. Only GA 1030!	10
	Diaphragm damaged.	Replace needle with diaphragm. Only GA 1020!	10
Intermittent or fluttering spray jet	Insufficient product in product tank.	Top up product (see manufacturer operating manual).	
Leaky air valve	Air valve seals not airtight.	Replace pistons with valves.	8.4



10 REPAIR WORK

10.1 REPAIR PERSONNEL

Repair work should be undertaken carefully by qualified and trained personnel. They should be informed of specific hazards during their training.

The following hazards may arise during repair work:

- risk to health from inhaling solvent vapors,
- use of unsuitable tools and aids.

A skilled person must check to ensure that the device is in a reliable state after it is repaired. Carry out function test in accordance with Chapter [11](#).

10.2 REPAIR NOTES

DANGER

Incorrect maintenance/repair!

Danger to life and equipment damage.

- Only a WALTHER service center or a suitably trained person may carry out repairs and replace parts.
- Use only WALTHER original spare parts and accessories.
- Only repair and replace parts that are listed in the "Spare parts" chapter and that are assigned to the unit.
- Before all work on the device and in the event of work interruptions:
 - Relieve the pressure from the spray gun, high-pressure hoses and all devices.
 - Secure the spray gun against actuation.
 - Switch off the energy and compressed air supply.
 - Disconnect the control unit from the mains.
- Observe the operating and service manual for all work.



Before Repair Work

- Carry out basic flushing in accordance with Chapter [7.5](#).
- Depressurization in accordance with Chapter [7.4](#).
- Clean the outside of the automatic spray gun with a damp cloth.

After Repair Work

- Carry out safety checks in accordance with Chapter [8.2.3](#).
- Put the system into operation and check for leaks as described in Chapter [6.8](#).
- Have the system checked for safe condition by a skilled person.
- Function test in accordance with Chapter [11](#).



10.3 TOOLS

The following tools are required for carrying out the repair work on the gun described below:

- Open-end wrench sizes 5 mm; 7 mm; 12 mm*; 13 mm; 15 mm***; 16 mm*; 19 mm**
- Allen wrench sizes 3mm; 5mm; 6mm*

* Only for converting to another configuration (not for service)

** Only PILOT GA 1020 automatic spray guns

*** Without needle stroke adjustment

Assembly aids:

Order no.	Quantity	Designation
9992831	1 pc \triangleq 50 ml	Loctite [®] 542
V000000001	1 pc \triangleq 8-10 g Pads	WALTHER PILOT gun grease

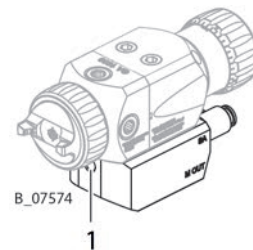
Brand notice:

The brands specified in this document are property of the respective owners. Loctite[®], for example, is a registered brand of Henkel.

10.4 DISASSEMBLY

- Carry out basic flushing in accordance with Chapter [7.5](#).
- Depressurization in accordance with Chapter [7.4](#).
- Clean the outside of the automatic spray gun with a damp cloth.

1. Loosen grub screw (1) with a size 3 SW Allen wrench. Remove the automatic spray gun from the connection plate.

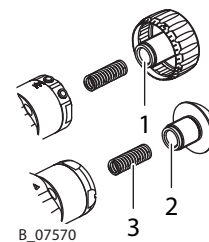


2. **Adjustable needle stroke:**

Unscrew the adjusting cap (1) from the rear side of the body and remove the pressure spring (3).

Fixed needle stroke:

Unscrew the end cap (2) from the rear side of the body and remove the pressure spring (3).

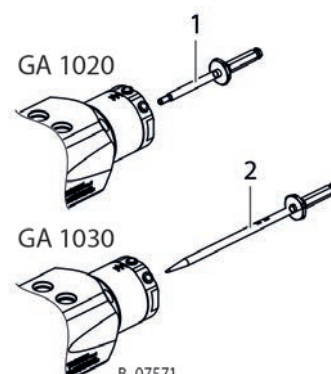


3. **PILOT GA 1020:**

Unscrew rear part of needle (1) with a size 5, open-end wrench.

PILOT GA 1030:

Carefully pull out needle (2) from the rear.



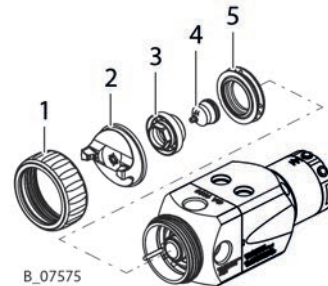
OPERATING MANUAL



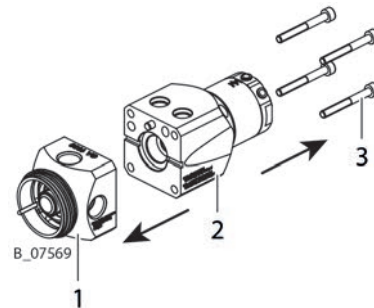
4. Unscrew air cap nut (1) and remove air cap (2).

Note: Note the position of the air manifold ring (5).

5. Unscrew nozzle nut (3) with a size 13, open-end wrench and remove nozzle (4) and air manifold ring (5).
Treat parts with cleaning agent until all remaining paint has been dissolved.

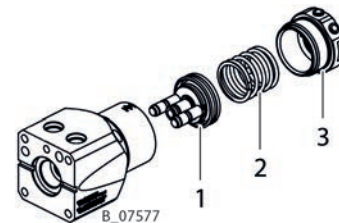


6. Remove front side (1) and rear side (2) of the body using the four socket cap screws (3).

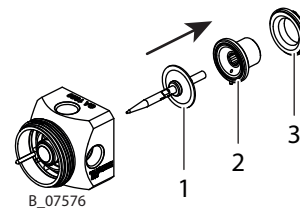


Note: Rear side of the body is under spring tension!

7. Unscrew threaded bushing (3) with a size 32, open-end wrench and remove the piston spring (2).
Push piston (1) through the hole in the rear side of the body.

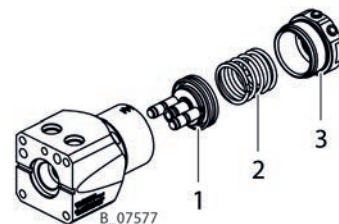


8. **Only PILOT GA 1020:**
Unscrew clamping nut (3) with size 19 mm open-end wrench mm from the front side of the body and pull out the needle guide (2) together with the needle diaphragm (1).



10.5 ASSEMBLY

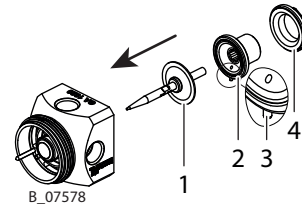
1. Lightly grease the piston (1) with gun grease and insert it into the rear side of the body.
Grease the piston spring (2) with gun grease and insert it into the rear side of the body. Put on threaded bushing (3) and tighten it with a size 32, open-end wrench.



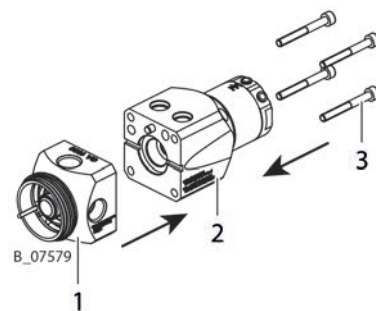
OPERATING MANUAL

2. **Only PILOT GA 1020:**

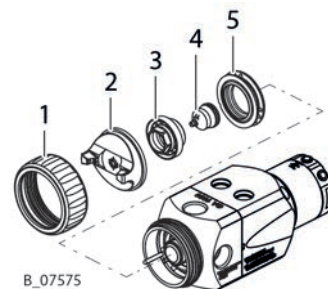
Lightly grease the needle (1) with gun grease.
 Insert needle (1) in needle guide (2). Insert together in the front side of the body. Ensure the correct alignment of the positioning pin (3) with the front side of the body!
 Place clamping nut (4) on the front side of the body and tighten it with a torque of 5 Nm.
 Check whether the needle can be moved!



3. Screw together the front side (1) and rear side (2) of the body using the four socket cap screws (3) with a torque of 1.8 Nm.



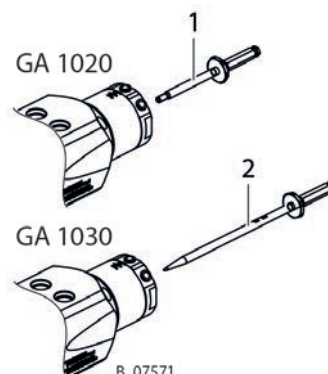
4. Insert the air manifold ring (5) in the spray gun and, when doing so, ensure the correct alignment.
 Insert nozzle (4). Lightly grease the nozzle nut (3) with gun grease and tighten it with a size 13, open-end wrench and a torque of 12 Nm.
 5. Mount air cap (2) and air cap nut (1). Tighten the air cap (1) by hand.

6. **PILOT GA 1020:**

Tighten the rear part of the needle (1) by hand with a size 5, open-end wrench.

PILOT GA 1030:

Carefully insert the needle (2).



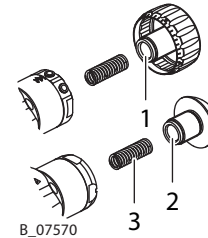


7. Adjustable needle stroke:

Insert the pressure spring (3) in the adjusting cap (1) and put the adjusting cap (1) on straight and screw it in by hand until the engagement points can be felt.

Fixed needle stroke:

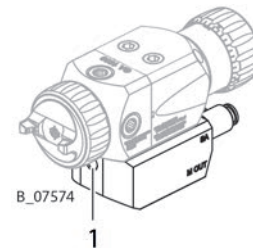
Insert the pressure spring (3) in the end cap (2) and tighten it with a size 15, open-end wrench.



Visual control: Check that the connection plate and the automatic spray gun are free of defects.

Ensure that there are no foreign bodies in the supply line. Contamination of the conveyed product leads to a diminishing of the automatic spray gun's service life.

8. Position the automatic spray gun on the connection plate and mount it using M6 x 12 mm (1) hexagon socket screw.



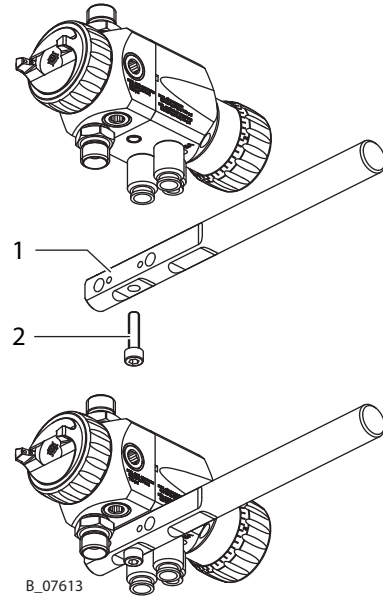
- Carry out basic flushing in accordance with Chapter [7.5](#).
- Carry out safety checks in accordance with Chapter [8.2.3](#).
- Put the system into operation and check for leaks as described in Chapter [6.8](#).



10.6 SUPPORTING BAR ASSEMBLY

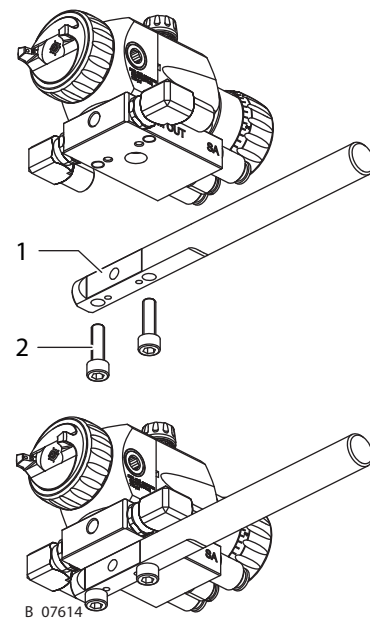
10.6.1 ON SPRAY GUN

1. Turn/align supporting bar (1) as shown.
2. Fasten supporting bar (1) to the spray gun with the supplied hexagon socket screw (2).



10.6.2 ON ADAPTER PLATE

1. Turn/align supporting bar (1) as shown.
2. Fasten supporting bar (1) to the adapter plate with the supplied hexagon socket screw (2).





11 FUNCTION TEST AFTER REPAIR WORK

After all repair work, the spray gun must be checked for safe condition before recommissioning. The necessary scope of inspection and testing depends on the repair carried out and must be documented by the repair personnel.

Activity		Means
1.	Assembly inspection	
	Automatic spray gun correctly mounted on robot arm?	Visual inspection
Activity		Means
2.	Leak test	Visual inspection
	<ul style="list-style-type: none"> – Product and air hose may not be damaged. – Product and air hose must be properly connected. 	Air max. 8 bar GA 1020: Product max. 2.5 bar GA 1030: Product max. 8 bar
Activity		Means
3.	Function test	
	<ul style="list-style-type: none"> – Valve needle (opens and closes correctly). – Atomizer and air cap are clean. – There is horn and atomizing air. 	Visual inspection

12 DISPOSAL

When the devices must be scrapped, please differentiate the disposal of the waste materials.

The following materials have been used:

- Stainless steel
- Aluminum
- Brass
- Plastics

The consumable products (lacquers, adhesives, solvents) must be disposed of in accordance with the applicable specific standards.

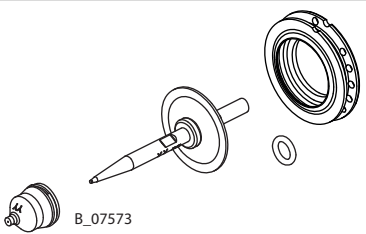


13 ACCESSORIES

13.1 NOZZLE NEEDLE SETS

PILOT GA 1020 nozzle needle sets are available in the following sizes:

Order no.	Designation
2407284	GA 1020 nozzle needle set 0.3 mm
2407285	GA 1020 nozzle needle set 0.5 mm
2407286	GA 1020 nozzle needle set 0.8 mm
2407287	GA 1020 nozzle needle set 1.0 mm
2407288	GA 1020 nozzle needle set 1.2 mm
2407289	GA 1020 nozzle needle set 1.5 mm
2407290	GA 1020 nozzle needle set 1.8 mm
2407291	GA 1020 nozzle needle set 2.0 mm

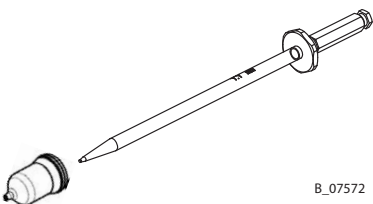


B_07573

PILOT GA 1030 ADH (adhesive) nozzle needle sets are available in the following sizes:

Order no.	Designation
V15103A0103	GA 1030 ADH nozzle needle set 1,0 mm
V15103A0123	GA1030 ADH nozzle needle set 1,2mm
V15103A0153	GA 1030 ADH nozzle needle set 1,5 mm
V15103A0183	GA 1030 ADH nozzle needle set 1,8 mm
V15103A0203	GA 1030 ADH nozzle needle set 2,0 mm
V15103A0253	GA 1030 ADH nozzle needle set 2,5 mm
V15103A1103	GA 1030 ADH nozzle needle set 1.0 mm
V15103A1123	GA 1030 ADH nozzle needle set 1.2 mm
V15103A1153	GA 1030 ADH nozzle needle set 1,5 mm
V15103A1183	GA 1030 ADH nozzle needle set 1,8 mm
V15103A1203	GA 1030 ADH nozzle needle set 2,0 mm
V15103A1253	GA 1030 ADH nozzle needle set 2,5 mm

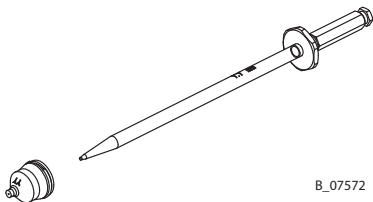
Rotary jet



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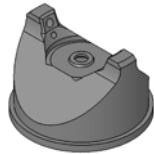

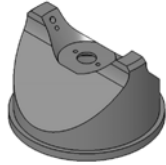
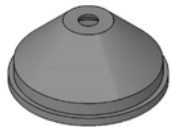


PILOT GA 1030 nozzle needle sets are available in the following sizes:

Order no.	Designation
2407264	GA 1030 nozzle needle set 0.3 mm
2407265	GA 1030 nozzle needle set 0.5 mm
2407266	GA 1030 nozzle needle set 0.8 mm
2407267	GA 1030 nozzle needle set 1.0 mm
2407268	GA 1030 nozzle needle set 1.2 mm
2407269	GA 1030 nozzle needle set 1.5 mm
2407270	GA 1030 nozzle needle set 1.8 mm
2407271	GA 1030 nozzle needle set 2.0 mm
2407272	GA 1030 nozzle needle set 2.2 mm
2407281	GA 1030 nozzle needle set 2.5 mm
2407282	GA 1030 nozzle needle set 3.0 mm
2407283	GA 1030 nozzle needle set 3.5 mm



B_07572

**13.2 AIR CAPS**

Order no.	Description	Processible Working Materials Adhesive	
V1071130105	Air cap 1,0 mm	Air cap with wide jet spray pattern for low and medium viscosity adhesives	
V1071130125	Air cap 1,2 mm		
V1071130155	Air cap 1,5 mm		
V1071130185	Air cap 1,8 mm		
V1071130205	Air cap 2,0 mm		
V1071130255	Air cap 2.5 mm		
V1071136105	Air cap 1,0 mm HVLP	Overspray reduced wide jet air cap for dispersion adhesive for bonding foams	
V1071136125	Air cap 1,2 mm HVLP		
V1071136155	Air cap 1,5 mm HVLP		
V1071136185	Air cap 1,8 mm HVLP		
V1071136205	Air cap 2,0 mm HVLP		
V1071136255	Air cap 2,5 mm HVLP		
V1070030080	Air cap 0,8 - 1.0 mm Rotating wide beam	Rotary jet air cap with wide jet spray pattern for high viscosity adhesives	
V1070030120	Air cap 1,2 - 1.5 mm Rotating wide beam		
V1070030180	Air cap 1,8 - 2.0 mm Rotating wide beam		
V1070071120	Air cap 1,2 - 1,5 mm Rotating round jet	Rotary jet air cap with round jet spray pattern for high viscosity adhesives	
V1070071180	Air cap 1,8 - 2.0 mm Rotating round jet		
V1070051050	Air cap 0,5 - 1,8 mm RndStr	Round jet air cap for low and medium viscosity adhesives	
V1070051200	Air cap 2,0 - 2,5 mm RndStr		
V1070051053	Air cap 0,5 - 1,8 mm RndStr stainless steel		
V1071145103	Disp.-adhe.-air cap 1,0 mm	Dispersion adhesive air cap with round jet spray pattern	
V1071145123	Disp.-adhe.-air cap 1,2 mm		
V1071145153	Disp.-adhe.-air cap 1,5 mm		
V1071145183	Disp.-adhe.-air cap 1,8 mm		
V1071145253	Disp.-adhe.-air cap 2,5 mm		

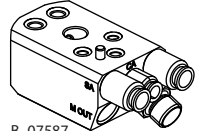
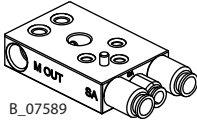
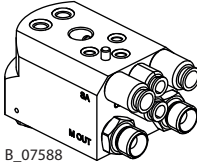

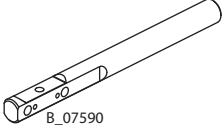
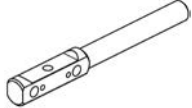
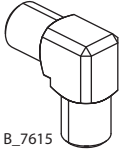

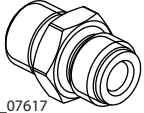

Only PILOT GA 1030.

OPERATING MANUAL



Order no.	Description	Processible Working Materials	
V1070035038	Air cap 0.3-1.8 mm CONV 8	Top coat, clear lacquer, separating agent, anti-dust	 B_07078
V1070035208	Air cap 2.0-2.5 mm CONV 8		
V1070035308	Air cap 3.0 mm CONV 8		
V1070035358	Air cap 3.5 mm CONV 8		
V1070035031	Air cap 0.3-1.8 mm CONV 10	Stain, primer, filler, top coat, clear lacquer, spraying plaster, separating agent	 B_07078
V1070035201	Air cap 2.0-2.5 mm CONV 10		
V1070035301	Air cap 3.0 mm CONV 10		
V1070035351	Air cap 3.5 mm CONV 10		
V1070038050	Air cap 0.3-1.8 mm CONV 12	Top coat, clear lacquer, separating agent	 B_07078
V1070038200	Air cap 2.0-2.5 mm CONV 12		
V1070039050	Air cap 0.3-1.8 mm CONV 14	Top coat, clear lacquer, separating agent, anti-dust	 B_07078
V1070039200	Air cap 2.0-2.5 mm CONV 14		
V1070036060	Air cap 0.3-1.8 mm HVLP Plus	Stain, primer, filler, base lacquer, top coat, clear lacquer, glaze	 B_07079
V1070036160	Air cap 2.0-2.5 mm HVLP Plus		
V1070036260	Air cap 3.0 mm HVLP Plus		
V1070036360	Air cap 3.5 mm HVLP Plus		
V1070037061	Air cap 0.3-1.8 mm HVLP	Stain, primer, filler, base lacquer, top coat, glazes, spraying plaster	 B_07080
V1070037161	Air cap 2.0-2.5 mm HVLP		
V1070037261	Air cap 3.0 mm HVLP		
V1070037361	Air cap 3.5 mm HVLP		

**13.3 CONNECTION PLATES WITH ADAPTER**

Order no.	Designation	
2407164	GA 1020/1030 adapter plate (aluminium, galvanized) With connections for, with or without internal control With or without circulation	 B_07587
2423101	GA 1020/1030 stainless steel adapter plate With air connections, 90° product connection right, G1/4" sealing plugs for, with or without internal control	 B_07589
2410060	GA 1020/1030 adapter plate with flushing valve 0° base plate with fittings, can be used with or without circulation	 B_07588
2411634	Gun adapter GA 1020/1030 for TF Robot Bell 1 With optical fiber cable adaption	
2411635	GA 1020/1030 60° adapter for robot applications With integrated flushing valve, for Fanuc P 250i	
2409620	GA 1020/1030 adapter plate for AGMD 517/PaintPro Intermediate plate for exchange with same TCP	 B_07591
2409636	Holder for gun or base plate including mounting screws ø 16 x 180 mm	 B_07590
2423657	Holder for gun or base plate including mounting screws ø 12 x 130 mm	
V2190020003	90° product connection	 B_7615
V2190016000	Nut	 B_07616
2406685	Straight product connection for stainless steel adapter plate	 B_07617
2394499	G1/4" sealing plugs	 B_07618



14 SPARE PARTS

14.1 HOW CAN SPARE PARTS BE ORDERED?

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

Order number, designation and quantity

The quantity need not be the same as the number given in the quantity column "**Stk**" on the list. This number merely indicates how many of the respective parts are used in each component.

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

- billing address
- delivery address
- name of the person to be contacted in the event of any queries
- type of delivery (normal mail, express delivery, air freight, courier, etc.).

Identification in spare parts lists

Explanation of column "**K**" (labeling) in the following spare parts lists:

- ◆ Wearing parts. Wearing parts are not included in the warranty terms.
- ★ Included in service set

Notice

These parts are not covered by warranty terms.

- Not part of standard equipment, however, available as special accessory.

Explanation of order no. column

- Item not available as spare part.
- / Position does not exist.

DANGER

Incorrect maintenance/repair!

Danger to life and equipment damage.

- Only a WALTHER service center or a suitably trained person may carry out repairs and replace parts.
- Use only WALTHER original spare parts and accessories.
- Only repair and replace parts that are listed in the "Spare parts" chapter and that are assigned to the unit.
- Before all work on the device and in the event of work interruptions:
 - Relieve the pressure from the spray gun, high-pressure hoses and all devices.
 - Secure the spray gun against actuation.
 - Switch off the energy and compressed air supply.
 - Disconnect the control unit from the mains.
- Observe the operating and service manual for all work.



OPERATING MANUAL

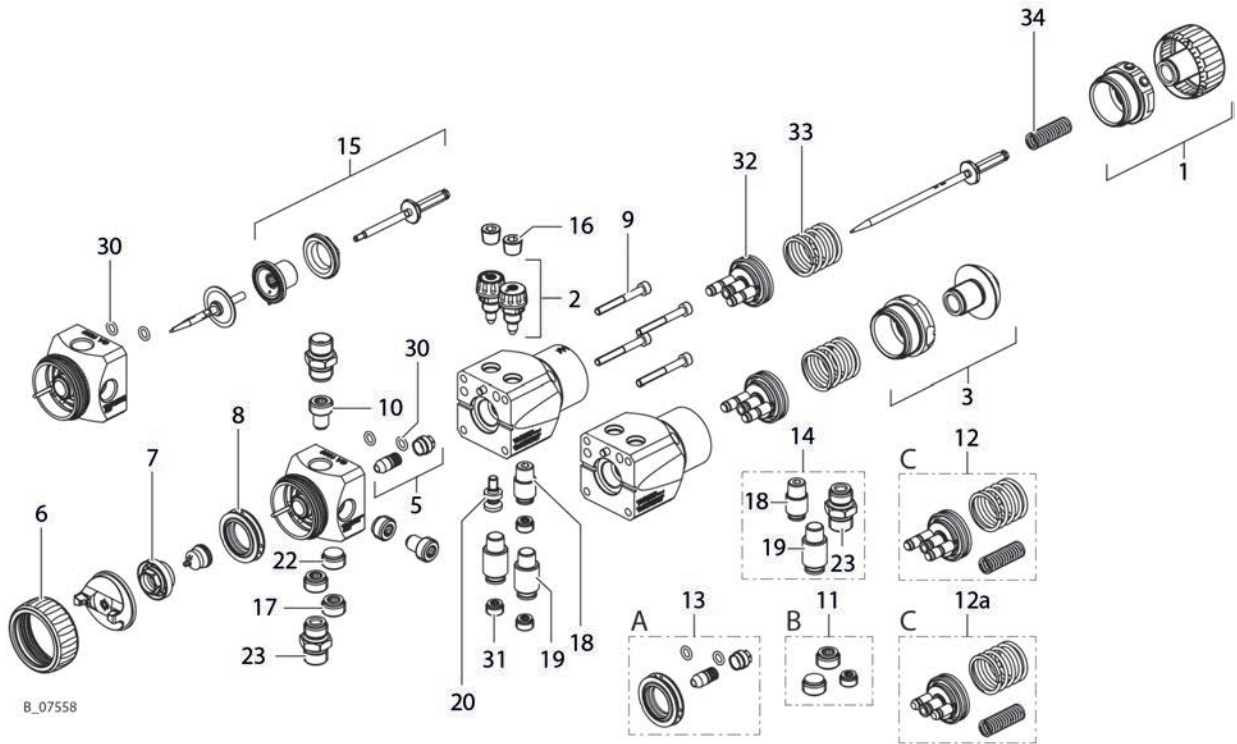


14.2 GUN VERSIONS

	1	2	3	4	5	6	7	8	9	10	11	
Model designation	G											
Automatic		A										
Series with membrane			1	0	2							
Series with needle packing			1	0	3							
Internal control						1						
Internal control circulation						2						
Internal control for A-plate						3						
Internal control for A-plate circulation						4						
External control						A						
External control circulation						B						
External control for A-plate						C						
External control for A-plate circulation						D						
Air cap adhesive conventional							0	2				
Air cap adhesive HVLP							0	3				
HVLP							0	4				
HVLP ^{plus}							0	5				
Conventional 8-hole							0	8				
Conventional 10-hole							1	0				
Conventional 12-hole							1	2				
Conventional 14-hole							1	4				
Dispersion adhesive round jet							4	5				
Round jet							5	1				
Adhesive rotary jet							7	1				
Adhesive rotating wide jet							3	3				
Nozzle size \varnothing 0,5-2,5 mm									X	X		e.g: Nozzle size 1,5 mm X X = 1 5
Nozzle size adhesive \varnothing 0,5-2,5 mm									X	X		
Nozzle size rotary jet \varnothing 1,0-2,5 mm									X	X		
Standard stainless steel												3
e.g: Order number for a GA 1030 auto-matic-spray gun with needle packing, internal control for adapter plate, air cap dispersion adhesive round jet with nozzle size adhesive 1.5 mm and stainless steel material nozzle and needle.	G	A	1	0	3	3	4	5	1	5	3	



14.3 EXPLODED VIEW PILOT GA 1020/1030 AUTOMATIC SPRAY GUN



**14.4 SPARE PARTS LIST PILOT GA 1020 / 1030**

Pos	K	Stk	Order no.	Designation	Service set		
					A	B	C
1		1	2407259	Needle stroke adjustment set			
2		1	2407244	Air regulator set			
3		1	2407261	Constant needle stroke set			
5	◆	★	1	2400771	Needle packing set	x	
6	◆		1	2400769	Air cap nut, cpl.		
7			1	2400782	Nozzle nut		
8	◆	★	1	2400779	Air control ring	x	
9		4	K158.03	Hexagon socket head cap screw			
10		1	2398075	G1/4 product connections plugs			
14	◆		1	2411643	Fitting set, assembly without adapter		
15	◆		1	2407258	Needle guide, diaphragm		
16		2	2324032	Fitting PF-M-R1/8-530 bar-SSt			
17		★	3	2394644	G1/4 fitting, open		x
18		1	V6610153013	Push-in fitting, QS-1/8-6-l			
19		2	V6610153015	Push-in fitting_QS-1/8-8-l			
20		1	2404903	Fixing bolt			
21			2363204	Threaded pin with hex. socket/point			
22		★	2394499	G1/4" sealing plugs		x	
23			2406685	Fitting, DF-MM-G1/4-G1/4-SSt			
30		★	--	O-ring	x		
31		★	--	Sealing plug		x	
32		★	--	Piston			x
33		★	--	Piston spring			x
34		★	--	Needle spring			x
		1	9992831	Loctite® 542			
		1	V0000000001	WALTHER PILOT Gun grease (Pads 8-10g)			
Tool and service sets							
13	◆	1	2407254	GA 1030 service set (air manifold ring, O-ring, needle packing set)	A		
11		1	2407240	Adapter fittings set		B	
12	◆	1	2407247	Service set - pistons			C
12a	◆	1	2411646	Service set - pistons without valves			C
		1	2407165	Adapter plate seal set (O-rings)			
		1	2411643	Fitting set, assembly without adapter			

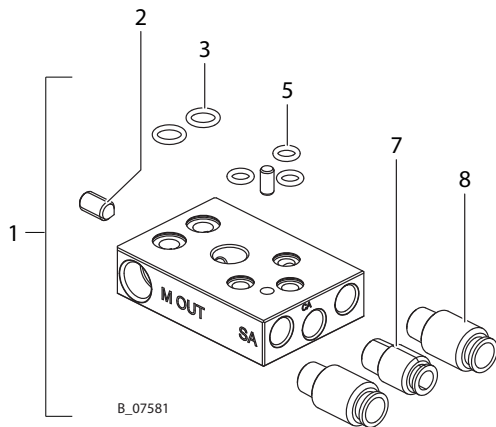
◆ = Wearing parts

★ = Included in a service set. The service sets are listed at the end of the table.

● = Not part of the standard equipment but available as a special accessory.



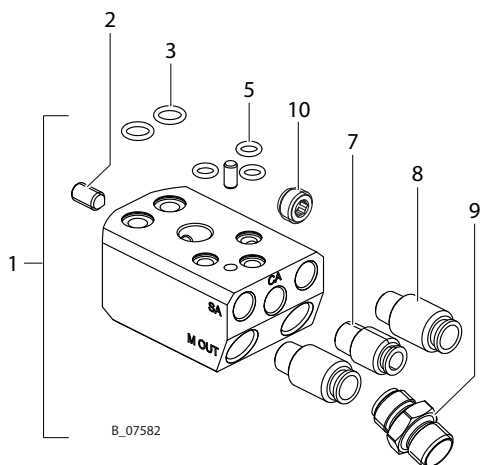
14.4.1 ADAPTER PLATE "PRODUCT CONNECTIONS AT SIDE"



Pos	K	Stk	Order no.	Designation
1		1	2407163	Adapter plate "Product connections at side"
2		1	2363204	Threaded pin with hex. socket/point
3	◆ ★	2	--	O-ring
5	◆ ★	3	--	O-ring
7		1	V6610153013	Push-in fitting, QS-1/8-6-l
8		2	V6610153015	Push-in fitting, QS-1/8-8-l

Note: The O-rings are only available in a set (order no. 2407165).

14.4.2 ADAPTER PLATE "PRODUCT CONNECTIONS AT REAR"

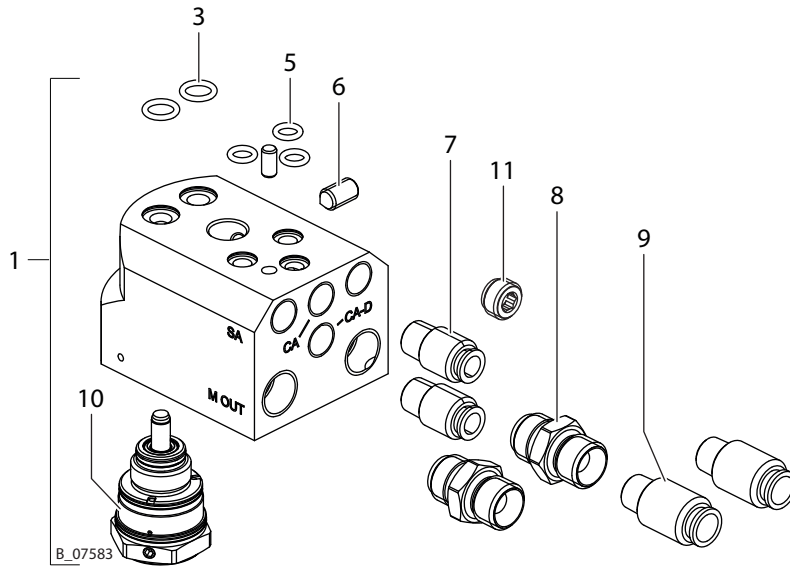


Pos	K	Stk	Order no.	Designation
1		1	2407164	Adapter plate "Product connections at rear"
2		1	2363204	Threaded pin with hex. socket/point
3	◆ ★	2	--	O-ring
5	◆ ★	3	--	O-ring
7		1	V6610153013	Push-in fitting, QS-1/8-6-l
8		2	V6610153015	Push-in fitting, QS-1/8-8-l
9		2	2406685	Fitting, DF-MM-G1/4-G1/4-SSt
10			2394499	Sealing plug

Note: The O-rings are only available in a set (order no. 2407165).



14.4.3 ADAPTER PLATE "FLUSHING VALVE"



Pos	K	Stk	Order no.	Designation
1		1	2410060	Adapter plate "Flushing valve"
3	◆ ★	2	--	O-ring
5	◆ ★	3	--	O-ring
6		1	2363204	Threaded pin with hex. socket/point
7		2	V6610153013	Push-in fitting, QS-1/8-6-I
8		2	2406685	Fitting, DF-MM-G1/4-G1/4-SSt
9		2	V6610153015	Push-in fitting, QS-1/8-8-I
10		1	2342424	Needle valve
11			2394499	Sealing plug

Note: The O-rings are only available in a set (order no. 2407165).



15 EU DECLARATION OF CONFORMITY

EC/EU-Declaration of Conformity according to 2006/42/EC, Annex II, No. 1A



We, the manufacturers of the equipment, hereby declare under our sole responsibility that the product(s) described below conform to the essential safety requirements. This declaration will be rendered invalid if any changes are made to the equipment without prior consultation with us.

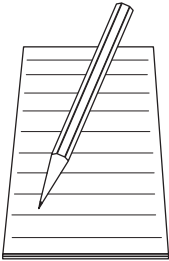
Manufacturer	WALTHER Spritz- und Lackiersysteme GmbH Kärntner Str. 18 - 30 D - 42327 Wuppertal Tel.: +49(0)202 / 787 - 0 Fax: +49(0)202 / 787 - 2217 www.walther-pilot.de • e-mail: info@walther-pilot.de		
Type Designation	Automatic spray guns		
	PILOT GA 1020 Membrane	GA102xxxxx3	
	PILOT GA 1030 Needle packing	GA103xxxxx3	
Intended purpose	Processing of sprayable media		
Applied Standards and Directives			
EU-Mechanical Engineering Directives 2006/42/EC 2014/34/EU (ATEX Directives)			
DIN EN ISO 12100:2011-3		DIN EN 1127-1:2019	
DIN EN 1953:2013		DIN EN ISO 80079-36:2016	
Specification according 2014/34/EU			
Category 2	Part marking		II 2G Ex h IIC T5 Gb
			Tech. File, Ref.: 2416
Authorized with the compilation of the technical file: Nico Kowalski, WALTHER Spritz- und Lackiersysteme GmbH, Kärntner Str. 18 - 30 D- 42327 Wuppertal			
Special remarks : The named product is intended for installation in other equipment. Commissioning is prohibited until such time as the end product has been proved to conform to the provision of the Directives 2006/42/EC.			

Wuppertal, 7th December 2020

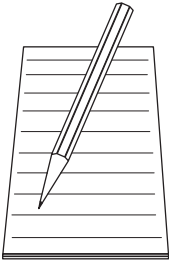
Name: Ralf Mosbacher
Managing Director

Name: Torsten Bröker
Manager, Design and Development

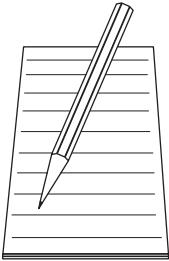
This Declaration does not give assurance of properties in the sense of product liability. The safety instructions provided in the product documentation must be observed at all times.



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The WALTHER PILOT Programme

- **Manual Spray Guns**
- **Automatic Spray Guns**
- **Low Pressure Spray Guns (System HVLP)**
- **Gun Nozzle Extension for Internal Coating**
- **Two Component Spray Guns**
- **Material Pressure Tanks**
- **Nonpressurized Tanks**
- **Agitator Systems**
- **Airless Equipment and Fluid Pumps**
- **Material Circulation Systems**
- **Paint Mist Extraction Systems**
- **Supply Air Systems**
- **Occupational Safety and Accessory Items**

Document-No.: 11411898 Version F

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Order no.: 2422842
Ausgabe: 10/2022

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