

WALTHER PILOT

Das WALTHER PILOT-Programm

- Hand-Spritzpistolen
- Automatik-Spritzpistolen
- Niederdruck-Spritzpistolen (System HVLP)
- Zweikomponenten-Spritzpistolen
- Materialdruckbehälter
- Drucklose Behälter
- Rührwerk-Systeme
- Airless-Geräte und Flüssigkeitspumpen
- Materialumlaufsysteme
- Kombinierte Spritz- und Trockenboxen
- Absaugsysteme mit Trockenabscheidung
- Absaugsysteme mit Naßabscheidung
- Pulversprühstände
- Trockner
- Zuluft-Systeme
- Atemschutzsysteme und Zubehör

Betriebsanleitung / Operating Instructions / Instrucciones de Servicio

Automatik-Spritzpistole / Automatic Spray Gun / Pistola Automática de Pulverización

PILOT WA 200



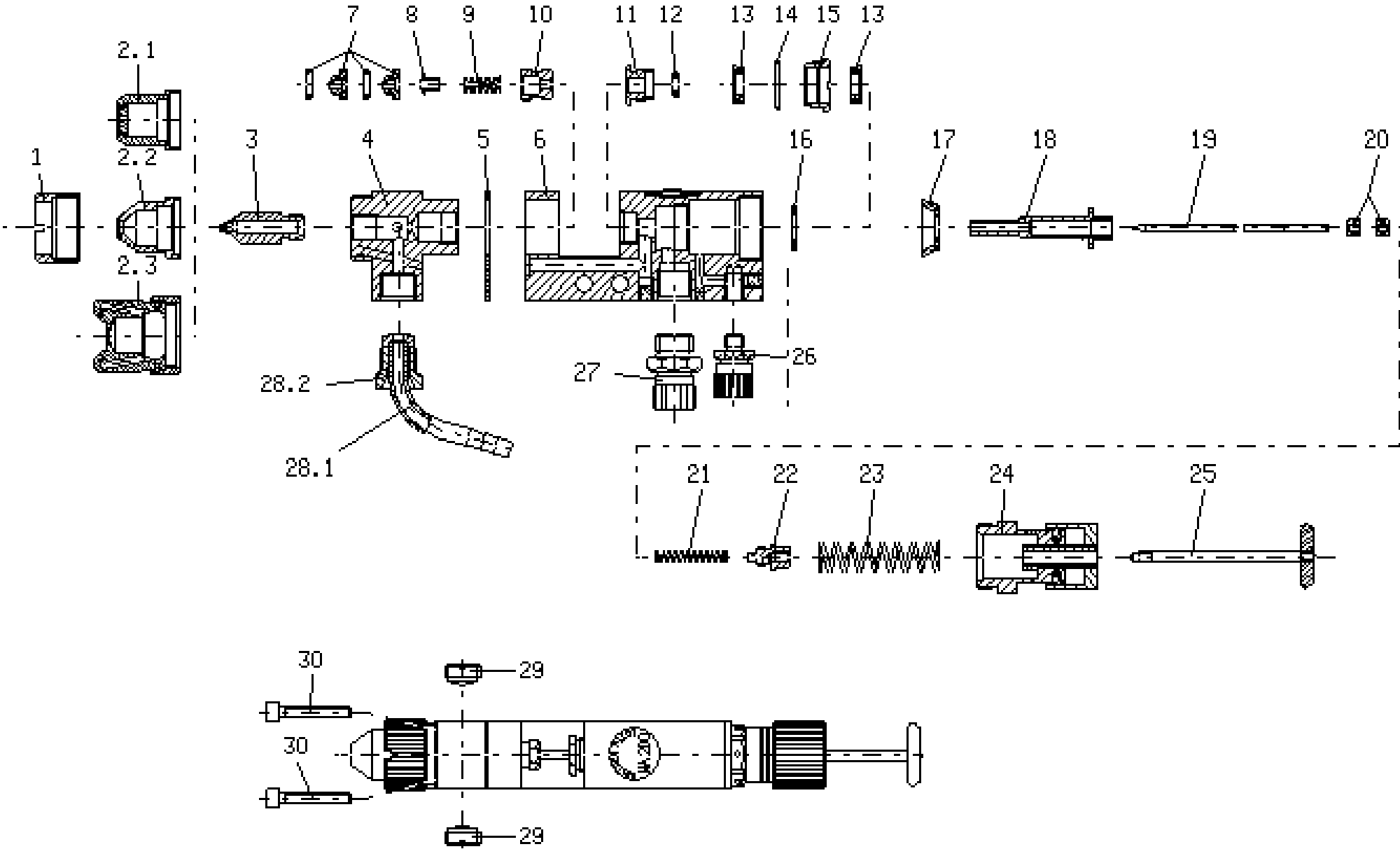
Die Beschichtungs-Experten

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Die Beschichtungs-Experten

PILOT WA 200



EG-Konformitätserklärung

Wir, der Gerätehersteller, erklären in alleiniger Verantwortung, daß das Produkt in der untenstehenden Beschreibung den einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen entspricht. Bei einer nicht mit uns abgestimmten Änderung an dem Gerät oder bei einer unsachgemäßen Verwendung verliert diese Erklärung ihre Gültigkeit.

D

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Typenbezeichnung	Automatische Spritzpistole PILOT WA 200	V 20 330		
Verwendungszweck	Verarbeitung spritzbarer Materialien			
Angewandte Normen und Richtlinien				
EG-Maschinenrichtlinien 98 / 37 EG 94 / 9 EG (ATEX Richtlinien) DIN EN ISO 12100-1 DIN EN ISO 12100-2 EN 1127-1				
Spezifikation im Sinne der Richtlinie 94 / 9 / EG				
Kategorie 2	Gerätebezeichnung		II 2 G c T 5	Tech.File,Ref.: 2408
Besondere Hinweise : Das Produkt ist zum Einbau in ein anderes Gerät bestimmt. Die Inbetriebnahme ist so lange untersagt, bis die Konformität des Endproduktes mit der Richtlinie 98 / 37 / EG festgestellt ist.				

Wuppertal, den 7. Juli 2003

i.v. 

Name: Torsten Bröker


Stellung im Betrieb: Leiter der Konstruktion und Entwicklung

Diese Erklärung ist keine Zusicherung von Eigenschaften im Sinne der Produkthaftung. Die Sicherheitshinweise der Produktdokumentation sind zu beachten.


Declaration of CE-Conformity

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.

GB

Manufacturer	WALTHER Spritz-und Lackiersysteme GmbH Kärntner Str. 18-30 D-42327 Wuppertal Tel.: 0202 / 787-0 Fax: 0202 / 787-217 www.walther-pilot.de • Email: info@walther-pilot.de			
Type Designation	Automatic Spray Gun PILOT WA 200	V 20 330		
Intended purpose	Processing of sprayable media			
Applied Standards and Directives				
EU-Machinery Directive 98 / 37 CE 94 / 9 EC (ATEX Directives) DIN EN ISO 12100-1 DIN EN ISO 12100-2 EN 1127-1				
Specification according 94 / 9 / CE				
Category 2	Part marking		II 2 G c T 5	Tech.File,Ref.: 2408
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 98 / 37 / CE.				

Wuppertal, the 7th of July 2003

i.v. 

Name: Torsten Bröker

Position: 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.

Replacement parts: PILOT WA 200

Pos.	Article-No.	Description
1	V 20 335 15 000	Sleeve nut
2.1	V 20 336 44 032*	Wide/flat jet air cap 0.3 - 0.5 mm ø
	V 20 336 44 082*	Wide/flat jet air cap 0.8 - 1.0 mm ø
	V 20 336 44 122*	Wide/flat jet air cap 1.2 - 1.5 mm ø
2.2	V 20 336 34 035*	Round jet air cap 0.3 - 0.5 mm ø
	V 20 336 34 085*	Round jet air cap 0.8 - 1.0 mm ø
	V 20 336 34 125*	Round jet air cap 1.2 - 1.5 mm ø
2.3	V 20 336 50 032*	Wide/flat jet air cap 0.3 - 0.5 mm ø
	V 20 336 50 082*	Wide/flat jet air cap 0.8 - 1.0 mm ø
	V 20 336 50 122*	Wide/flat jet air cap 1.2 - 1.5 mm ø
3	V 20 336 23 . . 3*	Material nozzle
4	V 20 330 02 003	Front part
5	V 09 002 43 000	Seal
6	V 20 330 01 005	Housing
7	V 09 002 41 000	Needle Packing compl.
8	V 20 353 14 000	Spring cup
9	V 20 353 04 000	Pressure spring
10	V 20 353 03 003	Packing box
11	V 20 330 09 005	Sealing screw
12	V 09 102 02 001	O-ring
13	V 09 220 21 000	Lip seal
14	V 09 103 22 001	O-ring
15	V 20 330 04 004	Piston sealing screw
16	V 09 230 05 000	Piston sealing
17	V 09 210 10 000	Cup seal
18	V 20 330 05 004	Piston
19	V 20 330 15 . . 3*	Material needle
20	V 10 106 02 000	Needle nut
21	V 10 101 19 000	Spring
22	V 20 330 06 004	Piston screw
23	V 10 106 08 000	Valve spring
24	V 20 330 10 000	Spring bushing
25	V 20 336 38 390	Pull rod
26	V 66 100 03 561	Quick coupling piece
27	V 66 100 02 027	Quick coupling piece
28.1	V 20 336 31 323	Hose fitting
28.2	V 20 336 33 003	Cap screw
29	V 20 330 03 003	Screw plug
30	V 20 330 11 003	Socket screw

* Please quote the required size(s) when placing an order for replacement parts.
It is recommended to keep in stock all BOLD-faced parts (fast wearing parts).
The Repair kit No.: V 16 330 51 . . 3* contains all bold-faced parts.

Listing of Contents



1	General
1.1	Identification of Model Version
1.2	Normal Use
1.3	Improper Use
2	Technical Description
3	Safety Warnings
3.1	Safety Warning Symbols
3.2	General Safety Precautions
4	Assembly/Installation
4.1	Mounting of Spray Gun
4.2	Connection of Input Lines
5	Operational Handling
5.1	Safety Warnings
5.2	Starting/Stopping Requirements
5.3	Spray Pattern Test
5.4	Adjusting the Spray Pattern
5.4	Retooling of Spray Gun
6	Cleaning
6.1	Safety Warnings
6.2	Cleaning - Complete
6.3	Cleaning - Routine
7	Repairs/Replacements
7.1	Replacement of defective Needle Seal Packing
7.2	Replacement of Springs and Seals
8	Troubleshooting and Corrective Action
9	Disposal of Cleaning/Serviceing Substances
10	Specification Data

1 General

1.1 Identification of Model Version

Model: Automatic Spray Gun PILOT WA 200

Type: V 20 330

Manufacturer: WALTHER Spritz-und Lackiersysteme GmbH
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1.2 Normal Use

The automatic spray gun PILOT WA 200 is exclusively designed for use with sprayable materials, especially:

- paints and lacquers
- greases, oils and corrosion preventives
- adhesive compounds
- ceramic glazes
- pickling solutions

Aggressive media should generally not be sprayed. If your specific material is not listed above, please contact us for further and detailed information.

Please note that sprayable material may only be applied to workpieces and/or similar items. The model PILOT WA 200 is not designed for manual operation and must therefore be installed in a suitable gun mounting device.

The temperature of the spraying material shall never exceed 80 degs. C.

The term normal use also implies that any and all safety warnings, operational handling details, etc., as stated in these Operating Instructions, are carefully read, understood and duly complied with.

This equipment complies with the explosion protection requirements of Directive 94/9/EC (ATEX 100a) for the explosion group, equipment category and temperature class indicated on the type plate. When using the equipment, the requirements specified in these Operating Instructions must be observed at all times.

The technical data indicated on the equipment rating plates and the specifications in the chapter "Technical Data" must be complied with at all times and must not be exceeded. An overloading of the equipment must be ruled out.

The equipment may be used in potentially explosive atmospheres only with the authorisation of the relevant supervisory authority.

The relevant supervisory authority or the operator of the equipment are responsible for determining the explosion hazard (zone classification).

The operator must check and ensure that all technical data and the marking of the equipment in accordance with ATEX are compliant with the necessary requirements.

The operator must provide corresponding safety measures for all applications in which the breakdown of the equipment might lead to danger to persons.

If any irregularities are observed while the equipment is in operation, the equipment must be put out of operation immediately and WALTHER PILOT must be consulted.

Grounding / Equipotential Bonding

Measures must be taken to ensure that the spray gun is sufficiently grounded (earthed) by means of a conductive air hose (maximum resistance $10^6\Omega$).

1.3 Improper Use

This spray gun shall not be used for purposes other than set forth in the above Chapter *Normal Use*.

Any other form of use and/or application is prohibited.

The term improper use also includes such operations as:

- spraying of material onto persons and animals
- spraying of liquid nitrogen

2 Technical Description

The model PILOT WA 200 is an all-automatic air-controlled gun operating in combination with a 3/2-way control valve in the form of hand-, foot- or solenoid-actuated valves.

Actuation of the 3/2-way valve directs control air into the cylinder inside the gun so as to open - in sequence - the atomizing air and the material input.

Closing of the 3/2-way valve is followed by the control air escaping from the cylinder inside the gun, upon which the spring-loaded material control needle returns to its initial position, where it shuts the material and atomizing air input off.

The material inlet duct of the PILOT WA 200 can be opened manually so as to permit, for example, cleaning of a clogged material nozzle.

3 Safety Warnings

3.1 Safety Warning Symbols



Warning

This pictograph and the accompanying warning note „Warning“ indicates possible risks and dangers for yourself and others. Possible consequences: injuries of any kind.



Caution

This pictograph and the accompanying warning note „Caution“ indicates possible damage to equipment. Possible consequences: damage to equipment.



Notice

This pictograph and the accompanying note „Notice“ indicates additional and useful information to help you to handle the spray gun with even greater confidence and efficiency.

3.2 General Safety Precautions

- It is important that all applicable accident prevention directives as well as industrial safety and health rules and regulations are duly complied with.
- Use this spray gun in well ventilated rooms. Open fires, naked lights and smoking are prohibited in the working area. Spraying of readily flammable media such as paints, lacquers, cleaning agents, etc., causes a potential health, explosion and fire risk.
- Measures must be taken to ensure that the spray gun is sufficiently grounded (earthed) by means of a conductive air hose (maximum resistance $10^6\Omega$).
- Prior to any servicing and repair work: Make sure that the spray gun is in unpressurized condition, i.e. all air and material inputs must be shut off - if not, imminent risk of injury.
- Keep your hands and other extremities away from the front of the spray gun - imminent risk of injury.
- Never point the spray gun at persons or animals - imminent risk of injury.
- It is important that all processing specifications and safety warnings issued by the manufacturers of spraying and cleaning media are duly complied with. Aggressive and corrosive media represent risk and hazards to personal health.
- The spray guns can produce sound levels of up to about 83 dB(A). It is therefore important to wear suitable hearing protectors.
- Air-borne particles represent a health hazard and must therefore be kept away from the working area. Wear proper respiratory protection masks and protective overalls when working with spraying media. Air-borne particles represent a health hazard.
- Nuts, screws and fasteners are always likely to come loose; therefore it is important to ensure that they are properly tightened, especially after servicing and repair work.
- Make sure you use only original WALTHER-PILOT replacement parts designed for functional reliability and efficiency.

Should you have any further questions regarding the safe use of the spraying gun please contact WALTHER Spritz- und Lackiersysteme GmbH, Wuppertal.

4 Assembly / Installation

This spray gun is delivered in completely assembled condition. Before taking it into operation, perform the following preparations:

4.1 Mounting of Spray Gun

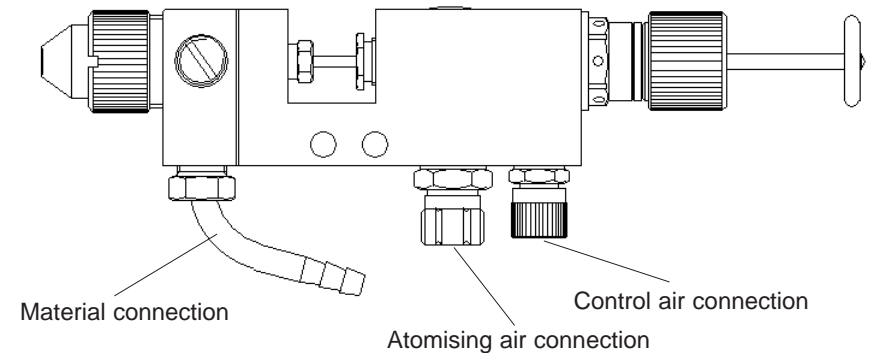
Install the gun in a suitable and stable mounting device. Use both \varnothing 5 mm mounting bores.

4.2 Connection of Input Lines



Warning

Make sure not to confuse the control and atomizing air connections - Risk of Injury.



1. Connect the input line for

- control air to the inlet fitting of the gun (M 5 - PK 3).
- atomising air to the inlet fitting of the gun (G 1/8" - PK 4).
- the material supply to the inlet fitting of the gun (M 10 - 5 mm \varnothing).

2. Check the hoses for tightness.

The spray gun is now properly installed and connected and ready for operation.

5 Operational Handling

5.1 Safety Warnings

Pay special attention to the following safety warnings prior to taking the spray gun into operation!

- Wear proper respiratory protection masks and protective overalls whenever operating this spray gun. Air-borne particles represent a health hazard.
- Wear suitable hearing protectors. Spray guns produce sound levels of up to 83 dB(A), which are very likely to cause hearing defects.
- Open fires, naked lights and smoking is prohibited in the working area. Spraying of readily flammable media (such as laquers, adhesive compounds) is always accompanied by the increasing risk of fire and explosion.

5.2 Starting / Stopping Requirements

The following requirements must be met, before this spray gun can be taken into operation:

- the control pressure must be available at the gun
- the atomising air pressure must be available at the gun
- the material pressure must be available at the gun.



Caution

The material pressure shall not exceed

- 8 bar,

as, otherwise, the functional reliability of the spray gun will suffer. Adjust the control air pressure to

- at least 4.5 bar,

in order to operate the spray gun.

High switching frequencies can loosen the pull rod of pos. 25. Always remove the draw bar of before taking the machine into operation.



Warning

It is important to remember that the spray gun must be relieved of all pressures whenever work is terminated. Lines left in pressurized condition could burst, with their contents likely to injure anybody present nearby.

5.3 Spray Pattern Test

Spray pattern tests should be performed whenever:

- the spray gun is taken into operation for the 1st time.
- the spraying medium is changed.
- the spray gun was taken apart for servicing or repairs.

The spray pattern is best tested using a workpiece sample, a sheet of metal, cardboard or paper.



Warning

Keep your hands and other extremities away from the front of the spray gun - imminent risk of injury.



Warning

Make sure that nobody is present in the spraying zone when the gun is started - imminent risk of injury.

1. Start the gun to produce a spray pattern sample (see 5.2 *Starting/Stopping Requirements*).
2. Inspect the sample and readjust the settings of the gun if necessary.

5.4 Adjusting the Spray Pattern

Adjustment of the Material Flow Rate

The material flow rate can be adjusted by using the notch of the spring bushing pos. 24. Screwing in the notch reduces the material rate; screwing the notch out increases the material rate.

Adjustment of the Material Pressure

This adjustment can only be made at the pump or the pressurized tank. Observe the operating instructions and safety warnings issued by the manufacturer.

Adjustment of the Atomizing Air Pressure

The atomizing air pressure is to be adjusted at the air pressure reducing valve of the compressor system. Observe the operating instructions and safety warnings issued by the manufacturer.

Adjustment of the Round- / Wide/flat jet

The adjustment of the round- / wide/flat jet is achieved by the selection of the corresponding air caps.

5.4 Retooling of Spray Gun

Combinations of air cap, material nozzle + needle, designed to match specific spraying media types and grades, form a unit - namely the nozzle insert assembly, which must always be interchanged as a complete assembly to maintain the desired spray-finish quality standard.



Warning

Prior to retooling: make sure that the spray gun is in unpressurized condition, i.e. all air and material inputs must be shut off - if not, imminent risk of injury.



Note

Please use the drawing at the beginning of these operating instructions in order to perform the operating steps presented hereafter.

Replacement of Air Cap and Material Nozzle

1. Unscrew the sleeve nut pos. 2 from the front part pos.4.
2. Remove the air cap pos. 2(.) and unscrew the material nozzle pos. 3 from the front part.

Installation of the air and material nozzle is performed in reverse order.

Replacement of Material Needle

1. Unscrew the pull rod pos. 25.
2. Unscrew the spring bushing pos. 24 from the housing pos. 6 and remove the valve spring pos. 23.
3. Pull out the material needle complete with the piston pos. 18 of the housing.
4. Unscrew the piston screw pos. 22 (ws 6 a. ws 10) and remove the spring pos. 21 of the piston.
5. Push the material needle backward of the piston.
6. Change the material needle by loosening both needle nut pos. 20.

Installation of the new material needle is performed in reverse order.



Note

The slip gauge of the material needle is 79 mm from the needle tip to the first needle retaining nut.



Note

Apply a thin film of grease to the following components during assembly: cup seal pos. 17, material needle pos. 19, spring pos. 21, valve spring pos. 23.

6 Cleaning

6.1 Safety Warnings

- Make sure that the spray gun is in unpressurized condition, i.e. all air and material inputs must be shut off - if not, imminent risk of injury.
- Open fires, naked lights and smoking is prohibited in the working area. There is an increasing risk of fire and explosion, when spraying readily flammable media (such as cleaning solutions).
- Observe all processing specifications and safety warnings issued by the manufacturer of cleaning media. Especially aggressive and corrosive media represents risks and hazard to personal health.

6.2 Cleaning - Complete

The spray gun should be frequently cleaned and lubricated so as to ensure a long service life and functional reliability. Clean the gun only with cleaning solutions recommended by the manufacturer of the spraying material, which do not contain any of the following constituents:

- halogenated hydrocarbons (e.g. 1,1,1, trichloroethane; methylene chloride, etc.)
- acids and acidiferous cleaning solutions
- regenerated solvents (so-called cleaning dilutions)
- paint removers

The above constituents cause chemical reactions with electroplated components resulting in corrosion damage. WALTHER PILOT is not responsible for damages resulting from this kind of treatment.

Clean the spray gun

- prior to each change of the spraying medium
- at least once a week
- as often as may be required by the spraying medium handled and the resulted degree of fouling.



Caution

Never immerse the spray gun in solvent or any other cleaning solution as such measure is very likely to affect the functional reliability and efficiency of the gun.



Caution

Do not use any hard, pointed or sharp-edged objects when cleaning the spray gun, as the precision-made parts can be easily damaged and are likely to affect your spraying results.

1. Dismantle the spray gun according to 5.5 *Replacement of Material Nozzle and Needle*.
2. Use a soft brush together with a compatible cleaning solution to clean the air cap and nozzle.
3. Use a suitable cloth with a compatible cleaning solution to clean the gun body and all remaining parts.
4. Apply a thin layer of grease to the following parts:
 - material needle pos. 19
 - cup seal pos. 17
 - spring pos. 21
 - valve spring pos. 23

Make sure to use a non-acidic, non-resinogenic grease and apply this with a soft brush. Assemble the spray gun in reverse order.

6.3 Cleaning - Routine

The spray gun does not have to be necessarily dismantled for cleaning if and when when the spraying medium is changed in regular intervals or upon termination of work (depending, of course, on the material used).



Note

It is recommended to clean and lubricate the spray gun frequently in accordance with 6.2 *Cleaning - Complete*. This will ensure a functional reliability of the spray gun.

The following requirements must be met before the routine cleaning work can be performed:

1. The material tank must be clean and then be filled with a compatible cleaning solution. The material pressure must be available at the gun. The cleaning solution should never be sprayed.
2. Take the spray gun into operation (see 5.2 *Starting/Stopping Requirements*).
3. Do not stop the spray gun until clear cleaning solution emerges from the nozzle.

The material input of the PILOT WA 200 can be released manually so that the complete spraying system does not have to be taken into operation.

1. Pull the pull rod pos. 25 of the spray gun backwards. The material inlet is now open and both the material duct and the material control needle will be cleaned.
2. Do not let go of the pull bar until clear cleaning solution emerges from the spray gun.

All pressures should be removed from the complete spraying system until it is taken into operation again.

7 Repairs/Replacements



Warning

Prior to any repairs/replacements: Make sure that the spray gun is in unpressurized condition, i.e. all air and material inputs must be shut off - if not, imminent risk of injury.



Note

Please use the drawing at the beginning of these operating instructions in order to perform the following operating procedures.

7.1 Replacement of defective Needle Packing

1. Remove the material needle according to 5.5 *Retooling the Spray Gun*.
 2. Loose both socket screws pos. 30 and remove the front part pos. 4 from the housing pos. 6.
 3. Unscrew the packing box pos. 11, remove the spring cup pos. 11 and the the pressure spring pos. 10 from the front part.
 4. Remove the needle packing pos. 7 from its seat. Use a strong wire with one end bent to form a small hook.
 5. Lubricate the new needle packing with a non-acidic, non-resinogenic grease.
 6. Install the new needle packing in the front part.
- Installation of the remaining parts is performed in reverse order.



Note

Never reinstall the removed needle packing to the gun front attachment; otherwise, the functional sealing reliability of the spray gun will suffer.

7.2 Replacement of Springs and Seals

Dismantle the spray gun in accordance to 5.5 *Retooling the Spray Gun* if any of the following parts have to be replaced:

- Seal pos. 5*
- Pressure Spring pos. 9*
- O-ring pos. 12 a. 14
- Lip seal pos. 13*
- Cup seal pos. 17*
- Spring pos. 21*
- Valve spring pos. 23*



Note

Parts marked * must be lubricated with a non-acidic, non-resinogenic grease prior to installation.

8 Troubleshooting and Corrective Action



Warning

Prior to any servicing and repair work: Make sure that the spray gun is in unpressurized condition, i.e. all air and material inputs must be shut off - if not, imminent risk of injury.

Fault	Cause	Corrective Action
Gun is dripping	Material needle or - nozzle is fouled	see 5.5 <i>Removing Material Nozzle and Needle</i> and clean same
	Material needle or - nozzle is damaged	see 5.5 <i>Replace Material Nozzle or Needle</i>
	Packing box is too tight	Loosen box slightly with a screw driver
Gun fails to open	Control air pressure too low	Increase Control Air Pressure to max. 6 bar
	Material needle is turned too in	Unscrew the notch of the spring bushing pos. 24 (to the left)
Spray Jet pulsating or unsteady	Level in material tank too low	Top-up material level (see operating instructions of plant systems manufacturer)
Gun sprays when not in operation	Cup seal pos. 17 or valve spring pos. 23 are damaged	Replace

9 Disposal of Cleaning / Servicing Substances

Disposal of any such substances must be in accordance with all applicable local and national regulations, directives and laws.



Warning

Pay special attention to all processing specifications and warnings issued by the manufacturer of spraying and cleaning media. The improper disposal of any toxic waste material represents a serious threat to to environment, i.e. to the health of mankind and animal life.

10 Specification Data

Weight:	350 g
Connections:	
Atomising Air	G 1/8" - PK 4
Control Air	M 5 - PK 3
Material Inlet	M 10 - 5 mm ø
Pressure Ranges:	
Control Air Pressure	max. 6 bar
Material Pressure	max. 6 bar

max. Operating Temperature of Spray Gun	80° C
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Sound Level (measured at a distance of 1 m from the spray gun)	83 dB(A)
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Air Consumption:	
1 bar Atomizing Air Input	50 L / min.
2 bar Atomizing Air Input	60 L / min.
3 bar Atomizing Air Input	70 L / min.
4 bar Atomizing Air Input	85 L / min.
5 bar Atomizing Air Input	90 L / min.
6 bar Atomizing Air Input	100 L / min.

Right to effect technical changes reserved.