

Das WALTHER PILOT- Programm

- Hand-Spritzpistolen
- Automatik-Spritzpistolen
- Niederdruck-Spritzpistolen (System HVLP)
- Pulverbeschichtungs-Systeme
- 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

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The WALTHER PILOT Programme

- Hand-Held Spray Guns
- Automatic Spray Guns
- Low Pressure Spray Guns (System HVLP)
- Powder Coating Systems
- Material Pressure Tanks
- Nonpressurized Tanks
- Agitator Systems
- Airless Equipment and Transfer Pumps
- Material Circulation Systems
- Combined Spraying and Drying Booths
- Spray Booth with Filter Mats
- Spray Booth with Water-Wash Function
- Powder Spray Stands
- Dryers
- Ventilation Systems
- Protective Respiratory Systems and Accessory Items

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WALTHER PILOT

Betriebsanleitung / Operating Instructions

Spritzpistole / Spray Gun

PILOT IV



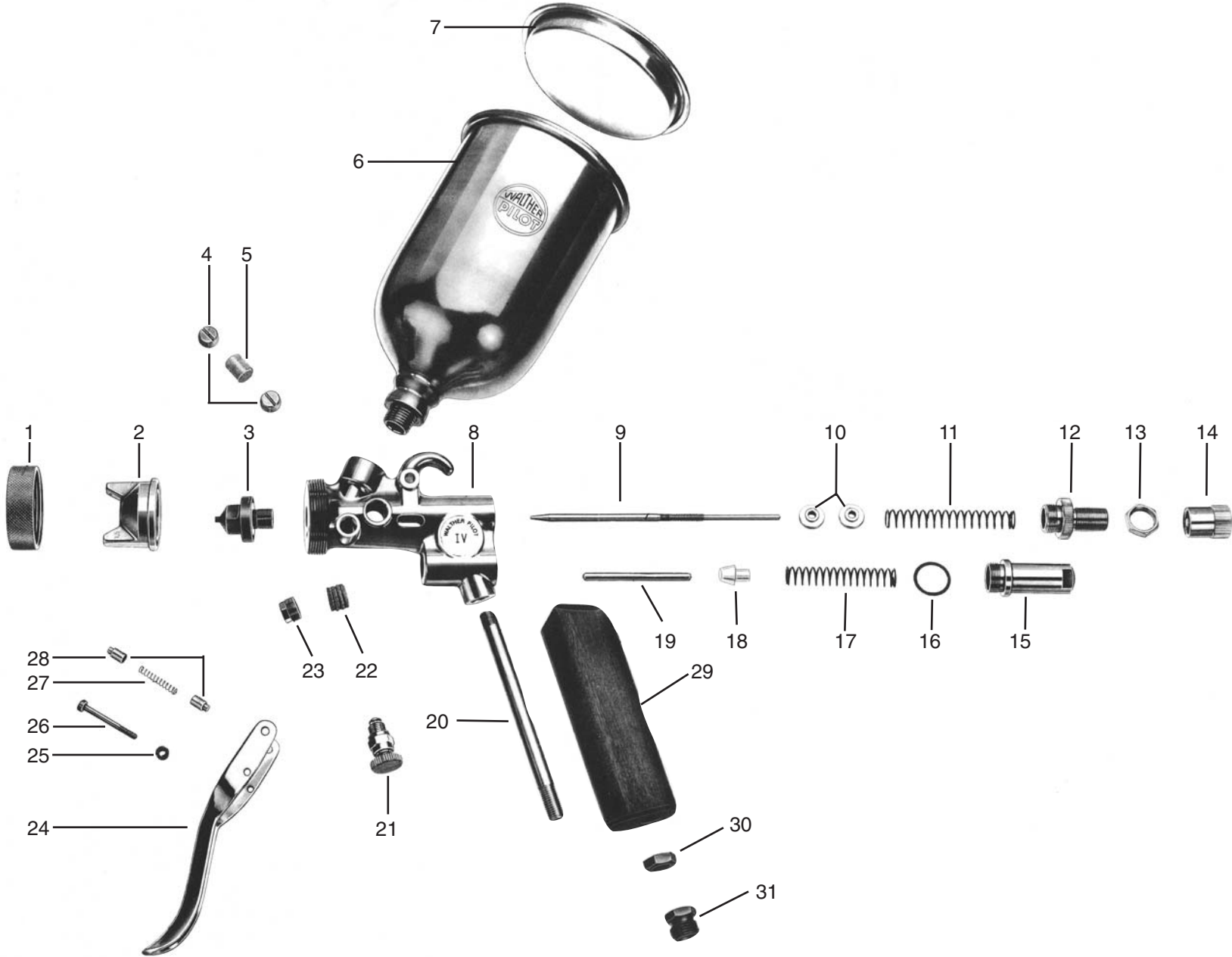
Die Beschichtungs-Experten

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Die Beschichtungs-Experten

PILOT IV



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

Hersteller	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	
Typenbezeichnung	Handspritzpistole PILOT IV PILOT IV Fließbecher	V 11 401
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 6	Tech.File,Ref.: 2403
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	Manual Spray Gun PILOT IV PILOT IV Gravity-Feed Cup	V 11 401
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 6	Tech.File,Ref.: 2403
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.

Listing of Replacement Parts PILOT IV

Item No.	Part No.	Description
1	V 01 101 03 000	Retaining Nut f. Air Cap
2	optional V 01 101 02 . . 2* V 01 101 02 . . 4* V 01 101 02 . . 6*	Air Cap 2-Bore 4-Bore 6-Bore
3	optional V 01 101 10 . . 3*	Material Nozzle
4	V 10 441 03 000	Packing Gland Screw
5	V 09 101 74 000	Needle Seal Packing
6	V 00 130 01 040	Gravity-Feed Cup
7	V 00 130 03 040	Cover for Feed Cup
8	V 11 401 01 000	Gun Body (Nickled Brass)
9	V 10 406 01 . . 3*	Material Needle
10	V 10 206 02 000	Needle Retaining Nut
11	V 10 206 04 000	Needle Spring
	V 10 206 05 060	Set Adjusting Screw compl.
	consisting of:	
12	V 10 206 06 000	Spring Retaining Bush
13	V 11 506 07 000	Lock Nut
14	V 10 206 05 000	Adjusting Screw
15	V 10 204 14 000	Valve Housing
16	V 09 101 14 000	Seal
17	V 10 204 03 000	Valve Spring
18	V 10 904 02 000	Valve Cone
19	V 10 444 01 000	Valve Shank
20	V 00 101 09 000	Air Tube
21	V 00 101 74 750	Air Regulating Valve compl.
22	V 09 101 15 000	Packing (6 Disks)
23	V 10 201 06 000	Valve Bushing
24	V 00 103 06 000	Trigger
25	V 00 103 04 000	Nut for U-Bolt
26	V 00 103 07 000	U-Bolt
27	V 10 101 19 000	Spring for Trigger-Mount
28	V 10 101 18 000	Trigger Screw
29	V 00 101 10 000	Gun Handle
30	V 00 101 08 000	Retaining Nut for Air Tube
31	V 00 101 05 000	Reducer

* When ordering replacement parts please quote the respective size/s. It is recommended to keep in stock all bold-printed parts (wearing parts) to avoid work stoppages.

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1 General

1.1 Identification of Model Version

Model: Manual Spray Gun PILOT IV

Type: PILOT IV Gravity-Feed Cup V 11 401

Manufacturer: WALTHER Spritz-und Lackiersysteme GmbH
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1.2 Normal Use

The manual spray gun PILOT IV is exclusively designed for use with sprayable media. Spraying aggressive media should be avoided as the wetted parts are not made of stainless specialty steel.

The gun is especially suited for processing / handling paints and lacquers, primers and fillers.

Please note that sprayable materials may only be applied to work pieces and/or similar items.

The temperature of the spraying materials shall never exceed 43° 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 improper use also includes such operations as may be:

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

2 Technical Description

Models PILOT IV

When actuating the trigger (Item 24) the air valve (Item 18) is opened (preliminary air); slightly hereafter the material needle (Item 9) is retracted. Closing is in reverse order.

The material flow rate depends on the diameter of the nozzle.

In addition, the material flow rate can be adjusted by screwing in or out the adjusting screw (Item 14).

Through the regulating screw (Item 21) the spraying pattern can be controlled, i. e. left-hand turn = wide jet, right-hand turn = round jet.

Design versions:

The model PILOT IV is to be used with gravity-feed cup only.

3 Safety Instructions

3.1 Safety Warning Symbols



Warning

This pictograph and the accompanying warning note "Warning" indicate possible risks and dangers for yourself.

Possible consequences: Injuries of any kind.



Caution

This pictograph and the accompanying warning note "Caution" indicate possible damage to equipment.

Possible consequences: Damage to equipment, workpieces, etc.



Note

This pictograph and the accompanying note "Notice" indicate additional and useful information to help you handling the spray gun with even greater confidence and efficiency.

3.2 General Safety Instructions

All applicable accident prevention rules and regulations as well as other recognised industrial safety and health rules and regulations must be observed at all times.

Use the spray gun only in well-ventilated rooms. Fire, naked flames and smoking are strictly prohibited within the working area. WARNING – during the spraying of flammable materials (e.g. lacquers, cleaning agents, etc.), there is an increased risk to health as well as an increased risk of explosion and fire.

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

Before carrying out maintenance or servicing work, always ensure that the air and material feed to the spray gun have been de-pressurised. Risk of injury!

When spraying materials, do not place your hands or other parts of the body in front of the pressurised nozzle or the spray gun. Risk of injury!

Never point the spray gun at persons or animals. Risk of injury!

Always observe the spraying and safety instructions given by the manufacturers of the spraying material and the cleaning agent. Aggressive and corrosive materials in particular can be harmful to health.

Exhaust air containing particles (overspray) must be kept away from the working area and personnel. In spite of these measures, always wear the regulation breathing masks and protective overalls when using the gun. Airborne particles represent a serious health hazard!

Always wear hearing protection when using the gun or when in the vicinity of a gun that is in use. The noise level generated by the spray gun is approx. 84 dB (A).

After carrying out assembly or maintenance work, always ensure that all nuts, bolts and screw connections have been fully tightened before the gun is used.

Use only original replacement parts, since WALTHER can only guarantee safe and faultfree operation for original parts.

For further information on the safe use of the spray gun and the spraying materials, please contact WALTHER Spritz- und Lackiersysteme GmbH, D-42327 Wuppertal, Germany

4 Connection of Input Lines



Note

Use the exploded view at the beginning of these operating instructions to perform the operational steps described hereafter.



Warning

The air pressure at the gun shall not exceed 8 bar; otherwise a safe operation of the spray gun cannot be ensured.



Warning

The air hose which is installed with a hose grommet must be additionally secured with a hose clamp.

1. Connect the air hose to the air outlet valve (cleaned compressed air) - or an air cleaner - and to the air inlet of the spray gun (Item 31).
2. Fill the gravity-feed cup with screened material.
3. Close the gravity-feed cup.
4. Switch on the pneumatic system. The spray gun can then be taken into operation.

5 Operational Handling

5.1 Safety Instructions

Pay special attention to the following safety warnings when using the spray gun!

- Make sure to wear proper respiratory protection masks and protective overalls, whenever you are operating this spray gun. Airborne particles represent a health hazard.
- Make sure to wear suitable hearing protectors. The spray guns produce sound levels of approx. 84 dB (A).
- Make sure your working area is absolutely free from open fires and naked lights - and anybody smoking. Spraying of readily flammable media (e.g. lacquers) is always accompanied by the 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 atomizing air pressure must be available at the gun.



Caution

The air pressure shall not exceed 8 bar, as otherwise the functional reliability of the spray gun will suffer.



Warning

It is important to remember that the spray gun must be relieved of all pressures when work is terminated - lines left in pressurized condition could burst with their contents likely to injure anybody standing nearby.

5.3 Spray Pattern Test

Spray pattern tests should be performed whenever:

- the spray gun is taken into operation for the first 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

When spraying materials, do not place your hands or other parts of the body in front of the pressurized nozzle or the spray gun. 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 adjust the settings of the gun, if necessary (see 5.4 Spray Pattern Adjustments).

5.4 Spray Pattern Adjustments

The spray pattern of the PILOT IV can be adjusted as follows.

Wide and / or Round Jet Pattern

The regulating screw (Item 21) controls the width of the jet. By turning it to the left a wide-jet pattern will emerge; by screwing it to the right a round-jet pattern can be achieved.

Adjusting the Material Flow Rate

The material flow rate can be adjusted by screwing in / screwing out the set screw (Item 14). The material rate is increased by turning it to the left (screwing out) and decreased by turning it to the right (screwing in).

Adjustment of the Atomizing Air Pressure

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

If you wish to change the spraying pattern beyond the adjustments outlined so far, the spray gun must be retooled (see 5.5 Retooling the spray gun).

WALTHER offers a great variety of air cap / material nozzle / needle combinations for this purpose.

5.5 Retooling the Spray Gun

Combinations of air cap, material nozzle and needle, designed to match specific spraying media type 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. the air input must be shut off - if not, imminent risk of injury.



Note

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

Replacement of Material Nozzle and Air Cap

1. Unscrew the retaining nut of the air cap (Item 1).
2. Remove the air cap (Item 2).
3. Unscrew the material nozzle (Item 3) from the gun body using a size 12 wrench. Installation is performed in reverse order.

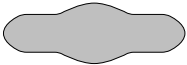
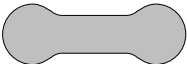
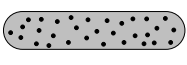
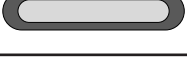
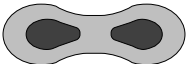

Replacement of Material Needle

1. Unscrew the adjusting screw (Item 12- 14).
2. Remove the spring (Item 11).
3. Pull out the material needle (Item 9) from the gun body. Installation is performed in reverse order. The setting dimension for the needle-controlled initial air input is 64 mm, measured from the point of the material control needle to the needle retaining nut (Item 10).

5.6 Correction of Spray Pattern Imperfections

The table below shows what to do to correct a spray pattern.

 desireable spray-painting result

Spray Pattern	Fault	Adjustment
	Swollen centre	<ul style="list-style-type: none"> • Spray jet should be flatter
	Swollen ends	<ul style="list-style-type: none"> • Spray jet should be rounder
	Coarse pearl effect	<ul style="list-style-type: none"> • Increase atomising air pressure
	Unduly thin paint layer in centre	<ul style="list-style-type: none"> • Decrease atomising air pressure
	Split centre	<ul style="list-style-type: none"> • Increase nozzle diameter • Reduce atomising air pressure • Increase material pressure
	Crowned centre	<ul style="list-style-type: none"> • Decrease material pressure • Increase atomising air pressure

6 Cleaning and Maintenance

6.1 Safety Instructions

- Make sure that the spray gun is in unpressurized condition, i.e. the air input 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 acidiferous media represent risks and hazards to personal health.

6.2 Cleaning Complete

The spray gun should be frequently cleaned and lubricated to ensure a long service life and functional reliability.



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 easily be damaged and are likely to affect your spraying results.

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 resultant degree of fouling.
- Performing these steps will ensure safe gun operation.

1. Dismantle the spray gun according to 5.5 Retooling of Spray Gun.
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 control needle
 - needle spring
 - all sliding parts and bearing points
 - The moveable interior parts have to be greased at least once a week.
 - The springs have always to be coated with a thin layer of grease.

Make sure to use a non-acidic, non-resinogenic grease and apply this with a soft brush. Afterwards, 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 the paint is changed in regular intervals or upon termination of work (depending, of course, on the material used).

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

1. The cleaned gravity-feed cup has to be filled with a cleaning solution compatible with the sprayed material.
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.

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 exploded view at the beginning of these operating instructions in order to perform the following procedures.

7.1 Replacement of defective Needle Seal Packing

1. Remove the material control needle (see 5.5 Retooling of Spray Gun).
 2. Remove the needle packing gland (Item 4) from the gun body.
 3. Remove the needle seal packing (Item 5).
- Assembly is performed in reverse order.



Note

Never reinstall a used needle seal packing, as otherwise the functional sealing reliability of the spray gun will suffer.

7.2 Replacement of Material Control Nozzle and Needle

Disassemble the spray gun according to 5.5 Retooling the Spray Gun.



Note

All sliding and moveable parts must be lubricated with a non-acidic, non-resinogenic grease prior to installation.

Repair Kit:

A WALTER PILOT repair kit is available for the manual spray gun PILOT IV which comprises all wearing parts:

Repair Kit Art. No.: V 16 004 02 . . 1

Consisting of: air cap (Item 2), material nozzle (Item 3), needle seal packing (Item 5), material control needle (Item 9), needle retaining nut (Item 10), needle spring (Item 12), valve spring (Item 17), valve cone (Item 18) and packing (Item 22).

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. the air input must be shut off - if not, imminent risk of injury.

Fault	Cause	Corrective Action
Gun is dripping	Material needle or nozzle fouled	Clean - see 5.5 Retooling the Spray Gun
	Material needle or nozzle damaged	Replace - see 5.5 Retooling the Spray Gun
	Needle packing gland (Item 4) too tight	Loosen slightly
	Needle spring (Item 11) defective, possibly broken	Remove material needle and needle spring - see 5.5 ...
	Size mismatch between material needle and nozzle	Use same diameters
Spray jet pulsating or unsteady	Adjusting screw (Item 14) turned too far to the back	Screw in adjusting screw slightly (turn clockwise)
	Level in gravity-feed too low	Top-up material level
	Gravity-feed cup is tilted too much during spraying operation	Keep straight
Material leakage from Packing Gland	Material nozzle is loose or damaged	Tighten
	Packing gland too loose	Tighten
Gun keeps blowing in off condition	Needle seal packing (Item 5) damaged	Replace
	Valve cone (Item 18) damaged or Valve shank (Item 19) binds	Replace Loosen
Spray jet one-side	Horn bores fouled	Clean air cap

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

Particular attention is drawn to all processing specifications and safety warnings issued by the manufacturers of spraying and cleaning media. Remember: The improper disposal of any toxic waste material represents a serious threat to the environment, i.e. to the health of mankind and animal life.

10 Specification Data

Net Weight PILOT IV: 630 g

Available range of spray nozzles: 0.5 • 0.8 • 1.0 • 1.2 • 1.5 • 1.8 • 2.0 • 2.5 • 3.0 • 3.5 mm \varnothing

Air Caps*: two-bore -, four-bore -, six-bore air cap
***other air caps on demand.**

Max. Spraying Pressure: 8 bar

Max. Operating Temperature of the Spray Gun: 43 °C

Sound Level
(measured at a distance of 1 m from the spray gun) 84 dB (A)

Air Consumption:

Atomising Air Pressure	Round Jet	Flat Jet
1.0 bar	110 l / min.	180 l / min.
2.0 bar	140 l / min.	240 l / min.
3.0 bar	170 l / min.	280 l / min.
4.0 bar	190 l / min.	320 l / min.
5.0 bar	200 l / min.	350 l / min.
6.0 bar	220 l / min.	390 l / min.

Right to effect technical changes reserved.