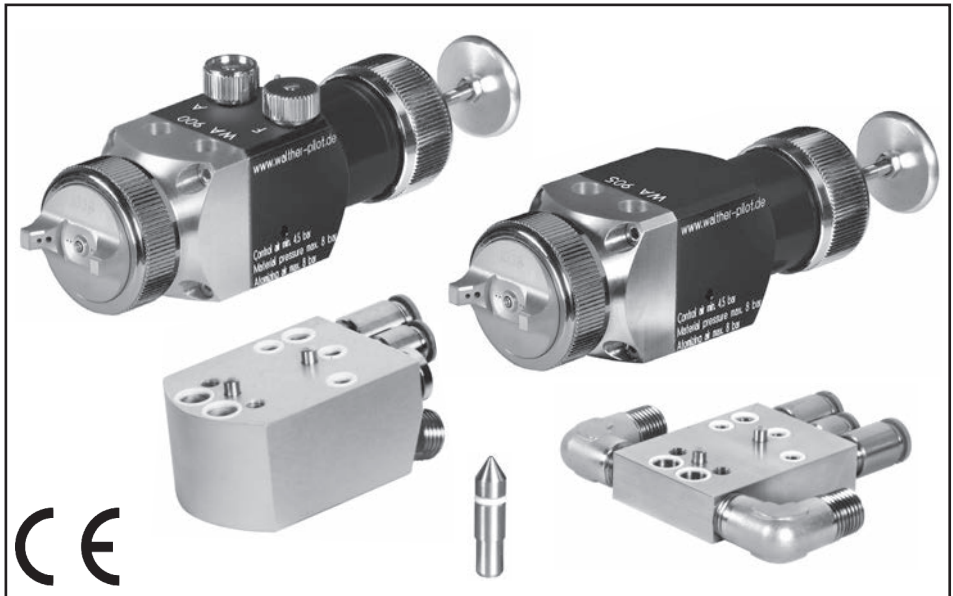


# WALTHER PILOT

Operating Manual

Pistolas Automaticas

## PILOT WA 900 / PILOT WA 905 ModelRs

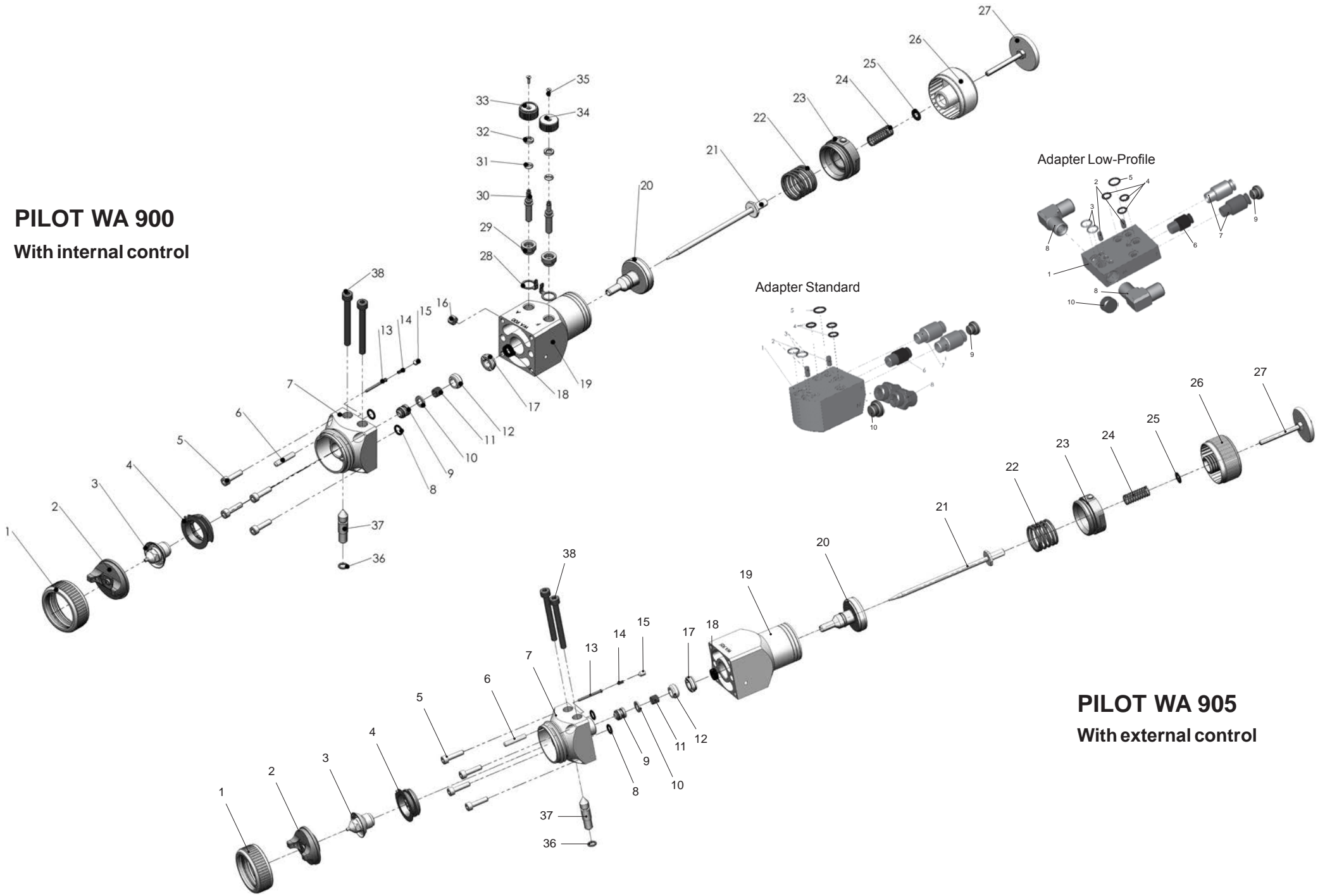


AUSG. 03/13



Die Beschichtungs-Experten

**PILOT WA 900**  
With internal control




**PILOT WA 905**  
With external control

## Table of Contents

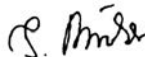
	<b>Exploded View</b>	<b>2</b>
	<b>Declaration of Conformity</b>	<b>5</b>
	<b>Parts List</b>	<b>6</b>
<b>1</b>	<b>General</b>	<b>12</b>
1.1	Model identification	12
1.2	Intended Use	12
1.3	Improper Use	13
<b>2</b>	<b>Technical Description</b>	<b>13</b>
<b>3</b>	<b>Safety Information</b>	<b>14</b>
3.1	Safety Warning Symbols	14
3.2	General Safety Precautions	15
<b>4</b>	<b>Assembly / Installation</b>	<b>15</b>
4.1	Standard or Recirculation	15
4.2	Mounting of the Spray Gun	16
4.3	Connection of Input Lines	16
<b>5</b>	<b>Operation</b>	<b>17</b>
5.1	Safety Information	17
5.2	Starting / Stopping Requirements	17
5.3	Spray Pattern Test	17
5.4	Spray Pattern Adjustments	18
5.5	Retooling the Spray Gun	19
5.6	Adjusting the Adapter Plate from Conventional to Recirculation	19
<b>6</b>	<b>Cleaning</b>	<b>20</b>
6.1	Safety Warnings	20
6.2	Cleaning - Complete	20
6.3	Cleaning - Routine	22
<b>7</b>	<b>Repairs / Replacements</b>	<b>22</b>
7.1	Replacement of leaking Needle Seal Packing	22
7.2	Replacement of Nozzle, Needle, Springs, & Seals	23
<b>8</b>	<b>Troubleshooting and Corrective Action</b>	<b>24</b>
<b>9</b>	<b>Disposal of Cleaning / Servicing Substances</b>	<b>24</b>
<b>10</b>	<b>Technical Data</b>	<b>25</b>

## EC Declaration of Conformity

We, the equipment manufacturer, declare under our sole responsibility that the product in the description below corresponds to the relevant basic safety and health requirements. Any unauthorized modifications are made to the equipment or improper use of this declaration loses its validity.

<b>Manufacturer</b>	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			
<b>Types</b>	<b>Automatic Spray Guns PILOT WA 900-Serie</b>			
	WA 900	(Standard with internal control)	V 21 900	
	WA 905	Standard with external control)	V 21 905	
	WA 920-HVLP	(Low pressure with internal control)	V 21 920	
	WA 925-HVLP	(Low pressure with external control)	V 21 925	
	WA 940-HVLP <sup>PLUS</sup>	(Medium pressure with internal control)	V 21 940	
	WA 945-HVLP <sup>PLUS</sup>	(Medium pressure with external control)	V 21 945	
<b>Intended Purpose</b>	Processing of sprayable materials			
<b>Applicable standards and regulations</b>				
EG-Maschinenrichtlinien 2006 / 42 / EG 94 / 9 EG (ATEX Richtlinien) DIN EN ISO 12100 Teil 1 DIN EN ISO 12100 Teil 2 DIN EN 1127-1				
DIN EN 1953 DIN EN 13463-1				
<b>Specification within the meaning of Directive 94 / 9 / EG</b>				
<b>Category 2</b>	<b>Unit Designation</b>		<b>II 2 G c T 5</b>	Tech.File,Ref.: 2416
<b>Authorized the compilation of the technical documentation:</b> Nico Kowalski, WALTHER Spritz- und Lackiersysteme GmbH, Kärntner Str. 18 - 30 D- 42327 Wuppertal				
<b>Special Information :</b> Das Produkt ist zum Einbau in ein anderes Gerät bestimmt. Die Inbetriebnahme ist so lange untersagt, bis die Konformität des Endproduktes mit der Richtlinie 2006 / 42 / EG festgestellt ist.				

Wuppertal, den 04. Februar 2013

i.V. 

Name: Torsten Bröker  
Stellung im Betrieb: Leiter der Konstruktion und Entwicklung

This declaration is not an assurance of properties in terms of product liability. The safety of the product documentation must be observed.

Spare Parts List:					
D		WA 900 (with internal control)		WA 905 (with external control)	
		V 21 900		V 21 905	
Pos.	Description	Pcs.	Part Number	Pcs.	Part Number
1	Air cap nut assy.	1	V 20 700 05 000	1	V 20 700 05 000
2	<b>Air Cap</b>	1	<b>V 10 700 35 xx8*</b>	1	<b>V 10 700 35 xx8*</b>
3	<b>Material Nozzle</b>	1	<b>V 10 700 40 xx3*</b>	1	<b>V 10 700 40 xx3*</b>
4	Air distribution ring	1	V 21 900 14 000	1	V 21 900 14 000
5	Hexagon socket screw	4	V 20 700 13 003	4	V 20 700 13 003
6	Cylinder Pin	1	V 20 350 05 001	1	V 20 350 05 001
7	Front Body	1	V 21 900 02 003	1	V 21 900 02 003
8	<b>O-Ring</b>	2	<b>V 09 102 21 009</b>	2	<b>V 09 102 21 009</b>
9	<b>Needle Seal Packing</b>	1	<b>V 09 001 72 000</b>	1	<b>V 09 001 72 000</b>
10	Washer	1	V 21 900 12 003	1	V 21 900 12 003
11	<b>Packing Spring</b>	1	<b>V 20 510 12 003</b>	1	<b>V 20 510 12 003</b>
12	Packing Screw	1	V 20 510 11 003	1	V 20 510 11 003
13	Pin for fixing air cap	1	V 20 700 02 303	1	V 20 700 02 303
14	<b>Locking Spring</b>	1	<b>V 20 700 02 403</b>	1	<b>V 20 700 02 403</b>
15	Screw	1	V 11 530 01 010	1	V 11 530 01 010
16	Plug	1	2325502		
17	Sealing Screw	1	V 22 650 43 100	1	V 22 650 43 100
18	<b>Retaining Ring</b>	1	<b>V 09 220 30 000</b>	1	<b>V 09 220 30 000</b>
19	Piston Housing	1	V 21 900 01 000	1	V 21 905 01 000
20	Piston assy.	1	V 21 900 09 000	1	V 21 900 09 000
21	<b>Material needle assy.</b>	1	<b>V 21 900 05 xx3*</b>	1	<b>V 21 900 05 xx3*</b>
22	<b>Piston Spring</b>	1	<b>V 20 606 11 100</b>	1	<b>V 20 606 11 100</b>
23	Threaded bushing assy.	1	V 21 900 10 000	1	V 21 900 10 000
24	<b>Needle Spring</b>	1	<b>V 20 510 29 103</b>	1	<b>V 20 510 29 103</b>
25	Needle spring washer	1	V 21 900 11 000	1	V 21 900 11 000
26	Cap assy.	1	V 21 900 13 000	1	V 21 900 13 000
27	Pull rod assy.	1	V 20 510 34 000	1	V 20 510 34 000
28	Knobs R + B	2	V 21 900 06 100		
29	Threaded Bushing	2	V 10 170 10 100		
30	Sealing Cone	2	V 20 810 11 005		
31	<b>O-Ring</b>	2	<b>V 09 102 02 007</b>		
32	Stuffing Gland	2	V 10 302 02 000		
33	RD-regulation	1	V 21 900 06 000		
34	BR-regulation	1	V 21 900 07 000		
35	Counter sunk screw	2	V 10 170 25 003		
36	<b>O-Ring</b>	1	<b>V 09 103 64 009</b>	1	<b>V 09 103 64 009</b>
37	Locking pin	1	V 21 900 08 000	1	V 21 900 08 000
38	Head screw	2	V 20 810 14 203	2	V 20 810 14 203

Spare Parts List:					
D		WA 920 HVLP (Internal Control)		WA 925 HVLP (External Control)	
		V 21 920		V 21 925	
Pos.	Bezeichnung	Stck.	Artikelnummer	Stck.	Artikelnummer
1	Air cap nut assy.	1	V 20 700 05 000	1	V 20 700 05 000
2	<b>Air Cap</b>	1	<b>V 10 700 37 xxx*</b>	1	<b>V 10 700 37 xxx*</b>
3	<b>Material Nozzle</b>	1	<b>V 10 700 40 xx3*</b>	1	<b>V 10 700 40 xx3*</b>
4	Air Distribution Ring	1	V 21 900 14 100	1	V 21 900 14 100
5	Hexagon Socket Screw	4	V 20 700 13 003	4	V 20 700 13 003
6	Cylinder Pin	1	V 20 350 05 001	1	V 20 350 05 001
7	Front Body	1	V 21 900 02 003	1	V 21 900 02 003
8	<b>O-Ring</b>	2	<b>V 09 102 21 009</b>	2	<b>V 09 102 21 009</b>
9	<b>Needle Seal Packing</b>	1	<b>V 09 001 72 000</b>	1	<b>V 09 001 72 000</b>
10	Washer	1	V 21 900 12 003	1	V 21 900 12 003
11	<b>Packing Spring</b>	1	<b>V 20 510 12 003</b>	1	<b>V 20 510 12 003</b>
12	Packing Screw	1	V 20 510 11 003	1	V 20 510 11 003
13	Pin for fixing air cap	1	V 20 700 02 303	1	V 20 700 02 303
14	<b>Locking Spring</b>	1	<b>V 20 700 02 403</b>	1	<b>V 20 700 02 403</b>
15	Screw	1	V 11 530 01 010	1	V 11 530 01 010
16	Plug	1	2325502		
17	Sealing Screw	1	V 22 650 43 100	1	V 22 650 43 100
18	<b>Retaining Ring</b>	1	<b>V 09 220 30 000</b>	1	<b>V 09 220 30 000</b>
19	Piston Housing	1	V 21 900 01 000	1	V 21 905 01 000
20	Piston assy.	1	V 21 900 09 000	1	V 21 900 09 000
21	<b>Material Needle assy.</b>	1	<b>V 21 900 05 xx3*</b>	1	<b>V 21 900 05 xx3*</b>
22	<b>Piston Spring</b>	1	<b>V 20 606 11 100</b>	1	<b>V 20 606 11 100</b>
23	Threaded Bushing assy.	1	V 21 900 10 000	1	V 21 900 10 000
24	<b>Needle Spring</b>	1	<b>V 20 510 29 103</b>	1	<b>V 20 510 29 103</b>
25	Needle Spring Washer	1	V 21 900 11 000	1	V 21 900 11 000
26	Cap assy.	1	V 21 900 13 000	1	V 21 900 13 000
27	Pull Rod assy.	1	V 20 510 34 000	1	V 20 510 34 000
28	Knobs R+B	2	V 21 900 06 100		
29	Threaded Bushing	2	V 10 170 10 100		
30	Sealing Cone	2	V 20 810 11 005		
31	<b>O-Ring</b>	2	<b>V 09 102 02 007</b>		
32	Stuffing Gland	2	V 10 302 02 000		
33	RD-Regulation	1	V 21 900 06 000		
34	BR-Regulation	1	V 21 900 07 000		
35	Counter Sunk Screw	2	V 10 170 25 003		
36	<b>O-Ring</b>	1	<b>V 09 103 64 009</b>	1	<b>V 09 103 64 009</b>
37	Locking Pin	1	V 21 900 08 000	1	V 21 900 08 000
38	Head Screw	2	V 20 810 14 203	2	V 20 810 14 203

Ersatzteilliste:					
D		WA 940 HVLP <sup>Plus</sup> (mit Innensteuerung)		WA 945 HVLP <sup>Plus</sup> (ohne Innensteuerung)	
		V 21 940		V 21 945	
Pos.	Bezeichnung	Stck.	Artikelnummer	Stck.	Artikelnummer
1	Air cap nut assy.	1	V 20 700 05 000	1	V 20 700 05 000
2	<b>Air Cap</b>	1	<b>V 10 700 36 xxx*</b>	1	<b>V 10 700 36 xxx*</b>
3	<b>Material Nozzle</b>	1	<b>V 10 700 40 xx3*</b>	1	<b>V 10 700 40 xx3*</b>
4	Air Distribution Ring	1	V 21 900 14 100	1	V 21 900 14 100
5	Hexagon Socket Screw	4	V 20 700 13 003	4	V 20 700 13 003
6	Cylinder Pin	1	V 20 350 05 001	1	V 20 350 05 001
7	Front Body	1	V 21 900 02 003	1	V 21 900 02 003
8	<b>O-Ring</b>	2	<b>V 09 102 21 009</b>	2	<b>V 09 102 21 009</b>
9	<b>Needle Seal Packing</b>	1	<b>V 09 001 72 000</b>	1	<b>V 09 001 72 000</b>
10	Washer	1	V 21 900 12 003	1	V 21 900 12 003
11	<b>Packing Spring</b>	1	<b>V 20 510 12 003</b>	1	<b>V 20 510 12 003</b>
12	Packing Screw	1	V 20 510 11 003	1	V 20 510 11 003
13	Pin for fixing air cap	1	V 20 700 02 303	1	V 20 700 02 303
14	<b>Locking Spring</b>	1	<b>V 20 700 02 403</b>	1	<b>V 20 700 02 403</b>
15	Screw	1	V 11 530 01 010	1	V 11 530 01 010
16	Plug	1	2325502		
17	Sealing Screw	1	V 22 650 43 100	1	V 22 650 43 100
18	<b>Retaining Ring</b>	1	<b>V 09 220 30 000</b>	1	<b>V 09 220 30 000</b>
19	Piston Housing	1	V 21 900 01 000	1	V 21 905 01 000
20	Piston assy.	1	V 21 900 09 000	1	V 21 900 09 000
21	<b>Material Needle assy.</b>	1	<b>V 21 900 05 xx3*</b>	1	<b>V 21 900 05 xx3*</b>
22	<b>Piston Spring</b>	1	<b>V 20 606 11 100</b>	1	<b>V 20 606 11 100</b>
23	Threaded Bushing assy.	1	V 21 900 10 000	1	V 21 900 10 000
24	<b>Needle Spring</b>	1	<b>V 20 510 29 103</b>	1	<b>V 20 510 29 103</b>
25	Needle Spring Washer	1	V 21 900 11 000	1	V 21 900 11 000
26	Cap assy.	1	V 21 900 13 000	1	V 21 900 13 000
27	Pull Rod assy.	1	V 20 510 34 000	1	V 20 510 34 000
28	Knobs R+B	2	V 21 900 06 100		
29	Threaded Bushing	2	V 10 170 10 100		
30	Sealing Cone	2	V 20 810 11 005		
31	<b>O-Ring</b>	2	<b>V 09 102 02 007</b>		
32	Stuffing Gland	2	V 10 302 02 000		
33	RD-Regulation	1	V 21 900 06 000		
34	BR-Regulation	1	V 21 900 07 000		
35	Counter Sunk Screw	2	V 10 170 25 003		
36	<b>O-Ring</b>	1	<b>V 09 103 64 009</b>	1	<b>V 09 103 64 009</b>
37	Locking Pin	1	V 21 900 08 000	1	V 21 900 08 000
38	Head Screw	2	V 20 810 14 203	2	V 20 810 14 203

\* For spare parts please indicate appropriate size. We recommend to keep all the bold parts (wear parts) in stock.

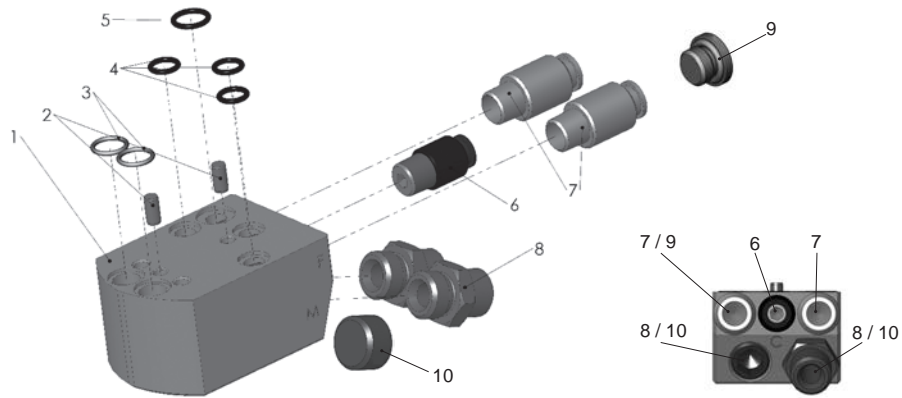
Repair Kits			
WALTHER PILOT for automatic spray guns PILOT WA 900 - prepared containing all parts subject to WA 945 HVLPPlus repair kits.			
			Artikelnummer
PILOT WA 900 / 905	Standard-Version		V 16 209 00 XX3
PILOT WA 920 / 925	HVLP /	Low-pressure Version	V 16 209 20 XX3
PILOT WA 940 / 945	HVLP <sup>PLUS</sup> /	Medium-pressure Version	V 16 209 40 XX3

Nozzle Insert Kits			
The Nozzle Insert Kits consist of an air cap, material nozzle, and material needle			
			Artikelnummer
PILOT WA 900 / 905	Standard-Version		V 15 209 00 XX3
PILOT WA 920 / 925	HVLP /	Low-pressure Version	V 15 209 20 XX3
PILOT WA 940 / 945	HVLP <sup>PLUS</sup> /	Medium-pressure Version	V 15 209 40 XX3

#### Nozzle Sizes Available

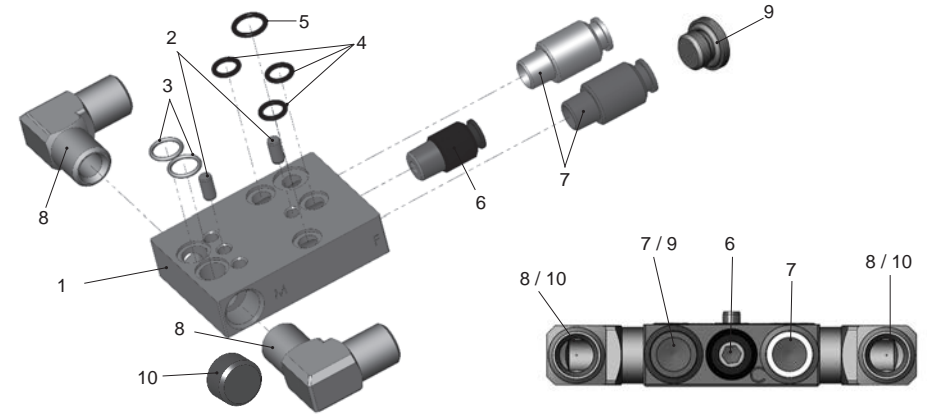
0,3 ▪ 0,5 ▪ 0,8 ▪ 1,0 ▪ 1,2 ▪ 1,5 ▪ 1,8 ▪ 2,0 ▪ 2,2 ▪ 2,5 ▪ 3,0 ▪ 3,5 mm ø

Accessories		
		Part Number
Gun holder		V 21 900 21 000
Grease Gun	Kissen 8 - 10 g	V 00 000 00 001



**Spare parts list for adapter plate aluminum, nickel-plated**

		Adapter plate Material connection back		Adapter plate Material connection back	
		WA 900	V 21 900 03 000	WA 905	V 21 905 04 000
Item	Description	Pcs.	Part Number	Pcs.	Part Number
1	Adapter plate	1	V 21 900 03 100	1	V 21 900 03 100
2	Cylinder pin	2	V 20 810 14 103	2	V 20 810 14 103
3	O-Ring	2	V 09 103 66 000	2	V 09 103 66 000
4	O-Ring	3	V 09 102 21 009	3	V 09 102 21 009
5	O-Ring	1	V 09 104 11 009	1	V 09 104 11 009
6	Fitting	1	V 66 101 53 013	1	V 66 101 53 013
7	Fitting	1	V 66 101 53 015	2	V 66 101 53 015
8	Double Nipple	1	V 00 101 01 003	1	V 00 101 01 003
9	Plug	1	V 66 100 03 568		
10	Sealing Plugs	1	V 20 540 40 003	1	V 20 540 40 003



**Spare parts list for adapter plate stainless steel**

		Adapter Plate Material connection side		Adapter Plate Material connection side	
		WA 900	V 21 900 04 003	WA 905	V 21 905 03 003
Item	Description	Pcs.	Part Number	Pcs.	Part Number
1	Adapter plate	1	V 21 900 04 103	1	V 21 900 04 103
2	Cylinder pin	2	V 20 810 14 103	2	V 20 810 14 103
3	O-Ring	2	V 09 103 66 000	2	V 09 103 66 000
4	O-Ring	3	V 09 102 21 009	3	V 09 102 21 009
5	O-Ring	1	V 09 104 11 009	1	V 09 104 11 009
6	Fitting	1	V 66 101 53 013	1	V 66 101 53 013
7	Fitting	1	V 66 101 53 015	2	V 66 101 53 015
8	Material connection 90°	1	V 21 900 20 003	1	V 21 900 20 003
9	Plug	1	V 66 100 03 568		
10	Sealing plugs	1	V 20 540 40 003	1	V 20 540 40 003

**Spare parts list for adapter plate aluminum, nickel-plated**

		Adapter, Recirculation Material connection back		Adapter, Recirculation Material connection back	
		WA 900	V 21 900 03 UML	WA 905	V 21 905 04 UML
Item	Description	Pcs.	Part Number	Pcs.	Part Number
1	Adapter Plate	1	V 21 900 03 100	1	V 21 900 03 100
2	Cylinder pin	2	V 20 810 14 103	2	V 20 810 14 103
3	O-Ring	2	V 09 103 66 000	2	V 09 103 66 000
4	O-Ring	3	V 09 102 21 009	3	V 09 102 21 009
5	O-Ring	1	V 09 104 11 009	1	V 09 104 11 009
6	Fitting	1	V 66 101 53 013	1	V 66 101 53 013
7	Fitting	1	V 66 101 53 015	2	V 66 101 53 015
8	Double Nipple	2	V 00 101 01 003	2	V 00 101 01 003
9	Plug	1	V 66 100 03 568		
10	Sealing Plugs				

**Spare parts list for adapter plate stainless steel**

		Adapter, Recirculation Material connection side		Adapter, Recirculation Material connection side	
		WA 900	V 21 900 04 UML	WA 905	V 21 905 03 UML
Item	Description	Pcs.	Part Number	Pcs.	Part Number
1	Adapter Plate	1	V 21 900 04 103	1	V 21 900 04 103
2	Cylinder pin	2	V 20 810 14 103	2	V 20 810 14 103
3	O-Ring	2	V 09 103 66 000	2	V 09 103 66 000
4	O-Ring	3	V 09 102 21 009	3	V 09 102 21 009
5	O-Ring	1	V 09 104 11 009	1	V 09 104 11 009
6	Fitting	1	V 66 101 53 013	1	V 66 101 53 013
7	Fitting	1	V 66 101 53 015	2	V 66 101 53 015
8	Material connection 90°	2	V 21 900 20 003	2	V 21 900 20 003
9	Plug	1	V 66 100 03 568		
10	Sealing plugs				

## 1 General

### 1.1 Model Identification

**Models:** Automatic Spray Guns PILOT WA 900-Series

<b>Types:</b>	WA 900	(Standard with internal control)	V 21 900
	WA 905	(Standard with external control)	V 21 905
	WA 920-HVLP	(low pressure with internal control)	V 21 920
	WA 925-HVLP	(low pressure with external control)	V 21 925
	WA 940-HVLP <sup>PLUS</sup>	(medium pressure with internal control)	V 20 940
	WA 945-HVLP <sup>PLUS</sup>	(medium pressure with external control)	V 20 945

**Manufacturer:** WALTHER Spritz- und Lackiersysteme GmbH  
Kärntner Str. 18-30  
D-42327 Wuppertal  
Tel.: 0202 / 787-0  
Fax: 0202 / 787-2217  
www.walther-pilot.de • Email: info@walther-pilot.de

### 1.2 Intended Use

The automatic spray guns PILOT WA 900, WA 905, WA 920, WA 925, WA 940 and WA 945 are for the processing of sprayable media, such as:

- Paints and coatings
- Greases, oils, and corrosion inhibitors
- Adhesive compounds
- Ceramic glazes
- Pickling solutions

For any materials not listed here, please contact WALTHER Spritz- and painting systems GmbH, Wuppertal.

The sprayable materials must only be applied on workpieces or objects.

The temperature of the spray material must generally not exceed 80 ° C.

The PILOT WA 900 series models are not hand-held spray guns and therefore have to be attached to a suitable gun mounting device.

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

The device complies with the ATEX requirements of the directive 94/9 EC (ATEX) for explosion group, category specified on the nameplate, and temperature class. When operating the device, the specifications of this manual must be followed.

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 authorization of the relevant supervisory authority.

**The competent authority or the operator is 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 regulations. The operator must provide corresponding safety measures for all applications in which the breakdown of the equipment might lead to danger of persons.

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

Grounding / potential equalization

You must ensure that the gun is properly grounded either separately or in connection with the with which it is being used (maximum resistance 106Ω).

### 1.3 Improper Use

This spray gun shall not be used for purposes other than set forth in the above Chapter 1.2 *Normal Use*. Any other form of use and/or application is prohibited. Improper use is for example:

- spraying of material on people and animals
- spraying of liquid nitrogen, etc.

## 2 Technical Description

In the series PILOT WA 900 is a simple modular system that permits all practical service combinations. There are two basic models, one with and one without internal control. There are two different quick-change adapter plates that are suitable for both models and can be retooled for recirculation systems.

The guns of WA 900 series can only be used in conjunction with an adapter plate. You can either use the standard or low-profile adapter plates. To integrate the guns in a recirculation system the built-in locking pin must be removed (item 37).

The PILOT WA 900-series models operate automatically via a compressed air control and are controlled via a 3/2-way solenoid valve.



### With internal control:

When the 3/2-way control valve is operated, the control air required for the cylinder chamber of the spray gun opens the atomizer air and subsequently the material supply. You can set the spray pattern shape in the PILOT WA 900 / WA-920 and WA HVLP 940-HVLPPLUS with the control screws (Items 33 and 34) on the gun.

If the air control is interrupted by the 3/2-way valve again, first the compressed air in the cylinder escapes. The spring pressure of the piston spring then pushes the material needle back into its initial position, closes the material supply and finally the atomizing air.

### With external control:

First, the atomizing air (round and wide jet) should be switched on by an external 3/2-way control valve. After that, the control air should be activated by another 3/2-way control valve. The piston and the material needle need be pushed back in order to open the material supply.

In models PILOT WA 905 / WA-925 and WA HVLP 945-HVLPPLUS the shape of the spray pattern is adjusted on the two-site air pressure regulator on the system. When the control air is interrupted by the 3/2-way control valve, the spring pressure moves the piston and the fluid needle back in its original position and closes the material feed to the material nozzle. Subsequently, the atomizing air should be turned off.

The material flow rate is regulated in all models by the material pressure and the air cap (Item 26). The material flow of the automatic spray gun series PILOT WA 900 can also be opened by hand with the tie rod (item 27) to clean, for example, a clogged material nozzle. .

The guns of the PILOT WA 900 series can be connected to pressure tanks or pump systems.

The models PILOT WA 920-HVLP and WA 925-HVLP are low pressure spray guns working with a spraying air pressure of 0.7 bar at an intake air pressure of 4.5 bar.

With the models PILOT WA 940-HVLP<sup>PLUS</sup> and WA 945-HVLP<sup>PLUS</sup> the intake air pressure ranges from 3.0 to 3.3 bar for a spraying air pressure of 1.2 to 1.4 bar.

## 3 Safety Warnings

### 3.1 Safety Warning Symbols



#### Warning

This picture and the accompanying warning note "**Warning**" indicate possible risk and dangers to yourself.



#### Caution

This picture and the accompanying note "**Caution**" indicate possible damage to equipment, workpieces, etc.



#### Notice

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

### 3.2 General Applicable Safety Precautions

- ▶ All applicable accident prevention rules and regulations as well as other recognized industrial safety and health rules and regulations must be observed at all times
- ▶ Use the spray gun only in well-ventilated rooms. Fires, naked light and smoking are strictly prohibited in the working area. WARNING - during the spraying of flammable materials (e.g. lacquers, adhesives, cleaning agents, etc), there is an increased risk to health as well as an increased risk of explosion and fire.
- ▶ You must ensure that the spray gun is properly grounded, either separately or in connection with the equipment with which it is being used (max. resistance 10<sup>6</sup>Ω).
  
- ▶ Before carrying out any maintenance or service work, always ensure that the air and material feed to the spray gun have been de-pressurized. Risk of injury!
- ▶ When spraying, do not place your hands or other body parts in front of the nozzle of 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.
- ▶ Always wear hearing protection when using the gun or when in vicinity of a gun that is in use. The noise level generated by the spray gun is approx. 86 dB(A).
  
- ▶ 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!
- ▶ 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 fault-free 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.

## 4 Mounting

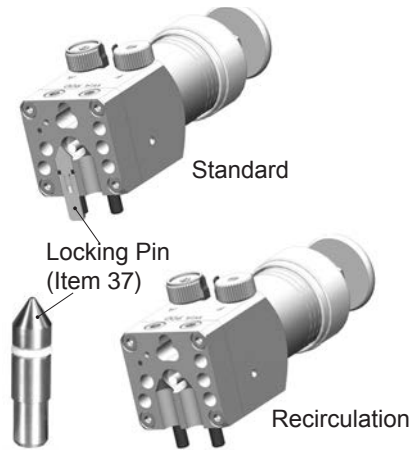
### 4.1 Standard or Recirculation

The guns of WA series 900 are completely factory assembled. They are supplied as standard with the locking pin (Item 37) installed. In this



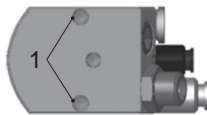
configuration, the gun can be used only with a standard, non-recirculation, system. The locking pin (item 37) must be removed if you have decided to use your gun with a recirculating system. When the pin is removed, a second material channel is opened.

Screw the spray gun on the adapter plate using the head screws (Item 38). Before you can use the spray gun with the chosen adapter plate, the following activities must be performed:



#### 4.2 Mounting the Spray Gun

Attach the spray gun at a suitable, stable mounting, as described in the following example:



To do this, use the two M 6 holes (1) with a hole spacing of 33 mm. Other attachment devices on request.

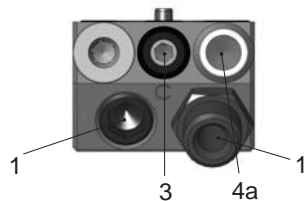
#### 4.3 Connecting the Supply Lines



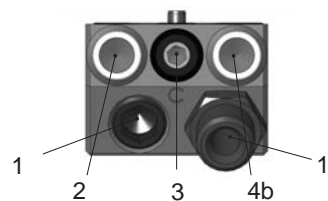
##### Warning

Make sure that the control and atomizing hoses are not reversed - risk of injury.

##### Internal Control



##### External Control



- 1 = Material connection (G1 / 4 ") marked with **M**
- 2 = Atomizing air connection wide jet (PU outer diameter 8 mm) marked with **F**
- 3 = Control air connection (PU external  $\varnothing$  6 mm) marked with **C**
- 4 a = Atomizing air connection round / wide jet (PU outer diameter 8 mm) marked with **A**
- 4 b = Atomizing air connection round jet (PU outer diameter 8 mm) marked with **A**

The gun is now fully assembled and can be put into operation.

## 5 Operational Handling

### 5.1 Safety Warnings

Please 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 you are operating the spray gun. Air-borne materials represent a health hazard.
- Make sure to wear suitable hearing protection. The gun produces sound levels of up to 86 dB (A) which may cause hearing damage.

Open fires, naked lights and smoking are prohibited in the working area. Spraying of readily flammable media such as paints and adhesive compounds is always accompanied by the risk of fire and explosion.

### 5.2 Starting / Stopping Requirements

Before you put the gun in operation, the following requirements must be met:

- control air must be available at the gun
- atomizing air must be available at the gun
- material pressure must be available at the gun



##### Caution

The material pressure should not be set higher than **8 bar**. 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.

The operation of the spray gun can be started / stopped by way of the 3/2-way control valve (see the Operating Instructions of the plant systems manufacturer).



##### Warning

It is important to remember that the spray gun must be relieved of all pressures whenever the work is terminated. Lines left under pressure can burst, with their contents likely to injure anyone present nearby.

### 5.3 Spray Pattern Test

Spray pattern tests should be performed whenever:

- the spray gun is put into operation for the first time
- the spraying material is changed
- the spray gun is taken apart and rebuilt for service or repairs

The spray pattern can be tested using a work piece sample, a sheet of metal, cardboard or paper.



##### Warning

Keep away from the front of the spray gun - imminent risk of injury.



### Warning

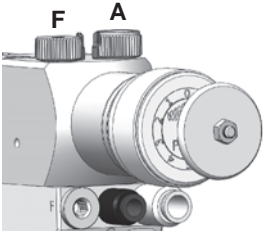
Make sure that nobody is present in the spraying zone when the gun is started - risk of injury.

1. Start the gun to produce a spray pattern sample (see 5.2 Starting / Stopping Requirements)
2. Inspect the sample and re-adjust the settings of the gun as may be required (see 5.4 Spray Pattern Adjustments).

## 5.4 Spray Pattern Adjustments

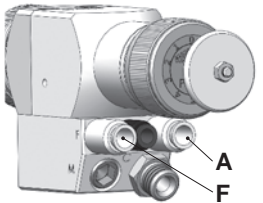
You can change the spray pattern on the PILOT WA 900-series through the following settings:

### Adjusting the spray jet pattern



#### Internal Control:

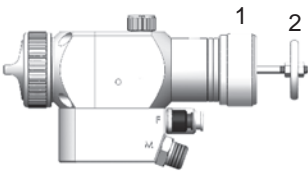
Using the two adjustment screws **F** and **A**, you can adjust the spray pattern until the optimal pattern is achieved. The adjustment screw **F** is for wide jet. The adjustment screw **A** is for round jet.



#### External Control:

The spray pattern is set via a pressure regulator in the system (see operating instructions of the equipment manufacturer). The connection **F** is for wide jet. The connection **A** is for round jet.

### Adjustment of the Material Flow Rate



- Turn the cap (1) from the default position (= notch on the piston housing).
- to the inside to decrease the material flow rate
  - to the outside to increase the material flow rate
- You can trigger material flow without atomizing air by pulling on the drawbar (2).

### Adjustment of the Material Pressure

This adjustment can only be made at the pump or the material pressure tank. Please comply with the operating instructions and safety warnings issued by the manufacturer.

### Adjustment of the Atomizing Air Pressure

The atomizing air pressure is adjusted at the air 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, you must retool the spray gun. (See 5.5 Retooling the Spray Gun).

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

### Correcting Spray Pattern Imperfections

The following table shows the settings you can alter to affect spray pattern inconsistencies.

		Desired Spray Pattern
Spray Pattern	Fault	Adjustment Needed
	Swollen center	• Spray jet should be flatter
	Swollen ends	• Spray jet should be rounder
	Coarse pearl effect	• Increase atomizing air pressure
	Unevenly thin paint layer in center	• Decrease atomizing air pressure
	Split center	• Increase nozzle diameter • Reduce atomizing air pressure • Increase material pressure
	Convex spray pattern	• Decrease material pressure • Increase atomizing air pressure

## 5.5 Retooling the Spray Gun

The right air cap / fluid nozzle / needle combination forms a coordinated unit - the nozzle insert. This unit is matched to correctly spray your specific material. Always replace the complete nozzle insert, so that the desired spray quality is maintained.



### Warning

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



### Note

To carry out the operations listed below, please use the exploded view drawing at the beginning of this manual.

## Changing the Air Cap and Material Nozzle

1. Unscrew the grooved air cap retaining ring (item 1) from the front body (item 7).
2. Pull the air cap (item 2) from the front body.
3. Unscrew the Material Nozzle (item 3) from the front body.
4. Screw on the desired material nozzle, (possibly replace the air manifold ring) and set the desired air cap on the front body.
5. Screw the air cap retaining ring on the front body.

## Changing the Material Needle

1. Unscrew the tie rod (item 27).
2. Unscrew the cap (Item 26) from the piston housing (Item 19).
3. Screw the draw bar in the fluid needle (item 21) and remove the fluid needle (item 21) from the piston housing.

Reassemble in reverse order.

## 5.6 Configuring the Adapter Plate from Standard to Recirculation

1. Loosen the two Allen screws (Item 38) and remove the gun from the adapter plate.
2. Remove the locking pin (Item 37) with O-ring (Item 36) from the gun. (Refer to 4.3 *Standard or Recirculation*)
3. Unscrew the plug (item 10) from the adapter plate.
4. Put your second material connection (V 00 101 01 003 for the aluminium standard version & V 21 900 20 003 for the low-profile stainless steel version) into the adapter plate

## 6 Cleaning

### 6.1 Safety Warnings

- Prior to any servicing and repair work: Make sure that the spray gun is in unpressurized condition. All material and air inputs must be shut off- risk of injury.
- No open fires, naked light and smoking allowed in the work area. When spraying readily flammable media such as cleaning solutions, there is an increased risk of fire and explosion.
- Observe the safety warnings issued by the manufacturer. Aggressive and corrosive media represent risks and hazards to personal health.

### 6.2 Cleaning - Complete

Regular cleaning and lubrication of the spray gun has to be performed. This is necessary in order to increase the service life and the function of the spray gun.

Clean the gun only with cleaning solutions recommended by the manufacturer of the

spraying material used at the time. It is important to make sure that the cleaning solution does not contain any of the following ingredients:

- halogenated hydrocarbons(e.g. 1,1,1-trichloroethane, methylene chloride, etc.)
- acids and acidic detergents
- regenerated solvents (so-called cleaning dilutions)
- Paint removers.

The above ingredients cause adverse chemical reactions with the electroplated components of the spray gun, resulting in corrosion damage. WALTHER Spritz- und Lackiersysteme is not responsible for any damage resulting from the use of such chemicals.

### Clean the spray gun

- prior to each change of the spraying medium (including color changes)
- at least once weekly.
- as often as may be required by the spraying medium handled and the degree of fouling (possibly up to several times a week)



### Caution

Never immerse the gun in solvent or other cleaning agents. The proper operation of the spray gun can not otherwise be guaranteed.



### Caution

Do not use any hard, pointed or sharp-edged objects when cleaning the spray gun. Any damage of the precision-made parts are likely to affect your spraying results.

1. Dismantle the spray gun in accordance with 5.5 *Retooling the Spray Gun*.
2. Use a soft brush together with a compatible cleaning solution to clean the air cap and nozzle.
3. Clean the remaining parts and the spray gun body with a suitable cloth and cleaning solution.
4. Apply a thin film of the appropriate grease to the:
  - sealing collar of the piston
  - O-Ring of the pistons
  - Material needle
  - Needle spring

The internal moving parts should be greased at least once weekly. The springs will then be constantly provided with a thin layer of grease. Use WALTHER PILOT gun grease and a brush to do so.

Subsequently, the spray gun is assembled in reverse order.

## 6.3 Cleaning - Routine

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



### Note

Clean and lubricate the spray gun frequently in accordance to Chapter 6.2 *Cleaning - Complete*. This will ensure functional reliability of the spray gun.

In order to perform routine cleaning, you must perform the following work steps:

1. The material tank must be clean and then filled with a compatible cleaning solution. Only the material pressure has to be present at the spray gun. The cleaning solution should not be sprayed.
2. Put the spray gun into operation, (see 5.2 *Starting the Spray Gun*).
3. Do not stop the spray gun until clear cleaning solution emerges from the nozzle.

The material supply of the series PILOT WA 900 can be manually released so that is it not necessary to operate the complete spraying system.



1. Pull back the drawbar of the spray gun. The material inlet is now open and both the material duct and the material nozzle will be cleaned.
2. Do not let go of the drawbar until clear cleaning solution emerges from the nozzle.

The entire spray system should now be de-pressurized until the next use.

## 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 drawing at the beginning of this manual to perform the following procedures.

### 7.1 Replacement of defective Needle Seal Packing

1. Remove all pressure from the gun.
2. Unscrew the frontbody (Part. 7) and the piston housing (Part. 19) by unscrewing the two cylinder screws (Part. 38) of the adapter plate.
3. Unscrew the tie rod (Part. 27) from the gun.
4. Unscrew the cap (Part. 26) from the piston housing.

5. Screw the draw bar into the material needle (Part. 21) and remove the material needle from the piston housing.
6. Unscrew the front body by removing the four Allen head screws (Part. 5) from the piston housing (Part. 19).
7. Unscrew the packing screw (Part. 12).
8. Remove (replace if damaged) the packing spring (Item 11) and washer (item 10) from the threaded opening.
9. Pull out the Needle Seal Packing (Item 9) with an auxiliary tool. Use a strong wire on which one end is bent, making a small hook.
10. Lubricate the new Needle Seal Packing with WALTHER PILOT gun grease and install it in the front body.

The assembly of the remaining components is carried out in reverse order.



### Note

Never re-use a used Needle Seal Packing (Part. 9) as otherwise the functional sealing reliability of the spray gun is not guaranteed.

### 7.2 Replacement of Nozzles, Needles, Springs, and Seals

Dismantle the spray gun in accordance with Chapter 5.5 *Retooling the Spray Gun*, if the following components have to be replaced.

- Material Nozzle
- Pressure spring of the piston
- Material Needle\*
- Needle spring\*
- Piston Sealing Collar\*
- O-Ring of the Piston\*



### Note

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

WALTHER Spritz- und Lackiersysteme repair kits are available for PILOT WA 900 series spray guns including all wearing parts.

**Part. Nr.: V 16 209 00 . . 3 (Standard Version)**

**Part. Nr.: V 16 209 20 . . 3 (Low pressure Version HVLP)**

**Part. Nr.: V 16 209 40 . . 3 (Medium pressure Version HVLP<sup>PLUS</sup>)**

The wear parts are also listed in the parts list (in bold).

## 8 Fehlersuche und -beseitigung

### Warning

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

Problem	Cause	Possible Remedy
Gun is dripping	Material nozzle or needle fouled	see 5.5 <i>Retooling the Spray Gun and Cleaning</i>
	Material nozzle or needle damaged	see 7.2 <i>Replacing Needle, Nozzle, Seals</i>
	Packing screw (Item 12) too tight	Loosen packing screw slightly with a screwdriver
Gun fails to open	Control air pressure too low	Increase control air pressure to at least 4.5 bar
Material leaks from leakage boring	Needle packing leaks	see 7.1 <i>Replacing Needle Seal Packing</i>
	Packing screw too loose	Tighten packing screw slightly with a screwdriver
Spray jet pulsating or unsteady	Level in material tank too low	Top-off material level (see operating instructions of plant systems manufacturer)

## 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 safety warnings issued by the manufactureres of the spraying and cleaning media. The improper disposal of any toxic waste material represents a serious threat to the environment and to the health of human and animal life.

## 10 Technical Specifications

### Nozzle sizes:

• 0,3 • 0,5 • 0,8 • 1,0 • 1,2 • 1,5 • 1,8 • 2,0  
• 2,2 • 2,5 • 3,0 • 3,5 mm ø

### Weight:

Spray gun with internal control: 500 g  
Spray gun with external control: 480 g  
Plated aluminum adapter plate: 195 g  
Stainless steel adapter plate: 310 g

### Connections

Atomizing Air PU Außen ø 8 mm  
Control Air PU Außen ø 6 mm  
Material Supply G 1/4"

### Pressure Ranges

Control Air mind. 4,5 bar  
Material Pressure: max. 8 bar  
Atomizing Air: max. 8 bar

max. Operating Temperature of Spray Gun

80 °C

Sound Level

(measured at a distance of 1m from the spray gun)

86 dB (A)

### Air Consumption:

	Air Cap	Inlet Pressure to the gun	Air consumption
PILOT WA 900	1038	4,0 bar	L/min.
PILOT WA 920 HVLP	1061	3,5 bar	L/min.
PILOT WA 940 HVLP <sup>PLUS</sup>	1060	3,4 bar	L/min.

	Air Cap	Inlet Pressure to the gun	Air consumption
PILOT WA 905	1038	4,0 bar	L/min.
PILOT WA 925 HVLP	1061	3,5 bar	L/min.
PILOT WA 945 HVLP <sup>PLUS</sup>	1060	3,4 bar	L/min.

\* At an inlet air pressure of 4.5 bar, the spraying air pressure is 0.7 bar.

**Subject to technical changes.**





**D**

## 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
- Trockner
- Zuluft-Systeme
- Atemschutzsysteme und Zubehör

**GB**

## The WALTHER PILOT Programme

- Hand-Held Spray Guns
- Automatic Spray Guns
- Low Pressure Spray Guns  
(System HVLP)
- Two-Component Spray Guns
- Material Pressure Tanks
- Nonpressurized Tanks
- Agitator Systems
- Airless Equipment and Transfer Pumps
- Material Circulation Systems
- Combined Spraying and Drying Booths
- Dry Back Overspray Extraction Systems
- Wet Back Overspray Extraction Systems
- Dryers
- Ventilation Systems
- Protective Respiratory Systems and  
Accessory Items



Die Beschichtungs-Experten

WALTHER Spritz- und Lackiersysteme GmbH  
 Kärntner Str. 18-30 • 42327 Wuppertal  
 Tel.: 0202 / 787-0 • Fax: 0202 / 787-2217  
[www.walther-pilot.de](http://www.walther-pilot.de)  
 Email: [Info@walther-pilot.de](mailto:Info@walther-pilot.de)

