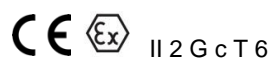
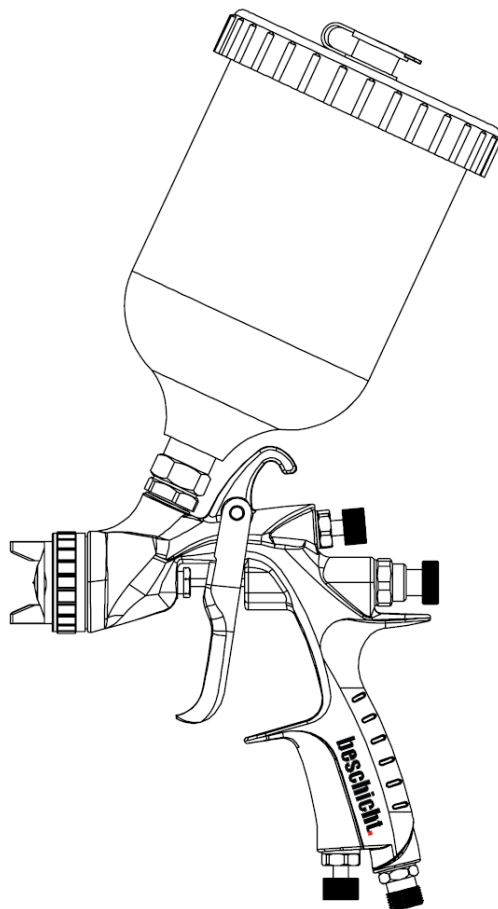


# Operating Manual M1 G

## Air Atomizing Gravity Flow Cup Gun



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## 1. About this Manual

These operating instructions contain information on the operation, maintenance, grounding, servicing and repair of the device.

Only use the device in accordance with these instructions. The operating instructions are available in German and English. In areas where German and English operating instructions are not permitted, the use is at the user's own risk and Beschichtpunkt GmbH accepts no liability whatsoever.

Keep these operating instructions available at the place of use of the device at all times. Local guidelines for occupational health and safety as well as accident prevention regulations must be observed at all times.

## 2. General Safety Instructions

The following safety precautions apply to the setup, use, grounding, maintenance, and repair of this equipment.

Additional product-specific warnings can be found at appropriate points in these operating instructions.

### 2.1. Fire and explosion hazard

Flammable vapors in the work area, such as solvent and paint vapors, can explode or ignite.

This will reduce the risk of fire and explosion:

- Ground all equipment in the work area.
- Provide adequate ventilation to prevent the buildup of flammable vapors from solvents or the material being processed
- Keep the work area free of debris, including solvents, rags and gasoline.
- If you notice sparking or feel an electric shock, immediately de-energize all equipment in the work area. Do not reuse the device until the problem has been solved.
- Always have a working fire extinguisher available in the work area.



### 2.2. Danger due to incorrect operation of the device

Incorrect use of the device can lead to damage or malfunction of the device and thus to serious injuries.

- This device is intended for professional use only.
- All applicable safety regulations must be observed.
- The device may only be used for the specified purpose.
- Changes or modifications to the device are not permitted.
- Inspect the device daily. Repair worn or damaged parts immediately or replace with original manufacturer's replacement parts.
- Never exceed the allowable working pressure or temperature of the lowest rated system component.
- Route hoses and cables used with this equipment away from traffic areas, sharp edges, moving parts, and hot surfaces.



### 2.3. Danger due to pressurized device

Fluid leaking from the gun, leaking hoses, or ruptured parts can splash in the eyes or on skin and cause serious injury.

- Check and tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.



## 2.4. Handling and protection against hazardous liquids, varnishes and paints

Before using the equipment, also familiarize yourself with the specific hazards of the material to be processed.



- During paint preparation, processing and cleaning, follow the processing instructions of the manufacturers of the paints, solvents and cleaners used.
- Take the prescribed protective measures, in particular wear protective goggles, protective clothing and gloves, and use a respirator or breathing apparatus (as recommended by the material and solvent manufacturers).
- Operate the equipment in a spray booth or on a spray wall with the ventilation (extraction) switched on.

## 2.5. Maintenance and repair

Repairs and replacement of parts may only be carried out by a beschichtpunkt GmbH service center or a specially trained person.

- Only use original beschichtpunkt GmbH spare parts and accessories.
- Before performing any work on the equipment and during work interruptions:
  - Depressurize the spray gun, pressure hoses and all equipment.
  - Secure the spray gun against unintentional operation.
  - Switch off the energy and compressed air supply.
- Observe the operating and service instructions for all work with the unit.

## 2.6. Protection and monitoring devices

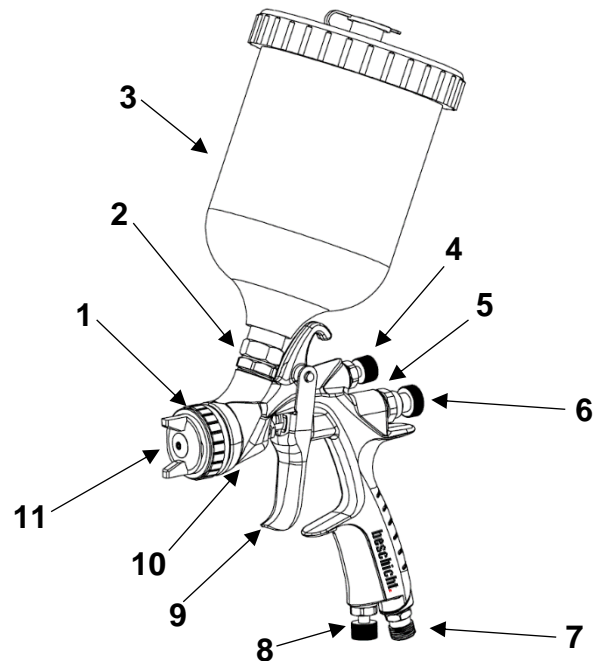
There is danger to life and possible damage to the device due to removal of protective and monitoring devices!

- The protection and monitoring devices must not be removed, modified or rendered ineffective under any circumstances.
- The function of these protection and monitoring devices must be checked regularly.
- In the event of defects in the protection and monitoring devices, the system or device must not be operated until these defects have been rectified.

## 3. Description

### 3.1. Structure of the M1 G

Nr.	Description
1	Airhead Nut
2	Connection Cup
3	Gravity Flow Cup
4	Shaped Air Regulator
5	Needle Stroke Stop
6	Needle Stroke Regulator
7	Air Inlet
8	Air regulator
9	Trigger
10	Gun Body
11	Nozzle / Air Head



### 3.2. How the spray gun works

When the trigger guard (8) is actuated, the atomizing air is first released and then the material needle is retracted.

The spray material thus reaches the material to be coated through the nozzle (11). The spray gun is closed in the reverse order.

The material flow rate depends on the diameter of the nozzle (11) and the material pressure setting on the pressure vessel or material pressure regulator.

The spray pattern shape is adapted to the workpiece to be coated with the forming air regulator (4). The material quantity is regulated by turning the needle stroke regulator (5) and with this setting can be fixed with the needle stroke regulator lock (4). The air supply is regulated with the air regulator (7).

### 3.3. Data of the M1 G

#### 3.3.1. Material of the color carrying parts

<b>Metal</b>	Stainless Steel I 1.4305
<b>Plastic</b>	PE-UHMW

#### 3.3.2. Technical Data

Description	Units	Value
Maximum air inlet pressure	bar; MPa; psi	8; 0.8; 116
Air Inlet		G ¼"
Weight	g	Ca. 585 with cup
Filling quantity flow cup	ml	Ca. 600
Maximum temperature material	°C; °F	40; 104

## 4. Scope of Supply

- Paint spray gun M1 G
- Nozzle set with 1.2mm needle
- Air head HVLP
- Flow cup
- Instruction manual
- Tool set

## 5. Operation

### 5.1. Start-up M1 G

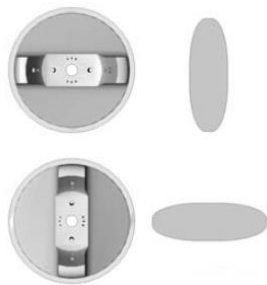
1. Place air head on nozzle and screw on air head nut, tighten by hand.
2. Connect the air hose from a source with oil-free air to the spray gun. Turn on compressed air to gun.
3. Make sure all conductive parts within the work area are grounded.
4. Set the spraying pressure while fully actuating the trigger.  
trigger fully actuated.
5. Adjust the spray pattern. See description for adjusting the spray pattern.
6. Pull the trigger and check whether the spray gun closes cleanly when it is released closes cleanly.
7. Then relieve the pressure from the spray gun again.







### 5.2. Application of material

1. Set air pressure to approx. 1 (14 psi) to 4 bar (56 psi). (Depending on requirements)
2. Slowly open the air regulator (8) on the gun.
3. Pull the trigger and apply to a test object.
4. Adjust material and air pressure according to nozzle and workpiece.
5. Adjust the ratio of mold air to atomizer air using the mold air regulator on the spray gun until the optimum spray pattern is achieved.

## 5.3. Adjustment of the spray pattern

Rotate the air cap to achieve the desired spray pattern.



Spray Pattern	Deviation	Correction
	- Spray pattern is very crowned	- Decrease material pressure - Increase atomizer air pressure
	- Spray pattern is in the middle too saturated	- Set wider spray jet shape
	- Spray pattern is too thick at the edges	- Set spray jet shape to a rounder shape
	- Spray pattern is split in the middle	- Increase nozzle diameter - Decrease atomizer air pressure - Increase material pressure
	- Spray pattern is quite coarse drip	- Increase atomizing air
	- Material application is too thin in the center of the spray pattern	- Reduce atomizing air

### Tip:

Changing the material quantity is achieved by:

- Changing the material pressure or limiting the needle stroke.
- Using a different nozzle.

### 5.3.1. Cleaning the nozzle and removing nozzle blockage

Note: As a rule, the airspray nozzle and the nozzle needle should always be replaced together. Loosen and tighten the nozzle only when the trigger is pulled.

1. Relieve the pressure on the spray gun and material pressure generator.
2. Unscrew the air head nut (1).
3. Remove the air head (11).
4. Unscrew the nozzle nut with a suitable wrench, remove the air guide ring and air spray nozzle.
5. treat the nozzle nut and Airspray nozzle e.g. with the cleaning agent **Clean**. ZCLE0001 until all material residues are dissolved/removed. In the case of stubborn soiling, leave in the cleaning agent for a longer period of time and, if necessary, use a cleaning kit (**CleaningKit**. ZSGCK001 is available as an accessory).
6. Insert the Airspray nozzle into the nozzle nut. Insert air guide ring into spray gun and tighten nozzle nut with suitable tool.
7. Place the air head (11) on the nozzle nut and tighten the air head nut by hand

## 6. Possible bug fixes

Problem	Cause	Correction
<b>Material output too low</b>	Nozzle too small	Replace with larger nozzle.
	Material pressure too low	Material pressure must be increased.
	Filter on material pressure generator clogged	Check, clean or replace the filters.
	Nozzle clogged	Clean or replace nozzle.
	Material supply set too low	Increase the material valve travel by adjusting the valve screw.
<b>Air valve is leaking</b>	Air valve defective	Replace air valve
<b>Poor spray pattern</b>	Atomizer air incorrectly adjusted	Readjust atomizer air.
	Wrong size of nozzle	Replace with another nozzle.
	Material pressure too high/too low	Adjust material pressure
	Viscosity of the material too high	Dilute material according to material manufacturer's instructions.
	Nozzle is defective	Insert new nozzle.
<b>Needle or needle packing leaking</b>	Needle packing (seal) on the needle defective	Replace needle packing (gasket).
<b>Spray gun does not close cleanly</b>	Nozzle nut not tightened	Tighten the nozzle nut.
	Nozzle or needle are defective	Replace nozzle or needle.



## 7. Repairs

### 7.1. Repair personnel

All repair work must be carried out by qualified and instructed personnel. Hazards due to inhalation of solvent vapors may occur during repair work.

A qualified person must ensure that the device is checked for safe condition after the repair work has been completed. A function check must be carried out afterwards.

### 7.2. Repair instructions

#### **Improper maintenance/repair!**

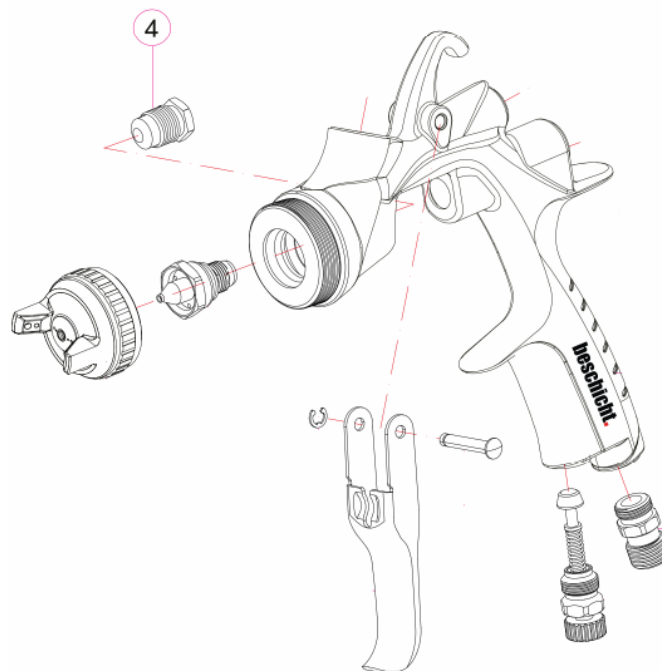
Danger to life and equipment damage.

Only use beschichtpunkt GmbH original spare parts and accessories.

Only repair and replace parts that are listed as "spare parts" and are assigned to the device.

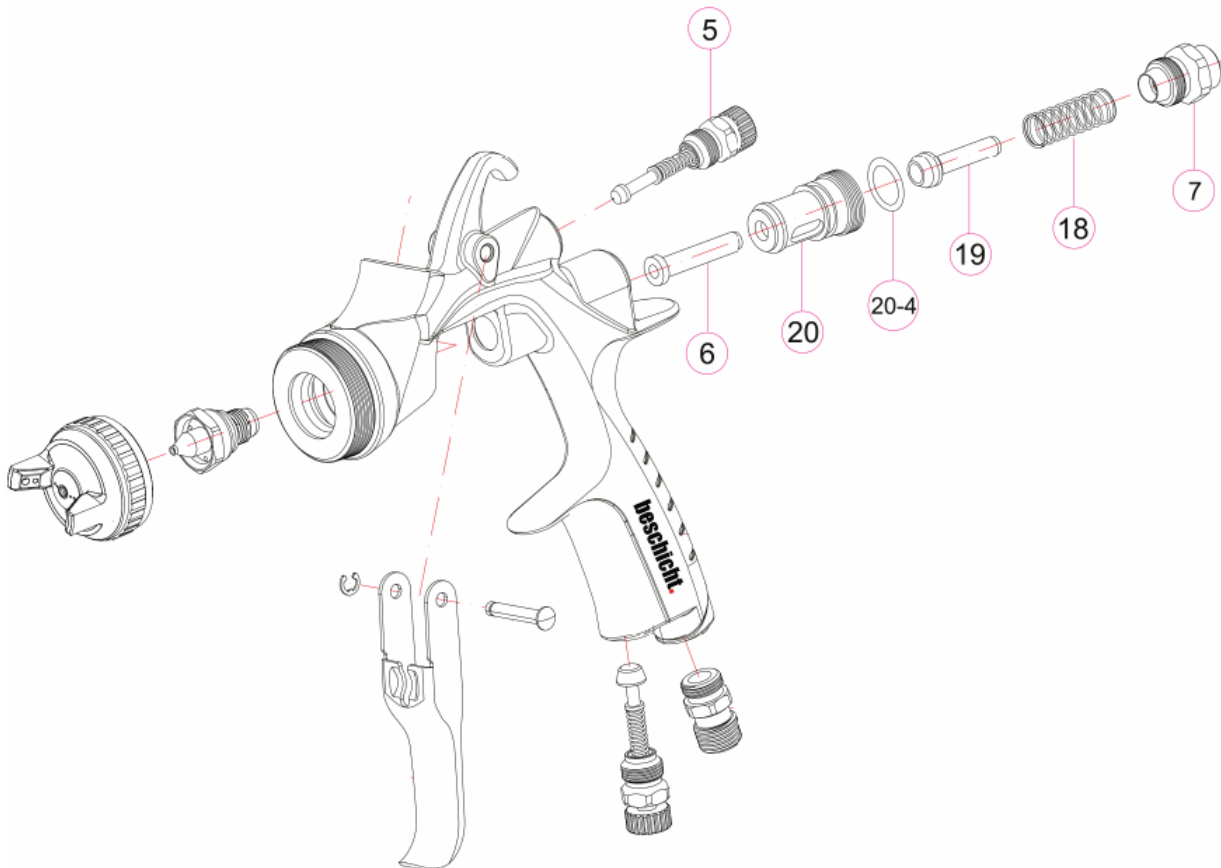
### 7.3. Change needle packing

1. Flush and clean the spray gun and then relieve the pressure.
2. Unscrew needle stroke regulator and remove needle.
3. Unscrew the needle packing (4) and apply Vaseline to the new needle packing and reinsert.
4. Insert the needle and fix and tighten it with the needle stroke regulator.



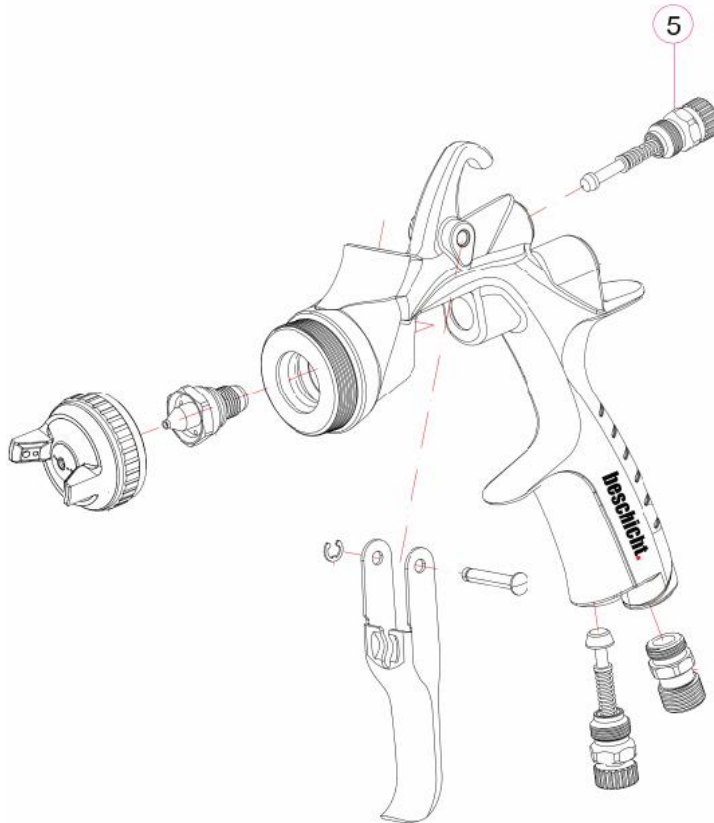
**7.4. Change air valve**

1. Flush and clean the spray gun and then relieve the pressure.
2. Unscrew the sealing cap (7) using a suitable tool.
3. Carefully remove the pressure spring (18) and unscrew the air valve (20) using a suitable tool.
4. Replace the air valve (20), apply Loctite® 542 to it and replace it together with the pressure spring (18). Reinsert pressure spring (18) and tighten to 6 Nm.
5. Apply Loctite® 542 to the sealing cap (7) and tighten it again with a suitable tool and a torque of 11 Nm.



**7.5. Changing the molded air control unit**

1. Flush and clean the spray gun and then relieve the pressure.
2. Remove the molded air control (5) using a suitable tool.
3. apply Loctite® 542 and Vaseline to new molded air control and tighten with suitable tool.



## 7.6. Change nozzle or needle

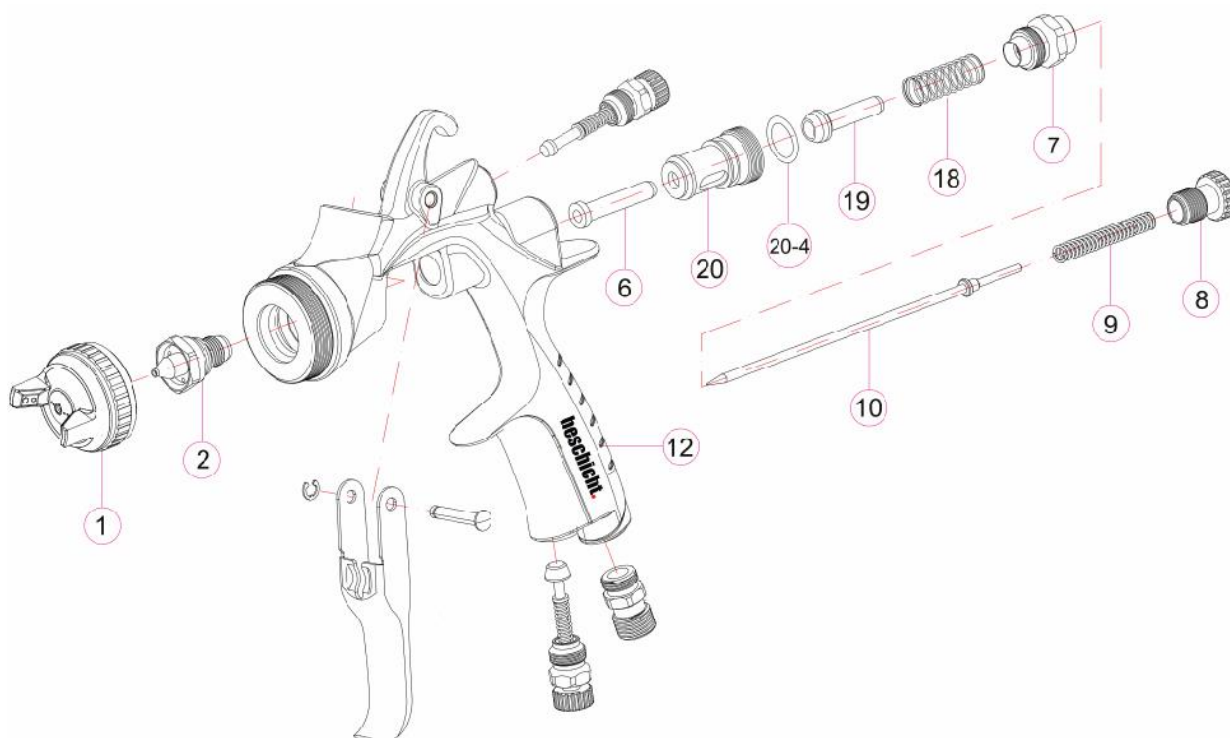
**Note:** Pull trigger to loosen and tighten nozzle.

### Removal of the nozzle or needle:

1. rinse, clean and depressurize the spray gun.
2. Unscrew the needle stroke regulator (8) by hand.
3. Pull out needle (10) to the rear (if necessary, loosen needle packing slightly).
4. Remove air head nut and air head (1).
5. Unscrew nozzle (2) with suitable tool.
6. treat components with cleaning agent until all material residues are removed.

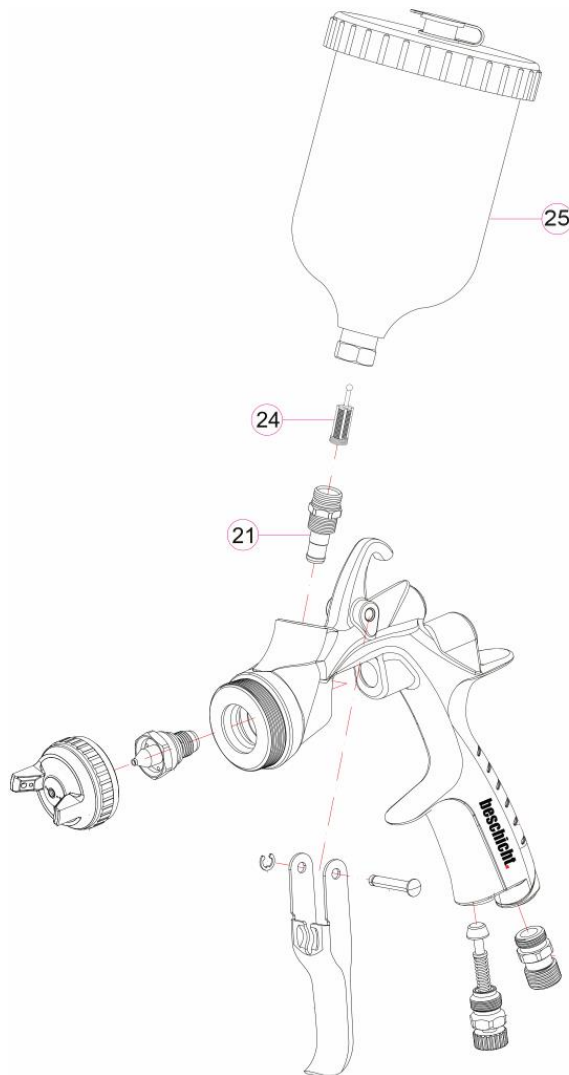
### Installation of the nozzle or needle:

1. Insert nozzle (2) into spray gun and tighten to 11 Nm using appropriate tool.
2. Insert air head nut and air head (1) and tighten by hand.
3. Apply Vaseline to the needle (10). Loosen needle packing and insert needle (10) carefully.
4. Place needle spring (9) on needle and screw on needle stroke regulator (8) by hand and tighten again.



**7.7. Change gravity cup and filter**

1. Flush and clean the spray gun and then relieve the pressure.
2. Remove the gravity cup (25)
2. Check if the filter (24) is clean, if not clean properly.
3. If you want to switch from the hard-plastic cup to our M1 cup system, you need to change the adapter (21) of the cup to the M1 G Adapter 3M Cup - part. No. ZM13MC01.



## 8. Function Control

The spray gun must be thoroughly checked for safe condition after each repair or maintenance before it is put back into operation.

The necessary scope of inspection and testing depends on the maintenance performed and must be documented by the person responsible for the repair.

<b>Assembly inspection</b>	
<b>Work</b>	<b>Resource</b>
<p><b>Leak test</b>            Connect the air connection with 1 bar (14.5 psi) air pressure. Now place the spray gun completely in a water bath and check all sealing points for leaks at a pressure of 4 bar (58 psi).            At this value, a slight leakage can be tolerated.</p>	Air connection & water bath
<b>Injection and final test</b>	
<p><b>Functional test of the trigger lever</b>            It must be possible to pull the trigger all the way through to the stop.            In the initial position, it has some play.</p>	Manual test
<p><b>Checking the switching sequence (air and material)</b>            Tighten nozzle and air head nut.            Slowly pull off the trigger and check the switching sequence.            Switch on: 1. forming air on; 2. material on            Switch off: 1. material off 2. forming air off</p>	Visual inspection
<p><b>Carry out cleaning of the spray gun</b>            Close the air connection, pull the trigger and rinse the spray gun. Then remove the air hose.            As soon as no more material escapes, remove the flow cup and clean the spray gun with the blow gun.</p>	Cleaning

## 9. Spare parts and accessories

Pos	Name	Art.No.
1	Z A1/M1 Aircap (conventional)	ZA1M1001
2	Z A1/M1 Aircap (HVLP)	ZA1M1002
3	Z A1/M1 Aircap (HVLP plus)	ZA1M1003
4	Z M1 Needle + Nozzle Set 0.8	ZM108001
5	Z M1 Needle + Nozzle Set 1.0	ZM110001
6	Z M1 Needle + Nozzle Set 1.2	ZM112001
7	Z M1 Needle + Nozzle Set 1.5	ZM115001
8	Z M1 Needle + Nozzle Set 1.8	ZM118001
9	Z M1 Needle + Nozzle Set 2.0	ZM120001
10	Z M1 gravity cup	ZM1GCP01
11	Z M1 service set gun	ZM1SER01
12	Z M1 G Adapter 3M Cup	ZM13MC01
13	Z M1 pressure regulator gun	ZM1PRA01
14	Z M1 Cup System 180 ml 120mic	ZM1GC180
15	Z M1 Cup System 400 ml 120mic	ZM1GC400
16	Z M1 Cup System 650 ml 120mic	ZM1GC650
17	Z M1 Cup System 850 ml 120mic	ZM1GC850
18	Z M1 Cup System 180 ml 190mic	ZM1GC182
19	Z M1 Cup System 400 ml 190mic	ZM1GC402
20	Z M1 Cup System 650 ml 190mic	ZM1GC652
21	Z M1 Cup System 850 ml 190mic	ZM1GC852

You can find the parts listed above and also other items in our online store under



## 10. Product Liability

If third-party accessories and spare parts are used, liability may be waived in whole or in part.

With original accessories and spare parts, you have the guarantee that all safety regulations are fulfilled. For any extended warranty claims, please refer to our general terms and conditions.

We do not accept any warranty for damage caused or contributed to by the following reasons:

- unsuitable or improper use
- faulty assembly or commissioning by the purchaser or by third parties
- natural wear and tear
- incorrect handling or maintenance
- unsuitable coating materials
- substitute materials and chemical, electrochemical or electrical influences, provided that the damage is not attributable to any fault on our part
- wear caused by the use of abrasive coating materials such as dispersions, glazes, liquid emery, zinc dust paints

Components not manufactured by beschichtpunkt GmbH are subject to the original manufacturer's warranty.

The replacement of a part does not extend the warranty period of the device.

The device must be inspected immediately upon receipt. To avoid loss of warranty, obvious defects must be reported to the supplier or to us in writing within 14 days after receipt of the device.

We reserve the right to have the warranty fulfilled by a contracting company.

The performance of this warranty is dependent on proof by invoice or delivery bill. If the examination shows that there is no claim for warranty, the repair is at the expense of the buyer.



It is clarified that this warranty claim does not represent a limitation of the legal claims or the claims contractually agreed by our general terms and conditions.

If you use our products in a country in which an operating manual in the national language is required and this is not yet available from beschichtpunkt GmbH, please contact us before use.

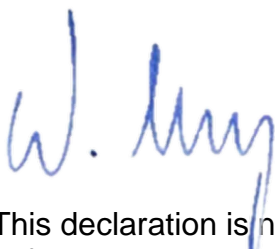


## 11. EG/EU - Declaration of Conformity

We, the device manufacturer, declare under our sole responsibility that the product in the description below complies with the relevant basic safety and health requirements. In the event of a modification to the device not agreed with us or in the event of improper use, this declaration loses its validity.

<b>Manufacturer</b>	<b>beschicht.</b> beschichtpunkt GmbH Graf-von-Soden-Straße 88090 Immenstaad am Bodensee
<b>Part Number</b>	M1G08001
<b>Applied Standards and Guidelines</b>	
EG-Maschinenrichtlinien 2006/42/EG 2014/34/EU (ATEX Richtlinie) DIN EN ISO 12100 DIN EN 1953	
<b>Specification within the meaning of Directive 2014/34/EU</b>	
  II 2 G c T 6	
<b>Authorized with the compilation of technical documentation:</b> Wolfgang Merz beschichtpunkt GmbH, Graf-von-Soden-Straße, 88090 Immenstaad am Bodensee	
<b>Special notes :</b> The product is intended for incorporation into another device. Commissioning is prohibited until the conformity of the final product with Directive 2006/42/EC has been established.	

Immenstaad, May 1st 2021 Wolfgang Merz  
(Managing Director)



This declaration is not a guarantee of properties in the sense of product liability. The safety instructions in the product documentation must be observed.

**beschicht.**

**beschichtpunkt GmbH**  
Graf-von-Soden-Straße  
88090 Immenstaad am Bodensee