

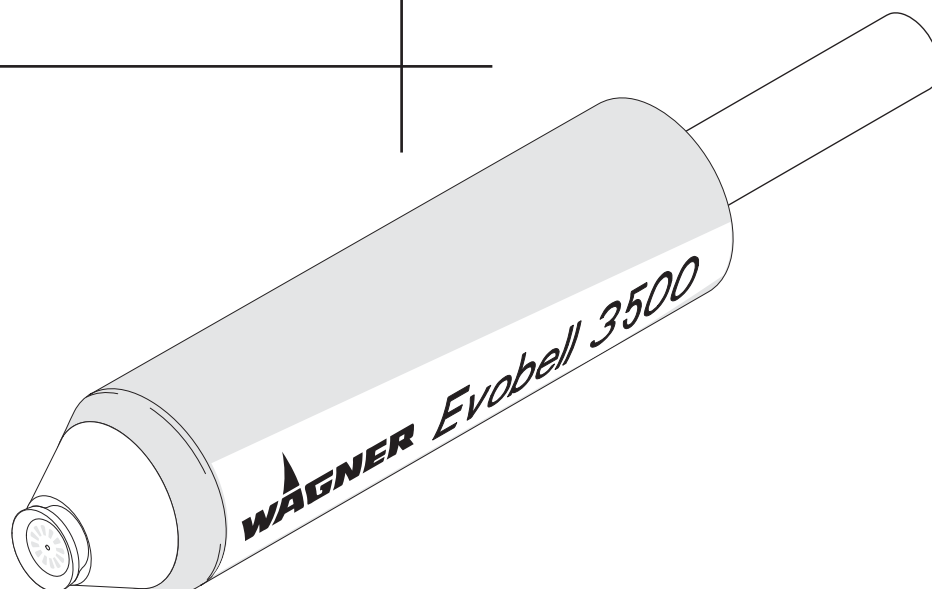


Translation of the original
Operating manual

Evobell 3500

Edition 05/2010

High rotation atomizer



B_01132



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1 ABOUT THESE INSTRUCTIONS

This operating manual contains information on the operation, repair and maintenance of the unit.

→ Always observe these instructions when operating the unit.

This equipment can be dangerous if it is not operated in accordance with this manual.

Compliance with these instructions constitutes an integral component of the warranty agreement.

1.1 LANGUAGES



This operating manual is available in the following languages:

Language:	Part No.	Language:	Part No.
German	387840	English	387841
French	387842	Dutch	387843
Italian	387844	Spanish	387845
Danish	387847	Swedish	387846
Czech	387849	--	



1.2 WARNINGS, NOTES AND SYMBOLS IN THESE INSTRUCTIONS

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



Danger - imminent danger. Non-observance will result in death, serious injury and serious material damage.

 SIHI_0100_GB	 DANGER
	<p>This line warns of the hazard! Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.</p> <p>→ The measures for preventing the hazard and its consequences.</p>

Warning - possible danger. Non-observance can result in death, serious injury and serious material damage.

 SIHI_0103_GB	 WARNING
	<p>This line warns of the hazard! Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.</p> <p>→ The measures for preventing the hazard and its consequences.</p>

Caution - a possibly hazardous situation. Non-observance can result in minor injury.

 SIHI_0103_GB	 WARNING
	<p>This line warns of the hazard! Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.</p> <p>→ The measures for preventing the hazard and its consequences.</p>

Caution - a possibly hazardous situation. Non-observance can cause material damage.

SIHI_0102_GB	CAUTION
<p>This line warns of the hazard! Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.</p> <p>→ The measures for preventing the hazard and its consequences.</p>	

Note - provide information on particular characteristics and how to proceed.

2 GENERAL SAFETY INSTRUCTIONS

2.1 SAFETY INSTRUCTIONS FOR THE OPERATOR

- Keep these operating instructions to hand near the unit at all times.
- Always follow local regulations concerning occupational safety and accident prevention.



2.1.1 ELECTRICAL EQUIPMENT

Electrical plant and unit

- To be provided in accordance with the local safety requirements with regard to the operating mode and ambient influences.
- May only be maintained by skilled electricians or under their supervision.
- Must be operated in accordance with the safety regulations and electrotechnical regulations.
- Must be repaired immediately in the event of problems.
- Must be put out of operation if they pose a hazard.
- Must be de-energized before work is commenced on active parts. Inform staff about planned work, observe electrical safety regulations.

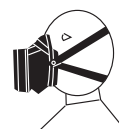


2.1.2 PERSONNEL QUALIFICATIONS

- Ensure that the unit is operated and repaired only by trained persons.

2.1.3 A SAFE WORK ENVIRONMENT

- Ensure that the floor of the working area is anti-static in accordance with EN 50053 Part 1, §7-2, measurement in accordance with DIN 51953.
- Ensure that all persons within the working area wear anti-static shoes, e.g. shoes with leather soles. The measured insulation resistance must not exceed 100 MΩ.
- The insulation resistance of protective clothing, including gloves, must not exceed 100 MΩ.
- Customer to provide paint mist extraction units conforming to local regulations.
- Ensure that the following components of a safe working environment are available:
 - Material/air hoses adapted to the working pressure
 - Personal safety equipment (breathing and skin protection)
- Ensure that there are no ignition sources such as naked flame, glowing wires or hot surfaces in the vicinity.
- Do not smoke.



2.2 SAFETY INSTRUCTIONS FOR PERSONNEL

- Always follow the information in these instructions, particularly the general safety instructions and the warning instructions.
- Always follow local regulations concerning occupational safety and accident prevention.

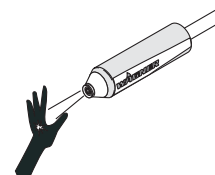


2.2.1 SAFE HANDLING OF WAGNER SPRAY UNITS

The spray jet is under pressure and can cause dangerous injuries.

Avoid injection of paint or cleaning agents:

- Never point the high rotation atomizer at people.
- Never reach into the spray jet.
- Before all work on the unit and in the event of work interruptions:
 - Secure the high rotation atomizer against actuation.
 - Relieve the pressure from the high rotation atomizer and unit.



In the event of skin injuries caused by paint or cleaning agents:

- Note down the paint or cleaning agent that you have been using.
- Consult a doctor immediately.

2.2.2 MATERIAL HOSES

- Ensure that the hose material is chemically resistant to the sprayed materials.
- Ensure that the material hose is suitable for the pressure generated in the unit.
- Ensure that the material hose is not conductive.
- Ensure that the material hose has a sufficiently high disruptive strength or that is additionally isolated to earth.



2.2.3 CLEANING

- De-energize the unit electrically.
- Disconnect the pneumatic supply line.
- Relieve the pressure from the unit.
- Non-flammable cleaning agents should preferably be used.
- Flammable cleaning liquids may only be used if, after switching off the high voltage supply, all high voltage conducting parts are discharged to a discharge energy of less than 0.24 mJ before they can be accessed.
- Ensure that the flash point of the cleaning agent is at least 5 K above the ambient temperature.
- To clean, use only solvent-free cloths and brushes. Never use hard objects or spray on cleaning agents a gun.

An explosive gas/air mixture forms in closed containers.

- When cleaning units with solvents, never spray into a closed container.
- Earth the container. Only use electrically conductive containers.



2.2.4 HANDLING HAZARDOUS LIQUIDS, VARNISHES AND PAINTS

- When preparing or working with paint and when cleaning the unit, follow the working instructions of the manufacturer of the paints, solvents and cleaning agents being used.
- Take the specified protective measures, in particular wear safety goggles, protective clothing and gloves, as well as hand protection cream if necessary.
- Use a mask or breathing apparatus if necessary.
- For sufficient health and environmental safety: Operate the unit in a spray booth or on a spraying wall with the ventilation (extraction) switched on.
- Wear suitable protective clothing when working with hot materials.



2.2.5 TOUCHING HOT SURFACES

- Touch hot surfaces only if you are wearing protective gloves.
- When operating the unit with a coating material with a temperature of $>43^{\circ}\text{C}$; 109.4°F :
 - Identify the unit with a warning label that says „Warning - hot surface“.



Order No.

9998910 Information label

9998911 Safety label

2.3 CORRECT USE

WAGNER accepts no liability for any damage arising from incorrect use.

- Use the unit only to work with the materials recommended by WAGNER.
- Operate the unit only as an entire unit.
- Do not deactivate safety equipment.
- Use only WAGNER original spare parts and accessories.



2.4 USE IN AN EXPLOSION HAZARD AREA

2.4.1 CORRECT USE

The unit is suitable for working liquid materials in accordance with the classification into explosion classes.

2.4.2 EXPLOSION PROTECTION IDENTIFICATION

As defined in the Directive 94/9/EC (ATEX 95), the unit is suitable for use in areas where there is an explosion hazard.

CE  II 3G T6 X

CE: Communautés Européennes

Ex: Symbol for explosion protection

II: Unit class II

3: Category 3 (Zone 2)

G: Ex-atmosphere gas

T6: Temperature class: maximum surface temperature < 85 °C; 185 °F

X: Note on special operating conditions in accordance with operating manual



2.4.3 IDENTIFICATION „X“

See chapter 4.1.1

2.4.3.1 MAXIMUM SURFACE TEMPERATURE

The high rotation atomizer's maximum surface temperature depends on the temperature of the coating material.

The high rotation atomizer is suitable for coating materials with a max. temperature of +60 °C; +140 °F.

Ambient temperature



Permissible ambient temperature: +10 °C to +50 °C; +50 °F to +122 °F.

2.4.3.2 ADVICE ABOUT SAFETY



The Evobell 3500 is a component of stationary equipment for electrostatic coating with flammable liquid coating materials, in accordance with EN 50176. The spray system meets the requirements of category 2G type B-L.

However, non-flammable liquid coating materials may also be processed with the Evobell 3500. In this case, the requirements of EN 50348 (Stationary equipment for electrostatic coating with non-flammable liquid coating materials) must be complied with. Depending on design, the spray system is categorized as type A-NL (discharge energy $W < 350$ mJ) or type B-NL ($W > 350$ mJ). This categorization must be carried out before commissioning the system, and marked accordingly on the system.

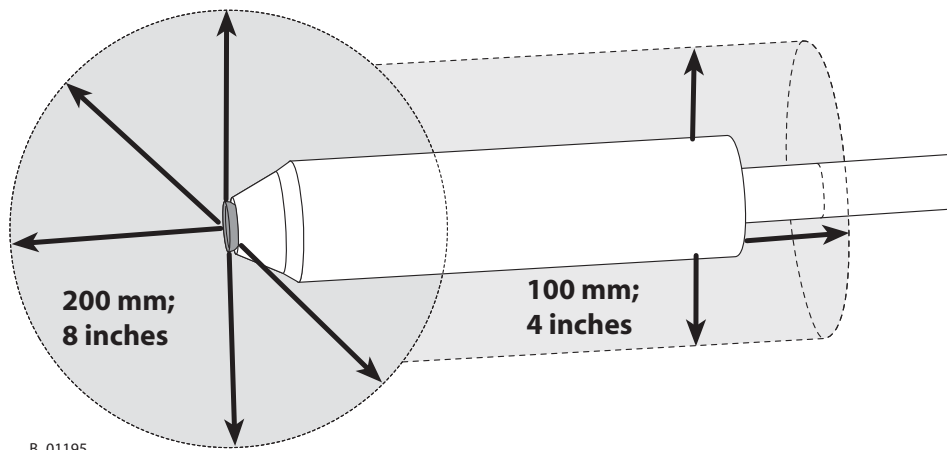
2.4.3.3 SAFETY INSTRUCTIONS

	 DANGER
	<p>Exploding gas air mixture through a spark over! Danger to life from flying parts and burns</p> <ul style="list-style-type: none"> → Earth all unit components. → Earth the workpieces being painted. → Observe the minimum distance between the atomizer bell, the earthed unit components and the workpieces to be coated. The minimum distance amounts to 200 mm; 8 inches.

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	 DANGER
	<p>Discharge of electrostatically charged components in atmospheres containing solvents! Explosion hazard from electrostatic sparks or flames</p> <ul style="list-style-type: none"> → Earth all unit components. → Earth the work pieces being painted. → Maintain the minimum distance between the cylindrical cover of the atomizer and the earthed components. The minimum distance amounts to 100 mm; 4 inches.

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Danger zone:

The distance between the workpieces and the parts of the spray system under high voltage must be large enough to prevent a sparkover during normal operation. A minimum distance of 200 mm; 8 inches is recommended in the area of the atomizer bell and a minimum distance of 100 mm; 4 inches in the area of the cylindrical cover. If required by the application or if demanded by the design, these distances can also be smaller. In this case it is necessary to check that sparkovers do not occur.

Safe handling of WAGNER spray units

Mechanical sparks can form if the unit comes into contact with metal.

In an explosive atmosphere:

- Do not knock or push the unit against steel or rusty iron.
- Use only tools that are made of a permitted material.

Ignition temperature of the coating material

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

Medium supporting atomizing

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

Surface spraying, electrostatic

- Do not spray unit parts with electrostatic (e.g. electrostatic spray gun).

**Cleaning**

If there are deposits on the surfaces, the unit may form electrostatic charges. Flames or sparks can form if there is a discharge.

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

**2.5 SETTING UP STATIONARY ELECTROSTATIC SPRAYING EQUIPMENT**

The high-rotation atomizer is a component of a stationary spray system. EN 50176 must be observed when stationary spray systems are installed. One of the requirements is that activation of the high voltage is only possible by using a key. De-activation of the high voltage must also be possible without a key.

3 GUARANTEE AND CONFORMITY DECLARATIONS

3.1 IMPORTANT NOTES ON PRODUCT LIABILITY

As a result of an EC regulation, effective as from January 1, 1990, the manufacturer shall only be liable for his product if all parts come from him or are approved by him, and if the devices are properly fitted, operated and maintained.

If other makes of accessory and spare parts are used, the manufacturer's liability could be fully or partially null and void.

The usage of original WAGNER accessories and spare parts guarantees that all safety regulations are observed.

3.2 GUARANTEE

This equipment is covered by the following manufacturing warranty

We will at our discretion repair or replace free of charge all parts which within 24 months in single-shift, 12 months in 2-shift or 6 months in 3-shift operation from date of receipt by the Purchaser are found to be wholly or substantially unusable due to causes prior to the sale, in particular faulty design, defective materials or poor workmanship.

The terms of the warranty are met at our discretion by the repair or replacement of the unit or parts thereof. The resulting costs, in particular shipping charges, road tolls, labour and material costs will be borne by us except where these costs are increased due to the subsequent shipment of the unit to a location other than the address of the purchaser.

This warranty does not cover damage caused by:

Unsuitable or improper use, faulty installation or commissioning by the purchaser or a third party, normal wear, negligent handling, defective maintenance, unsuitable coating products, substitute materials and the action of chemical, electro chemical or electrical agents, except when the damage is attributable to us.

Abrasive coating products such as red lead, emulsions, glazes, liquid abrasives, zinc dust paints and similar reduce the service life of valves, packings, spray guns, tips, cylinders, pistons etc. Any wear resulting from the aforementioned causes is not covered by this warranty.

Components not manufactured by Wagner are subject to the warranty terms of the original maker.

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

The unit should be inspected immediately upon receipt.

To avoid loss warranty, any apparent defect should be notified to us or the dealer in writing within 14 days from date of sale of the unit.

We reserve the right to assign warranty performances to a contractual partner.

Warranty claims are subject to proof of purchase by submitting an invoice or delivery note. If an inspection finds damage not covered by the present warranty, the repair will be carried out at the expense of the purchaser.

Note that this warranty does not in any way restrict legally entitled claims or those contractually agreed to in our general terms and conditions.

J. Wagner AG

3.3 CE-DECLARATION OF CONFORMITY



Herewith we declare that the supplied version of

- High rotation atomizer Evobell 3000 387001
- High rotation atomizer Evobell 3500 387051

Complies with the following guidelines:

- 94/9/EG
- 2006/42/EG

Applied standards, in particular:

- | | |
|-------------------------------|-----------------------------|
| - DIN EN 50176: 2010-04 | DIN EN ISO 12100-1: 2004-04 |
| - DIN EN ISO 12100-2: 2004-04 | DIN EN ISO 13732-1: 2006-12 |
| - DIN EN 1953: 1998-12 | DIN EN 14462: 2010-02 |
| - DIN EN ISO 14121-1: 2007-12 | DIN EN 1127-1: 2008-02 |
| - DIN EN 13463-1: 2009-07 | DIN EN 13463-5: 2004-03 |
| - DIN EN 50348: 2010-05 | |

Applied national technical standards and specifications, in particular:

BGR 500 Part 2, chap. 2.29, chap. 2.36
TRBS 2153

Marking:



CE Certificate of Conformity

The certificate is enclosed with this product. The certificate of conformity can be reordered from your WAGNER representative, quoting the product and serial number.

Part number:

Evobell 3500 387890

3.4 NATIONAL TECHNICAL STANDARDS AND SPECIFICATIONS

- | | | |
|----|-----------|---|
| a) | BGV A2 | Electrical plant and units |
| b) | BGR 500 | Part 2, chap. 2.29 Processing with coating materials |
| | BGR 500 | Part 2, chap. 2.36 Working with liquid ejection devices |
| c) | TRBS 2153 | Avoidance of ignition dangers due to electrostatic charges |
| d) | BGR 180 | Setting up for cleaning with solvents for liquid ejection devices |
| e) | ZH 1/406 | Guidelines for liquid ejection devices |
| f) | BGI 740 | Painting rooms and equipment |
| g) | BGI 764 | Electrostatic coating |

Note: All titles can be ordered from Heymanns Publishing House in Cologne or of the Internet down load.

4 DESCRIPTION

4.1 FIELDS OF APPLICATION, USING IN ACCORDANCE WITH THE INSTRUCTIONS

EOBELL 3500 is an air-bearing high-rotation atomizer. The device is suitable for atomizing liquid materials, in particular coating materials, under the influence of electrostatic.

4.1.1 PROCESSABLE MATERIALS

This high-speed rotation atomizer can be used to process both flammable liquid coating materials (solvent-based paints) and non-flammable liquid coating materials (water-based paints).

When using flammable liquid coating materials

It is imperative that the high-rotation atomizer be equipped with the resistance block. In this case the system is classified as Type B-L ($W < 350$ mJ) in accordance with EN 50176. A danger thus exists through explosive energy, but no danger through electric shock.

Coating paints, primers, corrosion protection, structure paints, etc. with a specific resistance > 50 k Ω (to WAGNER/Ransburg scale) are suitable for processing. The electrostatic effect has no effect at strongly conductive materials and at such materials with an excessive electrical resistance, i.e. no „paint wrap-around“ is present on the spray object. The suitability of the sprayed material with regard to the charging ability can be read from the actual values for the high voltage (kV) and for the spray current (μ A).

e.g.

- High kV value, low μ A value (no wrap-around) = Paint with excessive electrical resistance.
- Low kV-value, high μ A-value (no wrap-around) = Excessive conductivity of the paint.

When using non-flammable liquid coating materials

If water paints are used, the entire system (high-rotation atomizer with paint supply) is brought to high-voltage potential. The system corresponds to Type A-NL ($W < 350$ mJ) or Type B-NL ($W > 350$ mJ), depending on the structure in accordance with EN 50348. If the system is classified to Type B-NL, a danger exists through electric shock. The complete system must be safely earthed before being accessed by people.

In the event of application problems, contact your WAGNER branch or the paint manufacturer.

4.1.2 CATEGORIZATION OF WORKING MATERIALS

A large portion of stationary electrostatic paint spray systems are currently being converted to water-based paints. At the same time the fire and explosion protection of these systems can be eased considerably, if the water-based paints used can demonstrably be considered non-flammable.

Water-dilutable paints such as are in principle divided into 3 groups:

Green	Non-flammable (non-combustible) paints
Yellow	Paints with low flammability
Red	Flammable paints

Non-flammable:

Paints in this group have the following composition:

$$\text{Gew. \% H}_2\text{O} > 1.70 \times \text{Gew. \% LM} + 0.96 \times \text{Gew. \% ORG}$$

Where:

Gew. %	Weight percent
H ₂ O	Water
LM	Liquid organic phase (solvent mainly consisting of higher ethylene glycol esters)
ORG	Solid organic phase (solids mainly consisting of binding agents and pigments)

Such paints behave like water in respect of flammability in liquid form (liquid phase) and in sprayed form. Cleaners and thinners must also be non-flammable. A possible cleaner and thinner is, e.g. water with less than 35 weight percent 1:1 butylene glycol/N-propanol.

Paints in this group are categorized as non-flammable liquid coating materials.

When using non-flammable spray materials, the requirements of EN 50348 (mainly protection against contact) must be complied with.

Low flammability:

Paints in this group have the following composition:

$$\text{Gew. \% H}_2\text{O} > 1.50 \times \text{Gew. \% LM} + 0.49 \times \text{Gew. \% ORG}$$

Spray clouds of these paints cannot be ignited by sparks with an energy < 4 J. Explosion protection in the spray area is not usually necessary if ignition sources with an energy of more than 2 J do not occur.

Paints in this group are categorized as difficult to ignite.

When using spray materials that are difficult to ignite, the requirements of EN 50176 must be complied with.

Flammable:

Paints that do not meet the criteria for non-flammable or difficult to ignite.

Paints in this group are categorized as flammable liquid coating materials.

When using flammable spray materials, the requirements of EN 50176 must be complied with.

Please contact your local WAGNER dealer and the paint manufacturer if you encounter application problems.



4.2 DELIVERY SCOPE

The high-rotation atomizer consists of the premounted basic device as well as the accessories required explicitly to this purpose.

Accessories:

- Bells in diverse diameters and materials with corresponding air conductions
- Distributor variants
- Material tubes (diameter of bore)
- Valve blocks
- Resistance block (if solvent paints are used)
- Optical-fiber cables and speed sensor

4.2.1 EVOBELL 3500 MODEL IDENTIFICATION

In order to order the high-rotating atomizer please use the model identification 387051-A11D1FGHI in connection with the tables listed below.

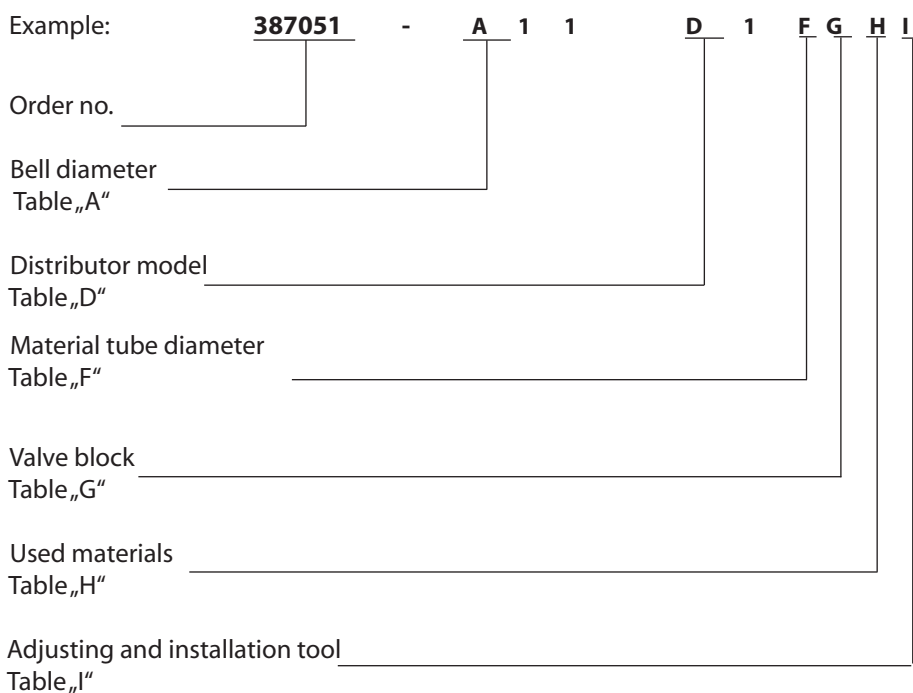


Table "A" - Bell diameter	
Number	Bell diameter mm; inch
1	36 mm; 1.42 inch
2	50 mm; 1.97 inch
3	70 mm; 2.76 inch
4	T 70 mm; 2.76 inch

Table "D" - Distributor model	
Number	Description
1	32 x d1.5
2	20 x d2.3
3	T

Table "F" - Material tube diameter	
Number	Description
1	Ø 0.8 mm; 0.031 inch
2	Ø 1.1 mm; 0.043 inch
3	Ø 1.6 mm; 0.063 inch
4	Ø 2.2 mm; 0.087 inch
5	T Ø 1.6 mm; 0.063 inch
6	T Ø 2.0 mm; 0.079 inch

Table "G" - Valve block	
Number	Description
1	1x Material, 1x Dump, 1 Flush
2	2x Material, 2x Dump, 2 Flush

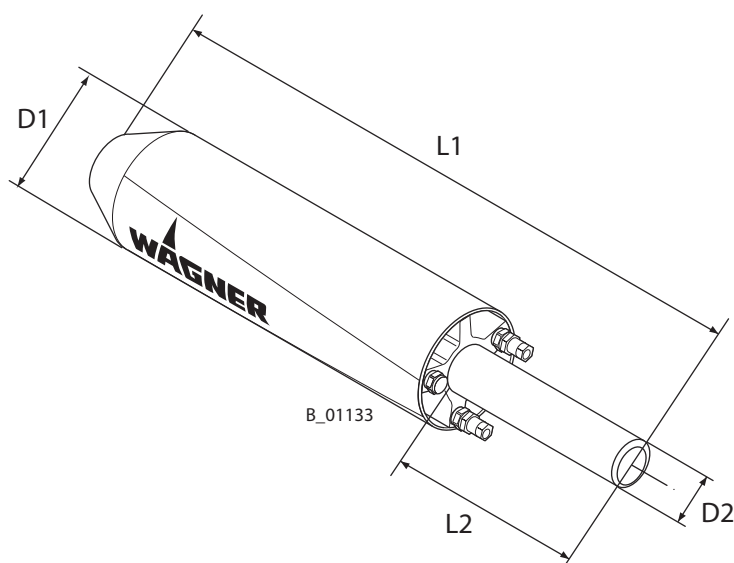
Table "H" - used material	
Number	Description
1	Solvent paints
2	Water paints

Table "I" - Adjusting and installation tool	
Number	Description
1	no
2	yes

4.3 SPECIFICATIONS**4.3.1 MATERIALS OF THE PARTS TRANSPORTING PAINT**

→ Consistal®

→ 1.4305

4.3.2 TECHNICAL DATA

Description	Evobell 3500	
Maximum voltage	100 kV	
Speed monitoring	Optical-fiber with speed sensor 4 pulses per rotation	
El. material resistance*	> 50 kΩ	
Shaft bearing	Air bearing	
Maximum speed	70.000 1/min (40.000 Bell d70)	70.000 rpm (40.000 Bell d70)
Air quality - bearing air	Particle filter < 0.5 μm Oil separator < 0.01 mg/m ³ by 20 °C Dew point 7.5 °C	Particle filter < 0.5 micron Oil separator < 0.1 mgr/cu yd by 68 °F Dew point 46 °F
Air quality Drive air / Brake air / Horn air	Particle filter < 5 μm Oil separator < 0.6 mg/m ³ by 20 °C Dew point 16 °C	Particle filter < 5 micron Oil separator < 7.1 mgr/cu yd by 68 °F Dew point 61 °F
Bearing air pression	500 ± 50 kPa (5 ± 0.5 bar)	72 ± 7 psi
Bearing air consumption	52 nl/min	1.82 scfm
Drive air pression	0 - 550 kPa (0 - 5.5 bar)	0 - 80 psi
Drive air consumption maxi.	470 nl/min	16.5 scfm
Brake air pression	0 - 550 kPa (0 - 5.5 bar)	0 - 80 psi
Horn air pression	20 - 500 kPa (0.2 - 5 bar)	3 - 72 psi
Horn air consumption maxi.	800 nl/min	28 scfm

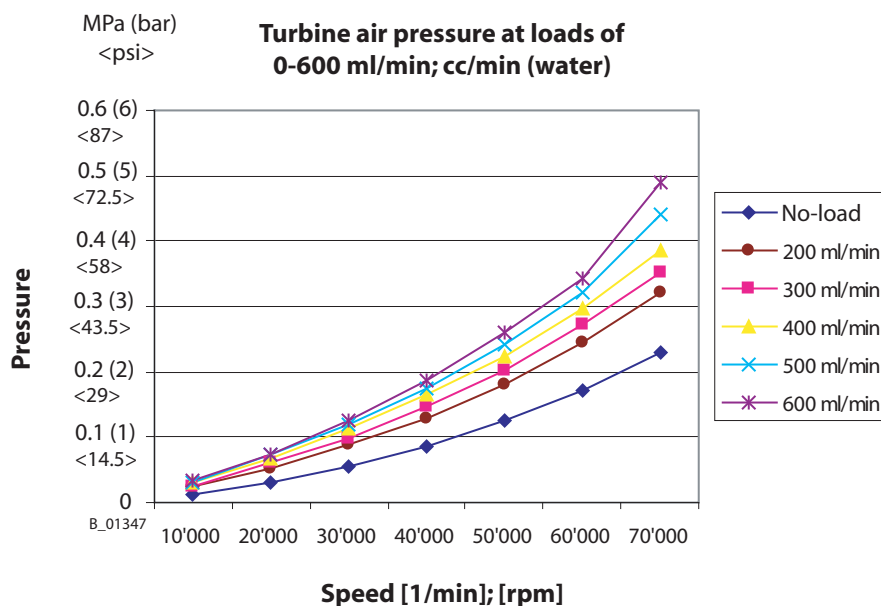
Description	Evobell 3500	
Material pressure	Normally 50 - 200 kPa / maxi. 800 kPa (normally 0.5 - 2.0 bar / maxi. 8 bar)	Normally 7 - 29 psi / maxi. 116 psi
Quantity fluid**	25 - 600 ml/min	25-600 cc/min
Spray jet -diameter approx.***	70 - 800 mm	3 -32 inches
Material connections	See chap. 4.3.3	
Air connections	See chap. 4.3.3	
Maximum temperature material	+60 °C	+140°F
Temperature Turbine-air	+15 °C to +50 °C	+59 °F to +122 °F
Ambient temperature	+10 °C to +50 °C	+50 °F to +122 °F
Sound power at 2 bar horn air 40.000 1/min, 600 ml/min; cc/min****	75 dB(A)	
Speed-up maxi.	1 g	1 g
Weight approx.	5.2 kg	11.5 lb
Measurements D1	125 mm	4.92 inch
Measurements D2	50 mm	1.97 inch
Measurements L1	700 mm (T-version 715 mm)	27.56 inch (T-version 28.15 inch)
Measurements L2	225 mm	8.86 inch

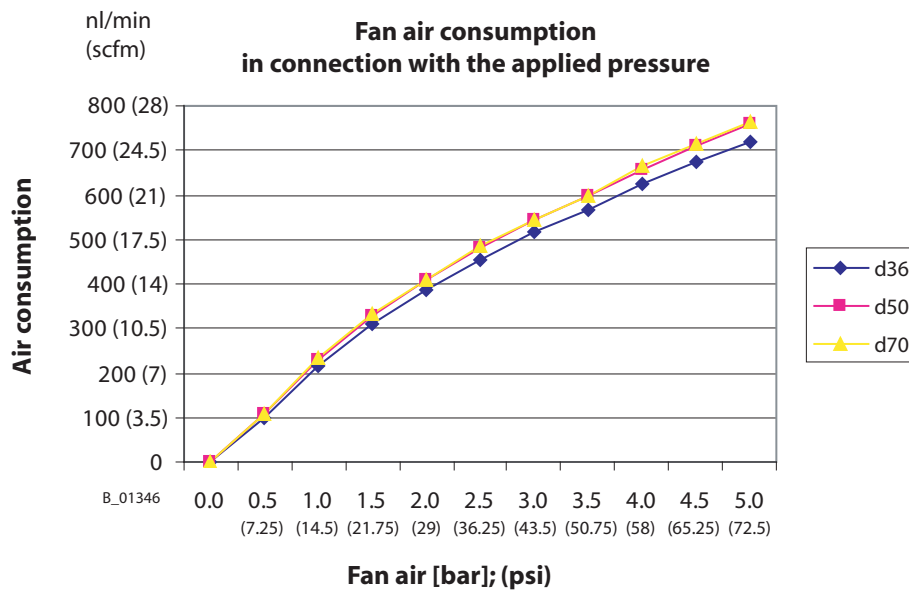
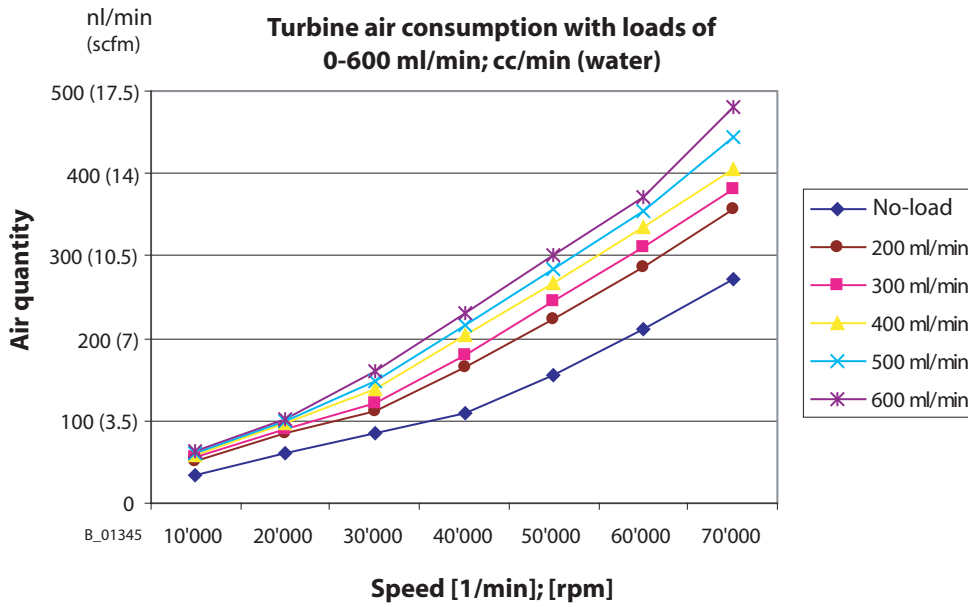
* according to the Wagner or Ransburg scale (only solvent paints)

** according to material tube and material pressure (see chap. 9.1)

*** according to bell diameter and horn air

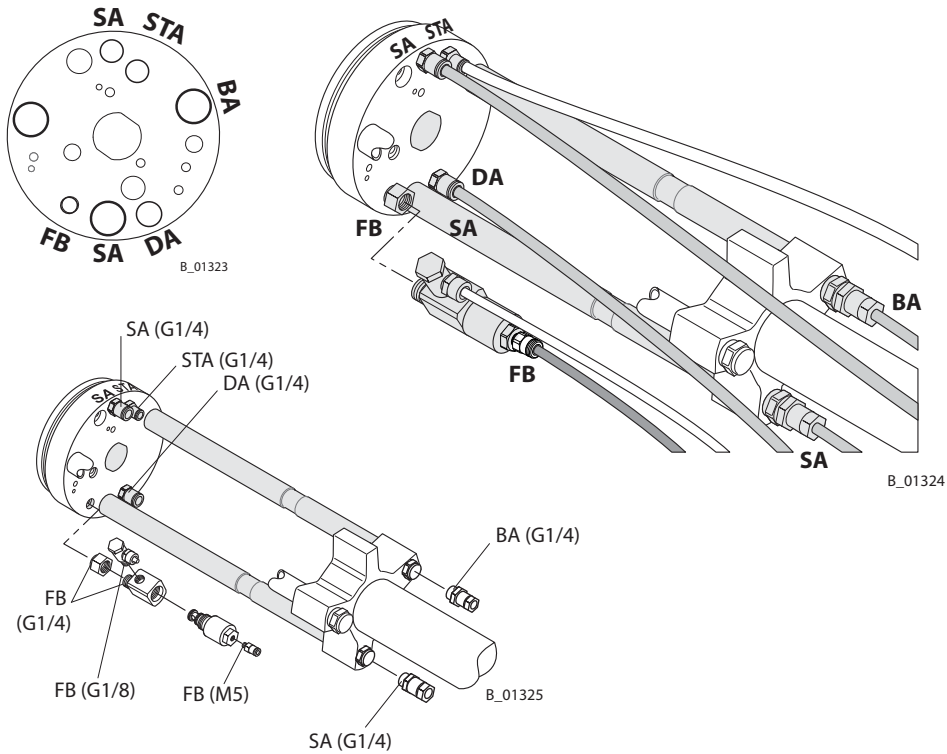
**** The A-rated emission sound pressure level at a distance of 1 m, LpA1m and the sound power level LWA were determined in accordance with noise standard EN 14462 with reference to framework standards EN ISO 11202 - Accuracy Class 3 and EN ISO 3746.





4.3.3 CONNECTION - DESIGNATIONS AND DIMENSIONS**4.3.3.1 CONNECTIONS - DRIVE UNIT**

(Designations on the adapter plate)



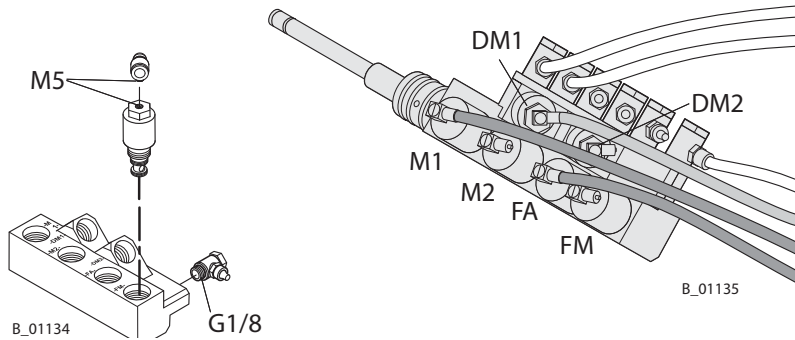
Air connections	Short description	Connection-Dimension (\varnothing inside x \varnothing outside) mm; inch
Bearing Air	BA	6 x 8 mm; 0.24 x 0.31 inch
Drive Air	DA	8 x 10 mm; 0.31 x 0.39 inch
Stop Air	STA	6 x 8 mm; 0.24 x 0.31 inch
Shaping Air -2x	SA	8 x 10 mm; 0.31 x 0.39 inch
Material valves	---	4 x 6 mm; 0.16 x 0.24 inch

Material connection	Short description	Connection-Dimension (\varnothing inside x \varnothing outside) mm; inch
Flushing Bell	FB	4 x 6 mm; 0.16 x 0.24 inch

Legend Short description:**BA**=Bearing Air / **DA**=Drive Air / **STA**=Stop Air / **SA**=Shaping Air / **FB**=Flushing Bell

4.3.3.2 CONNECTIONS - VALVE BLOCK

(Number of connections depends on the valve block variant)



Material connections	Short description	Connection-Dimension (\varnothing inside x \varnothing outside) mm; inch
Material 1	M1	4 x 6 mm; 0.16 x 0.24 inch
Dump Material 1	DM1	4 x 6 mm; 0.16 x 0.24 inch
Material 2	M2	4 x 6 mm; 0.16 x 0.24 inch
Dump Material 2	DM2	4 x 6 mm; 0.16 x 0.24 inch
Flushing Air*	FA	4 x 6 mm; 0.16 x 0.24 inch
Flushing Material	FM	4 x 6 mm; 0.16 x 0.24 inch

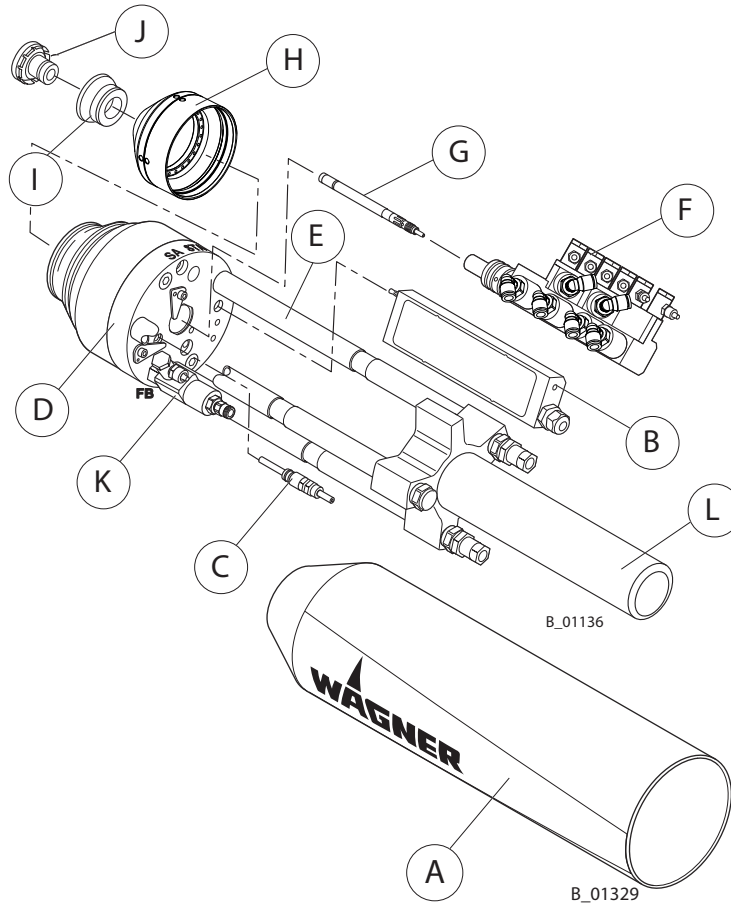
Legend Short description

M1=Material 1 / **DM1**=Dump Material 1/ **M2**=Material 2 / **DM2**=Dump Material 2 /
FA=Flushing Air / **FM**=Flushing Material

* The flushing inlet air is desired for air rinsing, but can also be used for a 2nd flushing agent.

4.4 FUNCTIONAL DESCRIPTIONS

4.4.1 DESIGN OF HIGH ROTATION ATOMIZER



	Description
A	Casing
B	Resistance block
C	Optical-fiber
D	Evobell 3500 Drive unit
E	Evobell 3500 pre-mounted
F	Valve block assy
G	Material tube
H	Air guide assy.
I	Bell assy.
J	Distributor
K	Bell-Flushing valve
L	Supporting tube

4.4.2 FUNCTIONS OF THE HIGH ROTATION ATOMIZER

The high rotation atomizer consists of the premounted basic device (E) which consists of the drive unit (D) and the bearing rods.

The bearing tube (L) is used to mount the device by the customer.

The optical-fiber (C) is used to detect signals for speed control.

Material is fed to the device via the valve block (F) and the material tube (G) lying in the axis center. This is then distributed evenly on the surface of the bell (I) via the distributor (J).

The deposited material is atomized finely in radial direction at the outer bell edge through the acting centrifugal forces. The electrostatic influence supports this process.

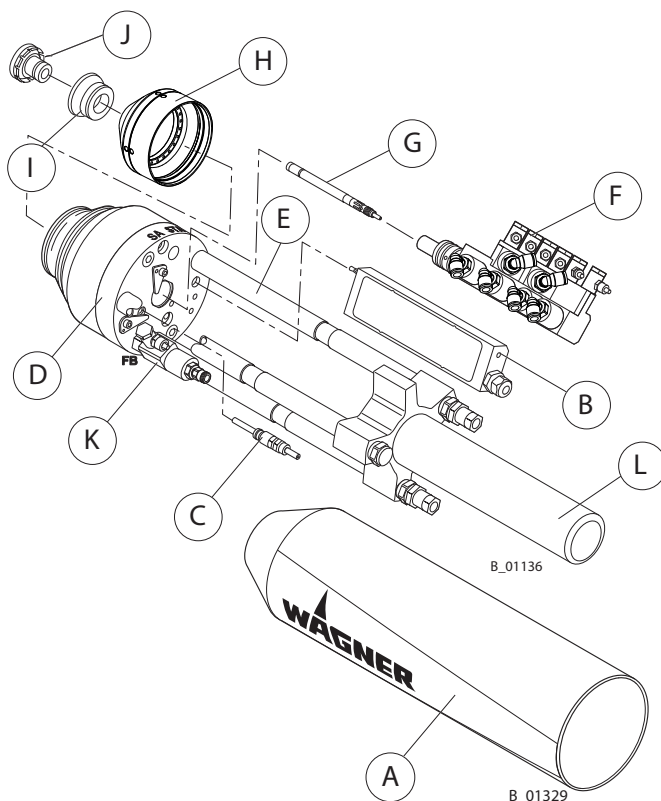
Both the atomizing cone diameter as well as the kinetic energy of the atomized material in the axial direction are influenced by the shaping air flowing through the air conduction.

Specific cleaning of the bell is possible by means of the bell flushing valve without having to flush the entire material channel.

The resistance block (B), as the connection of the high-voltage supply and atomizer (when solvent paint is used), is required to reduce a possible spark gap when the bell approaches the potential to ground. The resistor block decouples the capacities and causes damping of the discharge. The discharge is reduced. The resistor block acts as a voltage divider. As the current increases (e.g. as the bell approaches an object), the voltage at the edge of the bell reduces. A sparkover will subsequently result.

When working with water-based paint, the system is connected to the rest of the system by the paint column (ionic conductor), so that the effect of the resistor block is reduced.

The casing (A) serves as a shield for the applied high voltage, but also acts as a protective cover for the complete atomizer.



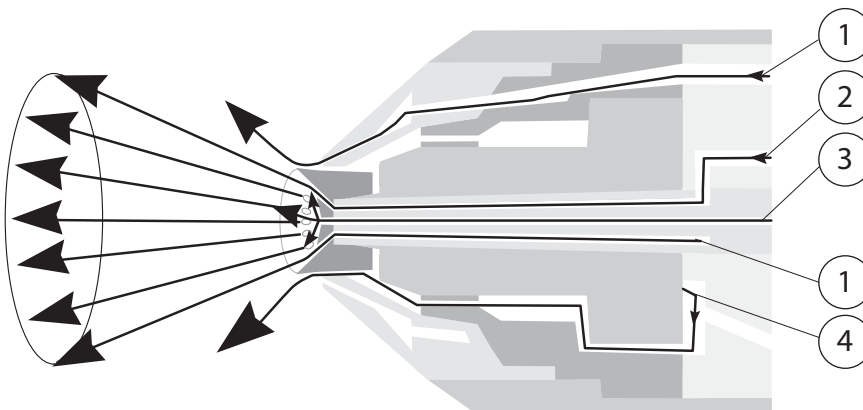
4.5 ATOMIZING PROCESS

4.5.1 SPRAYING PROCESS

At the high-rotation atomizer the sprayed material is atomized radial at the circumference of the bell under low pressure, approx. 0.05 to 0.30 MPa; 0.5-3.0 bar; 7.25-43.5 psi. The shaping air can be used to vary the atomizing cone diameter.

The spray scheme can be influenced by the following points:

- Material pressure / quantity
- Speed
- Bell diameter
- Distributor model
- Shaping air pressure, approx. 0.05 to 0.30 MPa; 0.5 to 3.0 bar; 7.25-43.5 psi
- Applied high voltage.



B_01193

Legend

- | | |
|-----------------|-------------------------|
| 1 = Shaping air | 2 = Material |
| 3 = Solvent | 4 = Exhaust air turbine |

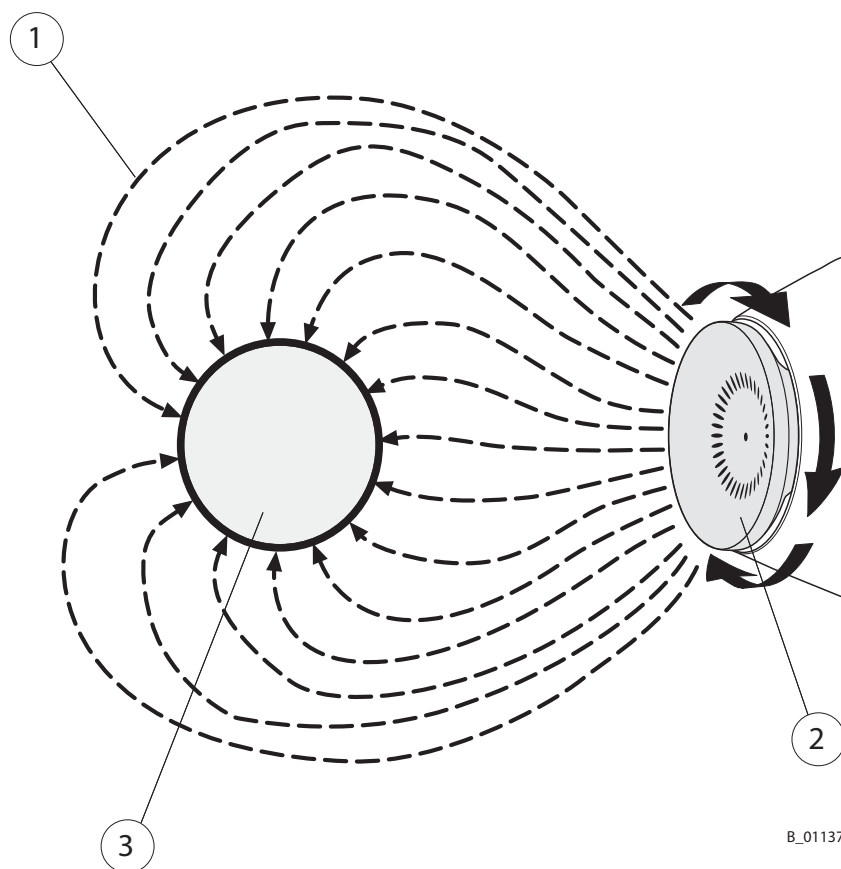
Spray material (2) is fed through the central hole of the material tube and is distributed in the distributor through the many holes.

Cleaning agent (3) is fed in the outer annular gap of the material tube and is applied through the central hole of the distributor.

4.5.2 THE ELECTROSTATIC EFFECT

The high rotation atomizer generates an electrostatic field of force via the applied high voltage.

The paint particles atomized by the rotating bell are now transported by kinetic and electrostatic energy to the earthed workpiece and distributed finely across the entire spray object.



B_01137

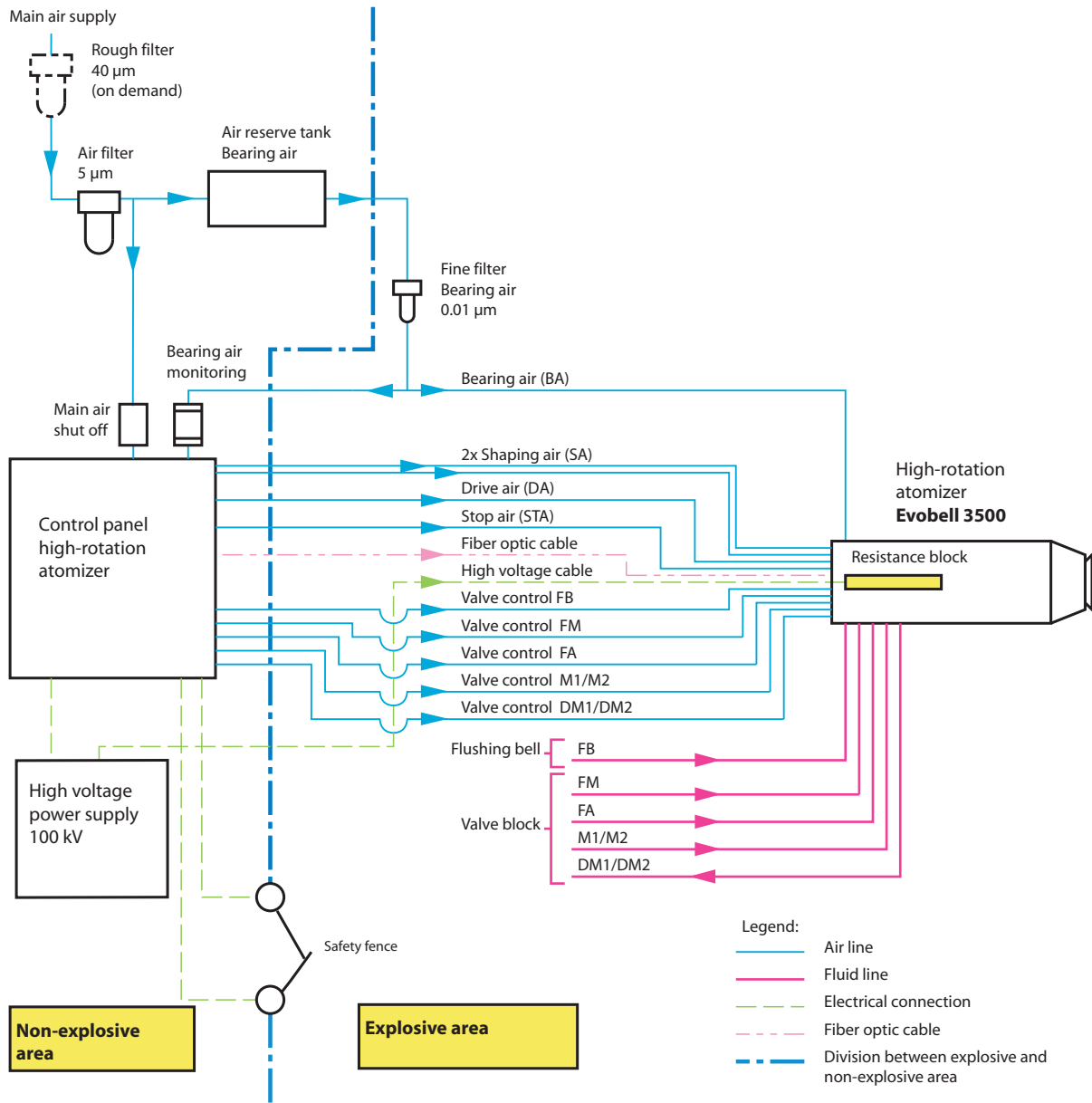
Legend

- 1 = Charged particles
- 2 = Rotating bell
- 3 = Grounded object

Advantage

- Efficient spraying
- Uniform coating thickness
- Coating hidden locations
- Improved edge covering
- Little over spray

4.6 INSTALLATION SCHEME





B_01309

The Installation shown above is only intended as a guide for selecting and assembling an electrostatic centrifugal atomizer system. It is not an actual system design. The particular type and size system for your operation must be custom designed for your needs. For assistance in designing a system, contact your WAGNER representative.

5 START-UP AND OPERATION

5.1 PUT THE EQUIPMENT IN PLACE AND CONNECT

5.1.1 TYPICAL ELECTROSTATIC SPRAYING SYSTEM

	 WARNING
	<p>Incorrect installation/operation! Risk of injury and damage to equipment</p> <p>→ The entire plant is to be evaluated in accordance with Directive 1999/92/EC (ATEX 137) before the initial start-up!</p> <p>→ When putting into operation and for all work, read and follow the operating instructions and safety regulations for the additionally required system components.</p>

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<h2>CAUTION</h2>
<p>Impurities in the spraying system! Dirt and humidity in the hose system can cause damage to the atomizer, in particular also to the drive turbine</p> <p>→ Hose length between filter bearing air and atomizer ≤ 10 m; 11 yd. → Hose length between filter (drive, brake, atomizer air and atomizer) ≤ 30 m; 33 yd.</p>

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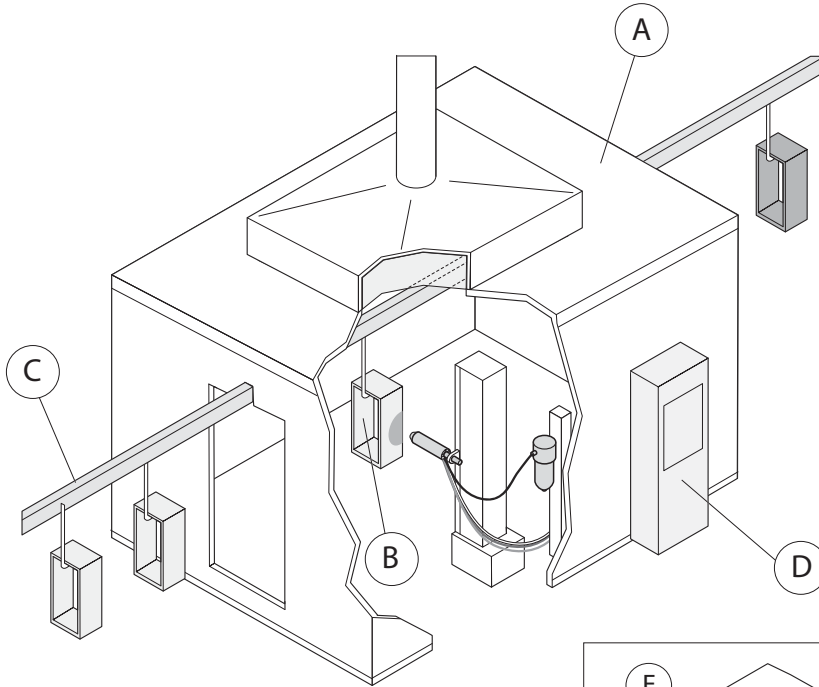
Note:

The high rotation atomizer Evobell 3500 must be used a part of an electrostatic spraying system. The spraying system shown in the figure is only one example of an electrostatic Aircoat spraying system.

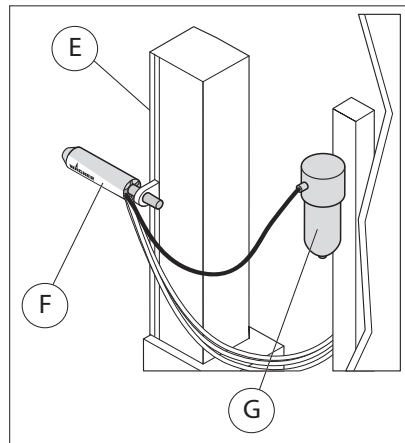
It is not an actual system design. Contact your Wagner distributor for assistance in designing a system to meet your needs.

The high-rotation atomizing plant may only be commissioned by trained skilled specialist personnel. Ensure that the operating personnel has familiarized itself with the additional operating instructions and safety specifications of all the system components. After completion of the installation, the capacity of the complete system must be measured and documented accordingly.

High voltage generator (Typ, Model)	
Measured capacity	





B_01138



B_01332



Pos	Description
A	Spray booth
B	Workpiece
C	Conveyor
D	Switch cabinet
E	Automatic movement system
F	Electrostatic - High rotation atomizer
G	Air filter (see accessories)

5.1.2 VENTILATION OF THE SPRAY BOOTH

	 WARNING
	<p>Toxic and/or flammable vapor mixtures! Risk of poisoning and burns</p> <p>→ Operate the unit in a spraying booth approved for the working materials. -or- → Operate the unit on an appropriate spraying wall with the ventilation (extraction) switched on. → Observe national and local regulations for the outgoing air speed.</p>

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5.1.3 AIR SUPPLY



	 CAUTION
	<p>Electrically conductive air supplies! Danger through electrically conductive air supplies</p> <p>→ Ensure that the air supplies are not electrically conductive.</p>

SIHI_0077_GB


The use of suitable air filters (see chap. 9.9) ensures that only dry, clean atomising air gets into the atomizer.

- Dirt and moisture in the shaping air reduce the spraying quality and the appearance of the finished piece.
- Dust and humidity in the bearing, drive or braking air causes damage to the drive turbine.

5.1.4 FLUID (PAINT) HOSES

	 WARNING
	<p>Bursting hose! Danger through escaping material mist Soiling of device and plant parts</p> <p>→ Ensure that the hose material is chemically resistant to the sprayed materials → Ensure that the high rotation atomizer and pressure hose between the unit and the high rotation atomizer is suitable for the pressure generated in the unit.</p>

SIHI_0078_GB


	CAUTION
	<p>Electrically conductive fluid (paint) hoses! Danger through electrically conductive fluid (paint) hoses</p> <p>→ Ensure that the fluid hoses are not electrically conductive.</p>

SIHI_0108_GB


CAUTION
<p>Impurities in the spraying system! High rotation atomizer blockage, materials harden in the spraying system</p> <p>→ Flush the high rotation atomizer and paint supply with a suitable cleaning agent.</p>

SIHI_0079_GB

5.1.5 EARTHING

	WARNING
	<p>Discharge of electrostatically charged components in atmospheres containing solvents! Explosion hazard from electrostatic sparks or flames</p> <p>→ Earth all unit components. → Earth the workpieces being painted.</p>

SIHI_0027_GB

	WARNING
	<p>Heavy paint mist if earthing is insufficient! Risk of poisoning Insufficient paint application quality</p> <p>→ Earth all unit components. → Earth the workpieces being painted.</p>

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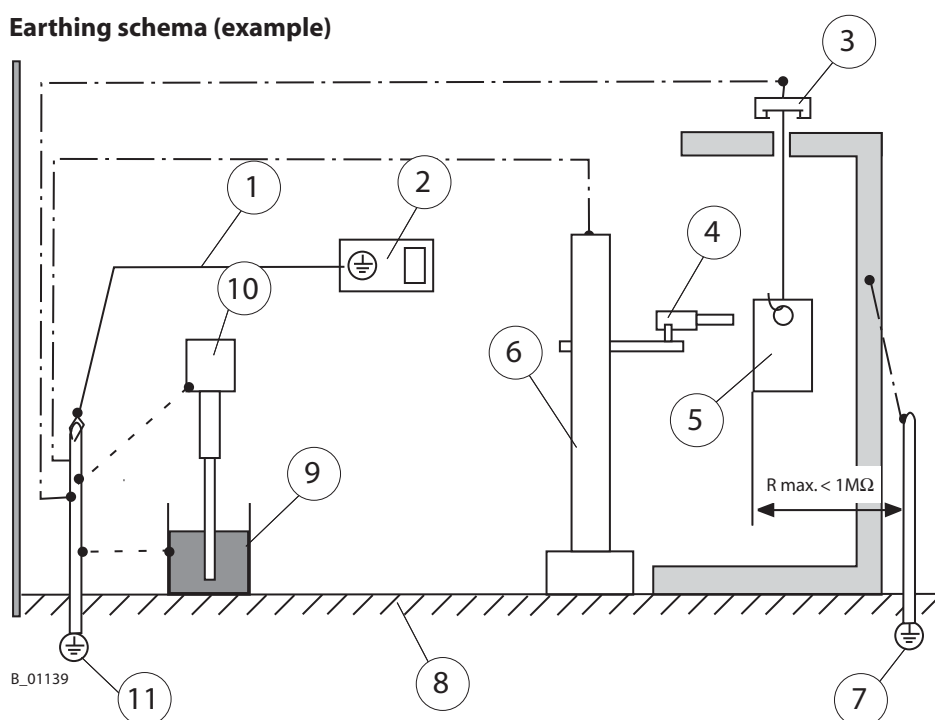
It must exist a leading connection (potential equalization cable) between original bundles, and system

The imperfect earthing of a workpiece will result in:

- Very poor wrap-around
- Uneven coating thickness
- Backspraying to the atomizer, i.e. contamination

The prerequisites for perfect earthing and coating are:

- Clean workpiece suspension.
- Earthing of spraying cabin, conveyor system and suspension on the building side in accordance with the operating instruction or the manufacturer's information.
- Earthing of all conductive parts within the working area.
- The earthing resistance of the workpiece may not exceed 1 M Ω (Mega Ohm).
- Connect the control unit only to the functional earth (e.g. water pipe).

Earthing schema (example)**Legend**

1 =	Earthing cable	2 =	Control unit
3 =	Conveyor	4 =	Evobell
5 =	Workpiece	6 =	Spraying stand
7 =	Functional earth	8 =	Anti-static floor
9 =	Paint container	10 =	Pump
11 =	Functional earth		

Minimum cable cross-section

Control unit	4 mm ² ; AWG11
Pump	4 mm ² ; AWG11
Paint container	4 mm ² ; AWG11
Conveyor	16 mm ² ; AWG5
Spray booth	16 mm ² ; AWG5
Spraying stand	16 mm ² ; AWG5

5.1.6 PREPARATION OF PAINTS

The viscosity of the paints is of great importance.



The best results are obtained with paints between 14 and 24 DIN sec (measured in immersion flow cup DIN 4 mm; 0.16 inch).

In the case of application problems contact the paint producer.

5.1.7 VISCOSITY CONVERSION TABLE

milli Pascal x Sec mPas	Centipoise	Poise	DIN Cup 4 mm ; 0.16 inch	Ford Cup 4	Zahn 2
10	10	0.1		5	16
15	15	0.15		8	17
20	20	0.2		10	18
25	25	0.25	14	12	19
30	30	0.3	15	14	20
40	40	0.4	17	18	22
50	50	0.5	19	22	24
60	60	0.6	21	26	27
70	70	0.7	23	28	30
80	80	0.8	25	31	34
90	90	0.9	28	32	37
100	100	1	30	34	41
120	120	1.2	33	41	49
140	140	1.4	37	45	58
160	160	1.6	43	50	66
180	180	1.8	46	54	74
200	200	2	49	58	82
220	220	2.2	52	62	
240	240	2.4	56	65	
260	260	2.6	62	68	
280	280	2.8	65	70	
300	300	3	70	74	
320	320	3.2			
340	340	3.4			
360	360	3.6	80		
380	380	3.8			
400	400	4	90		

5.2 OPERATING INSTRUCTIONS FOR SAFE OPERATION

	 DANGER
	<p>Incorrect maintenance/repair! Risk of injury and damage to the equipment</p> <ul style="list-style-type: none"> → The shaft and bell cone are to be checked for damage and soiling every time before the bell is mounted. Soiling and/or damage lead to an unbalanced bell. → Excessive unbalance leads to damage to the drive turbine and in the extreme case to be bell being hurled out.

SIHI_0081_GB

CAUTION
<p>Damage to the drive turbine! Incorrect handling causes damage to the drive turbine</p> <ul style="list-style-type: none"> → Ensure that bearing air is applied before starting up, during/after operation of the atomizer until the drive turbine is at a complete turbine. → Ensure that the bearing air is applied to the driver shaft before turning the driver shaft by rotating the drive shaft manually or by drive air. → Regular rinsing cycles ensure that the arising unbalance through paint deposits on the bell is low. Excessive unbalance causes damage to the drive turbine. → Ensure that the air quality meets the technical requirements. → Ensure that a separate micro-filter exists in the bearing air supply line. → Ensure that a coarse filter is positioned upstream in the supply line if the air quality is bad. → Ensure that the maximum amount of material in accordance with the „Technical data“ is not exceeded under any circumstances. Otherwise material/cleaning agent can penetrate the drive turbine. → Ensure that the maximum speed in accordance with the „Technical data“ is not exceeded under any circumstances

SIHI_0082_GB

Note:



- A suitable manometric switch for monitoring the bearing air can be found in the Accessories chapter.
- Suitable filters for bearing air, drive and brake air can be found in the Accessories chapter.
- Warranty claims are void in case of damage through incorrect handling!
- O-rings have to be greased lightly with Vaseline.
- In order to avoid back-spraying ensure that shaping air with min. 0.04 MPa; 0.4 bar; 5.80 psi is applied for approx. 2-3 seconds before opening/after closing all the material inlets.

- The air conduction of the shaping area is also decisive for the evenness of the atomizer cloud. Check the distributor ring and outer ring (in particular the narrow annular gap) for damage and soiling. If necessary, the parts have to be cleaned (dismantled, if applicable) or replaced completely.
- Depending of the material used the flushing material share can be changed by axial adjustment of the material tube inside or outside the distributor.
 - Carry out the basic setting using the adjusting part.
 - Set the material tube in the range of $\pm 1/2$ rotation.



5.3 START UP

5.3.1 GENERAL RULES FOR HANDLING THE HIGH ROTATION ATOMIZER



- Read the safety regulations in chap. 2.

	 DANGER
	<p>High voltage field! Danger to life from malfunctioning heart pacemakers</p> <p>Ensure that persons with heart pacemakers:</p> <ul style="list-style-type: none"> → Do not work with the electrostatic spray gun. → Remain outside the area of the electrostatic spray gun/work-piece.

SIHI_0083_GB



	 DANGER
	<p>Cutting effect of rapidly rotating edges! Danger of injury through touching the rapidly rotating bell</p> <ul style="list-style-type: none"> → Ensure that the bell stands still before any contact by persons. → Secure the atomizer against actuation.

SIHI_0084_GB



	 WARNING
	<p>Unintentional putting into operation! Risk of injury</p> <p>Before all work on the unit and in the event of work interruptions:</p> <ul style="list-style-type: none"> → Switch off the high-voltage generation. → Relieve the pressure from the spray gun and unit. → Secure the atomizer against actuation.

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5.3.2 PREPARATION FOR STARTING UP

	 DANGER
	<p>Incorrect maintenance/repair! Risk of injury and damage to the equipment</p> <ul style="list-style-type: none"> → The shaft and bell cone are to be checked for damage and soiling every time before the bell is mounted. Soiling and/or damage lead to an unbalanced bell. → Excessive unbalance leads to damage to the drive turbine and in the extreme case to be bell being hurled out.

SIHI_0081_GB

	 WARNING
	<p>Unintentional putting into operation! Risk of injury</p> <p>Before all work on the unit and in the event of work interruptions:</p> <ul style="list-style-type: none"> → Switch off the high-voltage generation. → Relieve the pressure from the spray gun and unit. → Secure the atomizer against actuation.

SIHI_0085_GB

CAUTION
<p>Damage to the drive turbine! Damage to the drive turbine through unsuitable filter system</p> <ul style="list-style-type: none"> → The use of suitable air filters ensures that the necessary air quality be kept strictly. → Ensures that only dry, clean atomising air gets into the atomizer. → Dust and humidity in the air supplies causes damage to the drive turbine.

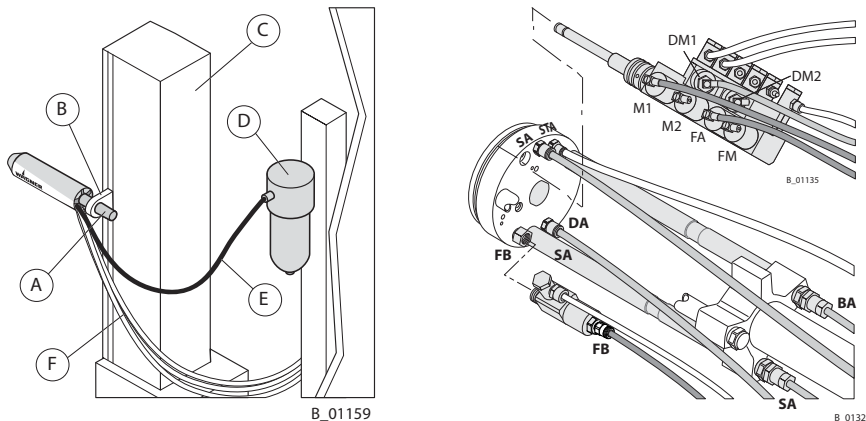
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Installation of the rotation atomizer in a master plant:**Notes:**

The high-rotation atomizer can be mounted flexibly.

Depending on the type of electrostatic high-rotation atomizing plant ceiling installation, wall installation or installation on hoisting devices, etc. is possible.

Cover dump outlets that are not used with corresponding valve plugs.



1. Fasten the atomizer via the bearing tube „A“ at the customer to the spray stand „C“ via the tool holding fixture „B“.
2. Connect the air hoses for bearing air (BA), drive air (DA) and breaking air (STA).
3. Connect the air hoses for shaping air (SA).
4. Install the valve block with material tube into the atomizer.
5. Check the installation position of the material tube using special tools and correct if appropriate (Section 5.4.7)
6. Connect the material hoses for the dump return line (DM1/DM2).
7. Connect the material hoses for the material supply line (M1/M2)
8. Connect the material hoses for the flushing agent supply line (FA/FM).
9. Connect the material hose for the flushing agent supply line (FB) to the adapter plate.
10. Connect the air hoses for controlling to all the valves.
11. Install the optical-fiber cables for speed detection.
12. Mount the air conduction in accordance with the selected bell diameter.
13. Connect the high voltage cable to the resistance block.
14. Slide on the casing and fasten it by means of the bayonet connection.
15. Mount the bell with mounted distributor to the drive shaft.
16. Check that the material tube has been installed correctly.

5.4 WORKING

5.4.1 START-UP FOR SPRAYING

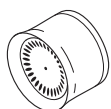
1. Apply bearing air (BA) at the high-rotation atomizer.
2. Set the operating pressure for material supply to 0.1 MPa; 1 bar; 14.5 psi.
3. Take the supply system for coating material and flushing agent into operation.
4. Set the pressure for shaping air (SA) to a min. 0.05 MPa; 0.5 bar; 7.25 psi and apply shaping air (SA).
5. Set the speed of the atomizer via an external control system to 20.000 1/min (rpm) and power up the atomizer slowly.
6. Flush through the valve block and material tube via the rearmost flushing valve (FM) for some seconds.
7. Apply the high voltage via the resistance block (60 – 80 kV).
8. Open the material valve and optimize the created spray cloud by modifying the setting values for speed, high voltage, material pressure and shaping air (SA).

Note:

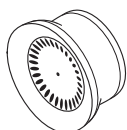
If necessary, this optimization has to be tested with another material tube or another bell diameter.

5.4.2 SPRAY PATTERN

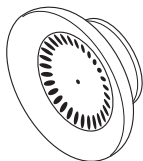
The spray jet diameter can be adapted individually by modifying the shaping air (SA). Larger or smaller spray schemes can be achieved by using other bell diameters.



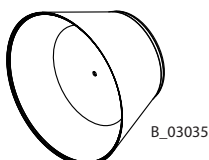
Bell Ø 36 mm; 1.42 inch



Bell Ø 50 mm; 1.97 inch



Bell Ø 70 mm; 2.76 inch



T-variant
Bell Ø 70 mm; 2.76 inch

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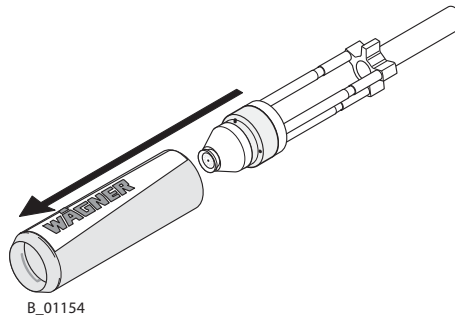
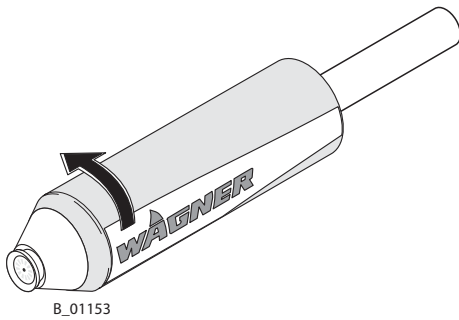
Note:

1. The paint output volume can be changed by:
 - Changing the material pressure or
 - Fitting another material tube (See accessories).
2. The quality of the distributor and bell are decisive for the spray scheme.

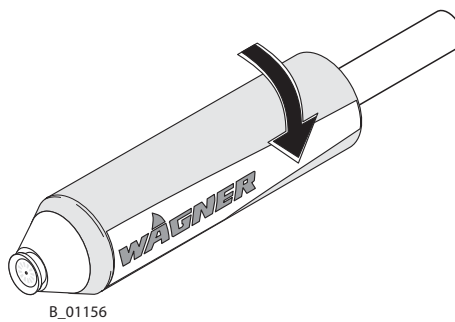
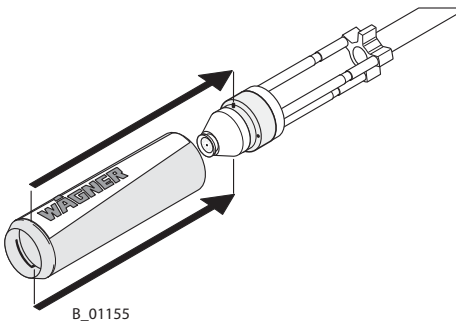
5.4.3 REMOVE / ATTACH THE CASING

	 WARNING
	<p>Unintentional putting into operation! Risk of injury</p> <p>Before all work on the unit and in the event of work interruptions:</p> <ul style="list-style-type: none"> → Switch off the high-voltage generation. → Relieve the pressure from the spray gun and unit. → Secure the atomizer against actuation.

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Remove the casing

→ Turn the casing counter clockwise and pull it off the basic body.

Attach the casing

→ Slide on the casing and fasten it by means of the bayonet connection.

5.4.4 REPLACING THE BELL

	 WARNING
	<p>Unintentional putting into operation! Risk of injury</p> <p>Before all work on the unit and in the event of work interruptions:</p> <ul style="list-style-type: none"> → Switch off the high-voltage generation. → Relieve the pressure from the spray gun and unit. → Secure the atomizer against actuation.

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CAUTION
<p>Damage to the bell! Damage to the bell through incorrect tool usage or incorrect mount</p> <ul style="list-style-type: none"> → Only dismount the bell using the original tool in order to prevent damage. → Mounting of bells only with inserted distributor to avoid a tilt of the centre cone.



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Note:

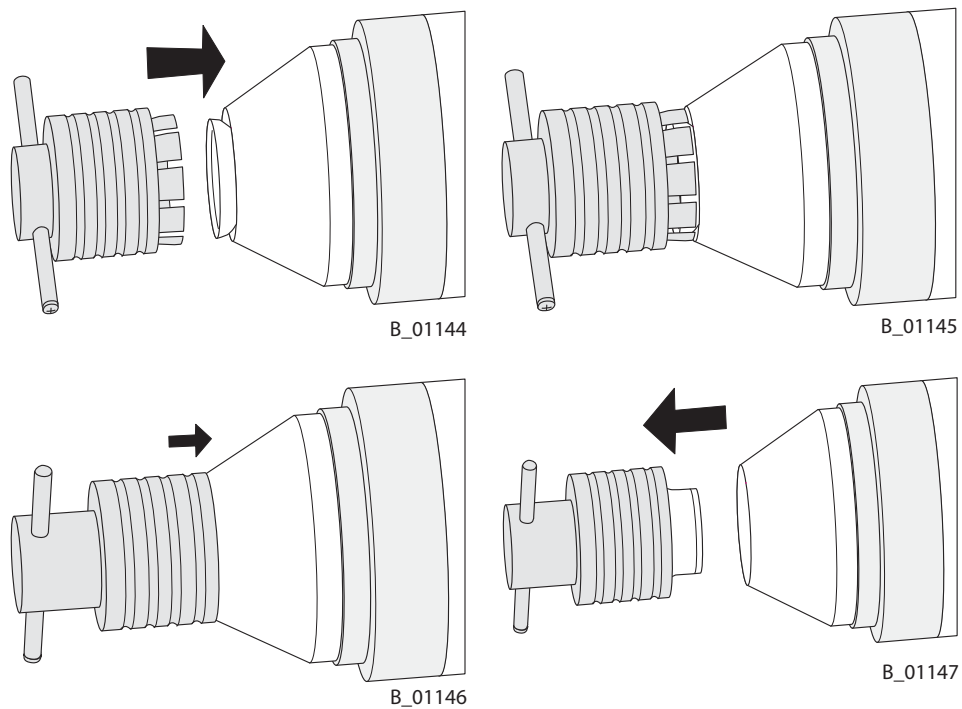
The bell, distributor and air conduction are interdependent in size.
Three diameter sizes are offered for the bell, distributor and air conduction.

- Ø 36 mm; 1.42 inch
- Ø 50 mm; 1.97 inch
- Ø 70 mm; 2.76 inch

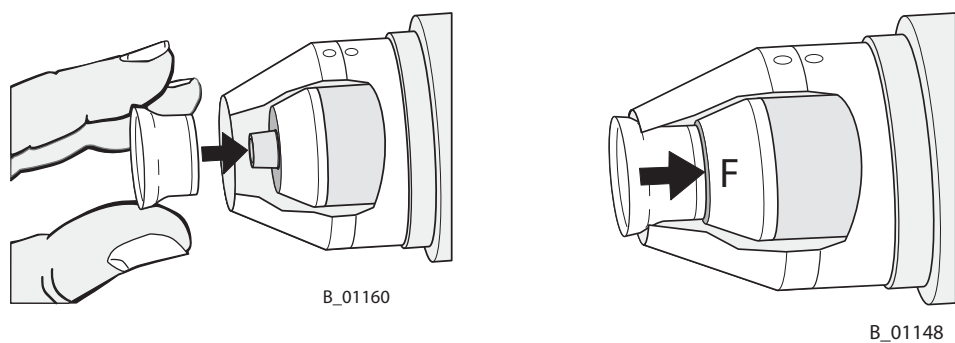
If you change the bell diameter, the distributor and air conduction have to be replaced as well!

	 DANGER
	<p>Incorrect maintenance/repair! Risk of injury and damage to the equipment</p> <ul style="list-style-type: none"> → The shaft and bell cone are to be checked for damage and soiling every time before the bell is mounted. Soiling and/or damage lead to an unbalanced bell. → Excessive unbalance leads to damage to the drive turbine and in the extreme case to be bell being hurled out.

SIHI_0081_GB

Disassembly:

- Place the tool on the bell with the clamping ring unlocked.
- Lock the bell with the clamping ring.
- Pull off the bell tool with the bell smoothly in the axial direction.



Assembly:

- Place the bell by hand in the axial direction on the cone.

Note:

- The bell is fastened on the drive cone by means of force (F).

5.4.5 CHANGING THE DISTRIBUTOR

	 WARNING
	<p>Unintentional putting into operation! Risk of injury</p> <p>Before all work on the unit and in the event of work interruptions:</p> <ul style="list-style-type: none"> → Switch off the high-voltage generation. → Relieve the pressure from the spray gun and unit. → Secure the atomizer against actuation.

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CAUTION
<p>Impurities in the distributor! Blockage, materials harden on the distributor</p> <p>→ Flush the distributor with a suitable cleaning agent.</p>

SIHI_0088_GB

CAUTION
<p>Damage to the distributor! Damage to the distributor through incorrect tool usage</p> <p>→ Only dismount the distributor by hand and using the original tool in order to prevent damage.</p> <p>→ Only mount the distributor by hand in order to prevent damage.</p>

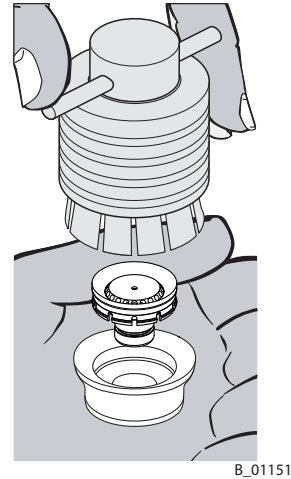
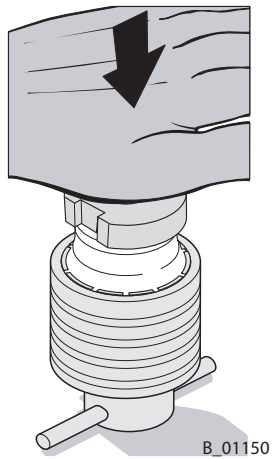
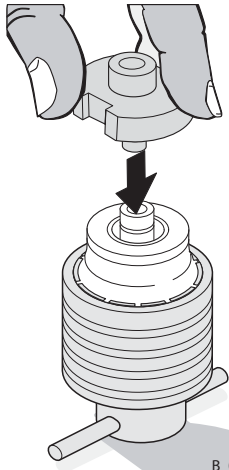
SIHI_0089_GB

Note:

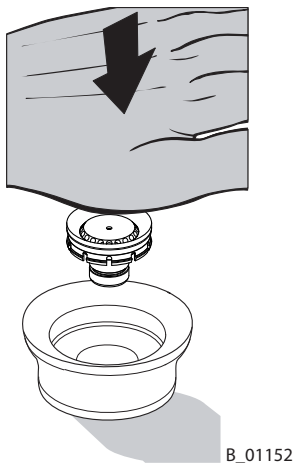
The bell, distributor and air conduction are interdependent in size
Three diameter sizes are offered for the bell, distributor and air conduction.

- Ø 36 mm; 1.42 inch
- Ø 50 mm; 1.97 inch
- Ø 70 mm; 2.76 inch

If you change the bell diameter, the distributor and air conduction have to be replaced as well!

Disassembly:

- Dismantle the bell from the device (see 5.4.4).
- Place the tool axially on the bell.
- Press in the tool by hand.
- Remove the distributor and bell from the tool.

Assembly:

- Press the distributor manually in the axial direction on the bell.

Disassembly T variant:

B_03043



- Dismantle the bell from the device (see 5.4.4).
- Place bell on a suitable soft surface and press distributor out of the bell with a suitable arbor.

Assembly T variant:

P_03044

- Grease O-ring (order no. 2312821) with Vaseline and insert into the groove of the bell (arrow).
- Place bell on a suitable soft surface and carefully press the distributor in.

5.4.6 REPLACING THE AIR CONDUCTION

	 WARNING
	<p>Unintentional putting into operation! Risk of injury</p> <p>Before all work on the unit and in the event of work interruptions:</p> <ul style="list-style-type: none"> → Switch off the high-voltage generation. → Relieve the pressure from the spray gun and unit. → Secure the atomizer against actuation.

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CAUTION
<p>Impurities of the air conduction! Blocking of the annular gap and of the distributor channels, hardening of the materials in the air conduction</p> <p>→ Flush the distributor channels and air conduction with a suitable cleaning agent.</p>

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CAUTION
<p>Damage to the air conduction! Damage to the air conduction through incorrect handling and incorrect tool usage</p> <p>→ Only dismount the air conduction using the original tool in order to prevent damage. → Only mount the air conduction by hand in order to prevent damage.</p>

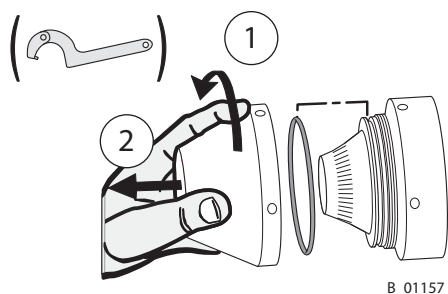
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Note:

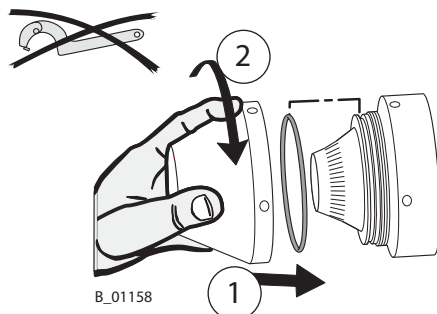
The bell, distributor and air conduction are interdependent in size.
Three diameter sizes are offered for the bell, distributor and air conduction.

- Ø 36 mm; 1.42 inch
- Ø 50 mm; 1.97 inch
- Ø 70 mm; 2.76 inch

If you change the bell diameter, the distributor and air conduction have to be replaced as well!



Disassembly:

- Remove the casing.
- Loosen the outer ring from the distribution ring using special tool.
- Remove the outer ring from the distributor ring and clean it.
- Loosen the distributor ring using a special tool and remove it from the bearer ring.
- Remove the O-ring and clean the distributor ring.

Assembly:

- Replace the O-ring and place the outer ring axially on the distribution ring and tighten it by hand.
- Place the air conduction axially on the bearer ring and tighten it by hand.
- Attach the casing.

5.4.7 REPLACING MATERIAL TUBE / VALVE BLOCK

	 WARNING
	<p>Unintentional putting into operation! Risk of injury</p> <p>Before all work on the unit and in the event of work interruptions:</p> <ul style="list-style-type: none"> → Switch off the high-voltage generation. → Relieve the pressure from the spray gun and unit. → Secure the atomizer against actuation.

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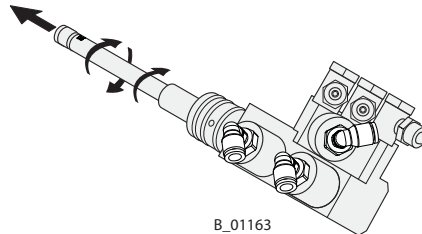
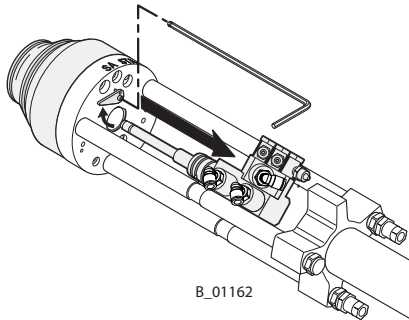
CAUTION
<p>Impurities of the valve block! Blocking of the material channels, hardening of the materials in the valve block and material tube</p> <p>→ Flush the material tube and valve block with a suitable cleaning agent.</p>

SIHI_0092_GB

CAUTION
<p>Damage to the valve block and material tube! Damage to the material tube and valve block through incorrect handling</p> <p>→ Only dismount/install the material tube by hand or using the original tool in order to prevent damage.</p>

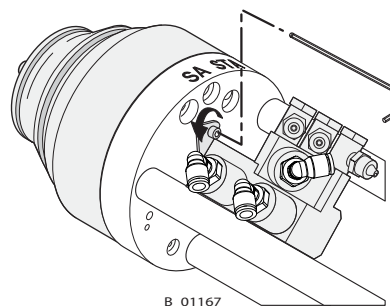
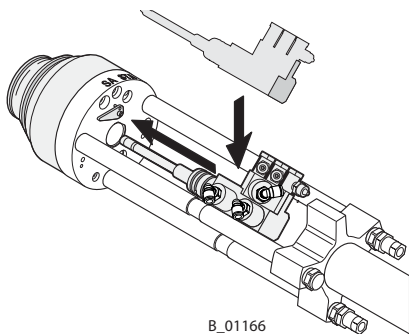
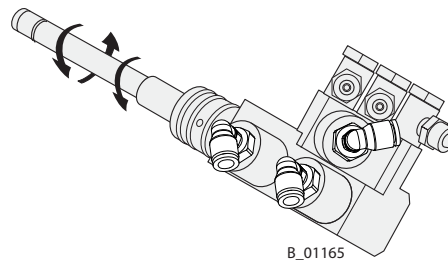
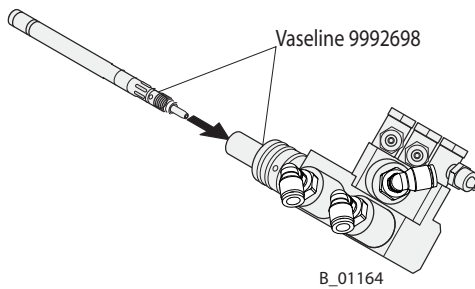
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Disassembly

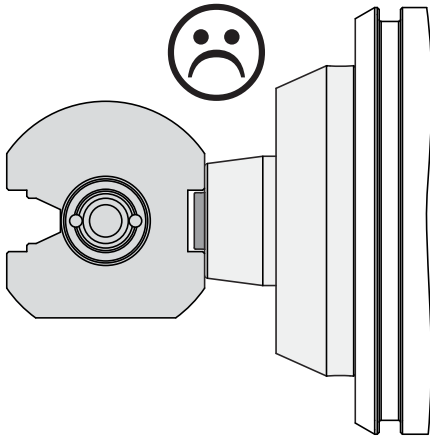


- Loosen the catch and swing it out.
 - Pull of the valve block.
 - Turn the material tube out of the valve block by hand or using the original tool.
- Attention:** Left threads

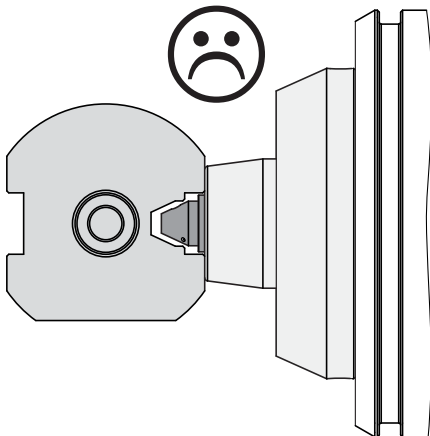
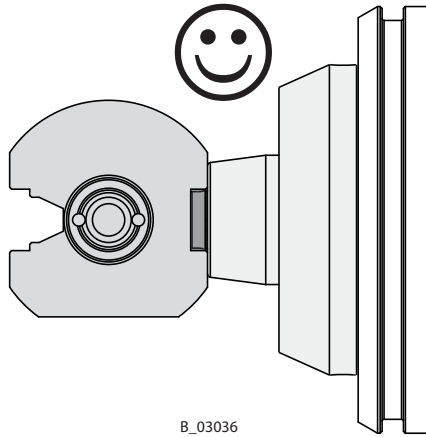
Assembly



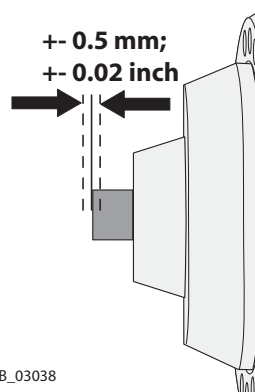
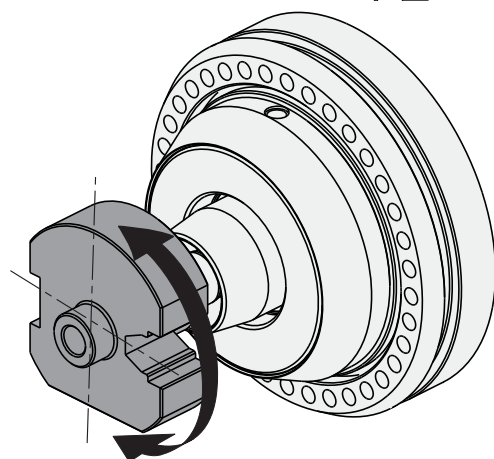
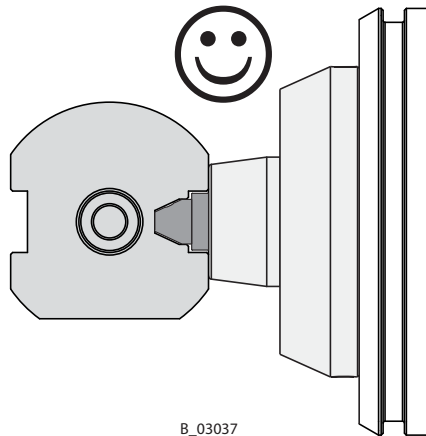
- Mount the new material tube with a new nozzle.
- Attention:** Left threads
Grease the O-rings lightly with Vaseline 9992698.
Screw the material tube by hand in until the latching cam of the valve block meshes into the groove of the material tube.
- Insert the valve block and material tube axially into the adapter plate until they latch in.
 - Fasten the valve block to the adapter plate using the catch.

Check the installation position of the material tube

B_03036



B_03037





B_03038

- Apply the test tool and check the optimal installation position of the material tube.
- If necessary, use the special tool to adjust the distance of the material tube top.

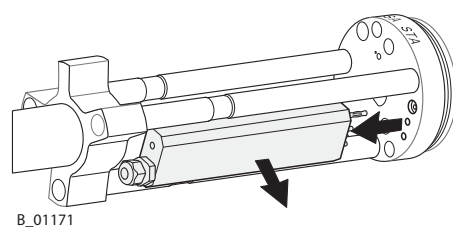
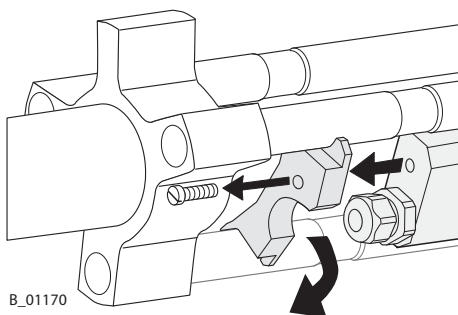
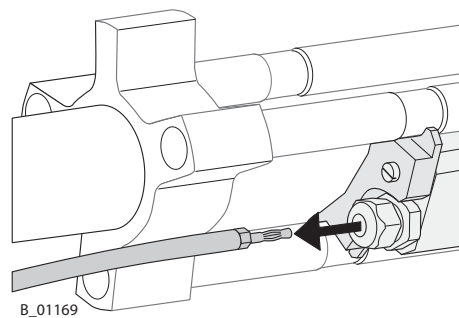
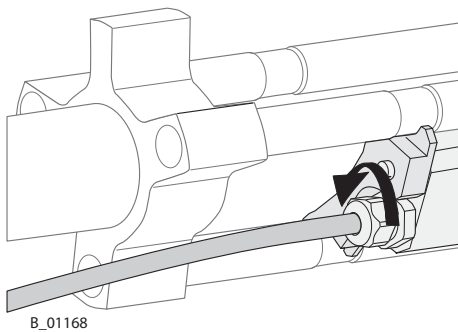
Note:

In order to achieve an optimal spraying result, the setting value between the material tube top and test tool should amount to $\leq 0.5 \text{ mm}$; 0.02 inches .

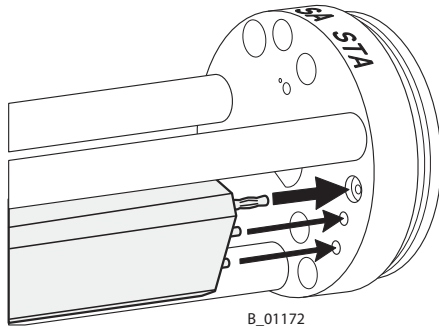
5.4.8 REPLACING THE RESISTANCE BLOCK / HIGH VOLTAGE CABLE

	 WARNING
	<p>Unintentional putting into operation! Risk of injury</p> <p>Before all work on the unit and in the event of work interruptions:</p> <ul style="list-style-type: none"> → Switch off the high-voltage generation. → Relieve the pressure from the spray gun and unit. → Secure the atomizer against actuation.

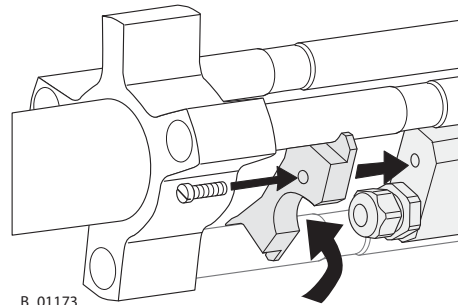
SIHI_0085_GB

Disassembly

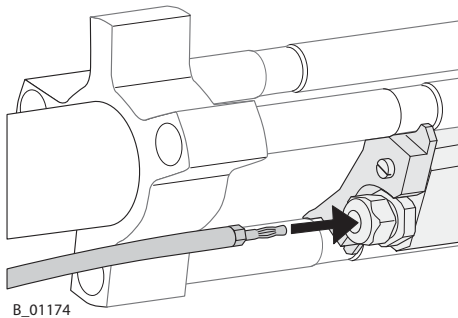
- Loosen the cable threaded joint and remove the high voltage cable from the resistance block.
- Loosen the fastening screw at the bearing plate. Remove the bearing plate.
- Draw the resistance block axially from the adapter platen.

Assembly

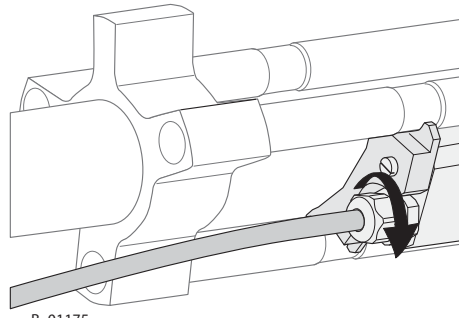
B_01172



B_01173



B_01174



B_01175

- Insert the resistance block.
- Attach the bearing plate to the resistance block with the fastening screw.
- Connect the high voltage cable to the resistance block.
- Insert the high voltage cable into the resistance block until it stops and fasten it with the cable threaded joint to the resistance block.

6 MAINTENANCE

→ See Safety regulations in chapter 2.

The high rotation atomizer or equipment must be cleaned and rinsed out every day. Use only the cleaning solvent recommended by the material manufacturer.

CAUTION

Cleaning agent in the air duct!

Functional faults caused by swollen seals

→ Never immerse the high rotation atomizer in cleaning agent.

SIHI_0094_GB



WARNING



Incorrect maintenance/repair!

Risk of injury and damage to the equipment



- Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center.
- Before all work on the unit and in the event of work interruptions:
 - Switch off the energy/compressed air supply.
 - Relieve the pressure from the high rotation atomizer and unit.
 - Secure the high rotation atomizer against actuation.
- Observe the operating and service instructions when carrying out all work.

SIHI_0095_GB

6.1 FINISHING WORK AND CLEANING

	 DANGER
	<p>Exploding gas/ air mixture! Danger to life from flying parts and burns</p> <p>→ Never spray into a closed container. → Earth the container.</p>

SIHI_0008_GB

	 WARNING
	<p>Explosive atmosphere! Explosive gases are produced when aluminium comes into contact with halogenized hydrocarbons</p> <p>→ To clean aluminium, do not use liquids containing halogenized hydrocarbons.</p>

SIHI_0009_GB

CAUTION
<p>Cleaning agent in the air duct! Functional faults caused by swollen seals</p> <p>→ Always point the high rotation atomizer down when cleaning. → Ensure that neither paint nor cleaning agent enters the air duct.</p>

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Note:

Methylene chloride is not recommended as a flushing or cleaning solvent with this atomizer or any system components.



Cleaning

1. Switch off the high voltage.
2. Relieve the pressure in the atomizer and equipment!
3. Connect cleaning supply
4. Thoroughly flush atomizer.
6. Relieve the pressure in the atomizer and equipment!
7. Clean the atomizer and equipment using a cleaning solvent (agent) recommended by the paint manufacturer and dry with a cloth or blow gun.



6.2 MAINTENANCE WORK

	 DANGER
	<p>Incorrect maintenance/repair! Risk of injury and damage to the equipment</p> <ul style="list-style-type: none"> → The shaft and bell cone are to be checked for damage and soiling every time before the bell is mounted. Soiling and/or damage lead to an unbalanced bell. → Excessive unbalance leads to damage to the drive turbine and in the extreme case to the bell being hurled out.

SIHI_0081_GB

	 DANGER
	<p>Discharge of electrostatically charged components in atmospheres containing solvents! Explosion hazard from electrostatic sparks or flames</p> <p>Before all maintenance work or repair work:</p> <ul style="list-style-type: none"> → Switch off the high voltage. → Earth the atomizer and all unit components. → Ensure that an explosive atmosphere does not exist in the working area (ventilate sufficiently). → Ensure that any possible static charging of the casing parts is discharged completely (by means of earthing rod).

SIHI_0097_GB

	 WARNING
	<p>Unintentional putting into operation! Risk of injury</p> <p>Before maintenance work on the unit:</p> <ul style="list-style-type: none"> → Disconnect the control unit from the mains. → Relieve the pressure from the high rotation atomizer and unit. → Secure the high rotation atomizer against actuation.

SIHI_0098_GB

6.2.1 VISUAL CHECKS - JOINTS AND FLUID HOSES

- Check that the connections to the drive unit, the bell flushing valve and the valve block are tight.
- In case of leaks, replace the hose connections.
- Replace porous damaged hose lines.

6.2.2 VISUAL CHECK - VALVE BLOCK

- Check the valve block for leaks.
- In case of leaks, remove the valve block and disassemble it (see chap.8.2).

6.2.3 VISUAL CHECK - BELL SOLVENTS VALVE

- Check the bell flushing valve for leaks.
- In case of leaks, remove the bell flushing valve and disassemble it (see chap.8.3).

6.2.4 VISUAL CHECK - RESISTANCE BLOCK

- Check the resistance block for damage.
- Check the high voltage cable for tight fitting
- Replace a damaged resistance block, porous or damaged high voltage cable..

6.2.5 VISUAL CHECK - SENSOR

- Check the sensor for tight fitting.
- Check the sensor for soiling and damage.
- Clean the soiled sensor carefully using a corresponding cleaning agent and soft rags.
- Replace damaged sensors, porous or damaged sensor cables.

6.2.6 VISUAL CHECK - BELL

- Check the bell for soiling and damage.
- Clean the soiled bell with a cleaning agent.
- Replace a damaged bell.

6.2.7 VISUAL CHECK - DISTRIBUTOR

- Check the distributor for soiling, blockage and damage.
- Clean the soiled distributor with a cleaning agent.
- Replace a damaged distributor.

6.2.8 VISUAL CHECK - AIR CONDUCTION

- Check the air conduction for tight fitting.
- Check the distributor holes and channels for shaping air for soiling.
- Clean the soiled distribution holes with a cleaning agent.
- Check the air conduction for leaks and damage.
- In case of leaks or damage replace the air conduction or O-ring.

6.2.9 VISUAL CHECK - MATERIAL TUBE

- Check the material tube for soiling.
- Clean the soiled material tube with a cleaning agent.
- Check the material tube for leaks and damage.
- In case of leaks or damage replace the material tube or O-ring.

6.3 INSPECTIONS IN ACCORDANCE WITH DIN EN 50176

If the system is used for electrostatic coating with flammable liquid coating materials (solvent-based paints), the inspection in accordance with DIN EN 50176: 2010-04 as per table 3 must be performed.

6.3.1 OVERVIEW OF INSPECTIONS

Paragraph	Type of inspection	Requirements
1	Inspection for safe operational condition	Safe operational condition of the complete system
2	Inspection of technical ventilation	Effectiveness of technical ventilation
3	Switch off of high voltage in voltage controlled and constant voltage operating mode	Safe switch off of high voltage
4	Switch off of high voltage in constant current operating mode	Safe switch off of high voltage
5	Protection against excessively high discharge energy	Safe discharge of all high voltage conducting parts after switching off high voltage
6	Protection against ignition of cleaning agents	Safe discharge of all high voltage conducting parts after switching off high voltage before use of flammable solvents
7	Protection against direct contact	Safe switch off of high voltage for access to live system parts
8	Earthing inspection	Earthing of the complete system
9	Locking device/Entry protection	Safe switch off of high voltage for access to live system parts
10	Inspection of fire extinguishing equipment	Inspection of local fire extinguishing equipment
11	Inspection of conductive parts in the coating material system	Inspection of conductive parts of the coating material supply for earthing and potential
12	Minimum distance in air	Minimum distance between earthed and high voltage conducting parts

Further inspections must be performed in accordance with EN 12215.

6.3.2 INSPECTION INTERVALS IN ACCORDANCE WITH TABLE 4 OF DIN EN 50176: 2010-04

Paragraph	Inspection point	Inspection interval category 2	Inspection interval category 3
1	Safe operational condition of the complete system	12 months	12 months
2	Effectiveness of technical ventilation	Continuously	Continuously
3	Overcurrent cut-out	Whenever the system is switched on	Whenever the system is switched on
4	Undervoltage cut-out	Whenever the system is switched on	Whenever the system is switched on
5	Discharge energy	Weekly	Weekly
6	Ignition protection for flammable cleaning agents	Before all cleaning tasks	Weekly
7	Protection against contact	Weekly	Weekly
8	Earthing measures	Weekly	Weekly
9	Locking device/Entry protection	Weekly	Weekly
10	Fire extinguishing equipment	6 months	6 months
11	Conductive parts of the coating material system	Weekly	Weekly
12	Minimum distance in air	Weekly	Weekly

6.4 INSPECTIONS IN ACCORDANCE WITH DIN EN 50348

If the system is used for electrostatic coating with non-flammable liquid coating materials (water-based paints), the inspection in accordance with DIN EN 50348:2010-05 as per table 3 must be performed.

6.4.1 OVERVIEW OF INSPECTIONS

Paragraph	Type of inspection	Requirements
1	Inspection for safe operational condition	Safe operational condition of the complete system
2	Inspection of technical ventilation	Effectiveness of technical ventilation
3	Switch off of high voltage in voltage controlled and constant voltage operating mode	Safe switch off of high voltage
4	Switch off of high voltage in constant current operating mode	Safe switch off of high voltage
5	Protection against excessively high discharge energy	Safe discharge of all high voltage conducting parts after switching off high voltage
6	Protection against direct contact	Safe switch off of high voltage for access to live system parts
7	Earthing inspection	Earthing of the complete system
8	Locking device/Entry protection	Safe switch off of high voltage for access to live system parts
9	Inspection of conductive parts in the coating material system	Inspection of conductive parts of the coating material supply for earthing and potential
10	Minimum distance in air	Minimum distance between earthed and high voltage conducting parts

Further inspections must be performed in accordance with EN 12215.

6.4.2 INSPECTION INTERVALS IN ACCORDANCE WITH TABLE 4 OF DIN EN 50348: 2010-05



Paragraph	Inspection point	Inspection interval
1	Safe operational condition of the complete system	12 months
2	Effectiveness of technical ventilation	Continuously
3	Overcurrent cut-out	Weekly
4	Undervoltage cut-out	Weekly
5	Discharge energy	Weekly
7	Protection against contact	Weekly
8	Earthing measures	Weekly
9	Entry protection	Weekly
11	Conductive parts of the coating material system	Weekly
12	Minimum distance in air	Weekly

7 TROUBLE SHOOTING AND SOLUTION



Functional fault	Possible cause	Elimination of error
Insufficient material discharge	• Material tube diameter too small	• Select larger material tube diameter (see accessories)
	• Material pressure too low	• Increase material pressure
	• Material viscosity too high	• Thin material in accordance with the manufacturer's instructions
	• Filter in material supply clogged	• Clean or replace filter
	• Material tube is clogged	• Clean or replace material tube
Poor spray pattern	• Wrongly adjusted material pressure or fan air	• Readjust material pressure or fan air
	• Incorrect material tube diameter	• Using a different material tube diameter
	• Material viscosity too high	• Thin material in accordance with the manufacturer's instructions
	• Material pressure too high	• Reduce material pressure
	• Damaged bell or distributor	• Replace bell or distributor
Material tube/Distributor leaks	• Damaged seals	• Exchange seals
Poor wrap-around	• Poor earthing at object	• Check earthing of object or hanger with ohmmeter
	• Paint resistance too high / too low	• Check resistance of paint in accordance with paragraph 4.1.1
Backspraying	• Object not earthed	• Check earthing
	• Distance between atomizer and object too large	• Reduce distance between atomizer and object
	• No fan air	• Check fan air
No wrap round	• No high voltage	• Check function of atomizer in accordance with its manual
	• Air-passages damp	• Cleaning air-passages and drying
	• Paint conductivity too high	• Check resistance of paint (see paragraph 4.1.1)
Unusual vibration (noise development)	• Damaged bell and distributor	• Replace bell and distributor
	• Receiver cone or drive turbine damage	• Replace the drive turbine

8 REPAIRS



→ See Safety regulations in chapter 2.

	 DANGER
	<p>Discharge of electrostatically charged components in atmospheres containing solvents! Explosion hazard from electrostatic sparks or flames</p> <p>Before all maintenance work or repair work:</p> <ul style="list-style-type: none"> → Switch off the high voltage. → Earth the atomizer and all unit components. → Ensure that an explosive atmosphere does not exist in the working area (ventilate sufficiently). → Ensure that any possible static charging of the casing parts is discharged completely (by means of earthing rod).



SIHI_0097_GB

	 WARNING
	<p>Incorrect maintenance/repair! Risk of injury and damage to the equipment</p> <ul style="list-style-type: none"> → Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center. → Before all work on the unit and in the event of work interruptions: <ul style="list-style-type: none"> - Switch off the energy/compressed air supply. - Relieve the pressure from the high rotation atomizer and unit. - Secure the high rotation atomizer against actuation. → Observe the operating and service instructions when carrying out all work.

SIHI_0095_GB

	 WARNING
	<p>Defective parts! Leakage caused by defective parts The resulting spray jet can inject material into the body (skin, eyes etc.)</p> <ul style="list-style-type: none"> → Always replace defective parts, O-rings and seal sets.

SIHI_0099_GB

	 WARNING
	<p>Defective parts! Risk of injury and damage to equipment by defective parts</p> <p>→ Always replace defective parts.</p>

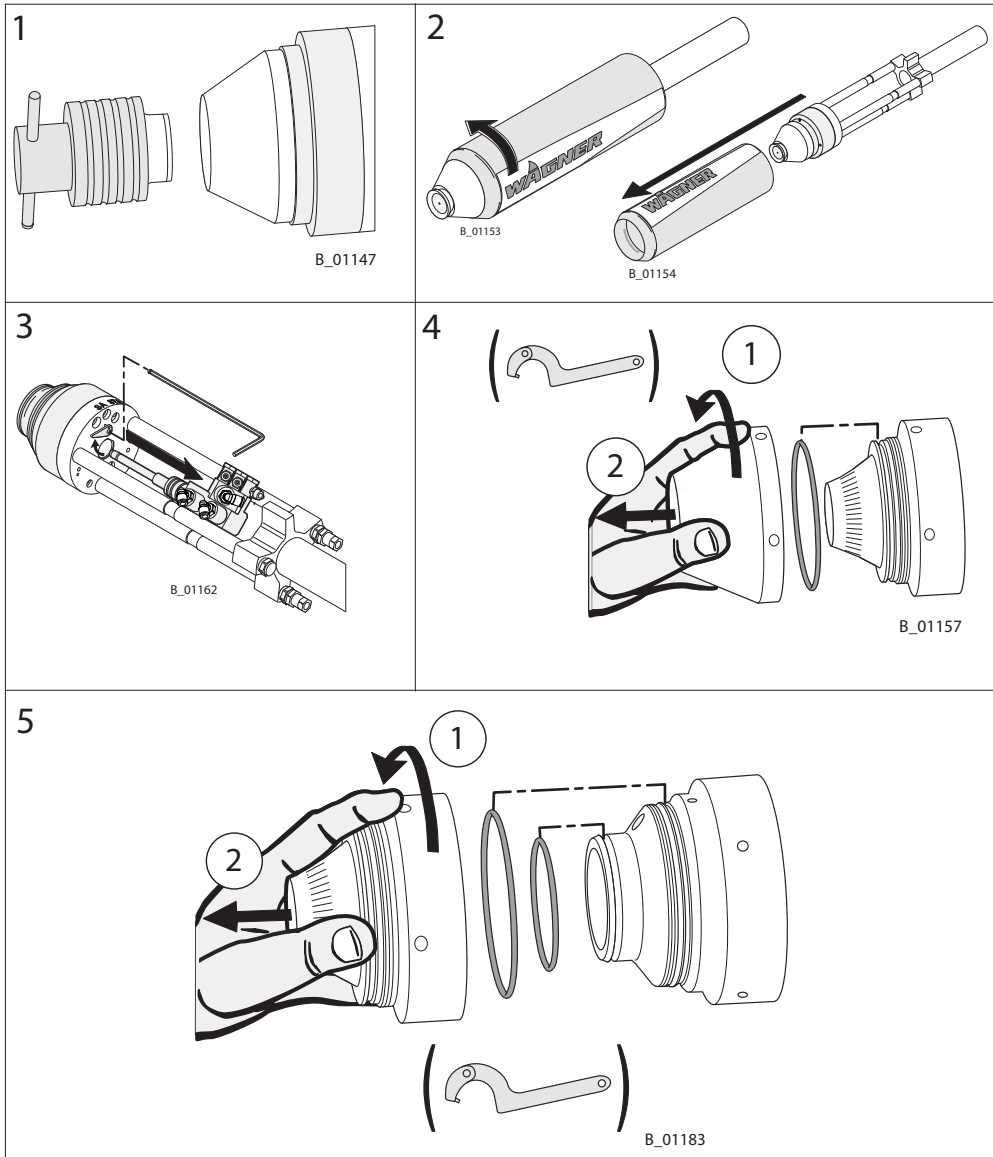
SIHI_0104_GB

8.1 REPLACING DRIVE UNIT

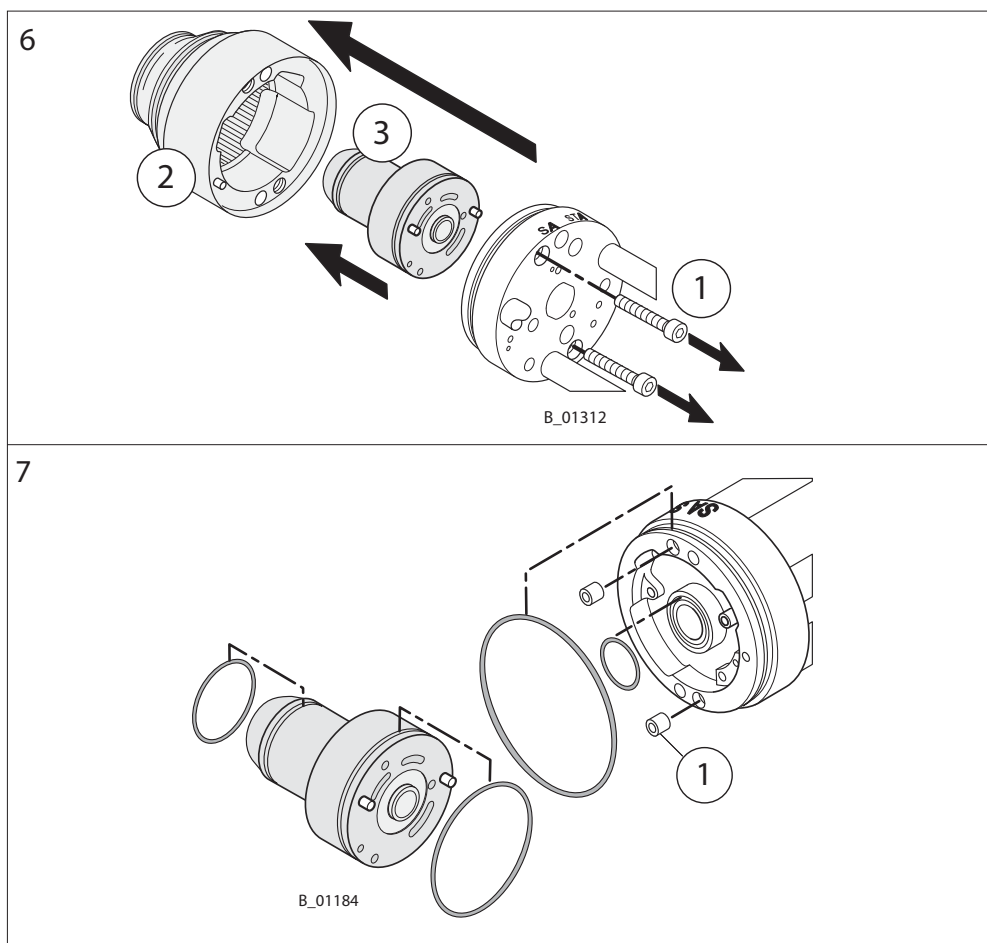
8.1.1 DISASSEMBLY DRIVE UNIT

	WARNING
	<p>Incorrect repair! Risk of injury and damage to the equipment</p> <p>→ Protect the receiver cone of the shaft for damage. → Tape over the cone or cover it with a protective cap.</p>

SIHI_0105_GB



1. Remove the bell using a special tool.
2. Turn the casing counter clockwise and pull it off the basic body.
3. Loosen the catch and swing it out and pull the valve block off the adapter plate.
4. Loosen the outer ring by hand, screw it off the distributor ring and replace the O-ring (if necessary use a heel wrench width 60-90).
5. Loosen the distributor ring by hand, screw it off the bearer ring and replace the O-rings (if necessary use a heel wrench width 60-90).





6. Loosen the fastening screws using an Allen key size M8.
Pull the bearer ring carefully from the adapter plate.

Note:



- The turbine sits loosely on the adapter plate and is held by the bearer ring.
 - Protect the turbine against falling!
- Pull the turbine by hand from the adapter plate.

7. Pull the air channels (1) from the adapter plate and replace the O-rings.

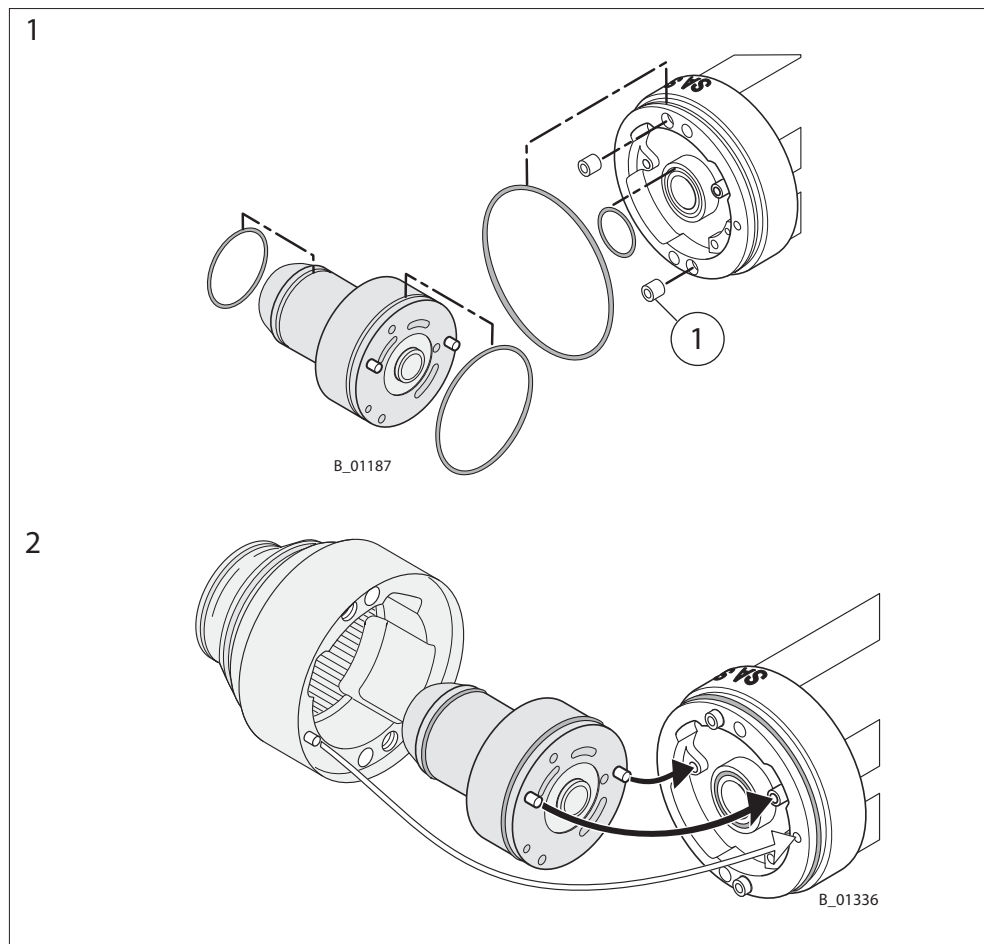
	 WARNING
	<p>Defective parts! Risk of injury and damage to equipment by defective parts</p> <ul style="list-style-type: none">→ Do not disassemble and repair the turbine!→ Always replace damaged turbine.

SIFI_0106_GB

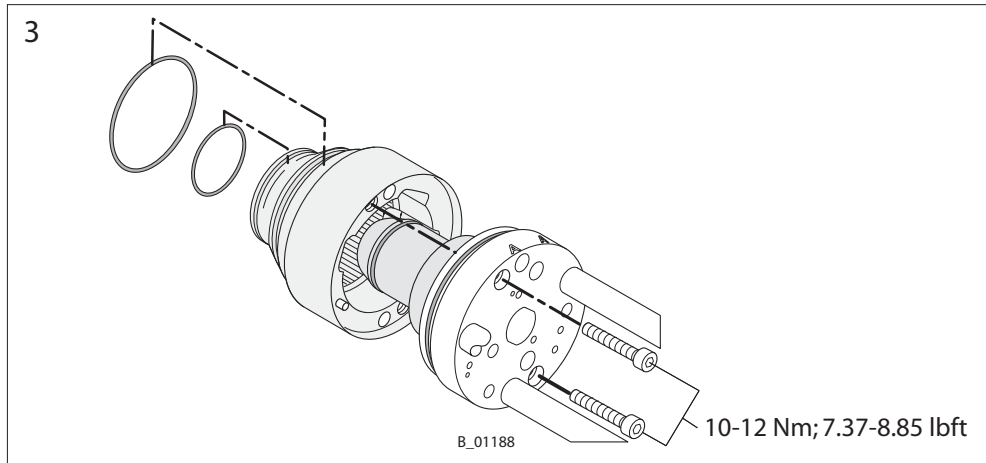
8.1.2 ASSEMBLY DRIVE UNIT

	 WARNING
	<p>Incorrect repair! Risk of injury and damage to the equipment</p> <p>→ Protect the receiver cone of the shaft for damage. → Tape over the cone or cover it with a protective cap.</p>

SIHI_0105_GB



1. Insert the air channels (1), grease the O-rings lightly with Vaseline.
2. Fasten the turbine with new O-rings by hand to the base plate and place the bearing ring with new O-rings on the turbine.



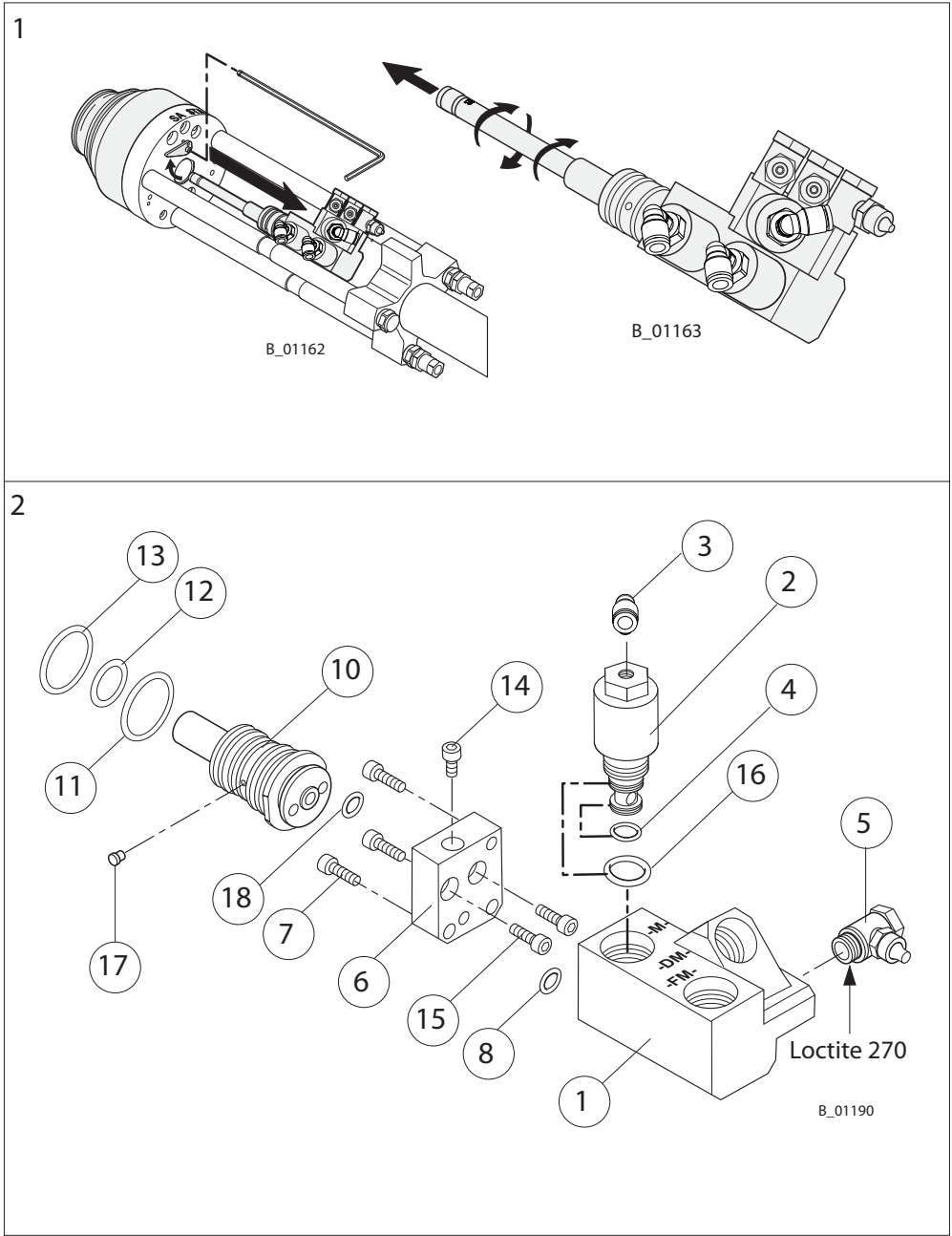
3. Screw in the fastening screws (secured with Loctite 222) by hand and tighten them with 10-12 Nm; 7.37-8.85 lbft.

Note:

- The positioning pins of the turbine must engage the holes of the adapter plate.
- The positioning pin in the bearer ring must engage the hole of the adapter plate.
- Observe the tightening torque for the fastening screw.
- Grease the O-rings lightly with Vaseline.

8.2 REPLACE VALVE BLOCK

8.2.1 DISASSEMBLY VALVE BLOCK



1. Remove the valve block with material tube from the adapter plate

- Remove the material tube from the valve block. **Attention:** Left threads

2. Disassemble the valve block

- Screw the material valve (2) from the material bearer (1).
- Remove the O-rings (4 and 16).
- Screw off the screw-in threaded elbow (3) joint.
- Screw off the swivelling screw (5) fitting.

Remove the flange from the valve bearer

- Unscrew the screws (7) from the valve bearer (1) using an Allen key size M4.
- Take off the flange (6) and remove the sealing material (8).

Note:

- Screw (14) secured with Loctite 542
- Remove screw only if necessary.

Remove the interim piece from the flange

- Loosen the screws (15) using an Allen key size M4. Pull the intermediate piece (10) from the flange (6).
- Remove the O-rings (11) (12) (13) (18).

8.2.2 ASSEMBLY VALVE BLOCK**Note:**

- Grease the O-rings lightly with Vaseline.

Mount the intermediate piece to the flange

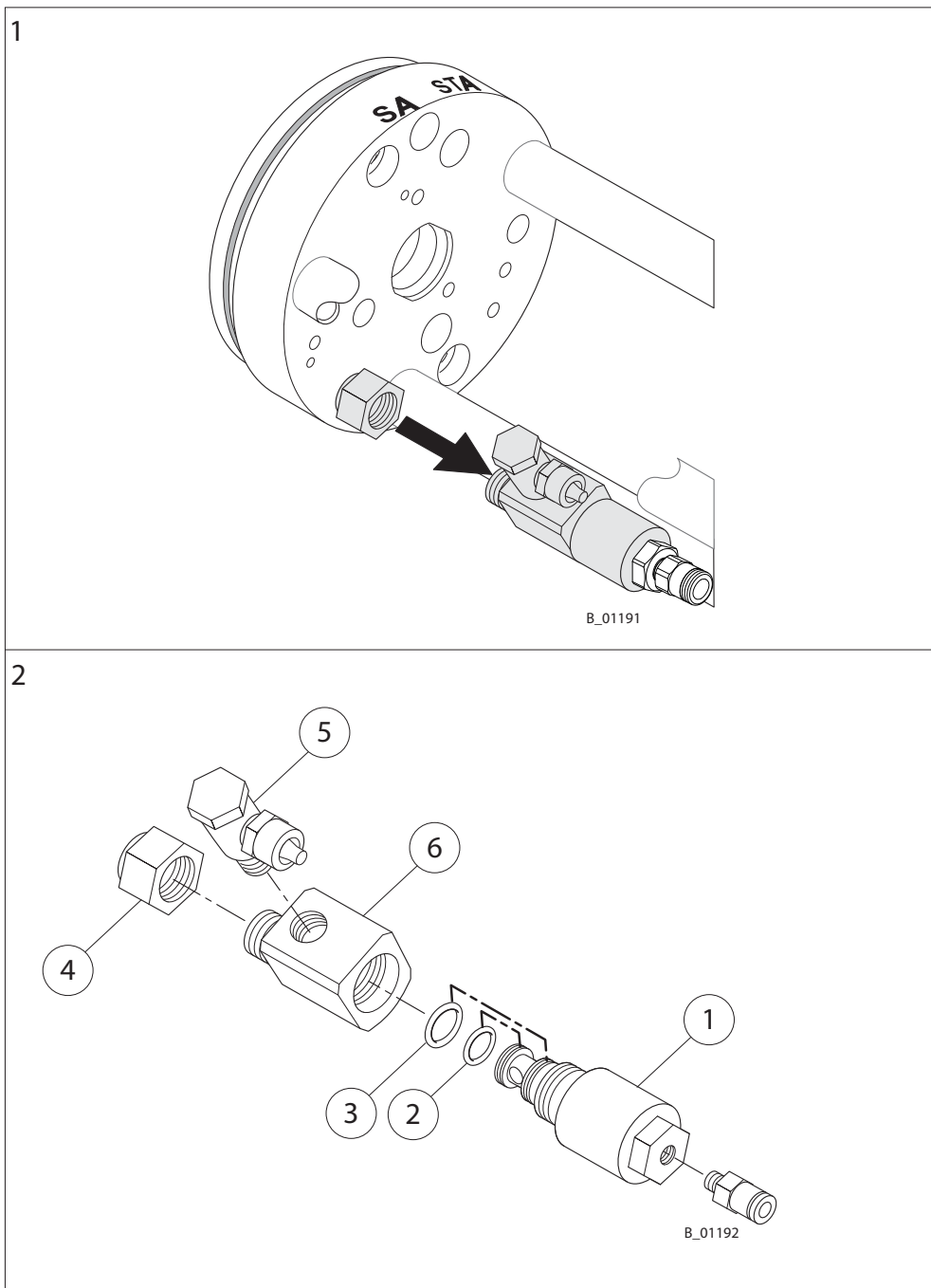
- Insert the intermediate piece (10) with new O-rings and seals into the flange (6).
- Moisten the screw (14) thread slightly with Loctite 542, insert the screw and screw in using an Allen key size M4.

Mount the add-on pieces to the valve bearer

- Screw the flange (6) with the new O-ring to the valve block.
- Insert the swivelling screw fitting (5) into the valve block and screw it in with the open-end wrench.
- Insert the material valves (2) with new O-rings into the valve block.

Note:

- Observe the torque of 3-5 Nm; 2.21-3.69 lbft
- Screw in the material valves (2) and tighten it 3-5 Nm; 2.21-3.69 lbft

8.3 REMOVE BELL SOLVENT VALVE**8.3.1 DISASSEMBLY BELL SOLVENT VALVE**

1. Remove the bell flushing valve from the connection nipple (4)**2. Disassemble the bell flush valve**

- Unscrew the material valve (1) from the housing (6)
- Remove the O-ring (2) and (3).
- Screw the swivelling screw fitting (5) off from the housing (6).

8.3.2 ASSEMBLY BELL SOLVENT VALVE**Note:**

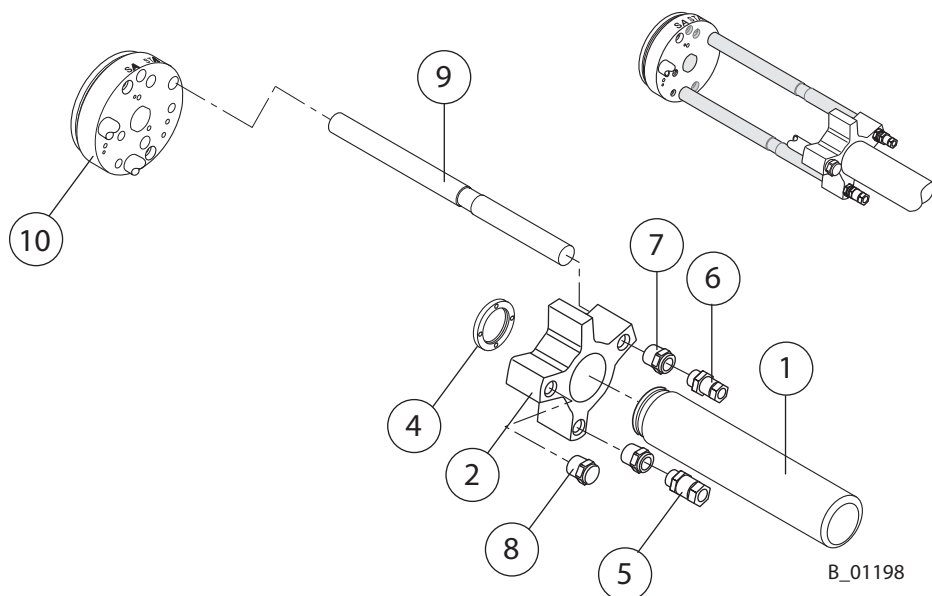
- Grease the O-rings lightly with Vaseline.

Assemble the bell flushing valve

- Screw the material valve (1) with new O-rings into the housing (6).
- Screw the swivelling screw fitting (5) into the housing (6).
- Screw the bell flushing valve into the connection nipple (4).

Note:

- Observe the torque of 3-5 Nm; 2.21-3.69 lbft
- Screw in the material valves (2) and tighten it 3-5 Nm; 2.21-3.69 lbft

8.4 REMOVE BEARING TUBE / CLAMP ROD**8.4.1 DISASSEMBLY BEARING TUBE / CLAMP RODS**

Remove the bearing tube

- Remove the nuts for the bearing tube (4).
- Screw the bearing tube (1) from the clamping piece (2).
- Remove joints (5) and (6).
- Remove air connections (7).
- Remove connector-stopper (8).

Note:

- Threaded joints (5 and 6), air connections (7) and connection plugs (8) are secured with Loctite 542

Remove clamp rod.

- Take the clamping piece (2) off from the stay bars (9).
- Remove the stay bars (9) from the adapter plate (10).

Note:

- Clamp rods (9) secured with Loctite 542.

8.4.2 ASSEMBLY BEARING TUBE / CLAMP RODS

CAUTION

Damage to the turbine!

Soiling of the supply lines, in particular of the bearing air cause damage to the turbine
Stay bars and connection nipples are to be bonded and sealed with Loctite 542

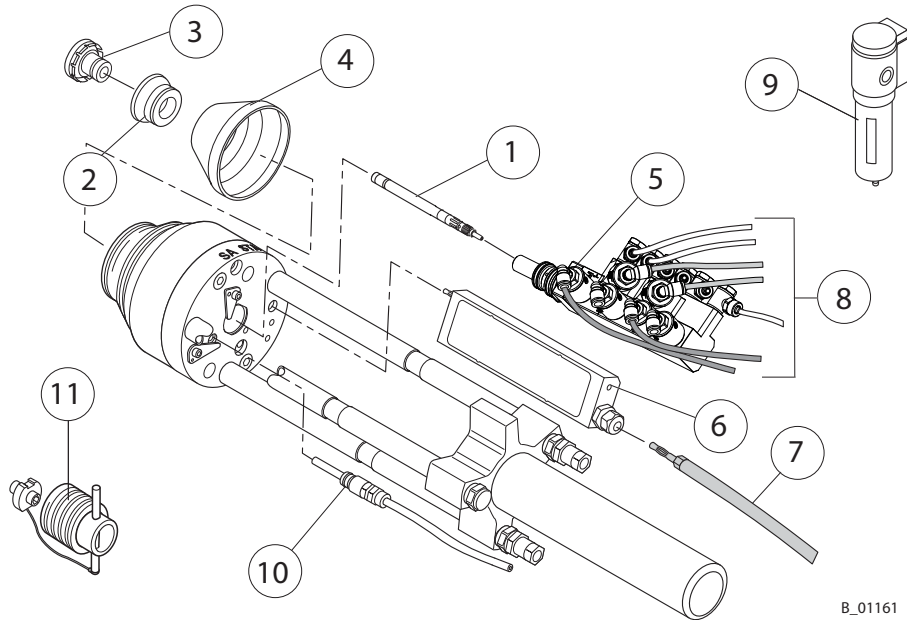
- Be sure to avoid soiling of the supply lines through the excessive use of bonding agent!
- Do not under any circumstances use Teflon tape or similar thread sealing means.

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Mount the stay bars and bearing tube

- Moisten the ends of the bearing tubes (9) with Loctite 542 slightly and insert them into the adapter plate (10).
- Insert the clamping piece (2) at the ends of the stay bars (9)
- Moisten the ends of threaded joints (5) and (6), of air connections (7) and ends of the connection plugs (8) slightly with Loctite 542 and insert them into the clamping piece (2).
- Screw the bearing tube (1) into the clamping piece (2).
- Tighten the nuts for the bearing tube (4).

9 ACCESSORIES

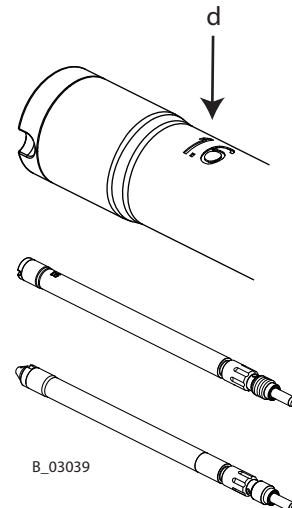


B_01161

- 1 = Material tube
- 2 = Bell
- 3 = Distributor
- 4 = Air guide
- 5 = Valve block
- 6 = Resistance block
- 7 = High voltage cable
- 8 = Hoses
- 9 = Air filter
- 10 = Speed/bearing air monitoring
- 11 = Tool

9.1 MATERIAL TUBES (ATTENTION: LEFT THREADS)

Part No.	Description	Volume flow ml/min; cc/min *	Hole diameter d mm; inch
387151	Material tube d 0.8	270 (270)	0.8; 0.031
387152	Material tube d 1.1	470 (470)	1.1; 0.043
387153	Material tube d 1.6	700 (700)	1.6; 0.063
387154	Material tube d 2.2	1040 (1040)	2.2; 0.087
2303890	Material tube T d 1.6	700 (700)	1.6; 0.063
2303891	Material tube T d 2.0	900 (900)	2.0; 0.079

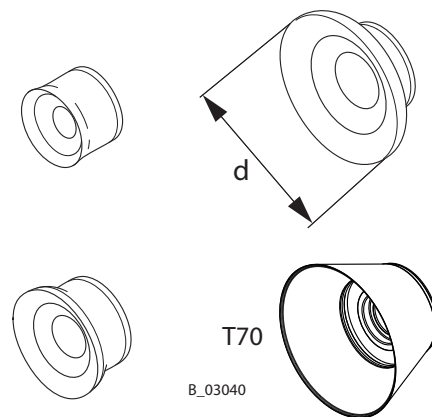


B_03039

* Volume flow water at 0.01 MPa; 1 bar; 14.5 psi material pressure

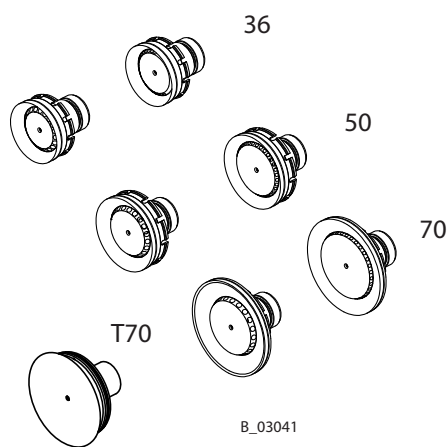
9.2 BELLS

Part No.	Description	Bell diameter d mm; in
387108	Bell 36 Aluminium	36; 1.42
387109	Bell 50 Aluminium	50; 1.97
387110	Bell 70 Aluminium	70; 2.76
2303928	Bell T 70 Aluminium	70; 2.76



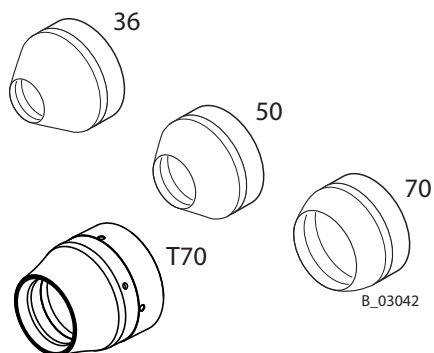
9.3 DISTRIBUTOR

Part No.	Description	Dimension: Master gauge for holes in mm; inch
387138	Distributor 36 (32 x d 1.5)	32 x Ø 1.5
387135	Distributor 36 (20 x d 2.3)	20 x Ø 2.3
387139	Distributor 50 (32 x d 1.5)	32 x Ø 1.5
387136	Distributor 50 (20 x d 2.3)	20 x Ø 2.3
387140	Distributor 70 (32 x d 1.5)	32 x Ø 1.5
387137	Distributor 70 (20 x d 2.3)	20 x Ø 2.3
2303925	Distributor T 70 (1 x d 2.0)	1 x Ø 2.0



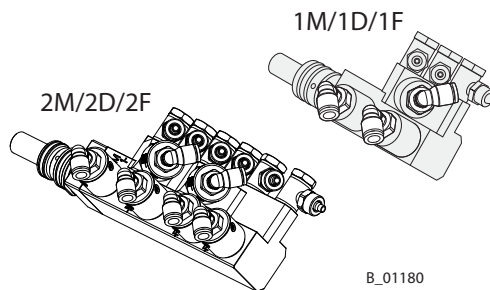
9.4 AIR CONDUCTION

Part No.	Description
387103	Air conduction 36 assy.
387104	Air conduction 50 assy.
387105	Air conduction 70 assy.
2303933	Air conduction T 70 assy.



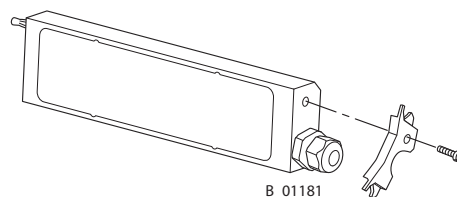
9.5 VALVE BLOCK

Part No.	Description
387116	Valve block assy. 2M/2D/2F EB3500
387117	Valve block assy. 1M/1D/1F EB3500



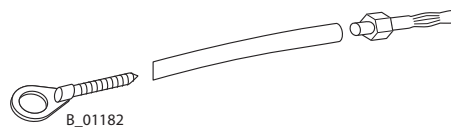
9.6 RESISTANCE BLOCK

Part No.	Description
387102	Resistance block
387335	Bearing plate
9900758	Cap head screw



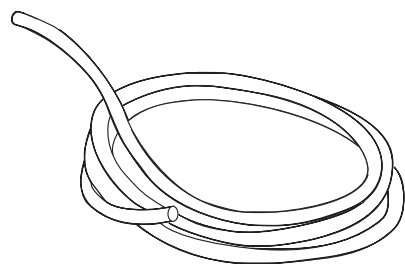
9.7 HIGH VOLTAGE CABLE WITH PLUG / EYE

Part No.	Description
9956066	High voltage cable (order by the meter, without packaging)
9956067	High voltage connector plug
9956071	High voltage mounting link M5
9956072	High voltage mounting link M6
9956073	High voltage mounting link M8



9.8 HOSES

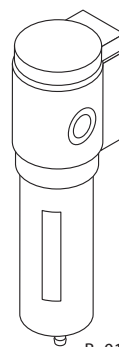
Part No.	Description	Dimension Inside diameter x Outside diameter in mm; inch
9982072	Air hose PUR black (per meter)	2.5 x 4 0.10 x 0.16
9981914	Air hose PUR blue (order by the meter)	6 x 8 0.24 x 0.31
9987116	Air hose PUR blue (order by the meter)	8 x 10 0.31 x 0.40
9987004	Material hose PTFE transparent (order by the meter)	4 x 6 0.16 x 0.24



B_01199

9.9 AIR FILTER

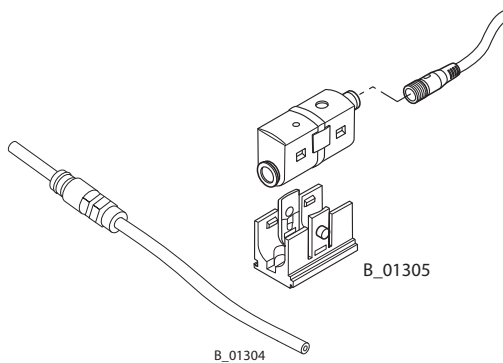
Part No.	Description
9999330	Filter Air 40 µm
9999331	Filter Air 5 µm
9999332	Filter Air 0.01 µm
9999334	Filter cartridge 40 µm
9999335	Filter cartridge 5 µm
9999336	Filter cartridge 0.01 µm



B_01302

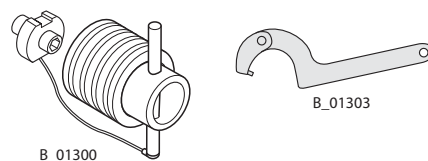
9.10 SPEED- / BEARING AIR CONTROL

Part No.	Description
387100	Speed sensor
387101	Optical-fiber cables
9956125	Push switch
9956126	Cable for Push switch



9.11 MISCELLANEOUS

Part No.	Description
387903	Set Valve stopper
387190	Adjusting and installation tool d 36
387191	Adjusting and installation tool d 50
387192	Adjusting and installation tool d 70
387980	Articulated sickle spanner 90/5



10 SPARE PARTS

10.1 HOW TO ORDER SPARE PARTS

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

Part Number, description and quantity

The quantity need not be the same as the number given in the „Quantity“ column. This number merely indicates how many of the respective parts are used in each subassembly.



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

- Address for the invoice
- Address for delivery
- Name of the person to be contacted in the event of any queries
- Type of delivery required (air freight or mail, sea route or overland route, etc.)

Marks in spare parts lists

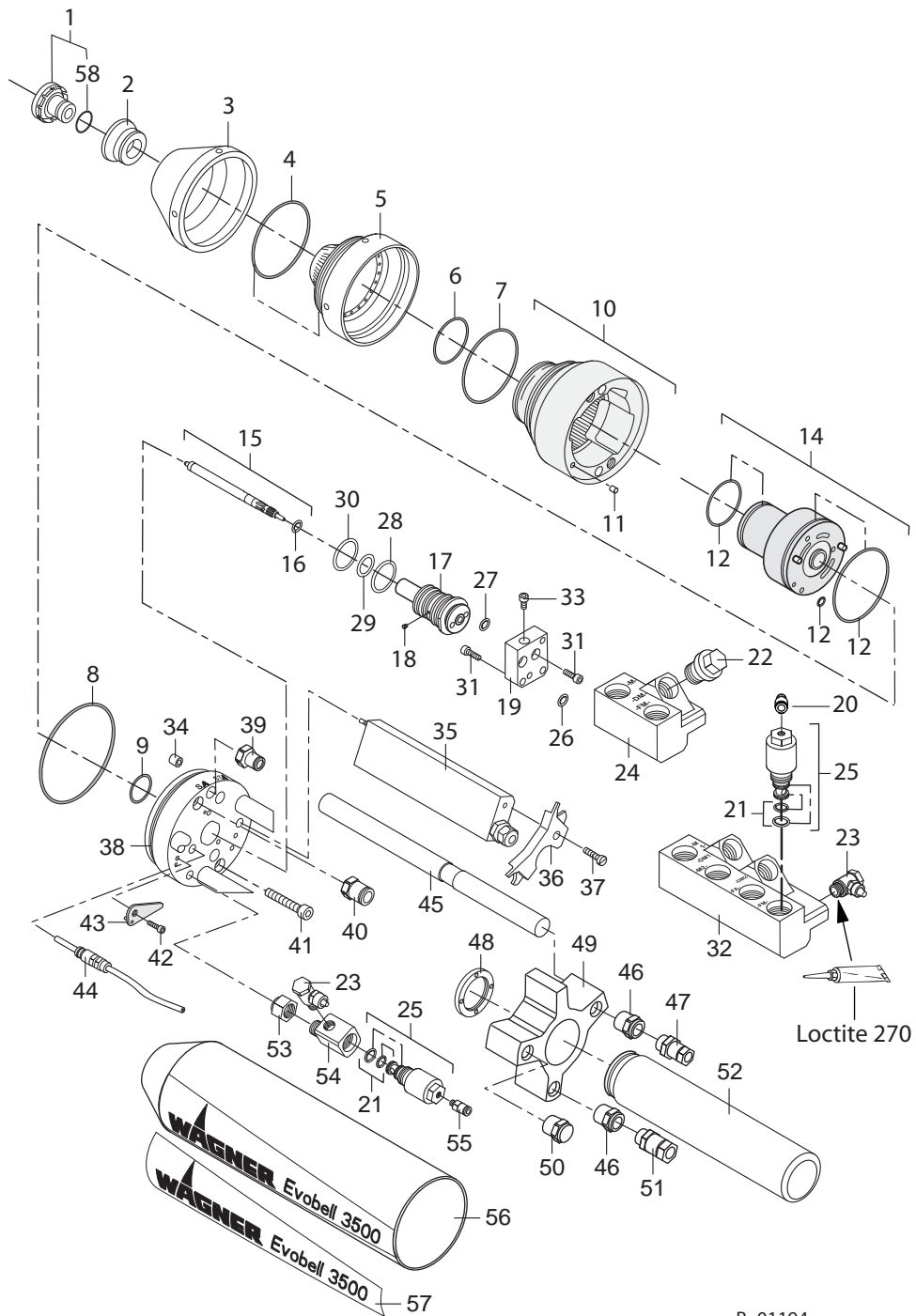
Note to column „K“ in the following spare parts lists.

- ◆ = Wearing parts
Note: No liability is assumed for wearing parts
- = Not part of standard equipment, available, however, as additional extra.

	 WARNING
	<p>Incorrect maintenance/repair! Risk of injury and damage to the equipment</p> <ul style="list-style-type: none"> → Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center. → Before all work on the unit and in the event of work interruptions: <ul style="list-style-type: none"> - Switch off the energy/compressed air supply. - Relieve the pressure from the high rotation atomizer and unit. - Secure the high rotation atomizer against actuation. → Observe the operating and service instructions when carrying out all work.

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10.2 SPARE PARTS LIST EVOBELL 3500



B_01194

Spare parts Evobell 3500

Pos	K	Qty	Part No.	Description
1	◆	1	3871..	Distributor --> see accessories
2	◆	1	3871..	Bell --> see accessories
3		1	387941	Outside ring 36 mm; 1.42 inches
3		1	387943	Outside ring 50 mm; 1.97 inches
3		1	387945	Outside ring 70 mm; 2.76 inches
3		1	2303930	Outside ring T 70 mm; 2.76 inches
4	◆	1	9974198	O-ring 36 mm; 1.42 inches, 50 mm; 1.97 inches
4	◆	1	9974204	O-ring 70 mm; 2.76 inches
5		1	387940	Distributor ring 36 mm; 1.42 inches
5		1	387942	Distributor ring 50 mm; 1.97 inches
5		1	387944	Distributor ring 70 mm; 2.76 inches
5		1	2303929	Distributor ring T 70 mm; 2.76 inches
6	◆★	1	9974200	O-ring
7	◆★	1	9974199	O-ring
8	◆★	1	9974197	O-ring
9	◆★	1	9971336	O-ring
10		1	387919	Support ring EB3500 assy.
11		3	387320	Stop pin
12	◆★	1	387915	Service Set Turbine EB3500
14	◆	1	387922	Turbine EB3500 assy.
15	◆	1	3871..	Material tube --> see accessories
16	◆	1	9974226	O-ring
17		1	387402	Intermediate piece
18		2	387348	Pressure bolt
19		1	387321	Flange
20		3 (6)*	9998752	Angle screwing in connection assy.
21	◆★	1	387904	Service Set Material valve Evobell
22	●	-	387903	Set Valve stopper --> see accessories
23		4 (7)*	9999278	Swivelling screw fitting
24		1	387322	Valve supporter 1M/1D/1F
25	◆	4 (7)*	387901	Material valve M17x1
26	◆★	1	380321	Material seal
27	◆★	1	9974227	O-ring

◆ = Wearing part

● = Not part of standard equipment for spray gun. Available, however, as additional extra

★ = Included in service set

* = Number depends of the valve block model

Spare parts Evobell 3500

Pos	K	Qty	Part No.	Description
28	◆★	1	9974202	O-ring
29	◆★	1	9974229	O-ring
30	◆★	1	9974205	O-ring
31		5	9900353	Cap head screw
32		1	387323	Valve supporter 2M/2D/2F
33		1	9900392	Cap head screw
34		2	387349	Air canal
35		1	387102	Resistance block assy.
36		1	387335	Support plate
37		1	9900758	Slotted cheese head screw with slit
38		1	387918	Adapter plate EB3500 assy.
39		1	9998254	Screwed connecting piece, straight
40		2	9998987	Screwed connecting piece, straight
41		2	9900309	Cap head screw
42		2	9900343	Cap head screw
43		2	387912	Catch assy.
44	●	-	387101	Optical-fiber --> see accessories
45		3	387328	Rod
46		2	387332	Connection Air
47		1	9999309	Screwed fitting
48		1	387331	Nut for supporter tube
49		1	387329	Clamp piece
50		1	387333	Connector stopper
51		1	9907096	Screwed fitting
52		1	387330	Support tube d 50 mm; 1.97 inches
53		1	387911	Connection nipple assy.
54		1	387327	Housing
55		1	9992722	Fitting, straight
56		1	387920	Casing EB3500 assy.
57		1	387411	Sticker Evobell 3500
58		1	9974225	O-ring
58		1	2312821	O-ring (T version)

◆ = Wearing part

● = Not part of standard equipment for spray gun. Available, however, as additional extra

★ = Included in service set

* = Number depends of the valve block model

Service-Sets and Spare parts subassemblies

Part No.	Description	Consisting of: Spare parts Item
387901	Material valve M17x1 FFKM	25
387903	Set Valve plug	22
387904	Service Set Material valve Evobell FFKM	21
387911	Connection nipple assy.	53
387912	Catch assy.	43
387915	Service Set Turbine EB3500	12
387916	Service Set Drive unit EB3500	6, 7, 8, 9
387917	Service Set Valve block EB3500	26, 27, 28, 29, 30
387918	Adapter plate EB3500 assy.	38
387919	Bearer ring EB3500 assy.	10
387920	Casing EB3500 assy.	56
387922	Turbine EB3500 assy.	14

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<p>Japan WAGNER Spraytech Ltd. 2-35, Shinden Nishimachi J- Daito Shi, Osaka, 574-0057 Telephone: +81 (0) 720 874 3561 Telefax: +81/ (0) 720 874 3426 E-Mail: marketing@wagner-japan.co.jp</p>	<p>Austria J. WAGNER GmbH Otto-Lilienthal-Str. 18 Postfach 1120 D- 88677 Markdorf Telephone: +49 (0) 7544 5050 Telefax: +49 (0) 7544 505200 E-Mail: service.standard@wagner-group.com</p>
<p>Sweden WAGNER Industrial Solutions Scandinavia Skolgatan 61 SE- 568 31 Skillingaryd Telephone: +46 (0) 370 798 30 Telefax: +46 (0) 370 798 48 E-Mail: info@wagner-industri.com</p>	<p>Spain WAGNER Spraytech Iberica S.A. Ctra. N- 340, Km. 1245,4 E- 08750 Molins de Rei (Barcelona) Telephone: +34 (0) 93 680 0028 Telefax: +34 (0) 93 668 0156 E-Mail: info@wagnerspains.com</p>
<p>Czechoslovakia WAGNER s.r.o. Nedasovská Str. 345 15521 Praha 5 - Zlicin Telephone: +42 (0) 2 579 50 412 Telefax: +42 (0)2 579 51 052 E-Mail: info@wagner.cz</p>	<p>USA WAGNER Systems Inc. 300 Airport Road, unit 1 Elgin, IL 60123 USA Telephone: +1 630 503 2400 Telefax: +1 630 503 2377 E-Mail: info@wagnersystemsinc.com</p>

WAGNER



Order number 387841

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