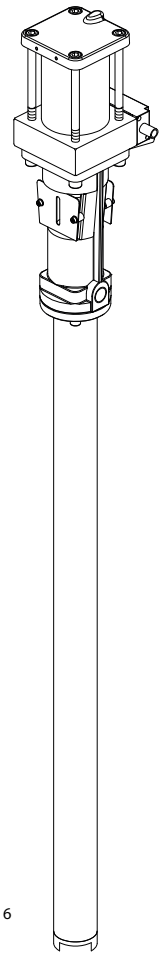


C_00116

Piston Pump

EvoMotion 5-125

Translation of the original operating manual

CE Ex II 2 G Ex h IIB T3/T4 Gb X

For professional use.
Always observe the information in this manual, particularly the safety instructions and the warning instructions. Store the manual in a safe place.

Edition: 03/2021

TABLE OF CONTENTS

1 ABOUT THESE INSTRUCTIONS

1.1 PREFACE

The operating manual contains information about safely operating, maintaining, cleaning and repairing the device. The operating manual is part of the device and must be available to the operating and service personnel.

The device may only be operated by trained personnel and in compliance with this operating manual. Operating and service personnel should be instructed according to the safety instructions.

This equipment can be dangerous if it is not operated according to the instructions in this operating manual.

1.2 WARNINGS, NOTICES AND SYMBOLS IN THESE INSTRUCTIONS

Warning instructions in this manual highlight particular dangers to users and to the device and state measures for avoiding the hazard.

These warning instructions fall into the following categories:

⚠	**DANGER**	Immediate risk of danger. Non-observance will result in death or serious injury.
⚠	**WARNING**	Potential danger. Non-observance may result in death or serious injury.
⚠	**CAUTION**	Potentially dangerous situation. Non-observance may result in minor injury.
ⓘ	**NOTICE**	Potentially dangerous situation. Non-observance may result in damage to property.
ℹ	**Info**	Provides information about particular characteristics and how to proceed.

Explanation of warning notice:

⚠ WARNING

This notice warns you of a danger!

Possible consequences of not observing the warning notice.

- ▸ The measures for preventing the hazard and its consequences.

1.3 GENERAL CHARACTERS AND SYMBOLS

The characters and symbols in this operating manual indicate the following:

- ✓ Requirement that must be fulfilled before an action can be performed.

1. Step 1 of an action to be performed with several action steps.
   - ▸ Second level action step
2. Step 2
   - ⇨ Intermediate result of an action

⇨ Result of a complete action

- ▸ Action to be performed with an action step

1. Numbered list, first level
   - – Numbered list, second level

– Non-numbered list, first level
  – Non-numbered list, second level

[8] = cross-reference on page

♦ = wearing parts

⋆ = included in service set

● = not part of the standard equipment but available as a special accessory

1.4 LANGUAGES

The operating manual is available in the following languages:

Original operating manual

Language	Order no.
German	2316595

Translation of the original operating manual

Language	Order no.	Language	Order no.
English	2316596	French	2316597
Italian	2316599	Spanish	2316600
Dutch	2316598	Danish	2316602
Swedish	2316601	--	--

Additional languages upon request or at: www.wagner-group.com

1.5 ABBREVIATIONS

Order no.	Order number
ET	Spare part
K	Marking in the spare parts lists
Pos	Position
Stk	Number of pieces
DH	Double stroke
2K	Two components
PE	polyethylene
PTFE	Polytetrafluorethylene
T	PTFE

1.6 TERMINOLOGY FOR THE PURPOSE OF THIS MANUAL

Cleaning

Cleaning	Manual cleaning of devices and device parts with cleaning agent.
Flushing	Internal flushing of paint-wetted parts with flushing agent.
Product pressure generator	Pump or pressure tank.

Personnel qualifications

Trained person	Is instructed in the tasks assigned to him/her, the potential risks associated with improper behavior as well as the necessary protective devices and measures.
Electrically trained person	Is instructed by an electrician about the tasks assigned to him/her, the potential risks associated with improper behavior as well as the necessary protective devices and measures.
Electrician	Can assess the work assigned to him/her and detect possible hazards based on his/her technical training, knowledge and experience in relevant provisions.
Skilled person in accordance with TRBS 1203 (2010/Revision 2012)	A person, who, based on his/her technical training, experience and recent vocational experience, has sufficient technical knowledge in the areas of explosion protection, protection from pressure hazards and electric hazards (if applicable) and is familiar with the relevant and generally accepted rules of technology so that he/she can inspect and assess the status of devices and coating systems based on workplace safety.

2 CORRECT USE

2.1 DEVICE TYPE

Pneumatic piston pump and spray packs:

EvoMotion 5-125

2.2 TYPE OF USE

The device is suitable for processing liquid products like paints and lacquers:

- Non-ignitable products.
- Products in accordance with their classification in explosion class IIB.

WAGNER explicitly prohibits any other use!

The device may only be operated under the following conditions:

- Use the device only to work with the materials recommended by WAGNER.
- Do not deactivate safety fixtures.
- Use only WAGNER original spare parts and accessories.
- The operating personnel must be trained on the basis of this operating manual.
- Follow the instructions in the operating manual.

2.3 FOR USE IN POTENTIALLY EXPLOSIVE AREAS

The device can be employed in explosion hazard zones (Zone 1) (see Chapter Identification [▸▸ 10]).

2.4 PROCESSIBLE WORKING MATERIALS

Fluid materials like paints and lacquers.

Application	EvoMotion 5-125
Water-based products	↗
Solvent-based products	↗
Low viscosity (< 40 sec. DIN no. 4)	↗
Medium viscosity (40–60 sec. DIN no. 4)	↗
High viscosity (> 60 sec. DIN no. 4)	↗
UV-sensitive products	→
Shear-sensitive products	↘
Humidity-sensitive products	↘

Signs and definitions:
↗ recommended
→ limited suitability
↘ not suitable

ⓘ NOTICE

Abrasive working materials and pigments!

Greater wear of product-wetted parts.

- Use the application-oriented model (flow rate/cycle, product, valves, etc.) as indicated in the Chapter Technical Data.
- Check if the fluids and solvents being used are compatible with the pump construction materials as indicated in the Chapter Materials of Paint-wetted Parts.
- Use suitable device combinations (packings, valves etc.)

Wear caused by abrasive working materials is not covered by the warranty.

Typical applications

Application	EvoMotion 5-125
Furniture industry	↗
Kitchen manufacturers	↗
Joinery	↗
Window factories	→
Steel-processing industry	→
Construction of vehicles	↗
Shipbuilding	↘

Signs and definitions:
↗ recommended
→ limited suitability
↘ not suitable

2.5 MISUSE

Misuse can lead to physical injury and/or property damage! Special attention must be paid that:

- No dry coating products, e.g., powder are processed.
- No food, medicine or cosmetics are processed. It is important to note that the device's materials are not food-safe.
- Do not process any 2K products.

3 IDENTIFICATION

3.1 EXPLOSION PROTECTION IDENTIFICATION

As defined in Directive 2014/34/EU (ATEX), the device is suitable for use in potentially explosive areas.

Device type	**EvoMotion 5-125** Piston Pump
Manufacturer	Wagner International AG 9450 Altstätten Switzerland


II 2 G Ex h IIB T3/T4 Gb X

CE	European Communities
Ex	Symbol for explosion protection
II	Device class II
2	Category 2 (zone 1)
G	Ex-atmosphere gas
Ex	Ignition protection
h	Ignition protection for non-electrical devices
IIB	Explosion group
T3	Maximum surface temperature < 200 °C; 392 °F (without drying protection active)
T4	Maximum surface temperature < 135 °C; 275 °F (with drying protection active)
Gb	Zone 1 high safety level
X	Special notes (see Chapter Identification "X")

3.2 IDENTIFICATION "X"

The maximum surface temperature corresponds to the permissible product temperature. This and the permissible ambient temperature can be found in Chapter Technical data.

Safe Handling of WAGNER Spray Devices

Mechanical sparks can form if the device comes into contact with metal.
In an explosive atmosphere:

- Knocking or pushing metal against metal is to be avoided.
- Do not drop the device.

Maximum surface temperature

The maximum surface temperature of the piston pump can be reached if it runs dry.

– Ensure that the piston pump is filled with sufficient working or flushing agent.
– Ensure that the separating agent tank is filled with sufficient separating agent.

Ignition temperature of the coating product

- Ensure that the ignition temperature of the surrounding gases (pumping product, cleaning agents) is higher than the maximum permitted surface temperature of the device.

Ambient temperature

The permissible ambient temperature range is: 5 °C to 60 °C; 41 °F to 140 °F.

Electrostatic surface spraying

- Do not spray device parts using electrostatic equipment.

Cleaning

If there are deposits on the surfaces, the device may form electrostatic charges. Flames or sparks can form during discharge.

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

Air in the pump fluid

Ignitable gas mixtures can form if air enters the pump fluid.

- Prevent the pump from taking in air and running dry.
- If air has been taken in, fix the leak. Then, fill slowly and in a controlled manner until the air has escaped.

Air in the pumped fluid can be caused by damaged packings.

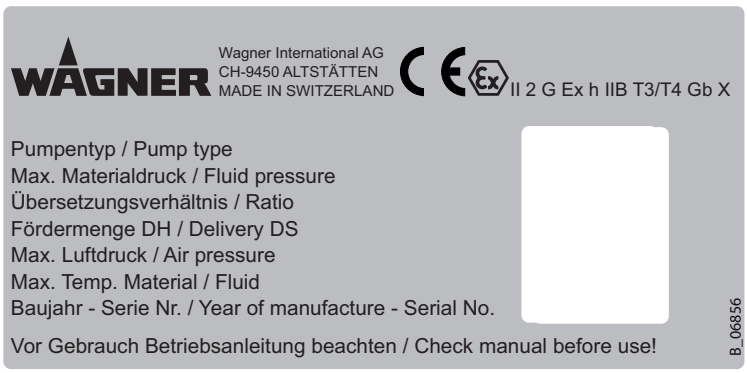
- Avoid operating the pump with damaged packing.
- Ensure that the separating agent tank is filled with sufficient separating agent.
- Periodically check that the pump is working smoothly, paying special attention to the presence of air in the pumped fluid.

Filling and emptying

Ignitable gas mixtures can form in the fluid section or product hoses if the pump must be emptied for maintenance and/or repair purposes.

- Empty and fill the device slowly and in a controlled manner.
- Avoid potentially explosive atmosphere in the surroundings.

3.3 TYPE PLATE



Example type plate

1	Manufacturer and CE identification	6	Maximum air inlet pressure
2	Pump type	7	Maximum product temperature
3	Maximum product pressure	8	Model year - serial number
4	Pump ratio	9	Read operating manual before use!
5	Flow rate per double stroke		

4 BASIC SAFETY INSTRUCTIONS

4.1 SAFETY INSTRUCTIONS FOR THE OPERATOR

- Keep this operating manual at hand near the device at all times.
- Always follow existing regulations concerning occupational safety and accident prevention regulations.

4.1.1 Electrical Devices and Equipment

Danger of electric shock!

Danger to life from electric shock:

- Place and operate device in accordance with the existing safety requirements with regard to the operating mode and ambient influences.
- May only be maintained by skilled electricians or under their supervision. With open housings, the mains voltage poses a danger.
- Operate device in accordance with the safety regulations and electrotechnical regulations.
- Do not disconnect any plug connections during operation.
- Label plug connections with the warning "Do not disconnect when energized".
- Must be repaired immediately in the event of problems.
- Decommission if device poses a danger or is damaged.
- Must be de-energized before work is commenced.
  - Secure the device against being switched back on without authorization.
  - Inform personnel about planned work.
  - Observe electrical safety regulations.
- Ground all devices to a common grounding point.
- Only operate the device with a properly installed socket with a protective ground wire connection.
- Keep liquids away from electrical devices.

4.1.2 A Safe Work Environment

Danger due to dangerous fluids or vapors!

Severe or fatal injuries due to explosion danger or inhalation, swallowing or contact with the skin or eyes.

- Ensure that the floor in the working area is static dissipative in accordance with EN 61340-4-1 (resistance must not exceed 100 MΩ).
- Paint mist extraction systems/ventilation systems must be fitted on site according to local regulations.
- Make sure that the ground connection and potential equalization of all system parts are reliable and continuous and can withstand the expected stress (e.g., mechanical stress, corrosion).
- Ensure that product hoses/air hoses adapted to the working pressure are used.
- Ensure that personal protective equipment is available and is used.

- Ensure that all persons within the working area wear static dissipative shoes. Footwear must comply with EN 20344. The measured insulation resistance must not exceed 100 MΩ.
- Ensure that during spraying, persons wear static dissipative gloves. The grounding takes place via the spray gun's handle or its trigger.
- Protective clothing, including gloves, must comply with EN 1149-5. The measured insulation resistance must not exceed 100 MΩ.
- Ensure that there are no ignition sources such as naked flames, sparks, glowing wires, or hot surfaces in the vicinity. No smoking.
- Ensure that the pipe joints, hoses, equipment parts and connections are permanently, technically leak-proof:
  - Periodic preventative maintenance and service (replacing hoses, checking tightness strength of connections, etc.)
  - Regular monitoring of leaks and defects via visual inspection and odor testing, e.g., daily before commissioning, at the end of work or weekly.
- Ensure that maintenance and safety checks are performed regularly.
- In the event of defects, immediately bring the device or system to a stop and arrange to have repairs carried out immediately.

4.1.3 Personnel Qualifications

Danger due to incorrect use of device!

Risk of death due to untrained personnel.

- Ensure that the operating personnel has been instructed by the operator in accordance with the operating manual and the operating instructions. The device must only be operated, maintained and repaired by trained personnel. Refer to the operating instructions for information about the required personnel qualifications.

4.2 SAFETY INSTRUCTIONS FOR THE PERSONNEL

- Always observe the information in this manual, particularly the safety instructions and the warning instructions.
- Always follow existing regulations concerning occupational safety and accident prevention regulations.

Danger due to high-voltage field!

Danger to life from malfunction of active implants.

- Persons belonging to a risk group according to EMF guideline 2013/35/EU (e.g., carriers of active implants), must not enter the high-voltage area.

4.2.1 Personal Safety Equipment

Danger due to dangerous fluids or vapors!

Serious or fatal injuries due to inhalation, swallowing or contact with the skin or eyes.

- When preparing or working with lacquer and when cleaning the device, follow the working instructions of the manufacturer of the lacquers, solvents and cleaning agents being used.
- Implement the prescribed safety measures, in particular the wearing of safety glasses, safety clothing and protective gloves as well as the use of protective hand cream.
- Use a mask or breathing apparatus if necessary.

- For sufficient health and environmental safety: Operate the device in a spray booth or on a spraying wall with the ventilation (extraction) switched on.
- Wear suitable protective clothing when working with hot products.

4.2.2 Safe Handling of WAGNER Spray Devices

Danger due to injection of lacquer or flushing agent into the skin!

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

Avoid injection of lacquer or flushing agents:

- Never point the spray gun at people.
- Never reach into the spray jet.
- Perform the following measures before any work on the device, in the event of work interruptions and malfunctions:
  - Switch off the energy/compressed air supply
  - Relieve the pressure from the spray gun and device
  - Securing the Spray Gun Against Actuation
  - Disconnect the control unit from the mains
  - In the event of functional faults, remedy the fault as described in the Troubleshooting chapter
- If needed, the liquid ejection devices must be checked by experts (e.g., WAGNER service technician) at least every 12 months for their work-safe condition in accordance with DGUV regulation 100-500 Chapter 2.29 and Chapter 2.36.
  - For shut down devices, the examination can be suspended until the next start-up.

In the event of skin injuries caused by lacquer or flushing agents:

- Note the lacquer or flushing agent that you have been using.
- Consult a doctor immediately.

Danger due to recoil forces!

Actuating the trigger can causes strong recoil forces. Thereby, the user can lose his balance and injure himself when falling.

Avoid risk of injury from recoil forces:

- Ensure that you have firm footing when operating the spray gun.

4.2.3 Grounding the Device

Danger due to electrostatic charge!

Risk of injury, explosion hazard and damage to the device.

Friction, flowing liquids and air or electrostatic coating processes create charges. Flames or sparks can form during discharge. Correct grounding of the entire spraying system prevents electrostatic charges.

- Ensure that all devices and tanks are grounded before each spraying process.
- Make sure that the ground and potential equalization of all system parts are performed reliably and continuously and can withstand the expected stress (e.g., mechanical stress, corrosion).
- Ground the work pieces to be coated.
- Ensure that all persons inside the working area are grounded, e.g., that they are wearing static dissipative shoes.

- Wear static dissipative gloves when spraying. The grounding takes place via the spray gun's handle or its trigger.

4.2.4 Product Hoses

Danger due to bursting of product hose!

The product hose is under pressure and may cause dangerous injuries.

- Ensure that the hose material is chemically resistant to the sprayed products and the flushing agents used.
- Ensure that the product hoses and the fittings are suitable for the pressure generated.
- Ensure that the following information can be seen on the high-pressure hose:
  - Manufacturer
  - permissible operating pressure
  - Date of manufacture
- Make sure that the hoses are laid only in suitable places. Hoses should not be laid in the following places under any circumstances:
  - in high traffic areas
  - on sharp edges
  - on moving parts
  - on hot surfaces
- Ensure that the hoses are never run over by vehicles (e.g., fork lifts), or that the hoses are never put under pressure from the outside in any other way.
- Ensure that the hoses are never kinked. Observe maximum bending radii.
- Ensure that no work is ever performed with a damaged hose.
- Make sure that the hoses are never used to pull or move the device.
- The electrical resistance of the product hose, measured at both valves, must be less than 1 MΩ.
- Suction hoses may not be subjected to pressure.

Several liquids have a high expansion coefficient. In some cases, their volume can rise with consequent damage to pipes, fittings, etc. and cause fluid leakage.

When the pump sucks liquid from a closed tank, ensure that air or a suitable gas can enter the tank. In this way a negative pressure is avoided. The vacuum could implode the tank (squeeze) and can cause it to break. The tank would leak and the liquid would flow out.

The pressure created by the pump can be a multiple of the input air pressure.

4.2.5 Cleaning and Flushing

Danger due to cleaning and flushing!

Explosion hazard and damage to the device.

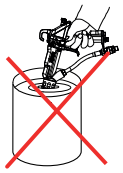
- Non-ignitable cleaning agents and flushing agents should preferably be used.
- When carrying out cleaning work with flammable cleaning agents, make sure that all equipment and resources (e.g., collection tank, funnel, transport cart) are conductive or static dissipative and grounded.
- Observe the specifications of the lacquer manufacturer.
- Ensure that the flash point of the cleaning agent is at least 15 K above the ambient temperature or that cleaning is undertaken at a cleaning station with technical ventilation.

- Never use chloride or halogenated solvents (such as trichloroethane and methylene chloride) with devices containing aluminium or galvanized/zinc-plated parts. They may react chemically thus producing an explosion danger.
- Take measures for workplace safety.
- It should be noted that when the device is put into operation or emptied: depending on the coating product used, depending on the rinsing agent (solvent) used, there may briefly be a mixture inside the pipes and equipment which can ignite.
- Only use electrically conductive tanks for cleaning and flushing agents.
- The tanks must be grounded.

An explosive gas/air mixture forms in closed tanks.

- Never spray into a closed tank when using solvents for flushing.

External Cleaning



When cleaning the exterior of the device or its parts, also observe the following:

- Relieve the pressure from the device.
- De-energize the device electrically.
- Disconnect the pneumatic supply line.
- Use only moistened cloths and brushes. Never use abrasive agents or hard objects and never spray cleaning agents with a gun. Cleaning the device must not damage it in any way.
- Ensure that no electric component is cleaned with or immersed into solvent.

4.2.6 Touching Hot Surfaces

Danger due to hot surfaces because of hot coating products!

Risk of burn injuries

- Only touch hot surfaces if you are wearing protective gloves.
- When operating the device with a coating product with a temperature of > 43 °C; 109 °F, apply a warning label to the device that says "Warning - Hot Surface."

Instruction label: Order no. 9998910

Protection label: Order no. 9998911

Info

Order the two labels together.

4.2.7 Maintenance and Repair

Danger due to improper maintenance and repair!

Danger to life and equipment damage.

- Only a WAGNER service center or a suitably trained person may carry out repairs and replace parts.
- Repair or replacement of devices or parts of devices are only allowed to be performed outside the hazard area by qualified personnel.
- Use only WAGNER original spare parts and accessories.
- Do not change or modify the device; if change is necessary, contact WAGNER.
- Only repair and replace parts that are listed in the accessories and spare parts chapter and that are assigned to the device.

- Do not use any defective components.
- Before all work on the device and in the event of work interruptions:
  - Relieve the pressure from the spray gun, product hoses and all devices.
  - Secure the spray gun against actuation.
  - Switch off the energy and compressed air supply.
  - Disconnect the control unit from the mains.
- Observe the operating and service manual for all work.

4.2.8 Protective and Monitoring Equipment

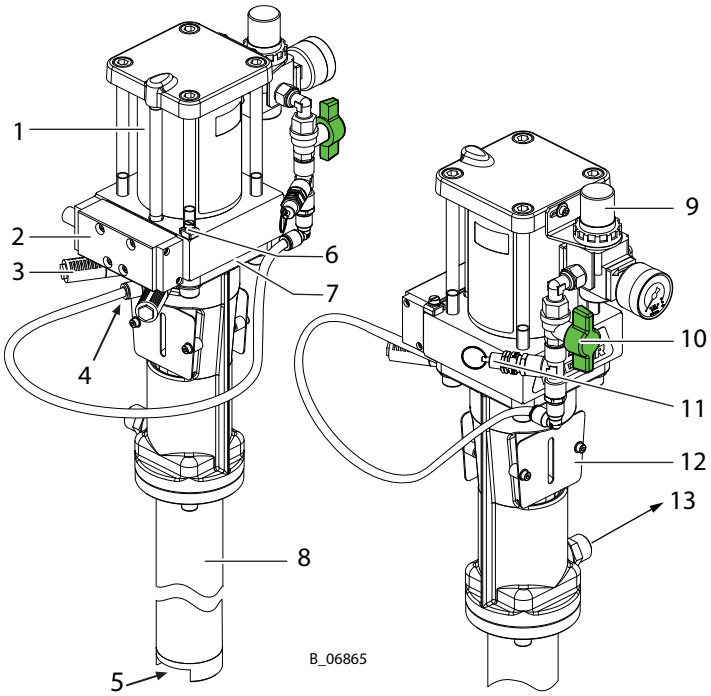
Danger due to removal of protective and monitoring equipment!

Danger to life and equipment damage.

- Protective and monitoring equipment must not be removed, modified or rendered unusable.
- Regularly check for perfect functioning.
- If defects are detected on protective and monitoring equipment, the system must not be operated until these defects are remedied.

5 DESCRIPTION

5.1 COMPONENTS



1	Air motor	8	Fluid section
2	Reversing Valve	9	Air pressure regulator (option)
3	Silencer	10	Ball valve (option)
4	Air input	11	Safety valve (option)
5	Product input	12	Spacer (separating fluid tank)
6	Grounding connection	13	Product output
7	Mounting flange	--	--

5.2 FUNCTIONING

The piston pump is driven with compressed air (4). This compressed air moves the air piston up and down in the air motor (1) and it also moves the the associated pump piston up and down in the fluid section (8). At the end of each stroke, the compressed air flow is redirected by a reversing valve (2). The working product is sucked up during the upwards stroke and, at the same time, is conveyed towards the pressure outlet (13) in both stroke directions.

5.2.1 Air motor

The air motor (1), with its pneumatic reversing valve (2), does not require pneumatic oil. The compressed air can be fed to the motor via an air regulator (9, option) and a ball valve (10 option). The air pressure regulator (9) is fitted with a safety valve (11), in accordance with chapter Protective and Monitoring Equipment [▸▸ 19].

5.2.2 Fluid section

The fluid section is designed as a piston pump with flap valves. The pump piston runs in the upper fixed packings which are self-adjusting by means of a pressure spring. This results in the packing having a long service life. There is a spacer (12) between the air motor and the fluid section. It serves to collect the separating agent.

5.3 PROTECTIVE AND MONITORING EQUIPMENT

Safety valve

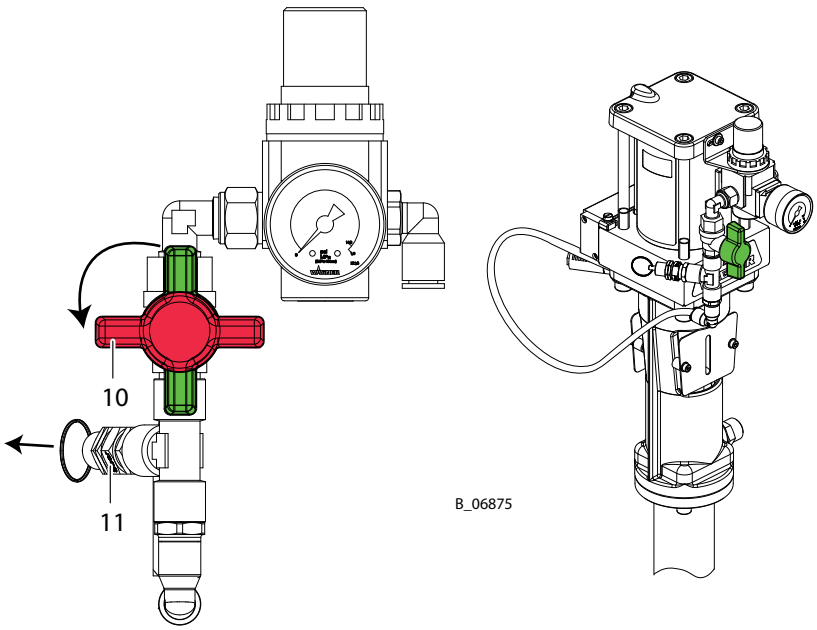
⚠ WARNING

Overpressure!

Danger to life from bursting device components.

- Never change the safety valve setting.

The air motor is fitted with a safety valve. The safety valve (11) has been set and sealed at the factory. In case of pressures over and above the permissible operating pressure, the valve, which is held with a spring, automatically opens and releases the excess pressure. As well as handling pressure limits, the valve is also used as a pressure relief valve for the air motor.



Process for manually relieving pressure

1. Close ball valve (10).
2. Pull the ring on the safety valve (11) and hold it until the pressure in the air motor has been equalized.

5.4 EXTENT OF DELIVERY

Piston pump consisting of:

-	Fluid section
-	Air motor
-	Connection elements

The standard equipment includes:

Stk	Order no.	Designation
1	9992504	Separating agent 250 ml
1	2316595	Operating manual, in German
1	See Chapter EU Declaration of Conformity [▸▸ 61]	Declaration of Conformity
1	See Chapter Languages [▸▸ 6]	Operating manual in the local language

The delivery note shows the exact scope of delivery. Accessories: see Chapter Accessories [▸▸ 50].

5.5 DATA

5.5.1 Materials of Paint-wetted Parts

Paint-wetted part	Product
Pump housing	Carbon steel
Piston	Carbon steel with silicon carbide coating
Valve balls	Stainless steel
Valve seats	Stainless steel
Static seals	EPDM
Packings	PE / T

PE = Polyethylene UHMW

T = Polytetrafluorethylene (PTFE)

Positions of the individual parts: See Chapter Spare Parts [▸▸ 52].

5.5.2 Recommended Packings

WAGNER packings for this device:

Code	Product	Color
PE	Ultra high molecular weight polyethylene	transparent
T	PTFE	white

Each product has the following properties, which influence the packings:

Designation	PE	T
Mechanical stability	good	poor
Friction coefficient	good	very good
Sealing force	good	good
Chemical resistance	very good	very good
Temperature resistance	very good	poor

5.5.3 Technical data

Description	Units	Evo Motion 5-125
Pump ratio		5:1
Flow volume per double stroke (DS)	cm^3 / cc	125
Maximum operating pressure	MPa	4.0
	bar	40
	psi	581
Maximum possible strokes in operation	DS/min	60
Minimum/maximum air inlet pressure	MPa	0.2–0.8
	bar	2–8
	psi	28–116
Compressed air quality: free from oil and water	Quality standard 7.5.4 according to ISO 8573.1, 2010	
		7: Particle concentration 5–10 mg/m^3
		5: Humidity: pressure dew point ≤ 7 °C
		4: Oil content ≤ 5 mg/m^3
Air inlet diameter (internal thread)	mm; inch	8.0; 0.31
Minimum diameter of the compressed air supply line	mm; inch	9.0; 0.35
Air consumption at 0.6 MPa; 6 bar; 87 psi per double stroke	nl; scf	4.0; 0.14
Air motor piston diameter	mm; inch	80; 3.15
Sound pressure level at maximum permissible air pressure*	dB(A)	72
Sound pressure level at 0.6 MPa; 6 bar; 87 psi air pressure*	dB(A)	69
Sound pressure level at 0.4 MPa; 4 bar; 58 psi air pressure*	dB(A)	62
Product inlet (inside thread)	mm	--
Product output (inside thread)	inch	G 1/2"
Weight	kg; lb	25; 55
Product pH value	pH	3.5–9
Maximum product pressure at pump inlet	MPa	--
	bar	--
	psi	--
Product temperature	°C	5–80
	°F	41–176
Ambient temperature	°C	5–60
	°F	41–140
Allowable inclination for operation	∠°	± 10

* Measured A-rated emission sound pressure level at distance of 1 m, LpA1m in accordance with DIN EN 14462: 2015. Reference measurements have been made by Suva (Swiss National Accident Insurance Fund).

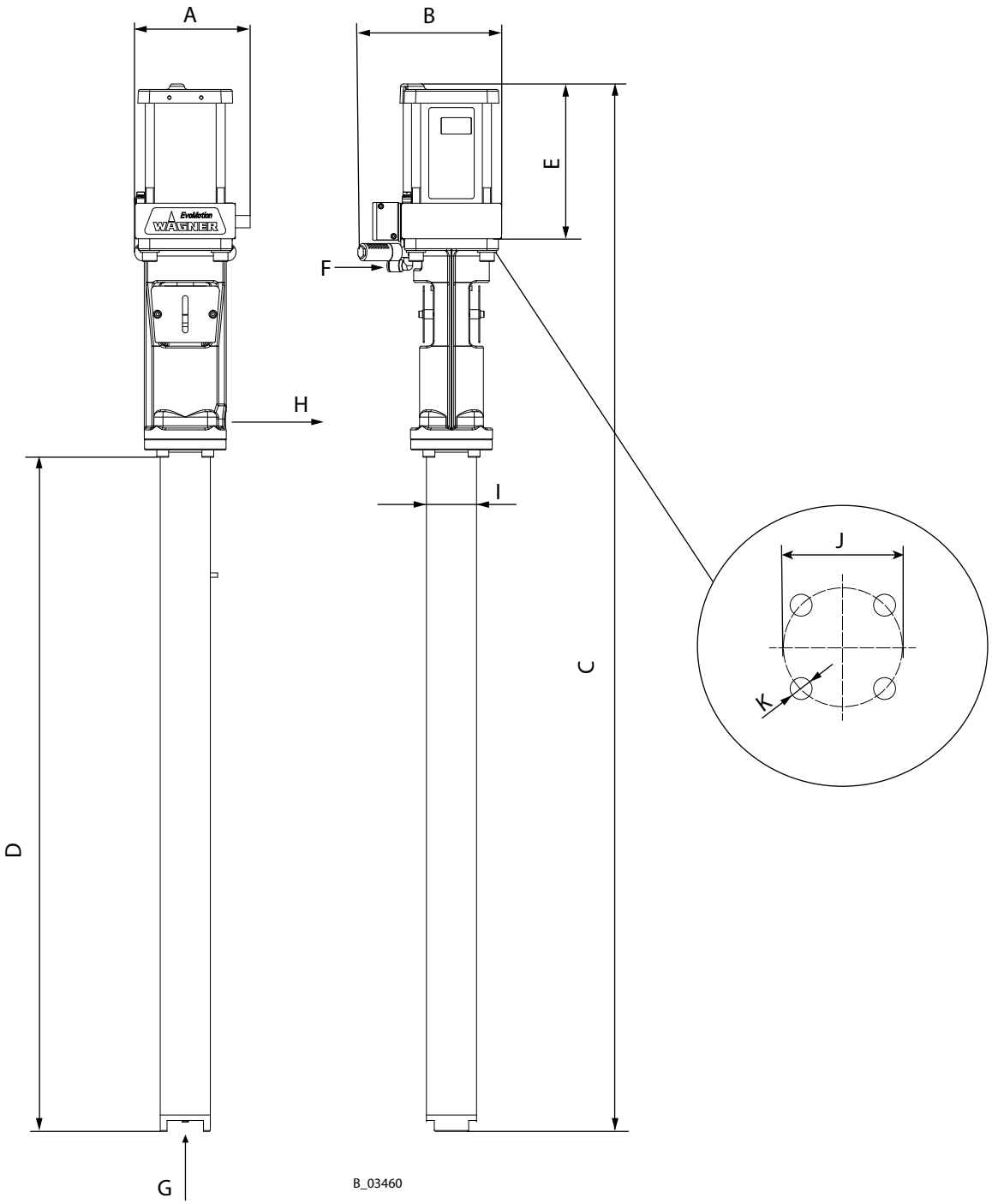
⚠ WARNING

Exhaust air containing oil!

Risk of poisoning if inhaled.

- Provide compressed air free from oil and water.

5.5.4 Dimensions and connections

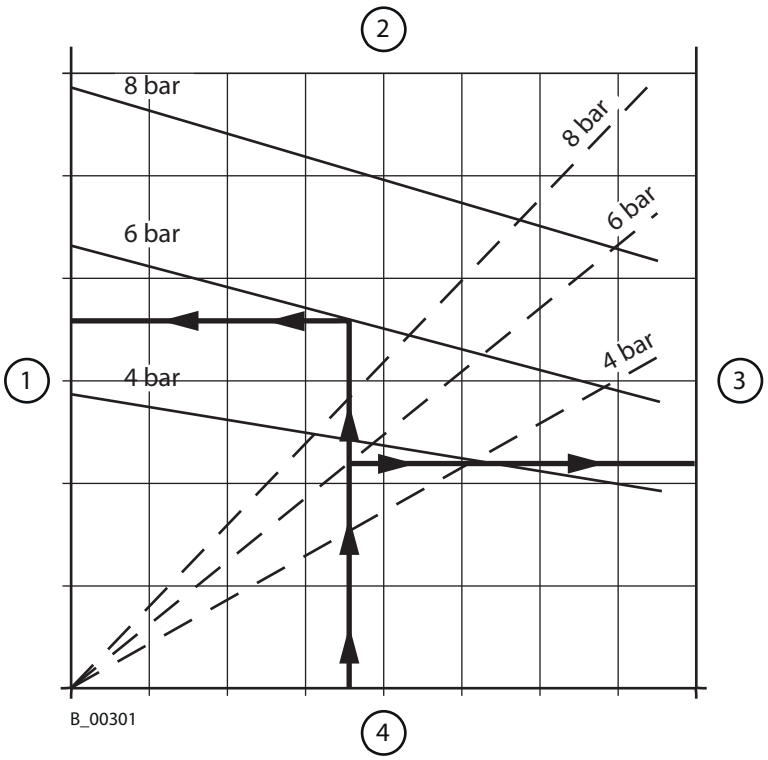


Pos	mm	inch
A	126.5	5.0
B	142	5.6
C	1338.5	52.7
D	944.5	37.2
E	170	6.7
F	ø 8	ø 0.31
G	--	--
H	--	G1/2“
I	54	2.1
J*	ø 110	4.33
K*	ø 11	0.43

* On-site: possible wall mount fixing

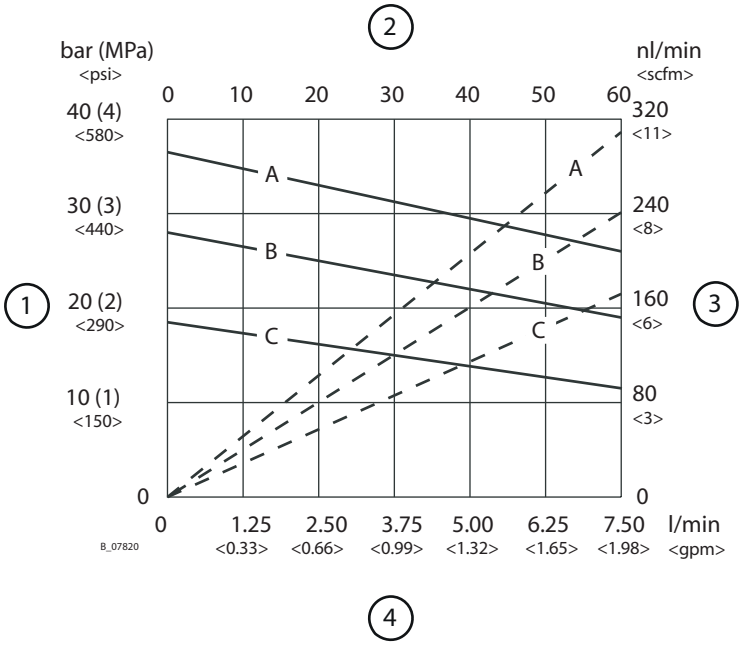
5.5.5 Performance Diagrams

Example



1	Product pressure in bar; (MPa); <psi>	3	Air consumption in nl/min.; <scfm>
2	Stroke frequency in DH/min.	4	Flow rate of water in l/min.; <gpm>

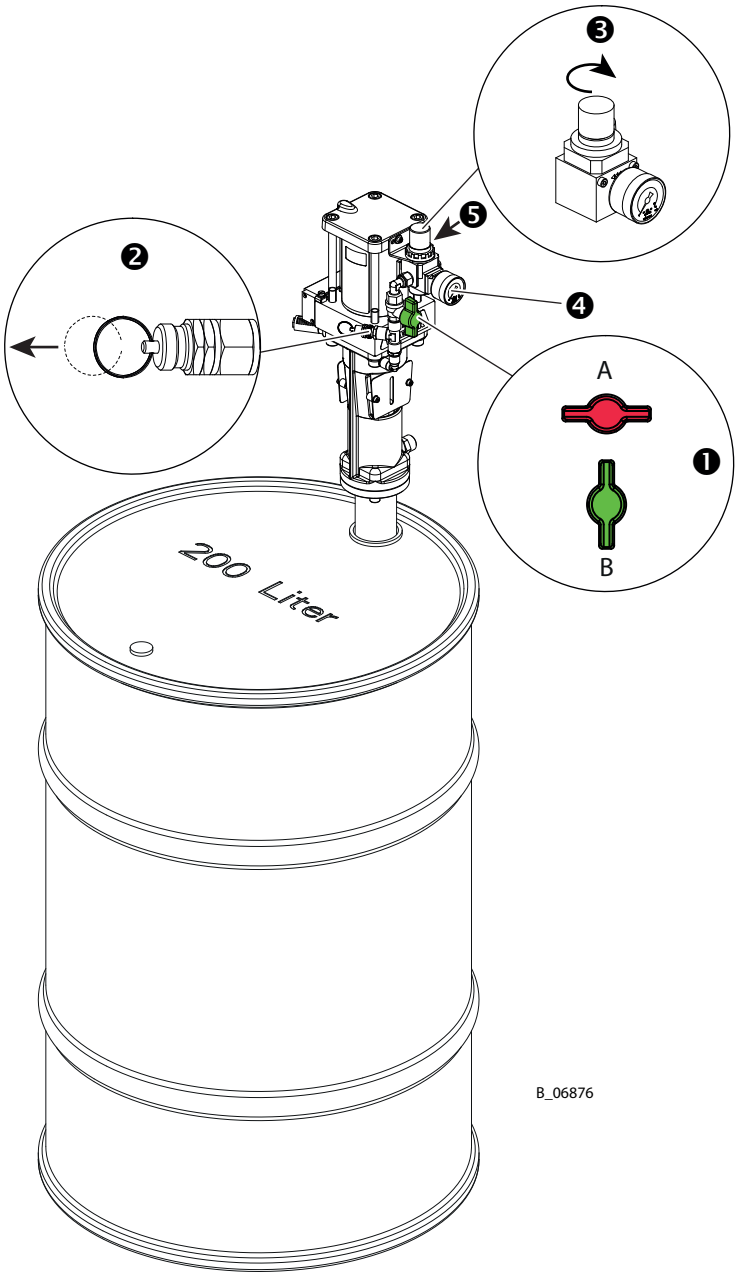
EvoMotion 5-125



1	Product pressure in bar; (MPa); <psi>	A	Characteristic curve for air pressure 8 bar; 0.8 MPa; 116 psi
2	Stroke frequency in DH/min.	--	--
3	Air consumption in nl/min.; <scfm>	B	Characteristic curve for air pressure 6 bar; 0.6 MPa; 87 psi
4	Flow rate of water in l/min.; <gpm>	C	Characteristic curve for air pressure 4 bar; 0.4 MPa; 58 psi

5.6 OPERATING ELEMENTS

5.6.1 Pressure Regulator Unit



A	Open: working position	3	Pressure regulator
B	Closed: the air motor can still be under pressure	4	Pressure gauge (air inlet pressure)
1	Ball valve	5	Compressed air input
2	Safety valve (See chapter Protective and Monitoring Equipment [▸▸ 19])	--	--

6 ASSEMBLY AND COMMISSIONING

6.1 TRAINING OF ASSEMBLY/COMMISSIONING PERSONNEL

- The assembly and commissioning personnel must have the technical skills to safely commission the device.
- When assembling, commissioning and carrying out all work, read and follow the operating manuals and safety regulations for the additionally required system components.

A skilled person must check to ensure that the device is in a reliable state after it is assembled and commissioned.

6.2 STORAGE CONDITIONS

Until the point of assembly, the device must be stored in a dry location, free from vibrations and with a minimum of dust. The device must be stored in closed rooms.

Die Lufttemperatur am Lagerort muss in einem Temperaturbereich zwischen -20 °C und +60 °C; -4 °F und +140 °F liegen.

The relative air humidity at the storage location must be between 10 and 95% (without condensation).

6.3 INSTALLATION CONDITIONS

The air temperature at the installation site must be in a range between 4 °C and 40 °C; 39 °F and 104 °F.

The relative air humidity at the installation site must be between 10 and 95% (without condensation).

6.4 MANUAL TRANSPORT

The pump can be moved manually without lifting equipment.

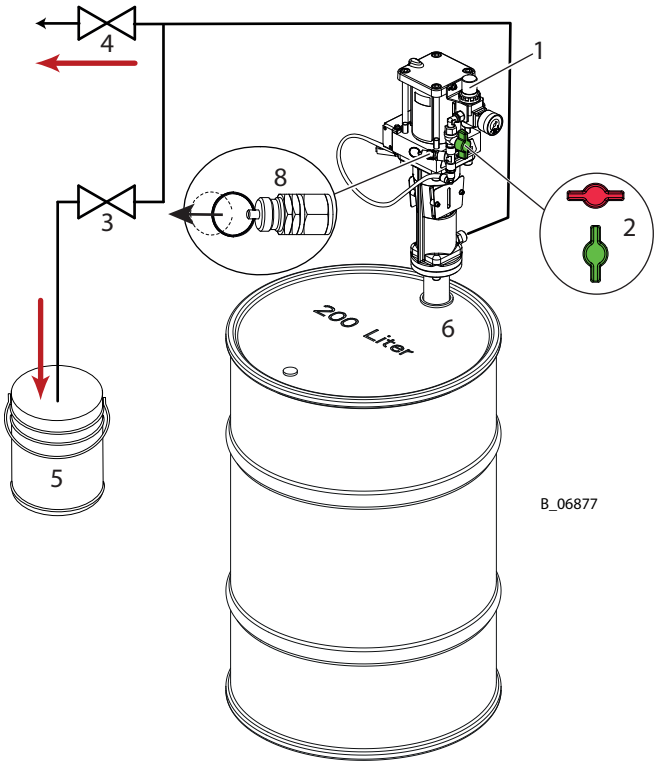
6.5 ASSEMBLY AND INSTALLATION

Info

Ensure that the national explosion prevention rules and regulations are observed when setting up the device.

This pump can be used as part of a spraying system or it can be used in a TwinControl system, for example. A variety of supplemental components for this pump can be found in the WAGNER liquid coating or accessories catalogues. So that the pump can be separated from the rest of the system, the correct product valve must be mounted in the product line.

- Further valves (e.g. spray guns) downstream of the product non-return valve are not discussed in this manual. Observe superordinate operating manual!



A	Closed: The air motor may still be under pressure.	B	Open: working position

1. Ensure that the product tank is equipped with the correct drum adaptor or the correct mounting bracket (ø suction tube pump 54 mm, 2.1 inch).
2. Mount the pump vertically with the drum adaptor or with the mounting bracket. The pump must be vertical during operation (maximum permissible tilt of the pump ± 10°) -> See chapter Technical data [▸▸ 21]
3. Mount a pressure regulator unit (1).
4. Mount a return valve with corresponding return hose (3).
5. Mount a suitable product non-return valve (4) on the product line.
6. Place the pump in the product tank (6).
7. Provide an empty tank (5).

6.5.1 Ventilation of the Spray Booth

– Operate the device in a spray booth approved for the respective working materials.
- or -
– Operate the device on an appropriate spraying wall with the ventilation (extraction) switched on.
– Observe national and local regulations for the exhaust air speed.

6.5.2 Air Supply Lines

⚠ WARNING

Hose connections!

Risk of injury and damage to the device.

- Do not mix up hose connections of product hose and air hose.

- Ensure that only dry, clean atomizing air is used in the spray gun! Dirt and moisture in the atomizing air worsens the spraying quality and spray pattern.

6.5.3 Product Supply Lines

⚠ DANGER

Bursting hose, bursting threaded joints!

Danger to life from injection of product.

- Ensure that the hose material is chemically resistant to the sprayed products.
- Ensure that the spray gun, fittings and product hose between the device and the spray gun are suitable for the pressure generated in the device.
- Ensure that the following information can be seen on the high-pressure hose:
  - Manufacturer
  - Permissible operating pressure
  - Date of manufacture.

6.6 GROUNDING

⚠ WARNING

Discharge of electrostatically charged components in atmospheres containing solvents!

Explosion hazard from electrostatic sparks.

- Clean the pump only with a damp cloth.

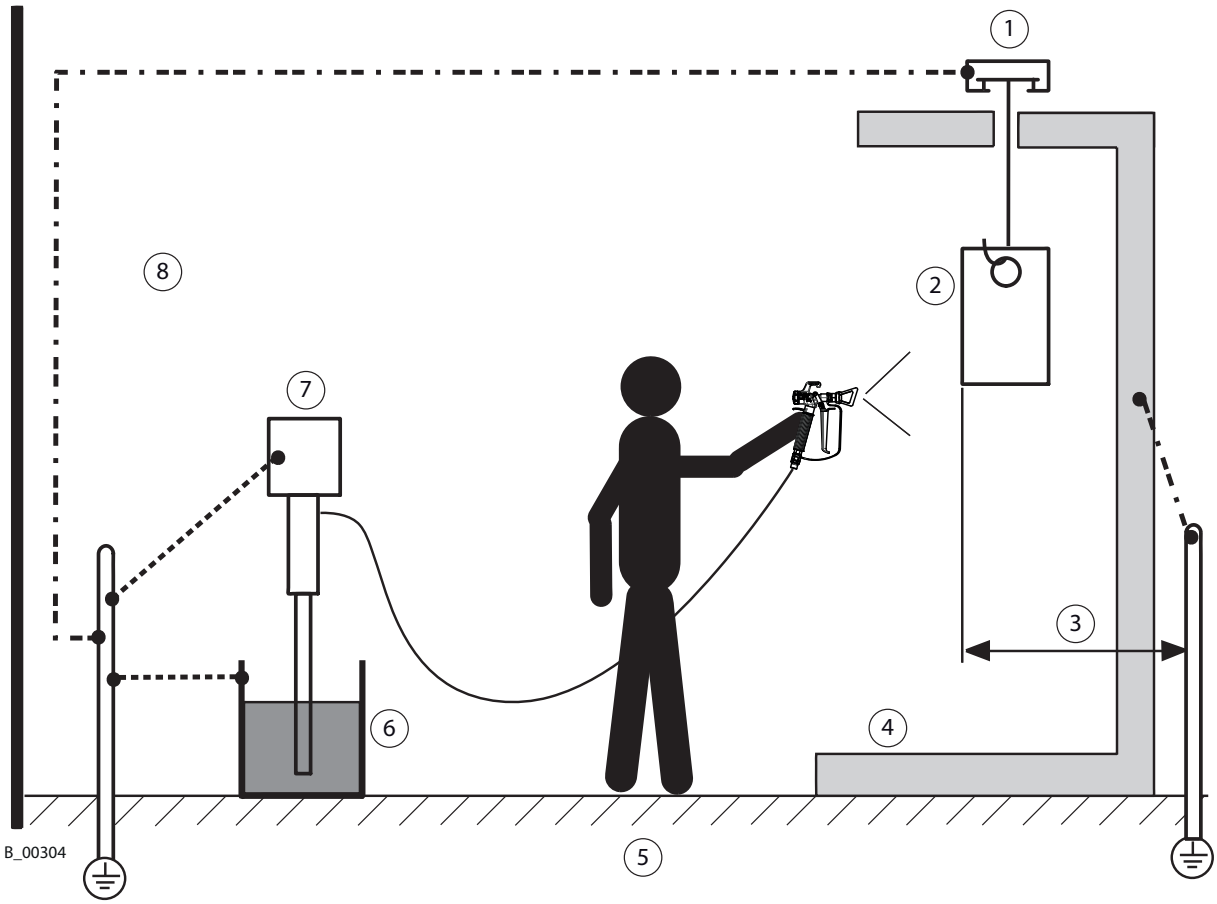
⚠ WARNING

Heavy paint mist if grounding is insufficient!

Risk of poisoning.

Insufficient paint application quality

- Ground all device components.
- Ground the work pieces to be coated.

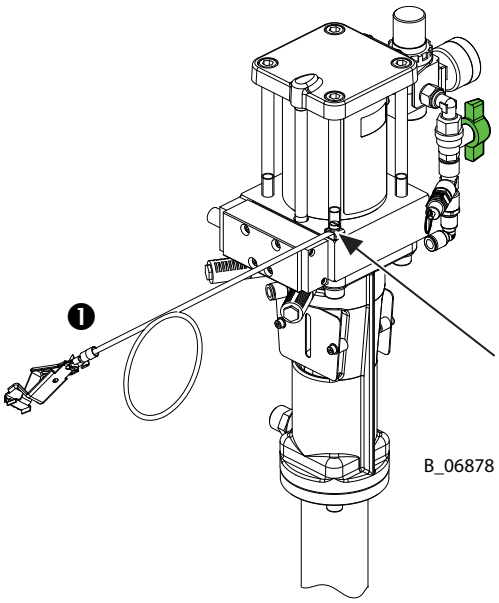


Earthing schema (example)

Pos	Part / workstation	Cable cross section
1	Conveyor	16 mm²; AWG6
2	Work piece	--
3	R_{max} < 1 MΩ	--
4	Spraying stand Alternative: Spray booth	16 mm²; AWG6
5	Floor, static dissipative	--
6	Product tank	6 mm²; AWG10
7	Pump	4 mm²; AWG12
8	Ex zone	--

Info

Safe operation of the pump is only guaranteed with a grounding connection. Connect all grounding cables using a short and direct route.



1	Grounding cable

1. Screw on grounding cable with eyelet.
2. Clamp the grounding cable clip to a grounding connection on site.
3. Ground the product tank to an on-site grounding connection.
4. Ground the other parts of the system to an on-site grounding connection (16 mm2; AWG 6).

Ex zone

All devices and equipment must be suitable for use in potentially explosive areas.

- All paints, flushing agents and waste tanks have to be electrically conductive.
- All tanks must be grounded.

6.7 COMMISSIONING

⚠ WARNING

Gas mixtures can explode if there is an incompletely filled pump!

Danger to life from flying parts.

- Ensure that the pump and suction system are always completely filled with flushing agent or working medium.
- Do not spray the device empty after cleaning.

ⓘ NOTICE

Impurities in the spraying system

Spray gun blockage, products harden in the spraying system.

- Flush the spray gun and paint supply with a suitable flushing agent before commissioning.

Emergency stop, see Chapter Emergency Stop [▸▸ 33].

6.7.1 Preparation

Before every commissioning, the following points should be observed as laid down in the operating manual:

1. Secure spray gun with safety lever.
2. Check the permissible pressures.
3. Check all connections for leaks.
4. Check hoses for damage in accordance with chapter Safety Checks and Maintenance Intervals [▸▸ 39].
5. Fill the separating agent in accordance with Chapter Filling with Separating Agent [▸▸ 40].

6.7.2 Fill the Pump with Flushing Agent

The devices are tested during manufacturing with emulsifying oil, pure oil or solvent.

Possible residues must be flushed out of the circuits with a solvent (flushing agent) before commissioning.

- Fill the empty device with flushing agent in accordance with Chapter Filling the Empty Pump [▸▸ 43].

6.7.3 Pressure Tightness Test

⚠ WARNING

Overpressure!

Risk of injury from bursting components.

- The operating pressure must not exceed the value shown on the type plate.

1. Gradually increase the pressure in pump with the pressure regulator until maximum pressure is reached. Maintain the pressure for 3 minutes and check all connection points for leaks.

2. Carry out pressure relief in accordance with Chapter Pressure Relief / Work Interruption [▸▸ 34].

6.7.4 Verifying a Safe Operational Condition

A skilled person must check to ensure that the device is in a reliable state after it is assembled and commissioned. This includes:

- Carry out safety checks in accordance with Chapter Safety Checks and Maintenance Intervals [▸▸ 39].

6.7.5 Filling with Working Product

- Proceed in accordance with Chapter Filling the Empty Pump [▸▸ 43].

7 OPERATION

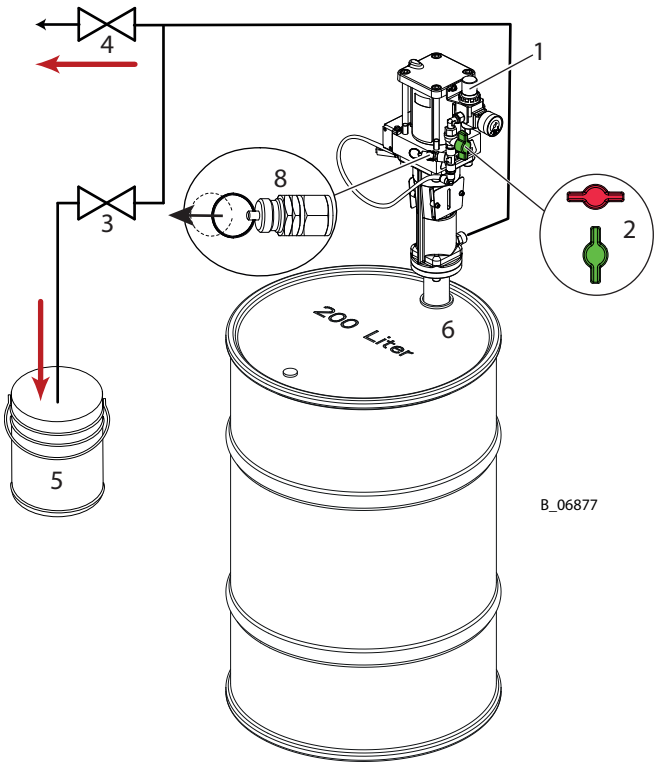
7.1 TRAINING THE OPERATING PERSONNEL

- The operating personnel must be qualified to operate the entire system.
- The operating staff must be familiar with the potential risks associated with improper behavior as well as the necessary protective devices and measures.
- Before work commences, the operating personnel must receive appropriate system training.

7.2 EMERGENCY STOP

In the case of unforeseen occurrences immediately:

1. Close ball valve (2).
2. Open the safety valve (8) until the piston pump is entirely depressurized. Relieve the pressure of the product-transporting parts (3 and 4) with the provided valves.



A	Closed	B	Open

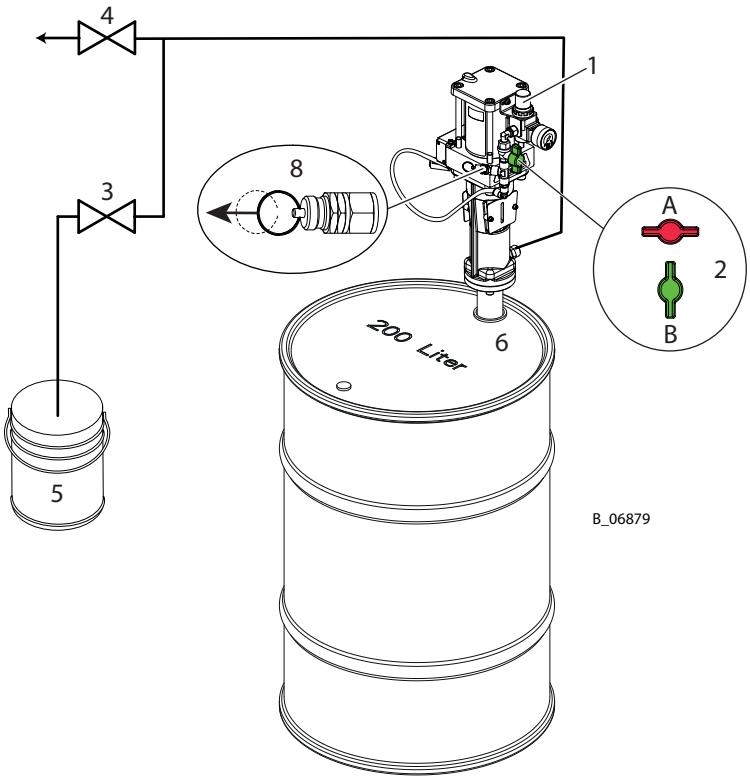
7.3 TASKS

Ensure that:

commissioning is carried out in accordance with Chapter Commissioning [▸▸ 31].

1. Carry out a visual inspection: Personal protective equipment, grounding and all devices ready for use.
2. Close the valve (3).
3. Slowly open the ball valve (2).
4. Observe superordinate operating manual. Open the valve (4).
5. Activate the pressure regulator (1) and set the required operating pressure.

6. Open and close the valve (4) and/or the the lock units on the product line in order to start and/or interrupt the product flow.
7. Start work process.



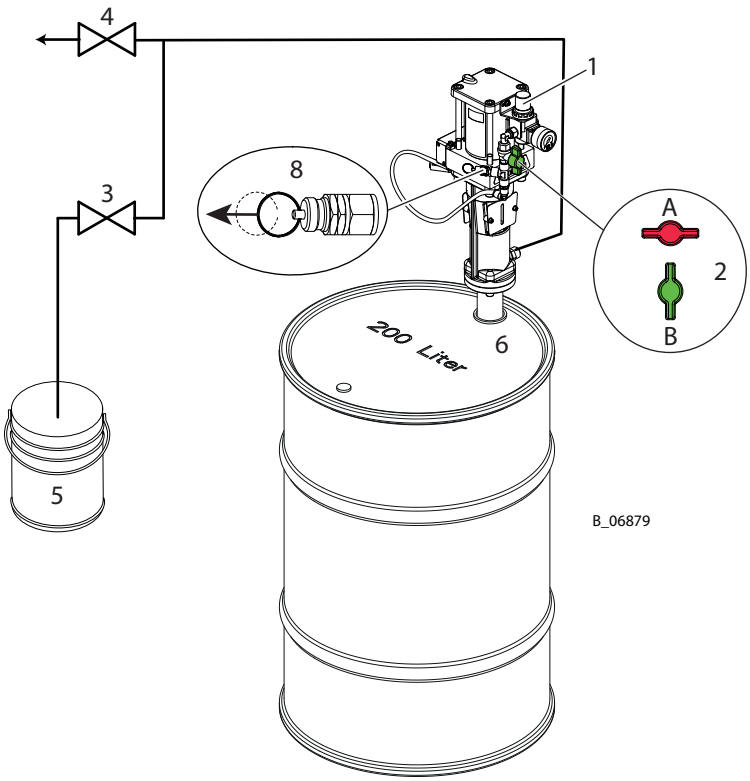
A	closed	B	open

7.4 PRESSURE RELIEF / WORK INTERRUPTION

The pressure must always be relieved:
- after the spraying tasks are finished,
- before servicing or repairing the system,
- before carrying out cleaning tasks on the system,
- before moving the system to another location,
- before something needs to be checked on the system,
- before the nozzle or the filter is removed from the spray gun.

The components for pressure relief on a CE-compliant spraying system include:
- Air cock with pressure relief valve mounted between the compressed air source and the pneumatic pump. In this case, the pressure relief valve is the safety valve (8).
- Outlet equipment (return valve) mounted between pump and spray gun.

Process for relieving pressure



A	Closed	B	Open

1. Close the valve (4).
2. Completely close the ball valve (2).
3. Place grounded metal tank (5) for return product under the return tube (3).
4. Slowly open the return valve (3).
5. When no further overpressure is detected, close the return valve (3).
6. Pressure can still be present after the valve (4). Relieve the pressure in the product line downstream of valve (4) towards the front if necessary. When doing so, observe the superordinate operating manual.

Note: Control air pressure is still present.

Pressure relief of the air (in case of longer work interruptions)

1. Carry out pressure relief of the product (as mentioned above).
2. Ensure that the ball valve (2) is closed.
3. Pull the ring on the safety valve (8) and hold it until the pressure in the air motor has been equalized.

7.5 BASIC FLUSHING

Regular flushing

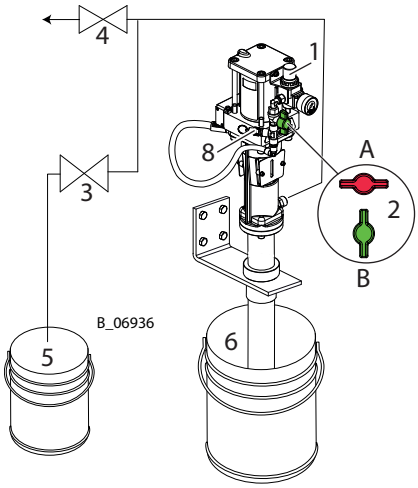
- Regular flushing, cleaning and maintenance ensures the pump's high conveying and suction capacity.
- The cleaning and flushing agents used must be compatible with the working material.
- Do not flush hardener pumps with water. Only flush them using suitable flushing agents (solvents).

⚠ WARNING

Incompatibility of cleaning/flushing agent and working medium!

Risk of explosion and danger of poisoning by toxic gases.

- Examine the compatibility of the flushing and cleaning agents and working media on the basis of the safety data sheets.



A	Closed	B	Open

Preparation

1. Visual check: personal safety equipment, grounding and all devices ready to use.
2. Relieve the pump's pressure according to Chapter Pressure Relief / Work Interruption [▸▸ 34].
3. Place an empty, grounded collection tank (5) under the return tube (3).
4. Place pump in grounded metal tank (6) with flushing agent.
5. Adjust the pressure regulator (1) to approx. 0.05 MPa; 0.5 bar; 7.25 psi.

Flushing via the return valve

1. Open return valve (3).
2. Slowly open the ball valve (2).
3. Adjust the air pressure on the pressure regulator (1) so that the pump runs smoothly.
4. Flush the system until the cleaning agent that flows into the tank (5) is clean.
5. Close ball valve (2).
6. As soon as there is no pressure remaining in the system, close the return valve (3).

Flushing via the valve

1. Relieve the system's pressure upstream of the valve (4) in accordance with the superordinate operating manual. Open the valve (4).
2. Slowly open the ball valve (2).
3. Rinse until clean flushing agent flows from the spray gun.
4. Close ball valve (2).
5. As soon as there is no pressure remaining in the system, close the valve (4). Observe superordinate operating manual.

6. Repeat steps under *Flushing return valve* and *Flushing via valve* as needed.

External Cleaning

1. Clean the outside of the system.
2. Fully assemble the system.
3. Relieve the pump's pressure according to Chapter Pressure Relief / Work Interruption [▸▸ 34].
4. Dispose of the contents of the tank (5) according to the local regulations.

7.6 FILLING WITH WORKING PRODUCT

After basic flushing, the pump can be filled with working material.

- Proceed according to Chapter Filling the Empty Pump [▸▸ 43], but use working product instead of flushing agent.

8 CLEANING AND MAINTENANCE

8.1 CLEANING

8.1.1 Cleaning Personnel

Cleaning work should be undertaken regularly and carefully by qualified and trained personnel. They should be informed of specific hazards during their training.

The following hazards may arise during cleaning work:

- risk to health from inhaling solvent vapors,
- use of unsuitable cleaning tools and aids.

8.1.2 Decommissioning and Cleaning

The device should be cleaned for maintenance purposes, etc. Ensure that no remaining product dries on and sticks to the device.

1. Interrupt the work sequence in accordance with Chapter Pressure Relief / Work Interruption [▸▸ 34].
2. Carry out basic flushing in accordance with Chapter Basic Flushing [▸▸ 35].
3. Empty system in a controlled manner according to Chapter Emptying Pump [▸▸ 41].
4. Clean and check the suction system and the suction filter.
5. Clean the outside of the system.
6. Fully assemble the system.
7. Check fill level of the separating agent in accordance with Chapter Filling with Separating Agent [▸▸ 40].
8. Fill the system with flushing agent in accordance with Chapter Filling the Empty Pump [▸▸ 43].

8.1.3 Long-term Storage

If storing the system for a prolonged period of time, thorough cleaning and corrosion protection are necessary. Replace the water or solvent in the product pump with a suitable preserving oil and fill the separating agent tank with separating agent.

1. Carry out decommissioning and cleaning (steps 1 to 7) in accordance with Chapter Decommissioning and Cleaning [▸▸ 38].
2. Fill the system with preservation agent in accordance with Chapter Filling the Empty Pump [▸▸ 43].
3. Empty the system in a controlled manner in accordance with Chapter Emptying Pump [▸▸ 41] and seal the openings.

8.2 MAINTENANCE

8.2.1 Maintenance Personnel

Maintenance work should be undertaken regularly and carefully by qualified and trained personnel. They should be informed of specific hazards during their training.

The following hazards may arise during maintenance work:

- risk to health from inhaling solvent vapors,
- use of unsuitable tools and aids.

A skilled person must ensure that the device is checked for being in a reliable state after maintenance work is completed.

8.2.2 Maintenance Instructions

⚠ DANGER

Incorrect maintenance/repair!

Danger to life and equipment damage.

- Only a WAGNER service center or a suitably trained person may carry out repairs and replace parts.
- Use only WAGNER original spare parts and accessories.
- Only repair and replace parts that are listed in the spare parts chapter and that are assigned to the device.
- Before all work on the device and in the event of work interruptions:
  - Relieve the pressure from the spray gun, product hoses and all devices.
  - Secure the spray gun against actuation.
  - Switch off the energy and compressed air supply.
  - Disconnect the control unit from the mains.
- Observe the operating and service manual for all work.

Prior to maintenance

It should be ensured that the unit is in the following state before carrying out any work on it:

– Flush and clean the system according to Chapter Decommissioning and Cleaning [▸▸ 38].
– Interrupt the air supply.

After maintenance

– Carry out safety checks in accordance with Chapter Safety Checks and Maintenance Intervals [▸▸ 39].
– Put the system into operation and check for leaks as described in Chapter Commissioning [▸▸ 31].
– Have the system checked for safe condition by a skilled person.
– Carry out functional check in accordance with Chapter Function Test after Repair Work [▸▸ 48].

8.2.3 Safety Checks and Maintenance Intervals

Every day

1. Check grounding: see Chapter Grounding.
2. Check hoses, tubes and couplings: see Chapter Product Hoses, Pipes and Couplings [▸▸ 40]
3. Check the level of separating agent in the separating agent tank and top up, if necessary, in accordance with chapter Filling with Separating Agent [▸▸ 40].
4. For each decommissioning, the process according to Chapter Decommissioning and Cleaning [▸▸ 38] must be followed.
5. If the pump has to be emptied for maintenance work, proceed according to Chapter Emptying Pump [▸▸ 41].

Weekly

1. Check system for damage.

2. Check that the safety fixtures function properly (see Chapter Protective and Monitoring Equipment [▶▶ 19]).

Yearly or as required

1. In accordance with DGUV regulation 100-500, Chapters 2.29 and 2.36:
   - Have the liquid ejection devices checked by an expert (e.g. WAGNER service technician) as required, but no later than every 12 months to ensure that they are in safe working order.
   - For shut down devices, the examination can be suspended until the next start-up.

8.2.4 Filling with Separating Agent

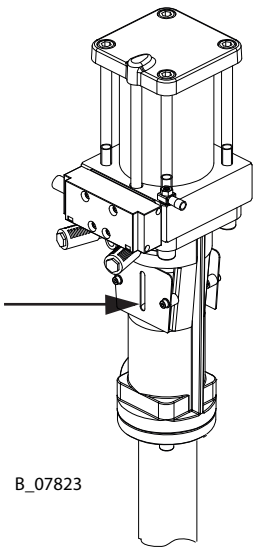
NOTICE

Piston pump dry run

High wear/damage to the packings.

Paint or solvent can escape if the seals are dry.

- Ensure that the separating agent tank is filled with sufficient separating agent.



B_07823

To prevent potential transportation issues, the separating fluid chamber of the pump is not filled at the factory. Pour the supplied separating agent into the intended opening.

Separating agent: order no. 9992504

Inclination angle of the pump

Maximum permissible inclination of pump for moving, transportation etc. after filling with separating agent is ± 30°. The pump must be vertical during operation.

8.2.5 Product Hoses, Pipes and Couplings

The service life of the complete hoses between product pressure generator and application device is reduced due to environmental influences even when handled correctly.

1. Check hoses, pipes, and couplings every day and replace if necessary.
2. Before every commissioning, check all connections for leaks.
3. Additionally, the operator must regularly check the complete hoses for wear and tear as well as for damage at intervals that he/she has set. Records of these checks must be kept.

4. Replace the complete hose if one of the following two periods is exceeded:
   - 6 years from the date of the hose crimping (see fitting embossing).
   - 10 years from the date of the hose imprinting.

Fitting embossing (if present)	Meaning
xxx bar	Pressure
yymm	Crimping date (year/month)
XX	Internal code

Hose imprinting	Meaning
WAGNER	Name / manufacturer
yymm	Date of manufacture (year/month)
xxx bar (xx MPa) e.g. 270 bar (27MPa)	Pressure
XX	Internal code
DNxx (e.g., DN10)	Nominal diameter

8.2.6 Emptying Pump

⚠ WARNING

Gas mixtures can explode if there is an incompletely filled pump!

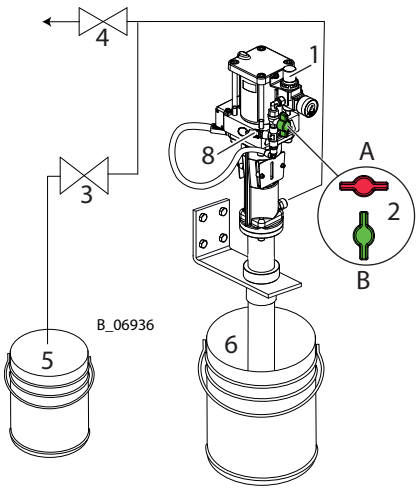
Danger to life from flying parts.

Ignition of potentially explosive surrounding atmosphere.

- Empty and fill the device slowly and in a controlled manner.
- Avoid potentially explosive atmosphere in the surroundings.

Info

If the pumping product becomes heated, switch off all heaters and let the product cool off.



A	Closed	B	Open

1. Visual check: personal safety equipment, grounding and all devices ready to use.

2. Place an empty, grounded collection tank (5) under the return tube (3).
3. Close pressure regulator (1) (0 MPa; 0 bar; 0 psi).

Emptying via return line

1. Open return valve (3).
2. Slowly open the ball valve (2).
3. Slowly dial up the air pressure at the pressure regulator (1) until the pump operates smoothly (approx. 0.05 MPa; 0.5 bar; 7.25 psi).
4. Be ready for the switch from working product to air. Turn down pressure regulator (1) far enough that the pump is still running normally (approx. 0–0.05 MPa; 0–0.5 bar; 0–7.25 psi).
5. As soon as working product is no longer flowing from the return tube (3), close the ball valve (2).
6. Close return valve (3).

Emptying the product line

1. Relieve the system's pressure upstream of the valve (4) in accordance with the superordinate operating manual. Open the valve (4).
2. Slowly open the ball valve (2). Be ready for the switch from working product to air.
3. As soon as no more working product is flowing, close the ball valve (2).
4. Close the valve (4).
5. Carry out pressure relief in accordance with Chapter Pressure Relief / Work Interruption [▸▸ 34].
6. Dispose of the contents of the tank (5) according to the local regulations.

8.2.7 Filling the Empty Pump

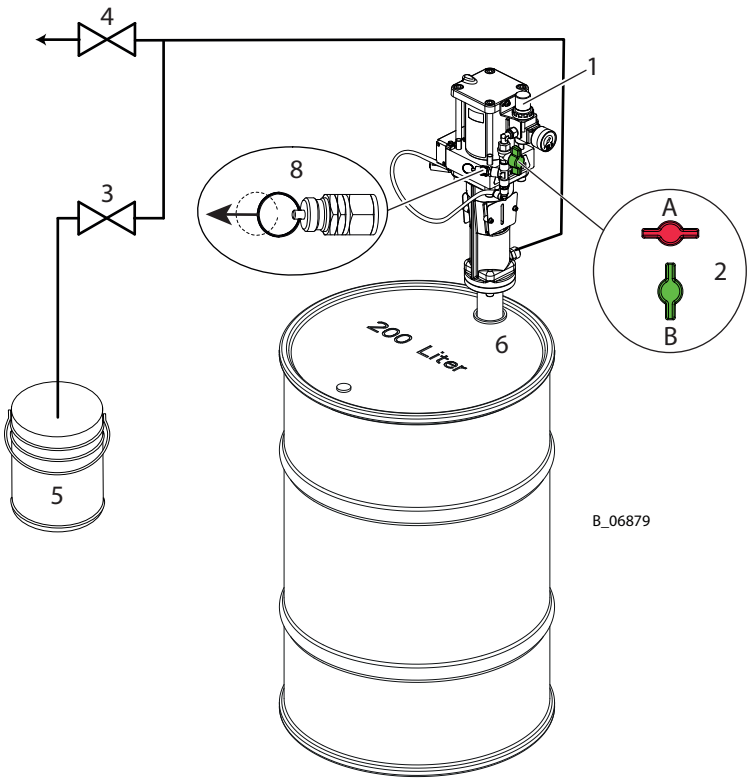
⚠ WARNING

Gas mixtures can explode if there is an incompletely filled pump!

Danger to life from flying parts.

Ignition of potentially explosive surrounding atmosphere.

- Empty and fill the device slowly and in a controlled manner.
- Avoid potentially explosive atmosphere in the surroundings.



A	Closed	B	Open

1. Carry out a visual inspection: Personal protective equipment, grounding and all devices ready for use.
2. Place an empty, grounded collection tank (5) under the return tube (3).
3. Place the pump in the tank (6) with working material.
4. Close pressure regulator (1) (0 MPa; 0 bar; 0 psi).
5. Open return valve (3).
6. Slowly open the ball valve (2).
7. Slowly turn up the air pressure on the pressure regulator (1). Only turn up the air pressure until the pump is running normally (approx. 0–0.05 MPa; 0–0.5 bar; 0–7.25 psi). Be prepared to switch from air to working material and prevent back spray.
8. Close ball valve (2) as soon as pure working material starts flowing from the return tube (3).
9. Close return valve (3).

10. Relieve the system's pressure upstream of the valve (4) in accordance with the superordinate operating manual. Open the valve (4).
11. Slowly open the ball valve (2). Be prepared for the switch from air to working product and avoid backspray.
12. cAs soon as pure working material without air bubbles is flowing out of the system, close the ball valve (2).
13. Close the valve (4).
14. Carry out pressure relief in accordance with Chapter Pressure Relief / Work Interruption [▸▸ 34].
15. Dispose of the contents of the tank (5) according to the local regulations.

9 TROUBLESHOOTING AND RECTIFICATION

Malfunction	Cause	Solution
The pump does not work.	The pump does not start or stops.	Open and close ball valve on the pressure regulator unit or briefly disconnect compressed air supply.
	No pressure indication on the pressure gauge (air pressure regulator defective).	Disconnect compressed air supply briefly or repair or change pressure regulator.
	Insufficient supply of compressed air	Check compressed air supply.
	Fluid section or high-pressure hose are clogged.	Dismount and clean fluid section, replace high-pressure hose.
	Sometimes, the pump stops at a switching point.	Press the starter on the reversing valve and restart the pump. Clean the slide on the reversing valve carefully and if necessary lubricate it lightly with oil.
Irregular operation of product pump: Spray jet collapses (pulsation).	Viscosity is too high.	Thin spraying product.
	Valves are clogged.	Clean pump. If necessary, leave it to soak in cleaning agent.
	Foreign body in suction valve.	Dismantle suction valve housing, clean and check valve seat.
	Diameter of compressed air line too small.	Assemble a larger supply line -> chapter Technical data [▸▸ 21]
	Valves, packings, or pistons are worn out.	Replace the parts.
	Control air filter or work air filter is clogged.	Check and clean it if necessary.
	Suction filter is clogged.	Clean filter.
	Ball in suction or piston valve is stuck.	Clean with cleaning agent (if necessary vent device).
The pump runs when the discharge duct is closed.	Packings, valves, or pistons are worn out.	Replace the parts.
Air motor is iced up.	There is a lot of condensation water in the air supply.	Install a water separator.

If the problem is not listed above consult your WAGNER Service Center.

10 REPAIRS

10.1 REPAIR PERSONNEL

Repair work should be undertaken carefully by qualified and trained personnel. They should be informed of specific hazards during their training.

The following hazards may arise during repair work:

- risk to health from inhaling solvent vapors,
- use of unsuitable tools and aids.

A skilled person must check to ensure that the device is in a reliable state after it is repaired. A function test should be performed.

10.2 REPAIR NOTES

⚠ DANGER

Incorrect maintenance/repair!

Danger to life and equipment damage.

- Only a WAGNER service center or a suitably trained person may carry out repairs and replace parts.
- Use only WAGNER original spare parts and accessories.
- Only repair and replace parts that are listed in the spare parts chapter and that are assigned to the device.
- Before all work on the device and in the event of work interruptions:
  - Relieve the pressure from the spray gun, product hoses and all devices.
  - Secure the spray gun against actuation.
  - Switch off the energy and compressed air supply.
  - Disconnect the control unit from the mains.
- Observe the operating and service manual for all work.

Before Repair Work

It should be ensured that the unit is in the following state before carrying out any work on it:

1. Flush and clean the system according to Chapter Decommissioning and Cleaning [▸▸ 38].
2. Interrupt the air supply.

After Repair Work

1. Carry out safety checks in accordance with Chapter Safety Checks and Maintenance Intervals [▸▸ 39].
2. Put the system into operation in accordance with Chapter Commissioning [▸▸ 31] and check for leaks in accordance with Chapter Function Test after Repair Work [▸▸ 48].
3. Have the system checked for safe condition by a skilled person.
4. Carry out functional check in accordance with Chapter Function Test after Repair Work [▸▸ 48].

10.3 TOOLS

The following tools are required for assembling and disassembling the device (if possible, always bring entire tool sets with you):

- Torque wrench 4.5 Nm; 3.3 lbft.
- Torque wrench 7 Nm; 5.1 lbft.
- Torque wrench 18 Nm; 13.2 lbft.
- Torque wrench 20 Nm; 14.7 lbft.
- Torque wrench 30 Nm; 22.1 lbft.
- Torque wrench 35 Nm; 25.8 lbft.
- Set of circlip pliers
- Set of slot-head screwdrivers
- Set of Phillips screwdrivers
- Set of Allen wrenches
- Set of wrenches

10.4 CLEANING THE PARTS AFTER DISASSEMBLY

⚠ WARNING

Incompatibility of cleaning agent and working medium!

Risk of explosion and danger of poisoning by toxic gases.

- Examine the compatibility of the cleaning agents and working media on the basis of the safety data sheets.

Please note:

1. Thoroughly clean all reusable parts with a suitable cleaning agent.
2. All dismantled parts have to be clean and dry after cleaning. Care should be taken that these parts remain free of solvents, grease or sweat from the hands (salt water). Perform cleaning and mounting tasks wearing gloves.

10.5 ASSEMBLY OF THE DEVICE

In Chapter Spare Parts [▸▸ 52] the order numbers for device spare parts can be found, as well as for wearing parts such as seals.

1. Defective parts, O-rings and seal sets must always be replaced.
2. Use greases and glues in accordance with Chapter Spare Parts [▸▸ 52].
3. Observe torque specifications in Chapter Spare Parts [▸▸ 52].

Assembly aids:

Order no.	Quantity	Designation	Smaller tanks
9992831	1 pc ≙ 50 ml	Loctite® 542	
9998157	1 pc ≙ 18 ml	Loctite® 480	
3201587	1 pc ≙ 50 ml	Loctite® 577	
9998808	1 pc ≙ 18 Kg!	Mobilux® EP 2 grease	400 g tube ≙ order no. 2355418
9992609	1 pc ≙ 100 g	Anti-seize paste	

Brand notice

The brands specified in this document are property of the respective owners. Loctite®, for example, is a registered brand of Henkel.

11 FUNCTION TEST AFTER REPAIR WORK

After all repairs, the device must be checked for safe condition before recommissioning. The necessary scope of inspection and testing depends on the repair carried out and must be documented by the repair personnel.

Activity	Aid tools
1.1 Filling with separating agent	
▸ See Chapter Filling with Separating Agent [▸▸ 40].	
1.2 EX-relevant inspections	
1. Check the ground connection between the corresponding ground connection of the pump and the frame/trolley, and between the individual parts of the frame/trolley: <100 kΩ 2. Check conductivity between the piston and the grounding connection: <100 kΩ **These tests are Ex-relevant!**	Ohmmeter (Measurement voltage 500...1000 VDC)
1.3 Testing for leaks	
1. Connect the air motor to the air supply (7 bar). 2. To perform a tightness check on the device, the product pressure with the flushing agent is slowly increased in increments until the maximum pressure indicated on the type plate is reached. 3. Close pump outlet. 4. In each position (with upstroke and downstroke), let sit for 0.5-1 minute(s) and listen for audible blowing off. 5. When the air supply is turned off, a drop in pressure must be watched for. 6. Check seal of following modules: - fluid section - mounted valves and regulators	Air motor: Test medium: Compressed air Leak spray Fluid section: Test medium: Suitable flushing agent
1.4 General inspections	
1. Check the tightening torques of various screws; see Chapter Spare Parts [▸▸ 52]. 2. Check all fittings. 3. Empty device in a controlled manner (Chapter Emptying Pump [▸▸ 41]) and depressurize (Chapter Pressure Relief / Work Interruption). 4. Check the functionality of the frame or transport trolley.	Torque wrench Visual check

12 DISPOSAL

12.1 DEVICE

When the devices must be scrapped, please differentiate the disposal of the waste materials.

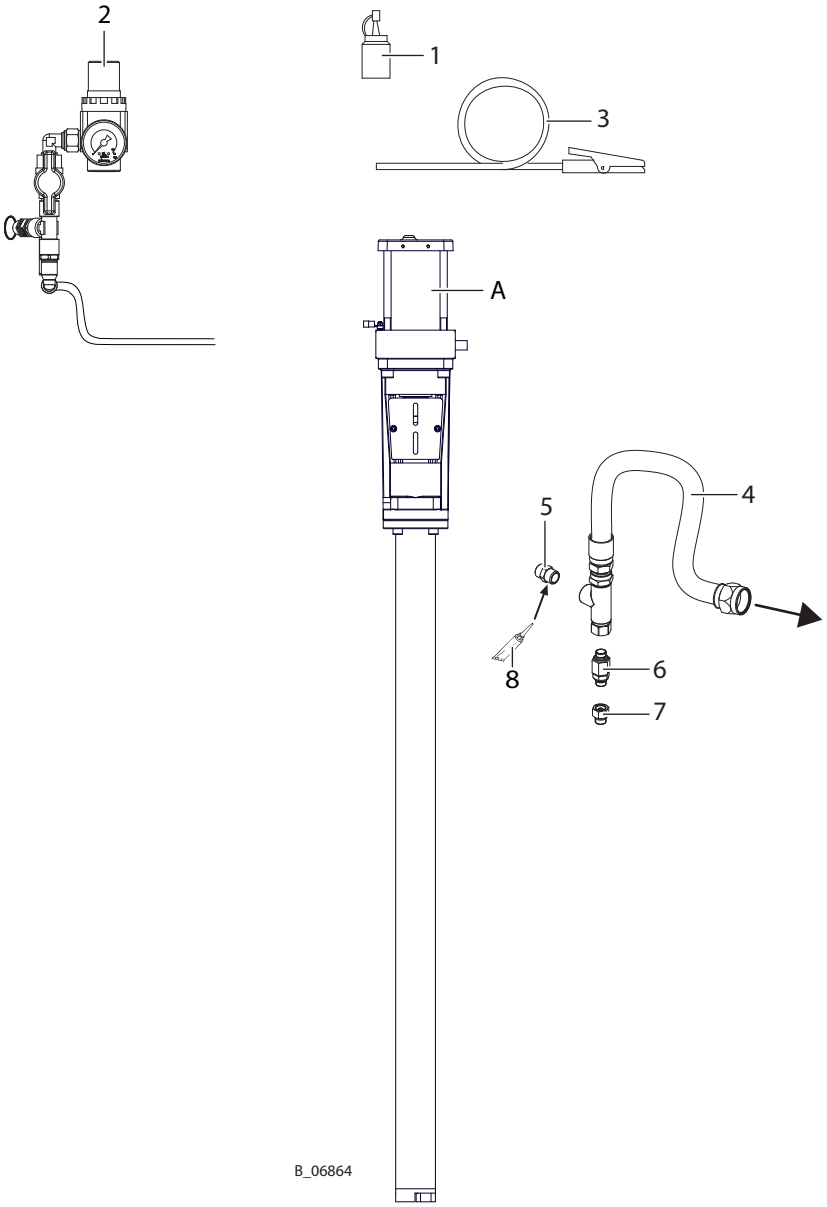
The following materials have been used:

- Stainless steel
- Aluminum
- Elastomers
- Plastics
- Carbide

12.2 CONSUMABLE PRODUCTS

Consumable products (lacquers, adhesives, flushing and cleaning agents) must be disposed of in accordance with all applicable legal requirements.

13 ACCESSORIES



Pos	K	Order no.	Designation
A		U1B05125D	Piston pump
1		9992504	Separating agent 250 ml; 250 cc
		9992505	Separating agent 500 ml; 500 cc
2		T6140.00	Air regulator
3		236219	Grounding cable, complete 3 m; 9.8 ft
4		2368149	Connection set DN20, 3m
5		3201040	Fitting, DF-MM-R1/2"-R1/2"-PN50-SSt

Pos	K	Order no.	Designation
6		2328382	Check valve assy. 20 bar
7		377342	Fitting-RF-FM-M16x1,5-G3/8“-PN530-SSt
8		3201587	Loctite® 577

14 SPARE PARTS

14.1 HOW CAN SPARE PARTS BE ORDERED?

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

Order number, designation and quantity

The quantity need not be the same as the number given in the "Stk" column in the lists. This number merely indicates how many of the respective parts are used in each component.

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

- billing address
- delivery address
- name of the person to be contacted in the event of any queries
- type of delivery (normal mail, express delivery, air freight, courier etc.)

Identification in spare parts lists

Explanation of column „K“ (marking) in the following spare parts lists:

♦ Wearing parts. Wearing parts are not included in the warranty.

⋆ = included in service set

● not part of the standard equipment but available as a special accessory

Explanation of order no. column:

-- Item not available as spare part.

/ Position does not exist.

14.2 NOTES ON USING SPARE PARTS

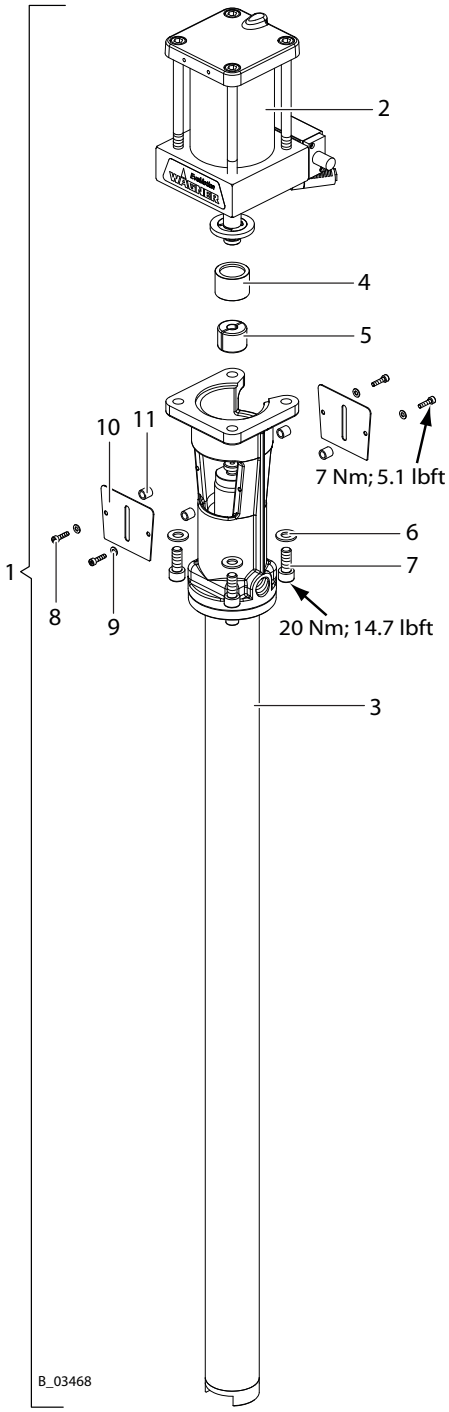
⚠ DANGER

Incorrect maintenance/repair!

Danger to life and equipment damage.

- Only a WAGNER service center or a suitably trained person may carry out repairs and replace parts.
- Use only WAGNER original spare parts and accessories.
- Only repair and replace parts that are listed in the spare parts chapter and that are assigned to the device.
- Before all work on the device and in the event of work interruptions:
  - Relieve the pressure from the spray gun, product hoses and all devices.
  - Secure the spray gun against actuation.
  - Switch off the energy and compressed air supply.
  - Disconnect the control unit from the mains.
- Observe the operating and service manual for all work.

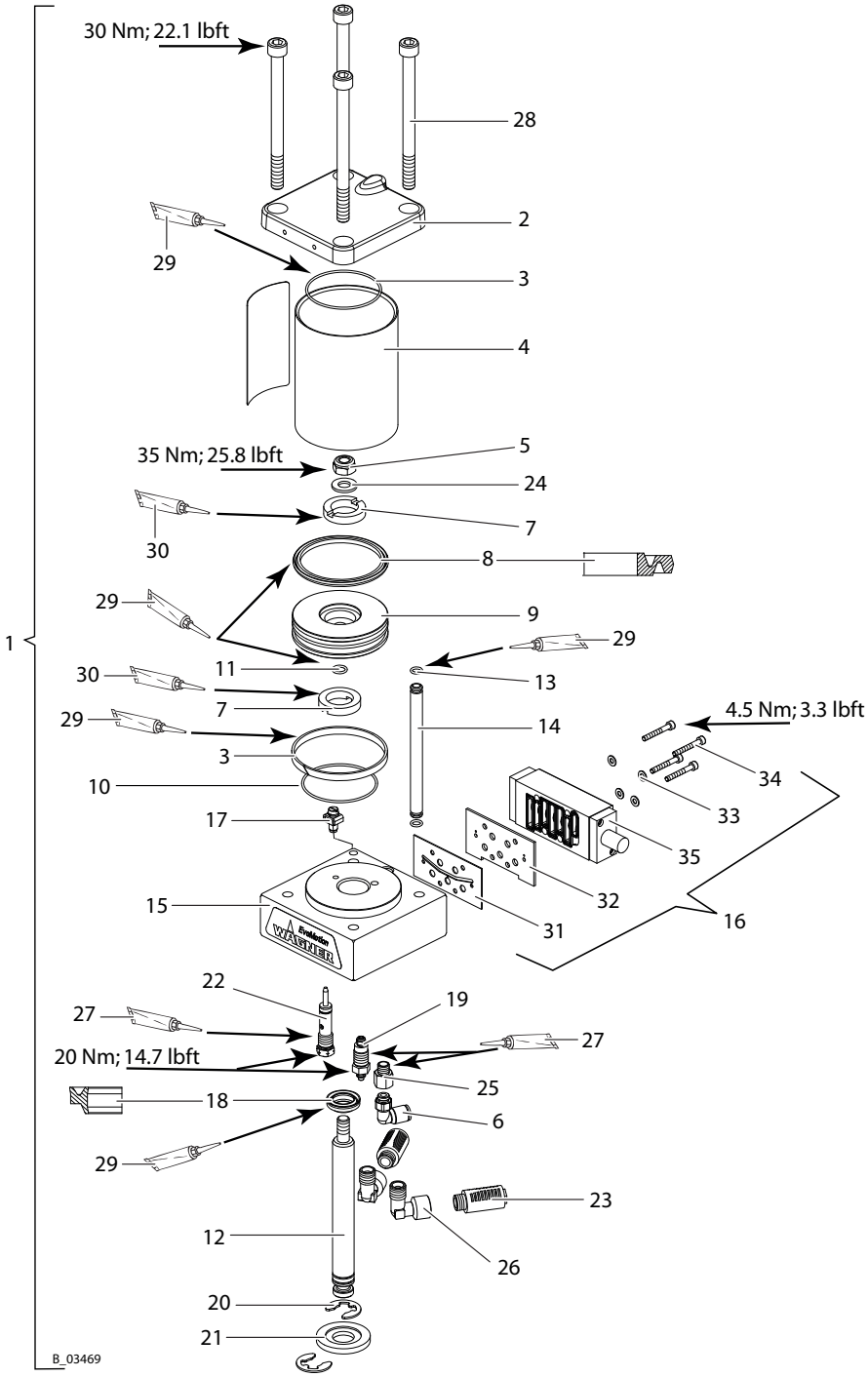
14.3 OVERVIEW OF THE COMPONENTS



Pos	Stk	Order no.	Designation
1	1	U1B05125D	EvoMotion 5-125 PE/T
2	1	U3B08018060A	Air motor M80 EM C60
3	1	U2B125FC	Fluid section 125 St PE/T
4	1	A112.62	Protection - connecting piece
5	1	A111.02	Connecting piece M/P

Pos	Stk	Order no.	Designation
6	4	9920106	Washer
7	4	9900342	Hexagon socket head cap screw
8	4	9900308	Hexagon socket head cap screw
9	4	9920104	Washer
10	2	E051.62B	Protection - connecting piece
11	4	A532.62	Spacer

14.4 AIR MOTOR M80 EM C60



Installation instructions

Always mount piston rod (12) from the bottom to the top, through the rod seal which is present (18).

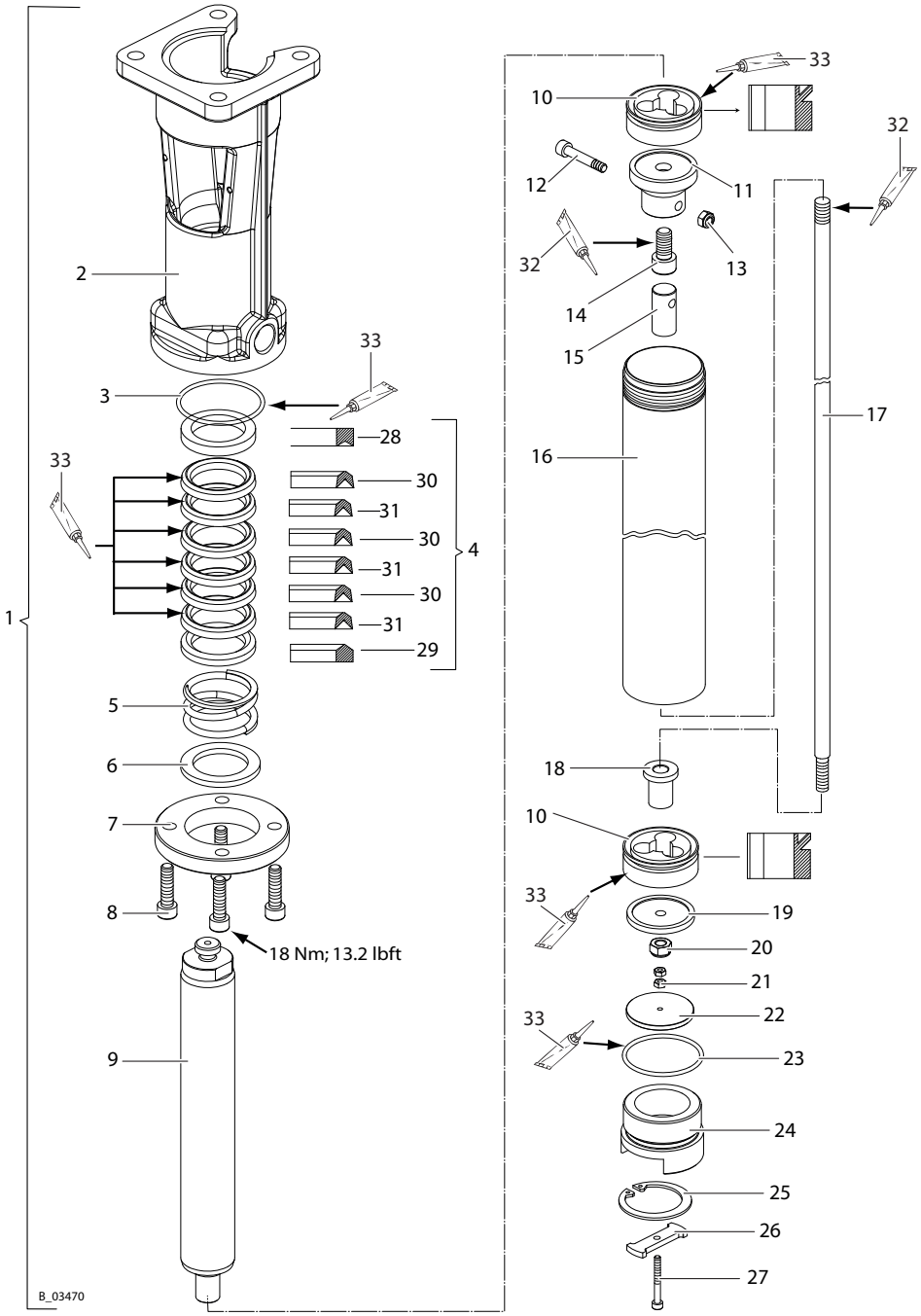
Pos	K	Stk	Order no.	Designation
1		1	U3B08018060A	Air motor M80 EM C60
2		1	F132.91C	Motor flange, upper, M80 EM
3	♦★	2	L108.06	O-ring

Pos	K	Stk	Order no.	Designation
4		1	2369375	Cylinder motor
5		1	3055157	Hexagon nut with clamp
6		1	9992757	Threaded elbow fitting
7	♦⋆	2	G903.06	Damper
8	♦⋆	1	L413.06	Seal DE 80
9		1	A164.01	Motor piston
10	♦⋆	1	L802.08	Sliding ring
11	♦⋆	1	L110.06	O-ring
12		1	D404.12	Piston rod, M80 EM
13	♦⋆	2	L109.06	O-ring
14		1	A408.12	Air tube, M80 EM
15		1	T616.00C	Motor flange, complete M80 EM, at bottom
16	♦	1	P498.00KNE	Reversing valve ISO N/1
17		1	367258	Grounding, complete
18	♦⋆	1	L403.06	Rod seal
19	♦⋆	1	T703.00	Sensor below, M80
20		1	K606.02	Lock washer for waves
21		1	A160.01A	Washer
22	♦⋆	1	369290	Pilot valve
23	♦	2	H505.07	Silencer
24		1	9920106	Washer
25		1	M432.00	Reducing fitting
26		2	9992265	Angled threaded fitting
27		1	9992831	Loctite 542
28		4	9907241	Hexagon socket head cap screw
29		1	9998808	Mobilux EP 2 grease
30		1	9998157	Loctite 480
31	♦	1	G735.06AB	Valve sealing
32		1	A818.71B	Valve plate
33		4	9920104	Washer
34		4	9900386	Hexagon socket head cap screw
35	♦	1	P498.00	Reversing valve, P/1 SP/NUM (see chapter Reversing Valve [▸▸ 59])
		1	T910.00	Service set, air motor EM 30-30/ 40-15/ 5-125

♦ = wearing parts

⋆ = Included in service set

14.5 FLUID SECTION 125



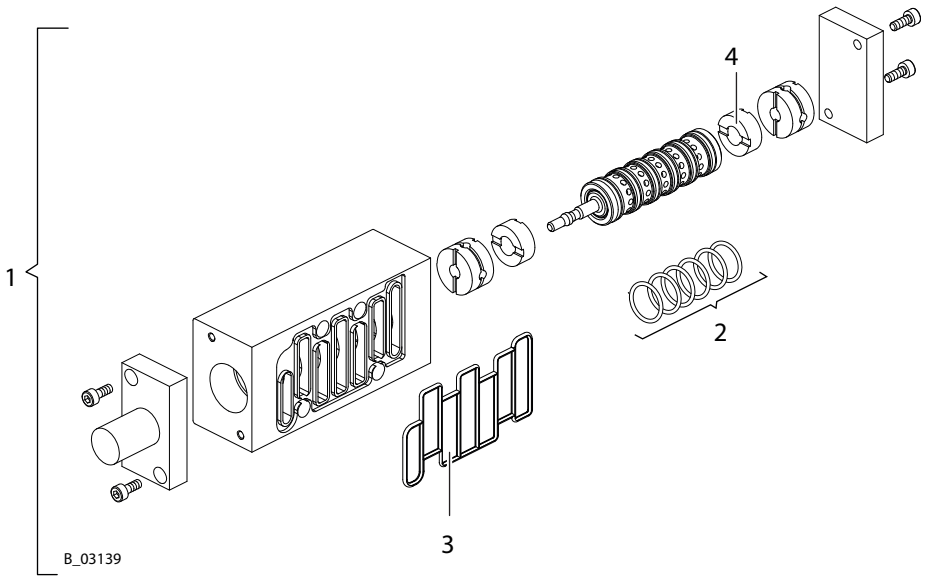
Pos	K	Stk	Order no.	Designation
1			U2B125FC	Fluid section 125 St PE/T
2		1	F142.21	Spacer MP
3	♦★	1	L136.06	O-ring
4	♦★	1	T971.00E	Packing PE/T 36/50
5		1	H212.03	Spring, upper

Pos	K	Stk	Order no.	Designation
6		1	A645.01	Washer
7		1	A644.12	Cylinder flange
8		4	9907079	Hexagon socket head cap screw
9	♦	1	D114.42A	Pump rod D36
10	♦⋆	2	G609.08	Gasket
11		1	A646.03	Piston valve
12		1	B0344.03	Special screw M6x35
13		1	K311.03A	Self-locking hexagon nut
14		1	K108.03	Hexagon socket head cap screw
15		1	A827.03	Rod coupling
16	♦	1	D710.22	Pump cylinder
17		1	A647.03	Pump rod
18		1	A648.03	Rod bush
19		1	A649.03	Piston valve
20		1	9913031	Self-locking hexagon nut
21		2	K317.03	Hexagon nut
22	♦	1	A179.03	Valve foot
23	♦⋆	1	L137.06	O-ring
24	♦	1	A650.03	Inlet housing
25		1	K604.22	Securing ring
26		1	A651.03	Valve stop
27		1	K158.03	Hexagon socket head cap screw
28	♦⋆	1	A253.01	Support ring
29	♦⋆	1	A250.01	Support ring
30	♦⋆	3	G121.05	Sealing collar T 36/50
31	♦⋆	3	G121.08E	Sealing collar PE 36/50
32		1	9992831	Loctite® 542
33		1	9998808	Mobilux EP 2 grease
		1	T958.00AE	Service set - EvoMotion fluid section 125 cm^3

♦ = wearing parts

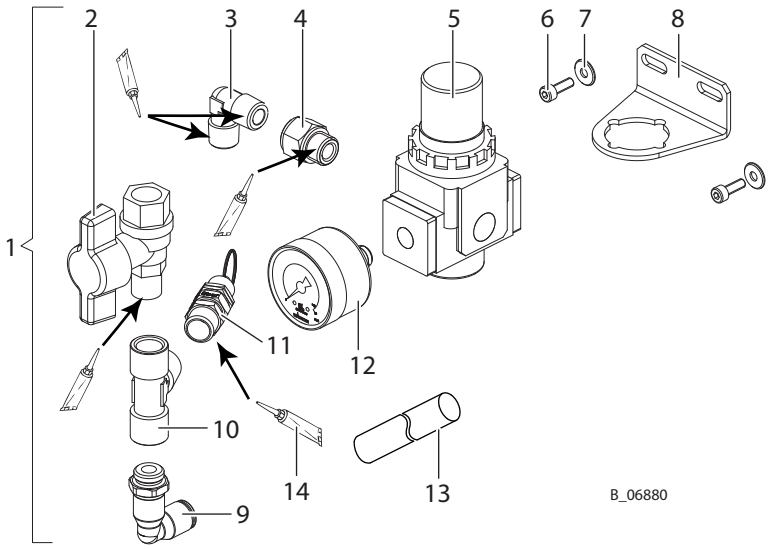
⋆ = Included in service set

14.6 REVERSING VALVE



Pos	K	Stk	Order no.	Designation
1		1	P498.00	Reversing Valve
2		6	9971123	O-ring
3		1	P521.00	Reversing valve seal
4		2	P520.00	Damper

14.7 PUMP AIR REGULATOR



Pos	K	Stk	Order no.	Designation
1		1	T6140.00	Set - pump air regulator
2		1	M101.00	Ball valve, FM
3		1	9998039	Screw fitting ellbow
4		1	9985682	Reducer

Pos	K	Stk	Order no.	Designation
5		1	2384362	Pressure regulator
6		2	9900353	Socket cap screw
7		2	9920308	Washer
8		1	2384363	Supporting bracket
9		1	9999138	Male stud elbow
10		1	M297.00	T-connection
11		1	P484.00C0	Safety valve 1/4", blue ring
12		1	9998677	Pressure gauge 0-10 bar (d40)
13		1	9982078	Hose, black AD8 x 1.25
14		1	9992831	Loctite® 542

♦ = wearing parts

15 DECLARATION OF CONFORMITY

15.1 EU DECLARATION OF CONFORMITY

We hereby declare that the supplied version of the pneumatic piston pumps and their spray packs:

EvoMotion 5-125

complies with the following guidelines:

2006/42/EC
2014/34/EU (ATEX Directive)

Applied standards, in particular:

DIN EN ISO 12100:2010	EN 14462:2015
EN 809: 1998+A1:2009+AC:2010	EN 12621:2006+A1:2010
EN ISO 4413:2010	EN 1127-1:2011
EN ISO 4414:2010	EN ISO 80079-36:2016
EN ISO 13732-1:2008	EN ISO 80079-37:2016

Applied national technical standards and specifications, in particular:

DGUV regulation 100-500 Chapter 2.29
DGUV regulation 100-500 Chapter 2.36
TRGS 727

Identification:

II 2 G Ex h IIB T3/T4 Gb X

EU Declaration of Conformity

The EU Declaration of Conformity is enclosed with this product. If needed, further copies can be ordered through your WAGNER dealer by specifying the product name and serial number.

Order number:

2312813

Order number 2316596
Edition 03/2021

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Version C

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