WAGNER

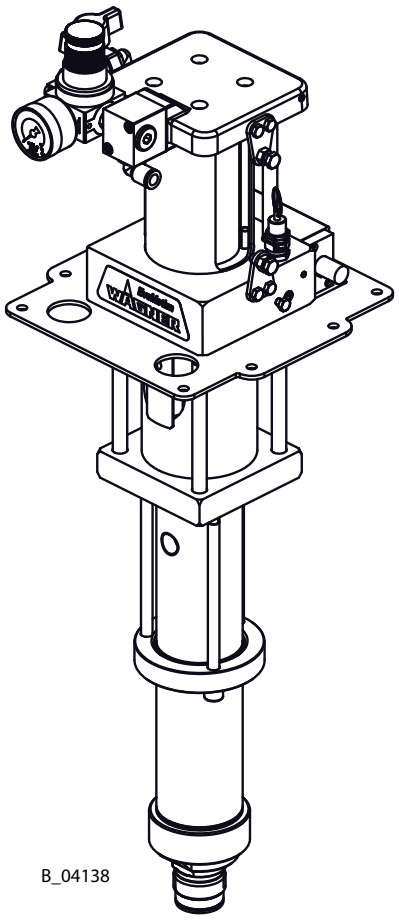
Translation of the Original Operating Manual

EvoMotion 5-60

Version 11/2015

Piston pump

Feed volume 60 cm³



B_04138

CE Ex II 2 G c IIB T3/T4 X

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1 ABOUT THESE INSTRUCTIONS

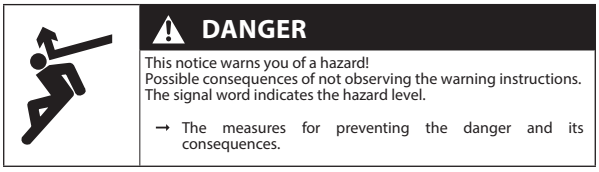
1.1 PREFACE

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 operating and service staff.
The device may only be operated by trained staff 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.

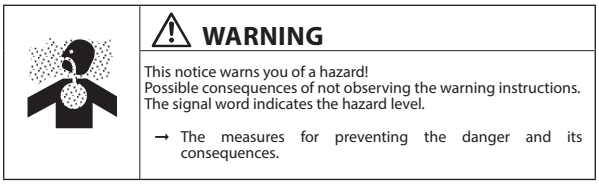
1.2 WARNINGS, NOTICES AND SYMBOLS IN THESE INSTRUCTIONS

Warning instructions in this operating 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:

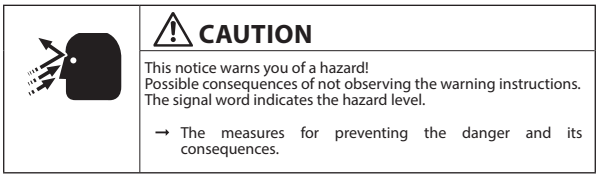
Danger - immediate risk of danger.
Non-observance will result in death or serious injury.



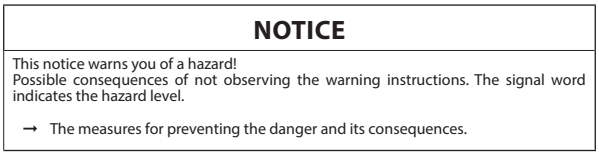
Warning - possible imminent danger.
Non-observance may result in death or serious injury.



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



Notice - a possibly hazardous situation.
Non-observance may result in damage to property.



Note - provides information about particular characteristics and how to proceed.

1.3 LANGUAGES

The operating manual is available in the following languages:

Language	Order No.
German	2333562
French	2333564
Italian	2333565

Language	Order No.
English	2333563
Spanish	2333566

1.4 ABBREVIATIONS IN THE TEXT

Stk	Number of pieces
Pos	Position
K	Marking in the spare parts lists
Order No.	Order number
No.	Number
DH	Double stroke
SSt	Stainless steel
2K	Two components

1.5 TERMINOLOGY FOR THE PURPOSE OF THIS MANUAL

Cleaning	Manual cleaning of devices and device parts with cleaning agent
Flushing	Internal flushing of paint-wetted parts with flushing agent
Staff 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 the context of TRBS 1203 (2010 / Revision 2012)	A person who, based on his/her technical training, experience and recent vocational experience, has sufficient technical knowledge 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. → Additional requirements for skilled persons are given in the TRBS 1203 (2010/Revision 2012): Expert knowledge in the areas of protection against excessive pressure, electrical hazards, and explosion protection (where applicable).

2 CORRECT USE

2.1 DEVICE TYPE

Pneumatic pump with spraypack:

EvoMotion
5-60

2.2 TYPE OF USE

The device is suitable for processing liquid materials like paints and lacquers in accordance with the classification into explosion classes IIA or IIB.

2.3 FIELD OF APPLICATION

The pneumatic pump can be used in potentially explosive areas (Zone 1). → See Chapter 3.

2.4 SAFETY PARAMETERS

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

- → Use the device only to work with the products recommended by WAGNER.
- → Only operate the device as a whole.
- → Do not deactivate safety fixtures.
- → Use only WAGNER original spare parts and accessories.

The pneumatic pump may only be operated under the following conditions:

- → The operating staff must be trained on the basis of this operating manual.
- → The safety regulations listed in this operating manual must be observed.
- → The operating, maintenance and repair information in this operating manual must be observed.
- → The statutory requirements and accident prevention regulation standards in the country of use must be observed.

2.5 PROCESSIBLE WORKING MATERIALS

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

Legend

↗ recommended ➟ limited suitability ↘ less suitable

NOTICE

Abrasive working materials and pigments!
Greater wear of parts carrying the product.

→ Do not use any grainy and abrasive working materials with large, sharp-edged pigments.
→ Use the application-related model (flow rate/cycle, material packaging, valve seat, etc.), as specified in Chapter 5.5.
→ Check if the fluids and solvents used are compatible with the pump construction materials as indicated in Chapter 5.5.1.

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

2.6 REASONABLY FORESEEABLE MISUSE

The forms of misuse listed below may result in physical injury or property damage:

- → coating work pieces which are not grounded;
- → unauthorized conversions or modifications to the pneumatic pump;
- → processing dry or similar coating products, e.g., powder;
- → using defective components, spare parts or accessories other than those described in the "Accessories" chapter of this operating manual;
- → continuing work with a defective or kinked product hose;
- → working with incorrectly set values;
- → processing food.

2.7 RESIDUAL RISKS

Residual risks are risks which cannot be ruled out even in the event of correct use.
If necessary, warning and prohibition signs at the relevant points of risk indicate residual risks.

Residual risk	Source	Consequences	Specific measures	Lifecycle phase
Skin contact with lacquers and cleaning agents	Handling of lacquers and cleaning agents	Skin irritation, allergies	Use personal safety equipment. Observe safety data sheets	Operation, maintenance, disassembly
Lacquer in air outside the defined working area	Lacquering outside the defined working area	Inhalation of substances hazardous to health	Observe work and operation instructions. Use personal safety equipment	Operation, maintenance

3 IDENTIFICATION

3.1 EXPLOSION PROTECTION IDENTIFICATION

As defined in Directive 94/9/EC (ATEX 95), the device is suitable for use in potentially explosive areas.

CE Ex II 2 G c IIB T3/T4 X

CE	CE mark (European Communities)
Ex	Explosion-proof equipment
II	Device class II (not mining)
2	Category 2 device (suitable for zone 1)
G	Ex-atmosphere gas
c	Constructional security
IIB	Device class (Gas) IIB
T3	Temperature class T3: maximum surface temperature 200 °C; 392 °F
T4	Temperature class T4: maximum surface temperature 135 °C; 275 °F
X	Special instructions exist for safe operation. → See the following Chapter "Identification X".

3.2 IDENTIFICATION X

Maximum surface temperature
The maximum surface temperature T3 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.

Temperature class T3: No dry running protection.

Temperature class T4: With dry running protection.

Ignition temperature
→ 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 is: +5 °C to +50 °C; +41 °F to +122 °F.

Medium supporting atomizing
→ To atomize the product, use only weakly oxidizing gases, e.g., air.

Safe handling of WAGNER spray devices

Mechanical sparks can form if the device comes into contact with metal.
In an explosive atmosphere:
→ Do not knock or push the device against steel or rusty iron.
→ Do not drop the device.
→ Use only tools that are made of a permitted material.

Surface spraying, electrostatics

→ 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.

National regulations

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

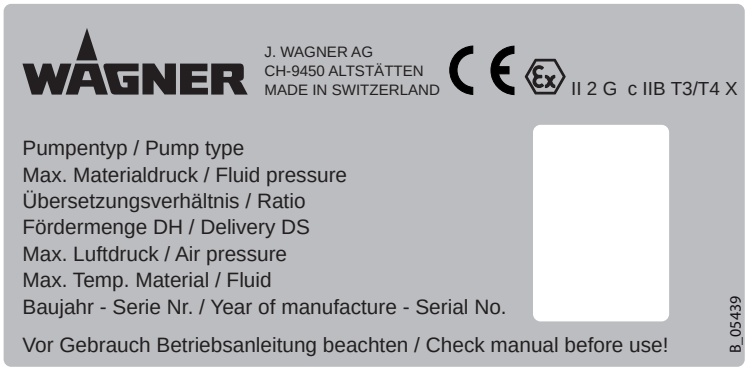
Air in the pump fluid

Flammable gas mixtures can form if air reaches 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 fluid tank is filled with sufficient separating fluid.
→ Periodically check that the pump is working smoothly, paying special attention to the presence of air in the pumped fluid.

Filling and emptying

Flammable gas mixtures can form in the fluid section or product hoses if the pump must be emptied for maintenance.
→ Empty and fill the device slowly and in a controlled manner.
→ Avoid potentially explosive atmosphere in the surroundings.

3.3 TYPE PLATE



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

4 GENERAL SAFETY INSTRUCTIONS

4.1 SAFETY INSTRUCTIONS FOR THE OPERATOR

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

4.1.1 ELECTRICAL EQUIPMENT

Electrical devices and equipment

→ 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. With open housings, there is a danger from line voltage.
→ Must be operated in accordance with the safety regulations and electrotechnical regulations.
→ Must be repaired immediately in the event of problems.
→ Must be decommissioned if they pose a hazard or are damaged.
→ Must be de-energized before work is commenced on active parts. Inform staff 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.

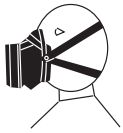
4.1.2 PERSONNEL QUALIFICATIONS

→ Ensure that the device is only operated, maintained and repaired by trained persons.

4.1.3 SAFE WORK ENVIRONMENT

→ Ensure that the floor in the working area is static dissipative in accordance with EN 61340-4-1 (resistance must not exceed 100 megohms).
→ Paint mist extraction systems/ventilation systems must be fitted on site according to local regulations.
→ Ensure that product / 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 megohms.

→ Ensure that during spraying, persons wear static dissipative gloves. The grounding takes place via the spray gun handle.
→ Protective clothing, including gloves, must comply with EN 1149-5. The measured insulation resistance must not exceed 100 megohms.
→ Ensure that there are no ignition sources such as naked flames, sparks, glowing wires, or hot surfaces in the vicinity. Do not smoke.
→ 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 and 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.
→ In the event of defects, immediately bring the device or system to a stop and arrange to have repairs carried out immediately.



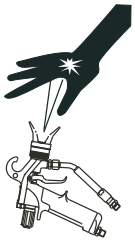
Grounding
→ Make sure that the ground and potential equalization of all system parts are performed reliably and continuously and can withstand the expected stress (e.g., mechanical stress, corrosion).

4.2 SAFETY INSTRUCTIONS FOR STAFF

→ Always follow the information in this manual, particularly the general safety instructions and the warning instructions.
→ Always follow local regulations concerning occupational safety and accident prevention.
→ In electrostatics application: Anyone fitted with a pacemaker must not enter the high-voltage area!

4.2.1 SAFE HANDLING OF WAGNER SPRAY DEVICES

The spray jet is under pressure and can cause dangerous injuries.
Avoid injection of paint or flushing agents:
→ Never point the spray gun at people.
→ Never reach into the spray jet.
→ Before all work on the device, in the event of work interruptions and functional faults:
  - Relieve pressure from spray guns and devices.
  - Secure spray guns against actuation.
  - Switch off the energy/compressed air supply.
  - 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.
- For shut down devices, the examination can be suspended until the next start-up.

→ Carry out the work steps as described in the "Pressure Relief" chapter:
- If pressure relief is required.
- If the spraying work is interrupted or stopped.
- Before the device is cleaned on the outside, checked or serviced.
- Before the spray nozzle is installed or cleaned.

In the event of skin injuries caused by paint or flushing agents:
→ Note the paint or flushing agent that you have been using.
→ Consult a doctor immediately.

Avoid risk of injury from recoil forces:
→ Ensure that you have firm footing when operating the spray gun.
→ Only hold the spray gun briefly in a position.

4.2.2 GROUNDING THE DEVICE

Friction, flowing liquids and air or electrostatic coating processes create charges. Flames or sparks can form during discharge. Grounding prevents electrostatic charging.
→ Ensure that the device is grounded. → See chapter "Grounding".
→ 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 handle.
→ The spray substance supply (spray substance tank, pump, etc.) must be grounded.

4.2.3 PRODUCT HOSES

→ Ensure that the hose material is chemically resistant to the sprayed products and the flushing agents used.
→ Ensure that the product hose is 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. Do not lay hoses:
- in high-traffic areas,
- on sharp edges,
- on moving parts or
- on hot surfaces.

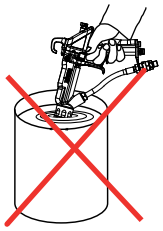
→ Ensure that the hoses are never run over by vehicles (e.g., fork lifts), or that the hoses are never put under pressure from the outside in any other way.
→ Ensure that the hoses are never kinked. Observe maximum bending radii.
→ Make sure that the hoses are never used to pull or move the equipment.
→ The electrical resistance of the product hose, measured at both valves, must be less than 1 megohm.
→ 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. Thus 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 is a multiplication of the inlet air pressure.

4.2.4 CLEANING AND FLUSHING

→ Relieve the pressure from the device.
→ De-energize the device electrically.
→ Preference should be given to non-flammable cleaning and flushing agents.
→ 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 paint 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.
→ Take measures for workplace safety (see Chapter 4.1.3).
→ When commissioning or emptying the device, please note that an explosive mixture may temporarily exist inside the lines and components of equipment:
- depending on the coating product used,
- depending on the flushing agent (solvent) used,
explosive mixture inside the lines and items of equipment.

→ Only electrically conductive tanks may be used 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:
→ 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.

4.2.5 HANDLING HAZARDOUS LIQUIDS, VARNISHES AND PAINTS

→ 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.
→ Take the specified protective measures. In particular, use personal protective equipment: safety goggles, protective clothing and gloves, as well as respiratory protection and skin protection cream if necessary.
→ 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.

4.2.6 TOUCHING HOT SURFACES

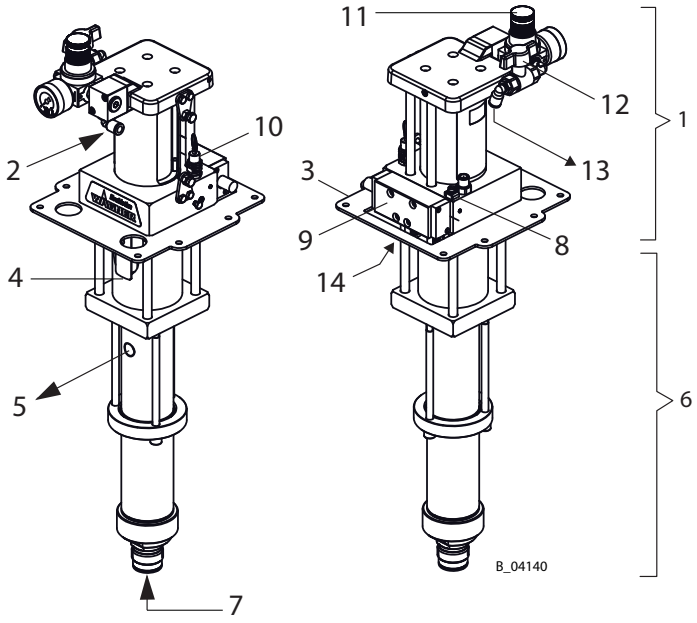
→ Only touch hot surfaces if you are wearing protective gloves.
→ When operating the device with a coating product with a temperature of > 43 °C; 109 °F: identify the unit with a warning label that says "Warning - Hot Surface".
- Instruction label Order no. 9998910
- Protection label Order no. 9998911

Note: Order the two stickers together.

5 DESCRIPTION

5.1 COMPONENTS

1 Air motor
2 Air inlet
3 Mounting flange
4 Separating fluid tank
5 Product outlet
6 Fluid section
7 Product inlet
8 Grounding connection
9 Reversing valve
10 Safety valve (air motor vent)
11 Air pressure regulator
12 Ball valve
13 Air outlet to the reversing valve
14 Air inlet to the reversing valve



5.2 MODE OF OPERATION

The piston pump is driven with compressed air (2). 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 (6). At the end of each stroke, the compressed air flow is redirected by a reversing valve (9).
The working material is sucked up during the upwards stroke and is continuously conveyed towards the product outlet (5) in both stroke directions.

Air motor (1)
The air motor with its pneumatic reverse (9) does not require pneumatic oil.
The compressed air is fed to the motor via an air regulator (11) and the ball valve (12).

Fluid section (6)
The fluid section has been designed as a piston pump with exchangeable ball valves. The pump piston runs in two fixed packings which are self-adjusting by means of a pressure spring, thus resulting in a long service life.

Between the air motor and the fluid section there is a separating agent cup (4) for holding the separating agent.

5.3 PROTECTIVE AND MONITORING EQUIPMENT

Safety valve

The air motor is fitted with a safety valve. The safety valve 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.

⚠ WARNING

Overpressure!
Risk of injury from bursting components.

→ Never change the safety valve setting.

5.4 SCOPE OF DELIVERY

Pneumatic piston pump
Consists of:
- Fluid section
- Air motor
- Connection set for air motor - fluid section
- Air pressure regulator for air motor

The scope of delivery also includes:

Separating agent 250 ml; 250 cc	Order no.: 9992504
Declaration of conformity	see Chapter 14.3
Operating manual, German	Order no.: 2322562
Operating manual in the local language	see Chapter 1.3

The delivery note shows the exact scope of delivery. Accessories: see Chapter 12.

5.5 DATA

5.5.1 MATERIALS OF PAINT-WETTED PARTS

Pump housing	Stainless steel
Piston	Stainless steel
Valve balls	Stainless steel
Valve seats	Stainless steel
Static seals	PTFE
Packings	PE / T

PE = Ultra high molecular weight polyethylene
T = Teflon (PTFE)

5.5.2 TECHNICAL DATA

⚠ WARNING

Exhaust air containing oil!
Risk of poisoning if inhaled.
Air motor switching problems.

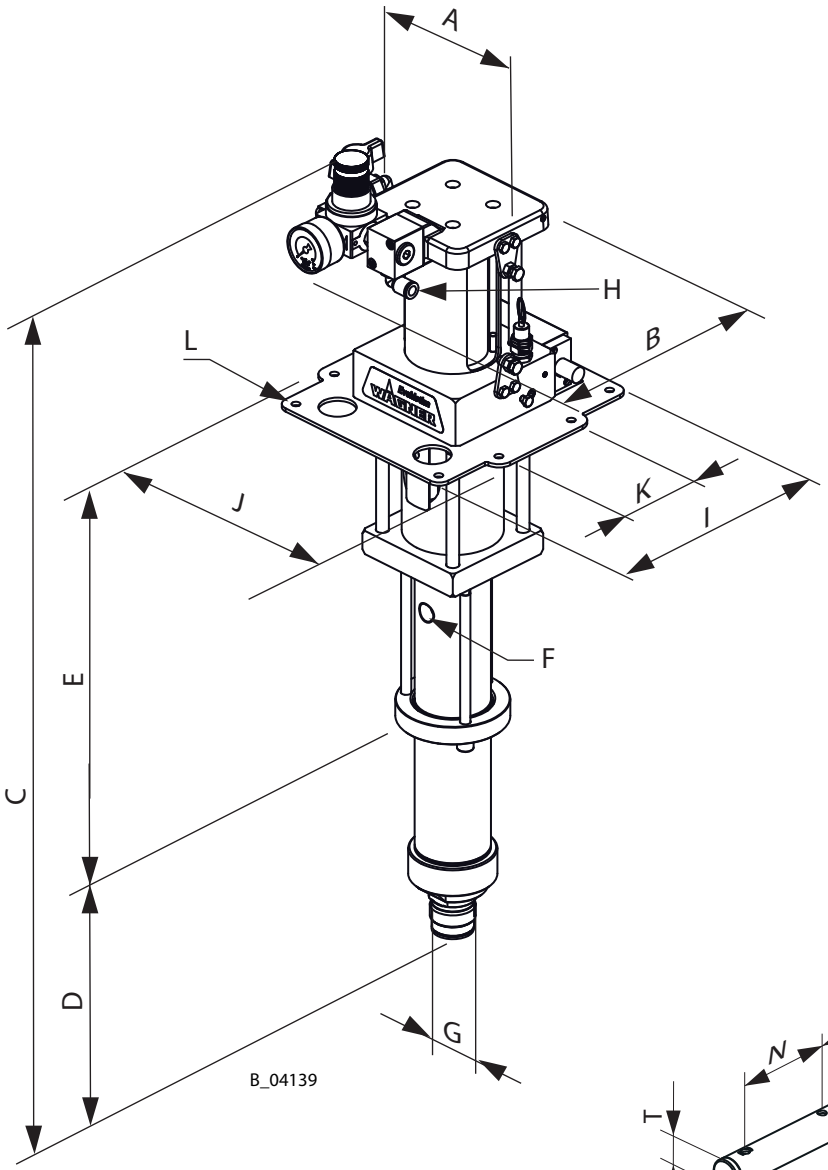
→ Provide water-free and oil-free compressed air

5.5.2.1 TECHNICAL DATA

Description		Devices	EvoMotion 5-60
Pump ratio			5:1
Volume flow per double stroke (DH)		cm^3/cc	60
Maximum operating overpressure		MPa bar psi	3.5 35 508
Maximum possible strokes in operation		DH/min.	60
Maximum recommended strokes per minute in continuous operation		DH/min.	40
Minimum / maximum air inlet pressure		MPa bar psi	0.2-0.8 2-8 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/m3
Ø air inlet connection (inside thread)		mm inch	8.0 0.31
Minimum Ø 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	2.4 0.09
Air motor piston diameter		mm inch	50 1.97
Air motor piston stroke		mm inch	68 2.68
Sound pressure level at maximum permissible air pressure*		dB(A)	65.1
Sound pressure level at 0.6 MPa; 6 bar; 87 psi air pressure*		dB(A)	62.9
Sound pressure level at 0.4 MPa; 4 bar; 58 psi air pressure*		dB(A)	61.0
Product inlet (outside thread)		mm	M36x2
Product outlet (inside thread)		inch	G 3/8"
Weight		kg; lb	13.0; 28.7
Product pH value		pH	3.5 – 9
Maximum product pressure at pump inlet		MPa bar psi	2 20 90
Product temperature		°C; °F	+5 … +80; +41 … +176
Ambient temperature	Construction and assembly	°C; °F	+5 … +50; +41 … +122
	Suspension	°C; °F	-20…+60 ; -4…+140
Relative humidity		%	10–95 (without condensation)
Allowable inclination for operation		<) °	± 10

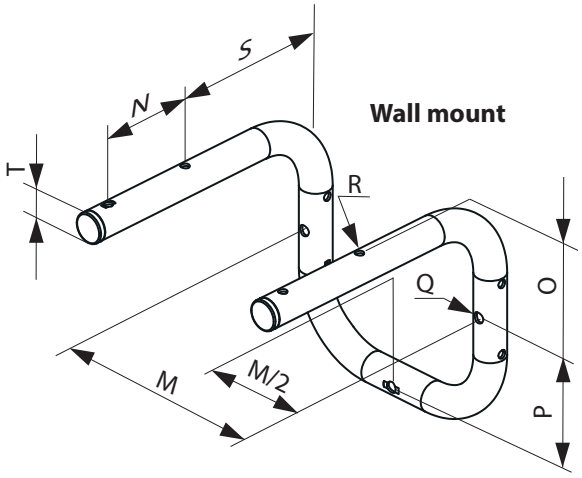
* A-rated sound pressure level measured at 1 m distance, LpA1m, according to DIN EN 14462: 2005.

5.5.2.2 MEASUREMENTS AND CONNECTIONS



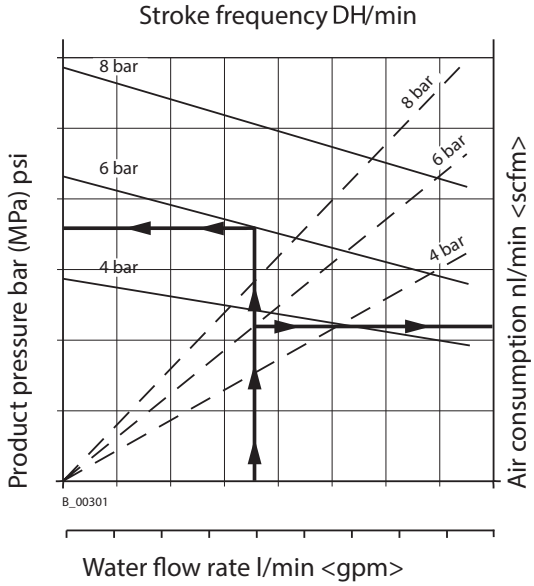
	EvoMotion 5-60	
	mm	inch
A	150	5.91
B	183	7.20
C	712	28.0
D	192	7.56
E	285	11.2
F	G 3/8"	
G	M36x2	
H	ø 8	ø 0.31
I	210	8.27
J	207	8.15
K	80	3.15
L	ø 7	ø 0.28
M	182	7.17
N	80	3.15
O	106	4.17
P	96.5	3.80
Q	ø 9	ø 0.35
R	ø 7	ø 0.28
S	149	5.87
T	ø 25	ø 0.98

Wall mount

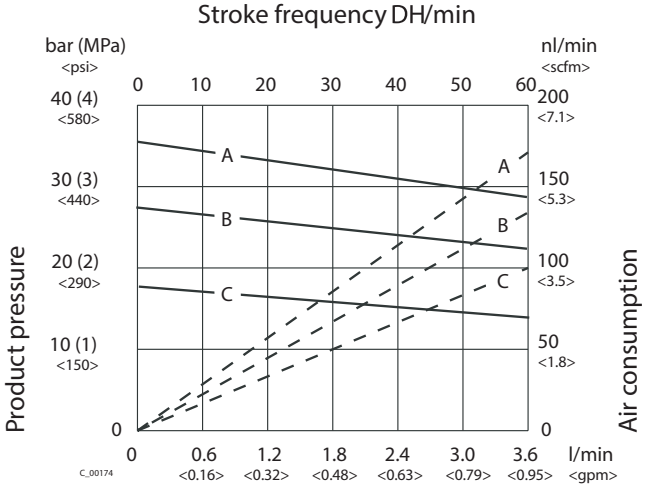


5.5.3 PERFORMANCE DIAGRAMS

Reading example:



EvoMotion 5-60

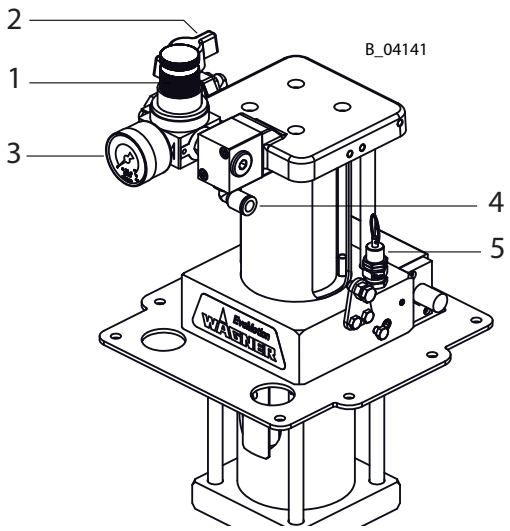


Water flow rate

A = 8 bar (0.8 MPa; 116 psi) air pressure
B = 6 bar; 0.6 MPa; 87 psi air pressure
C = 4 bar; 0.4 MPa; 58 psi air pressure

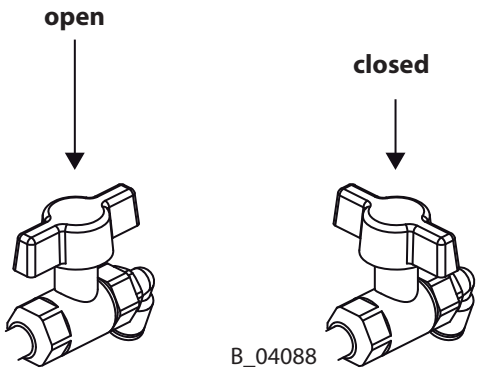
5.6 PRESSURE REGULATOR UNIT

1 Pressure regulator
2 Ball valve
3 Pressure gauge (working pressure)
4 Compressed air Inlet
5 Safety and Motor pressure relief Valve



Positions of the ball valve (2)

- Open: working position
- Closed: the air motor may still be under pressure.



5.6.1 SAFETY AND MOTOR PRESSURE RELIEF VALVE

Safety valve
The safety valve (5) has been factory adjusted so as to ensure that if pressure exceeds the permitted 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.

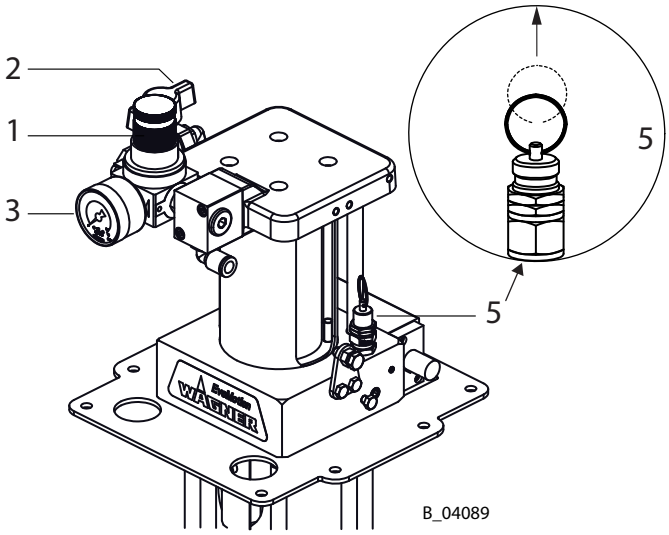
⚠ WARNING

Overpressure!
Risk of injury from bursting components.

→ Never change the safety valve setting.

Pressure relief of the air motor:

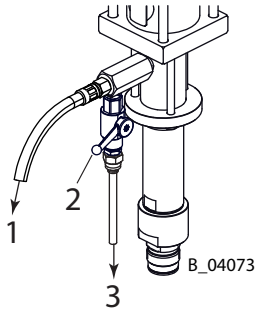
1 Close ball valve (2).
2 Pull up the ring on the safety valve (5) and hold it there until the pressure in the air motor has been equalized.



5.6.2 RETURN VALVE

Installing a return flow valve is absolutely necessary for carrying out a complete depressurization of the pump (see Chapter 7.5). The suitable return valves (ball valves), return pipes and hoses for the device can be found in the accessories list.

1 Product outlet
2 Return valve
3 Material return line



6 ASSEMBLY AND COMMISSIONING

6.1 TRAINING ASSEMBLY/COMMISSIONING STAFF

→ The assembly and commissioning staff 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 installed and before commissioning.

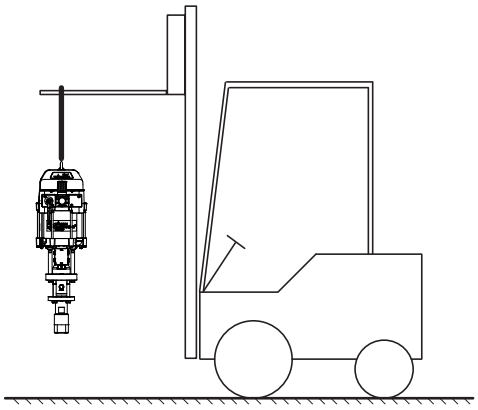
6.2 STORAGE AND INSTALLATION CONDITIONS

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. For specifications on temperatures and relative humidity, see Technical Data.

Long-term storage: Thoroughly clean the pump, if a long-term decommissioning is planned. See Chapter "Cleaning". For recommissioning, proceed according to following chapters.

6.3 TRANSPORTATION

The pump can be moved on a trolley or manually without lifting equipment.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⚠ WARNING

Inclined ground!
Risk of accidents if the device rolls away/falls.

→ Position the trolley with the piston pump horizontally.
→ If the surface is inclined, position the feet of the trolley towards the gradient.
→ Secure the trolley.

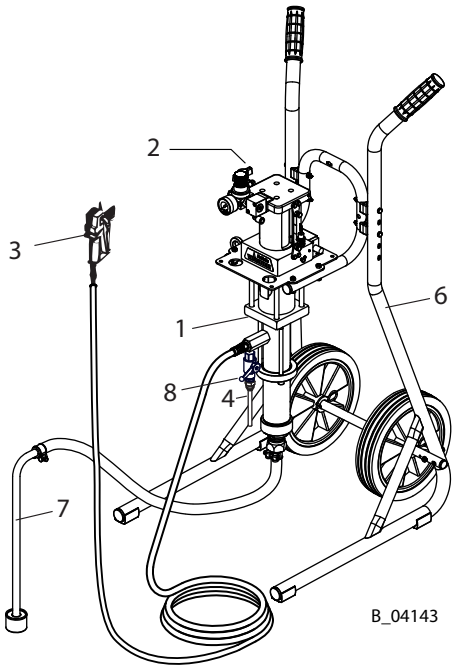
6.4 ASSEMBLING THE PUMP

Note:
This pump can be used as part of a spraying or feed system. Individual supplement components for this pump can be found in the Wagner Accessories Catalogue, or can be put together with the Spraypack Configurator. The nozzles must be selected according to the gun instructions.

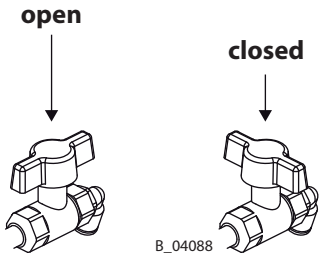
The pump is designed without an air filter. It is recommended that an on-site air filter be provided. The compressed air must be free of oil and water. Quality Standard 7.5.4 according to ISO 8573.1 must be observed: 5-10 mg/m³ / +7 °C / 5 mg/m³.

Procedure:

1. Mount pump (1) on wall mount or trolley (6).
2. In an AirSpray system, the air hose is mounted to the gun and connected to the air supply (cleaned compressed air).
3. Mount suction system (7).
4. Mount the return valve (8) for pressure relief or product circulation.
5. Mount return tube (4) or return hose
6. Connect a suitable product shut-off valve or gun (4) in accordance with the gun operating manual.



Ball valve (2):



6.4.1 VENTILATION OF THE SPRAY BOOTH

Observe the safety instructions in Chapter 4.1.3.

→ Operate the device in a spray booth approved for the 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 GROUNDING

⚠ WARNING

Discharge of electrostatically charged components in atmospheres containing solvents!
Explosion hazard from electrostatic sparks.

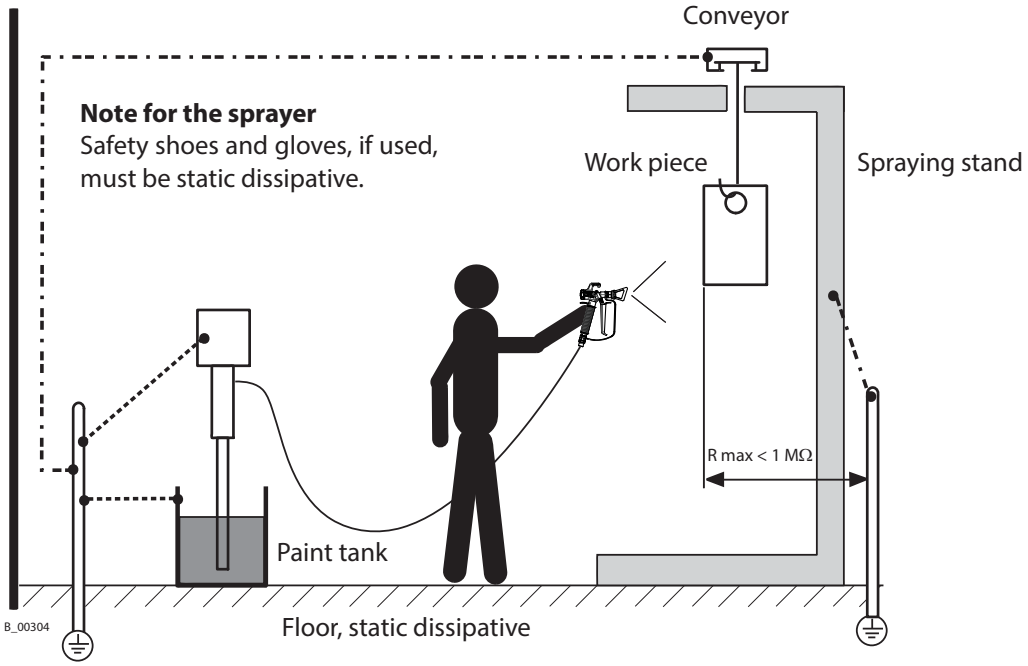
→ Clean the piston pump only with a damp cloth.
→ Ground all device components.
→ Ground the work pieces to be coated.

⚠ WARNING

Heavy paint mist if grounding is insufficient!
Danger of poisoning.
Insufficient paint application quality.

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

Grounding scheme (example)



Cable cross sections

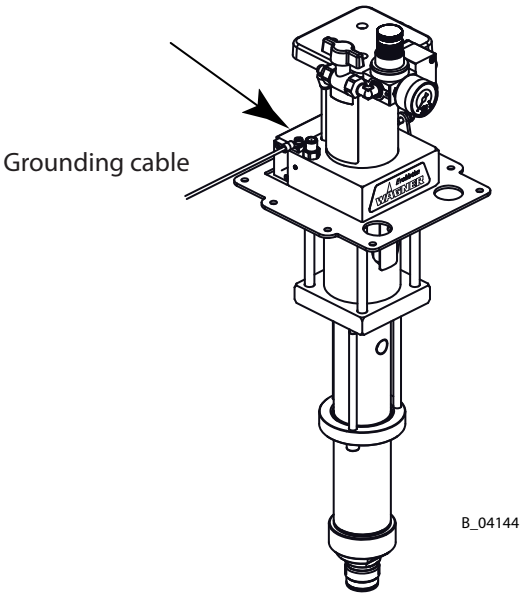
Pump	4 mm²; AWG 12	Conveyor	16 mm²; AWG 6
Product tank	6 mm²; AWG 10	Booth	16 mm²; AWG 6
		Spraying stand	16 mm²; AWG 6

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

Procedure:

1 Screw on grounding cable with eye.
2 Clamp the grounding cable to a grounding connection on site.
3 Ground the product (paint) tank to an on-site grounding connection.
4 Ground the other parts of the system to an on-site grounding connection.

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



6.6 COMMISSIONING

→ Observe all safety regulations in accordance with Chapter 4 and Chapter 7.2.

→ Emergency stop, see Chapter 7.3.

Preparation
Before every start-up, the following points should be observed as laid down in the operating manual:

- Secure gun with safety clip.
- Check the permissible pressures.
- Check all connections for leaks.
- Check hoses for damage in accordance with Chapter 8.2.7.

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 separating agent in accordance with Chapter 8.2.4.
- Fill the empty device with flushing agent in accordance with Chapter 8.2.6.

Pressure tightness test

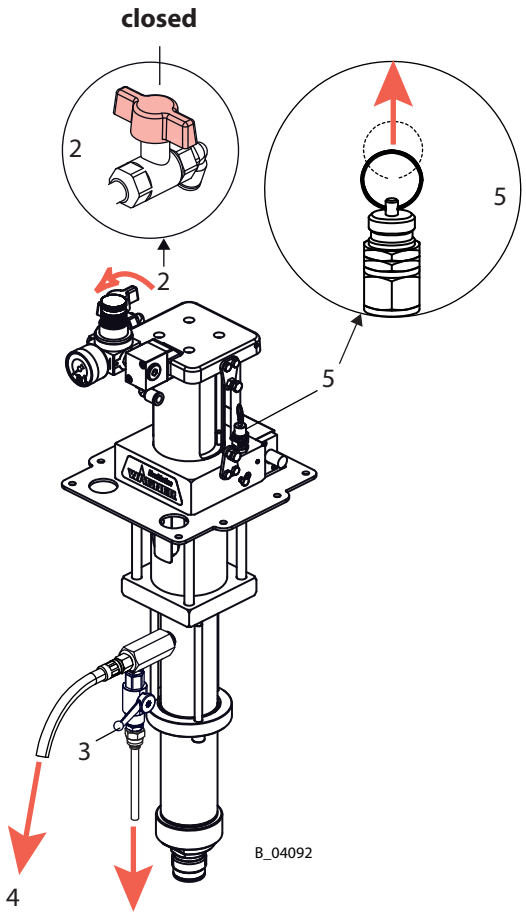
- Gradually increase the pressure in pump with the pressure regulator until maximum pressure is reached. Maintain the pressure for 3 minutes and check all connection points for leaks.
- Depressurization in accordance with Chapter 7.5.

Filling with working material

- In accordance with Chapter 7.6.1.

Before every start-up, the following points should be observed as laid down in the operating manual:
- Check the permissible pressures.
- Check all connections for leaks.
- Check hoses for damage.

It should be ensured that the device is in the following state before carrying out any work on it:
- Interrupt the air supply (2).
- Depressurize the air motor (pull the ring on the safety valve (5)).
- Relieve the pressure from the fluid section.



7 OPERATION

7.1 TRAINING THE OPERATING STAFF

→ The operating staff must be qualified and fit 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 staff must receive appropriate system training.

7.2 SAFETY INSTRUCTIONS

Before carrying out any work, the following points must be observed in accordance with the operating manual:
→ Observe all safety regulations in accordance with Chapter 4.
→ Carry out commissioning in accordance with Chapter 6.6.

⚠ WARNING

Incorrect operation!
Risk of injury and damage to the device.

→ If contact with lacquers or cleaning agents causes skin irritation, appropriate precautionary measures must be taken, e.g., wearing protective clothing.
→ The footwear worn by operating staff must comply with EN ISO 20344. The measured insulation resistance must not exceed 100 megohms.
→ The protective clothing, including gloves, must comply with EN ISO 1149-5. The measured insulation resistance must not exceed 100 megohms.

⚠ WARNING

Unintentional putting into operation!
Risk of injury

Before any work on the device, in the event of work interruptions and malfunctions:
→ Relieve the pressure from the spray gun and unit.
→ Secure the spray gun against actuation.
→ Switch off the energy/compressed air supply.
→ Disconnect the control unit form the network.
→ In the event of functional faults: remedy the fault as described in the "Troubleshooting" chapter.

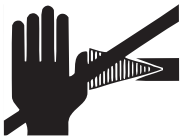
⚠ WARNING

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 material.
→ Do not spray the device empty after cleaning.

7.2.1 GENERAL RULES FOR MAKING ADJUSTMENTS TO THE SPRAY GUN

→ Observe the operating manual of the spray gun.



⚠ WARNING

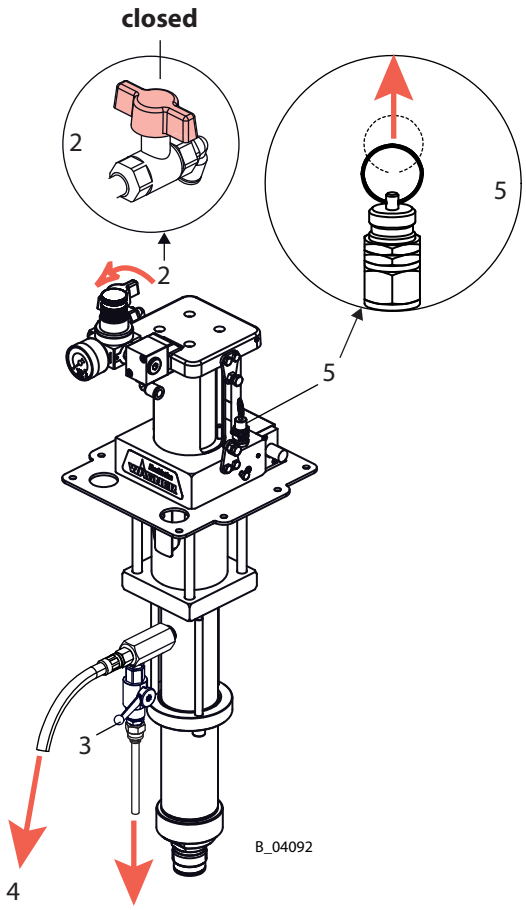
High pressure spray jet!
Danger to life from injecting paint or solvent.

→ Never reach into the spray jet.
→ Never point the spray gun at people.
→ Consult a doctor immediately in the event of skin injuries caused by paint or solvent. Inform the doctor about the paint or solvent used.
→ Never seal defective high-pressure parts; instead relieve the pressure from them and replace them.
→ Use personal protective equipment (protective clothing, gloves, eyewear and respiratory protection).

7.3 EMERGENCY STOP

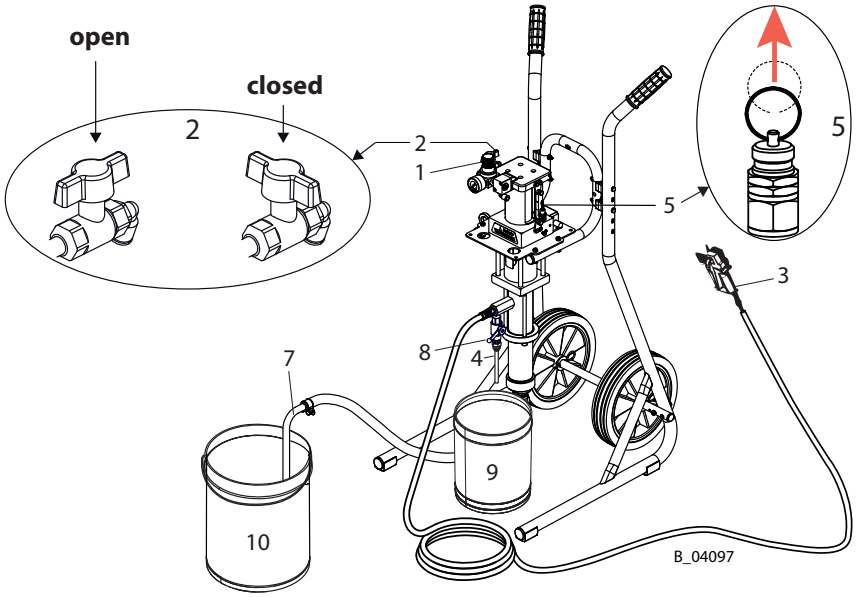
In the case of unforeseen occurrences:

- Close ball valve (2),
- Open safety valve (5),
- Relieve the product-conveying parts completely of pressure via the return valve (3), the gun or an outlet valve in the product outlet (4).



7.4 SPRAYING

1. Visual check: personal safety equipment, grounding and all devices ready to use.
2. Secure the gun (3) and insert the nozzle into the gun.
3. Close return valve (8).
4. Slowly open the ball valve (2).
5. Set the required operating pressure on the pressure regulator (1).
6. Optimize the spraying results according to the data in the gun operating manual.
7. Start work process.



7.4.1 FEED SYSTEM

1. Close return valve (8).
2. Slowly open the ball valve (2).
3. Set the required operating pressure on the pressure regulator (1).
4. Open and close the outlet valve and/or the the lock units on the discharge duct in order to start and interrupt the product flow.

7.5 PRESSURE RELIEF/WORK INTERRUPTION

Spraying system

Pressure relief of the product

1. Close gun.
2. Close ball valve (2).
3. Release the system by opening the gun.
4. Close and secure gun.
5. Open and close the return valve (8) to completely depressurize the system.

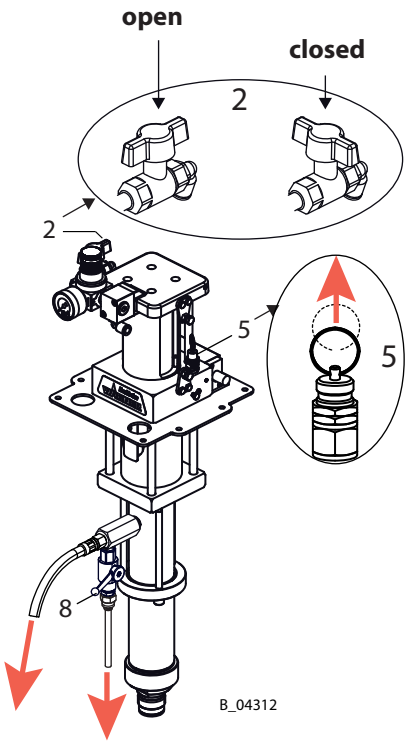
Feed System

Pressure relief of the product

1. Close the outlet valve and/or the lock units on the discharge duct.
2. Close ball valve (2).
3. Relieve the system pressure, by opening the return valve (8).
4. Close the return valve (8) again.

Air pressure relief
(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 up the ring on the safety valve (5) and hold it there until the pressure in the air motor has been equalized.



If the system has been used with 2K products:

NOTICE

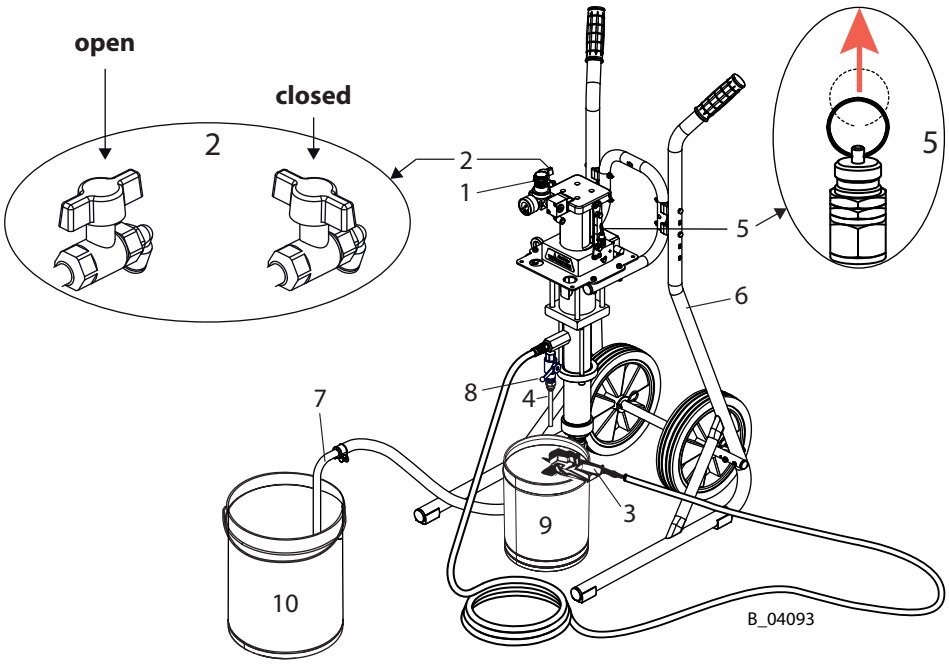
Hardened working material in the spraying system when 2K product is processed!
Destruction of pump and injection system.

→ Follow the manufacturer's processing rules, particularly regarding the pot life.
→ Flush thoroughly before the end of the pot life.
→ The pot life is decreased by warmth.

7.6 BASIC FLUSHING

Before each basic flushing, the nozzle must be removed from the gun. The data in the gun's operating manual are to be observed.
With AirSpray systems, carry out the basic flushing of the system without atomizing air.

1. Visual check: personal safety equipment, grounding and all devices ready to use.
2. Place empty tank (9) under return tube (4).
3. Place suction hose (7) in the tank with flushing agent (10).
4. Open the ball valve (2) and set the pressure regulator (1) to approx. 0.05 MPa; 0.5 bar; 7.25 psi.
5. Open return valve (8).
6. Adjust the air pressure on the pressure regulator (1) so that the pump runs smoothly.
7. Flush the system until clean flushing agent flows into the tank (9).
8. Close ball valve (2).
9. Close return valve (8).
10. Point the gun (3), without nozzle, into tank (9) and open it.
11. Slowly open the ball valve (2).
12. Rinse until clean flushing agent flows from the gun.
13. Close ball valve (2). Pull up the ring on the safety valve (5) and hold it there until the pressure in the air motor has been equalized.
14. Relieve the system pressure, either by opening the return valve (8) or via the trigger on the gun (3).
15. As soon as there is no pressure remaining in the system, close the gun or the return valve (8).
16. Secure the gun.
17. Dispose of the contents of the tank (9) according to the local regulations.



7.6.1 FILLING WITH WORKING MATERIAL

After basic flushing, the system can be filled with working material.
Proceed according to Chapter 7.6, but use working material instead of flushing agent.

8 CLEANING AND MAINTENANCE

8.1 CLEANING

8.1.1 CLEANING STAFF

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

The following hazards may arise during cleaning work:

- Health hazard from inhaling solvent vapors
- Use of unsuitable cleaning tools and aids

8.1.2 SAFETY INSTRUCTIONS

→ Clean the piston pump only with a damp cloth.

→ Observe safety instructions in Chapter 4.

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.
→ Only repair and replace parts that are listed in the Chapter "Spare parts" and that are assigned to the unit.
→ Before all work on the device and in the event of work interruptions:
- Relieve pressure from spray guns and devices.
- Secure spray guns against actuation.
- Switch off the energy/compressed air supply.
- Disconnect the control unit from the mains.
→ Observe the operating manual and service manuals at all times when carrying out work.

8.1.3 DECOMMISSIONING AND CLEANING

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

1. Carry out work interruption → Chapter 7.5.
2. Carry out basic flushing → in accordance with Chapter 7.6.
3. Empty the pump in a controlled manner → in accordance with Chapter 8.2.5.
4. Maintain the gun according to the operating manual.
5. Clean and check the suction system and the suction filter.
6. When using a material filter, check filter insert and filter housing and clean or replace them.
7. Clean the outside of the system.

⚠ WARNING

Brittle filter pressure regulator!
The tank on the filter pressure regulator becomes brittle through contact with solvents and can burst.
Flying parts can cause injury.

→ Do not clean the tank on the filter pressure regulator with solvents.

8. Fully assemble the system.
9. Check fill level of the separating agent → Chapter 8.2.4.
10. Fill the system with flushing agent in accordance with Chapter 8.2.6.

⚠ WARNING

Gas mixtures can explode if there is an incompletely filled pump!
Danger to life from flying parts.
Ignition of potentially explosive surrounding atmosphere.

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

8.1.4 LONG-TERM STORAGE

When storing the device for longer periods of time, it is necessary to thoroughly clean it and protect it from corrosion. Replace the water or solvent in the product pump with a suitable preservative, fill separating agent cup with separating agent.

Procedure:

1. Carry out points 1 to 9 of Chapter 8.1.3 "Decommission and clean".
2. Fill the system with preservative in accordance with Chapter 8.2.6.
3. Empty the pump in a controlled manner in accordance with Chapter 8.2.5 and seal the openings.

8.2 MAINTENANCE

8.2.1 MAINTENANCE STAFF

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

The following hazards may arise during maintenance work:

- Health hazard from inhaling solvent vapors
- Use of unsuitable tools and aids

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

8.2.2 SAFETY INSTRUCTIONS

→ Observe the safety instructions in Chapter 4 and Chapter 8.1.2.

Prior to maintenance
It should be ensured that the device is in the following state before carrying out any work on it:

- Release pressure from the pump, high-pressure hose and gun.
- The gun should be secured with the safety clip.
- The air supply should be interrupted.

After maintenance

- Commissioning in accordance with Chapter 6.6.

→ According DGUV regulation 100-500:

- The liquid ejection devices should be checked by an expert (e.g., WAGNER service technician) for their safe working conditions as required and at least every 12 months.
- For shut down devices, the examination can be suspended until the next start-up.

DANGER

Incorrect maintenance/repair!
Danger to life and equipment damage.

→ Repair or replacement of devices or parts of devices are only allowed to be performed outside the hazard area by qualified personnel.

8.2.3 REGULAR MAINTENANCE WORK

1. Check the level of separating agent in the separating agent cup every day, and top up if necessary.
2. Check and clean the high-pressure filter every day or as required (if available).
3. Every shut down should be carried out as laid down in Chapter 8.1.3!
4. Check hoses, pipes, and couplings every day and replace if necessary.

If the pump has to be emptied for maintenance work, proceed according to Chapter 8.2.5.

The service manual is available in German and English.
For order number see Chapter 1.3.

8.2.4 FILLING SEPARATING AGENT

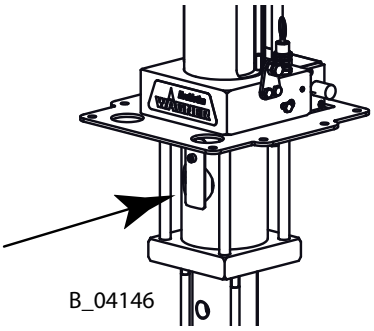
NOTICE

Piston pump dry run!
High wear/damage to the packings.
Paint or solvent can escape if the seals are dry.

→ Ensure that the separating fluid tank is filled with sufficient separating fluid. Filling level 2 cm; 0.8 inch under the tank edge.

Pour the supplied separating agent into the intended opening.
Filling level: 2 cm; 0.8 inch under the filling opening.
Separating agent: See accessories.

Notice
Maximum permissible inclination of pump for moving, transportation etc. after filling it with separating agent ± 30°.
The pump must be vertical during operation.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8.2.5 EMPTYING THE 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 the device slowly and in a controlled manner.
→ Avoid potentially explosive atmosphere in the surroundings.

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

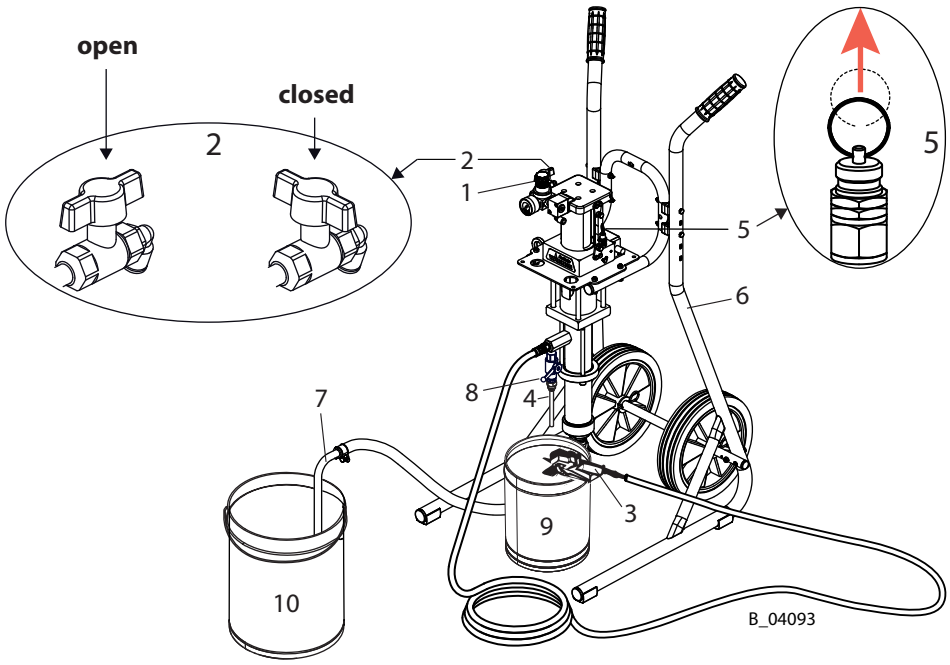
1. Visual check: personal safety equipment, grounding and all devices ready to use.
2. Carry out basic flushing in accordance with Chapter 7.6.
3. Place grounded collection tank (5) under the return tube (4).
4. Place the suction hose (7) in an empty, grounded tank (6).
5. Close pressure regulator (1) (0 MPa; 0 bar; 0 psi).

Empty using return line

6. Open return valve (3).
7. Slowly open the ball valve (2).
8. Slowly turn air pressure up on the pressure regulator (1) and only until the pump is running normally (approx. 0.05 MPa; 0.5 bar; 7.25 psi).
9. Be ready for the switch from working material 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).
10. As soon as working material is no longer flowing from the return tube (4), close ball valve (2).
11. Close return valve (3).

Empty up to the gun

12. Point the gun, without nozzle, into tank (5) and open it.
13. Slowly open the ball valve (2). Be ready for the switch from working material to air.
14. As soon as working material is no longer flowing from the return tube, close the ball valve (2).
15. Close and secure gun.
16. Depressurization in accordance with Chapter 7.5.
17. Dispose of the contents of the tank (5) according to the local regulations.


open
closed
2
2
1
5
5
6
8
4
7
9
3
10
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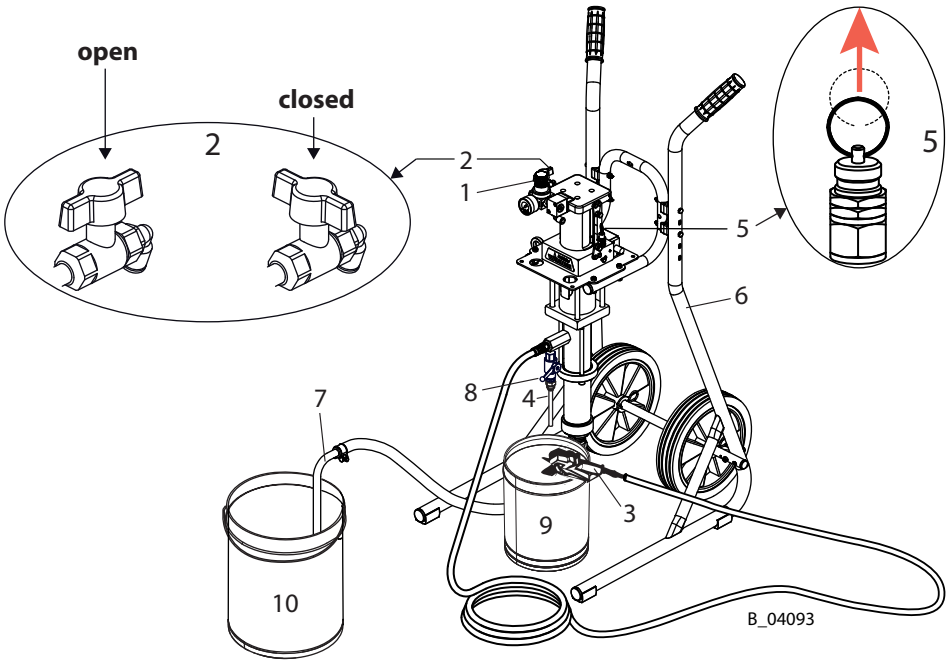
8.2.6 FILLING THE EMPTY PUMP

Note:
Before each filling, the nozzle must be removed from the gun. The data in the gun's operating manual are to be observed.
With AirSpray systems, carry out the filling of the system without atomizing air.

1. Visual check: personal safety equipment, grounding and all devices ready to use.
2. Place empty tank (9) under return tube (4).
3. Place suction hose (7) in the tank with the working material (10).
4. Open return valve (8).
5. Slowly open the ball valve (2).
6. Adjust the air pressure on the pressure regulator (1) so that the pump runs regularly.
7. Close the ball valve (2) immediately as soon as pure working material starts coming from the return line (4).
8. Close return valve (8).
9. Open the outlet valve or gun (3), and then slowly open the ball valve (2) in order to fill the discharge duct.
10. As soon as pure working material starts coming, close the ball valve (2) and relieve the pressure, i.e., open the vent valve (5) on the air motor (see Chapter 5.6.1).
11. If no pressure remains in the system, close the outlet valve or gun (3).
12. Dispose of the contents of the tank (9) according to the local regulations.



8.2.7 PRODUCT HOSES, TUBES AND COUPLINGS

DANGER

Bursting hose, bursting threaded joints!
Danger to life from injection of product and from flying parts.

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

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

→ Check hoses, pipes, and couplings every day and replace if necessary.
→ Before every commissioning, check all connections for leaks.
→ 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.
→ Undamaged complete hoses are to be replaced when one of the two following intervals has been 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 (27 MPa)	Pressure
XX	Internal code
DNxx (e.g., DN10)	Nominal diameter

9 TROUBLESHOOTING AND RECTIFICATION

Problem	Cause	Remedy
The pump does not work	Air motor does not work or stops.	Open and close ball valve on the pressure regulator unit or briefly disconnect compressed air supply.
	No pressure indication on the pressure gage (air pressure regulator defective).	Disconnect compressed air supply briefly or repair or change pressure regulator.
	Spray nozzle is clogged.	Clean the nozzle according to the instructions.
	Insufficient compressed air supply.	Check compressed air supply.
	Filter insert in spray gun is clogged.	Clean the parts and use a suitable working material.
	Fluid section or product hose is blocked (e.g., 2K product hardened).	Dismount and clean fluid section, replace product hose.
	Sometimes, the pump stops at a switching point.	Press the starter on the reverse valve and restart the pump. Replace the reversing valve if necessary.
Poor spray pattern	See the gun instructions.	
Irregular operation of the pump: spray jet collapses (pulsation)	The fluid section sucks in air.	Check the level of the working material. Fill the tank.
	Air in the fluid section.	Vent the system: Suction the product without a spray nozzle.
	Viscosity is too high.	Thin spraying product.
	Spraying pressure is too low.	Increase incoming air pressure. Use a smaller nozzle.
	Valves are clogged.	Clean pump, if necessary leave it to soak in solvent.
	Foreign body in suction valve.	Dismantle suction valve housing, clean and check valve seat.
	Diameter of compressed air line too small.	Assemble a larger incoming line -> Technical Data, Chapter 5.5.2.
	Valves, packings, or pistons are worn out.	Replace the parts.
	On-site air filter is clogged.	Check filter and clean it if necessary.
The pump runs smoothly but does not suck up any product	The suction system's union nut is loose; the pump is taking in air.	Tighten union nut.
	Air in the fluid section.	Vent the system: Suction the product without a spray nozzle.
	Suction filter is clogged.	Clean filter.
	Ball in suction or piston valve is stuck.	Clean balls and valve seats. (If necessary vent device.)
The pump runs when the discharge duct is closed.	Packings, valves, or pistons are worn out.	Replace the parts.
The air motor is iced up	There is a lot of condensation water in the air supply.	Install a water separator.

If none of the causes of malfunction mentioned are present, the defect can be remedied by a WAGNER Service Center.

10 REPAIR

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 repairs must be carried out in accordance with the corresponding service manual.

The following hazards may arise during repair work:

- Health hazard 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.

10.2 MOUNTING MATERIALS

In Chapter 13 the order numbers for device spare parts can be found, as well as for wearing parts such as seals.

→ Use torques, greases and glues in accordance with Chapter 13.

Mounting materials

Order No.	Quantity	Designation	Smaller tanks
9992590	1 pc ≙ 50 ml	Loctite® 222	
9992511	1 pc ≙ 50 ml	Loctite® 243	
9992831	1 pc ≙ 50 ml	Loctite® 542	
9998808	1 pc ≙ 18 kg !	Mobilux® EP 2 grease	400 g tube ≙ Order No. 2355418
9992616	1 pc ≙ 1 kg can	Molykote® DX grease	50 g tube ≙ Order No. 2355419
9992609	1 pc ≙ 100 g	Anti-seize paste	
9992816	1 pc ≙ 70 g	Miranit contact adhesive	

Brand notice

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

11 DISPOSAL

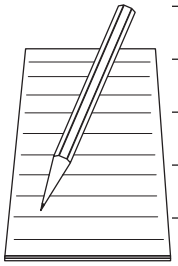
When the equipment must be scrapped, please differentiate the disposal of the waste materials.

The following materials have been used:

Steel	Aluminum	Plastics	Carbide

Consumable products

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



12 ACCESSORIES

12.1 EVOMOTION 5-60 ACCESSORIES

Pos	K	Order No.	Designation
A		2329535	Piston pump
A		2330596	Piston pump for sensor
1		236219	Grounding cable, complete 3 m; 9.8 ft
2		9992504	Separating agent 250 ml; 250 cc
2		9992505	Separating agent 500 ml; 500 cc

◆ = Wearing part

12.2 ACCESSORIES FOR PRODUCT OUTLET

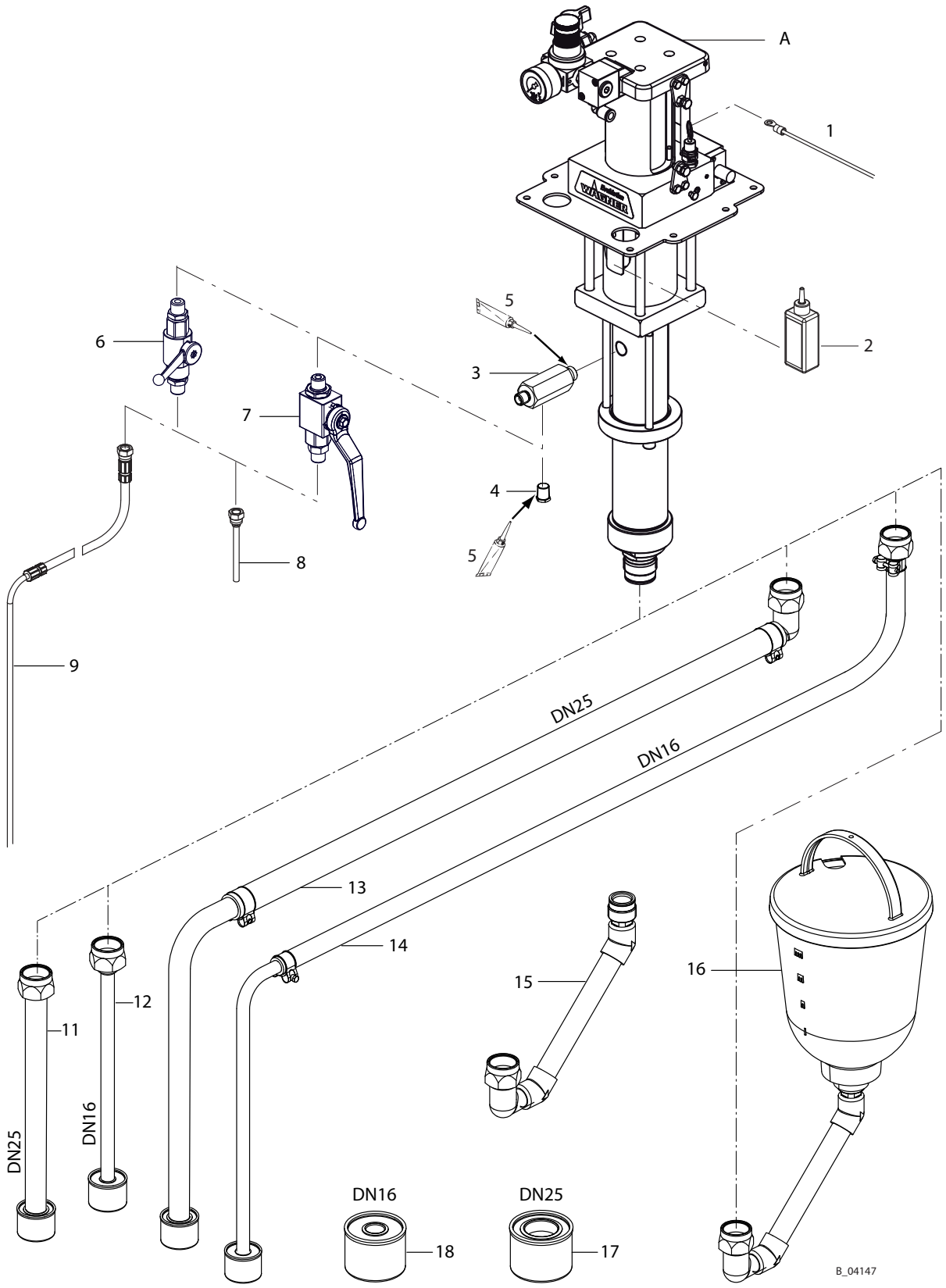
Pos	K	Order No.	Designation
3		B0461.03	Fitting-DF-MM-R3/8"-1/4"NPS-PN350
4		2323718	Hexagon plug
5		9992528	Loctite® 270
6	◆	2334488	Ball valve R1/4"-G1/4"-PN350-SSt
7	◆	2334472	Ball valve R1/4"-G1/4"-PN350-CS
8	◆	2331752	Return tube DN6-G1/4"-100mm-PA
9	◆	2329046	Return hose DN6-PN310-G1/4"-PA

◆ = Wearing part

12.3 ACCESSORIES FOR PRODUCT INLET

Pos	K	Order No.	Designation
11		2323239	Suction tube DN25-SSt, complete
12		2324158	Suction tube DN16-SSt, complete
13	◆	2324116	Suction hose DN25-SSt, complete
14	◆	2324110	Suction hose DN16-SSt, complete
15		2323225	Suction elbow for top reservoir SSt
16	◆	2332169	Top reservoir set, 5 l for piston pump
17	◆	2323325	Suction filter DN25-18mesh-SSt
18	◆	2323396	Suction filter DN16-18mesh-SSt

◆ = Wearing part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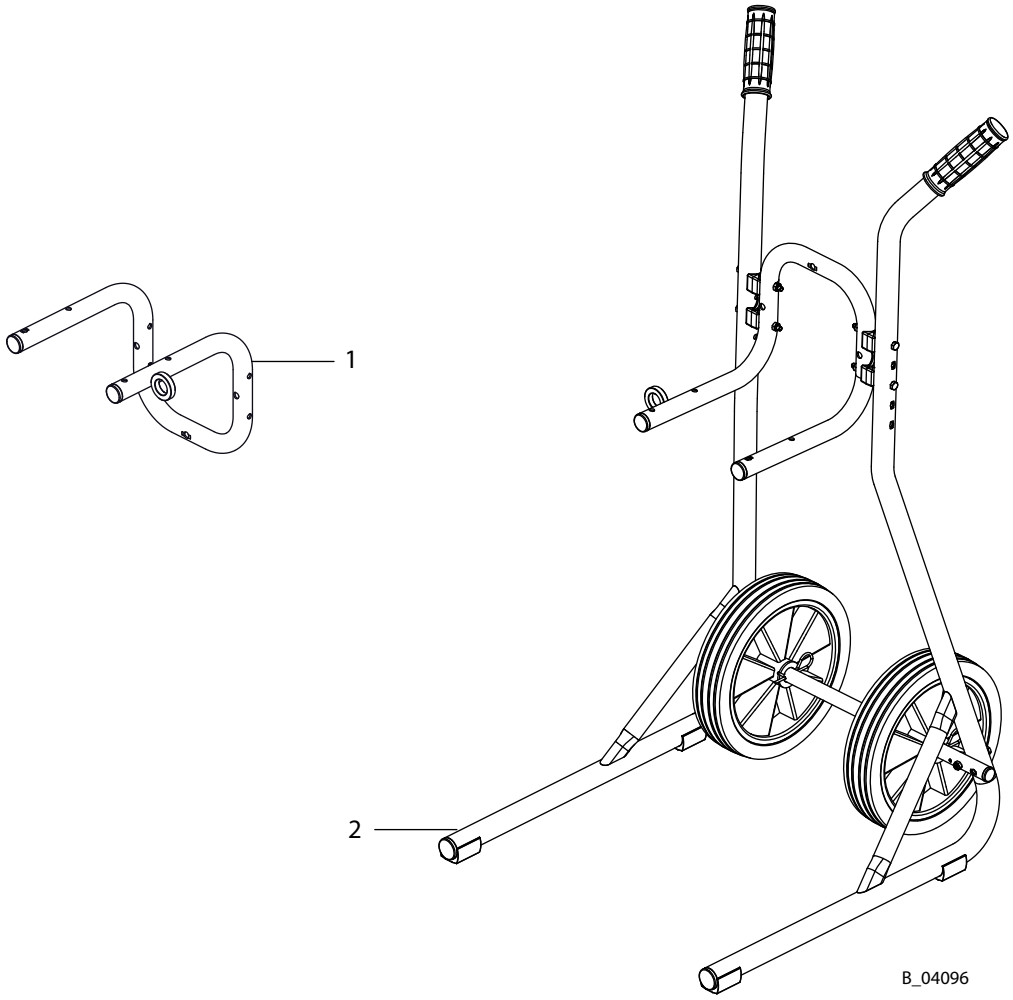
12.4 WALL MOUNT AND TROLLEY

Pos K	Order No.	Designation
1	2332143	Wall mount 4", complete
2	2325901	Trolley 4", complete

◆ = Wearing part



13 SPARE PARTS

→ Observe "Repair" chapter: Repair personnel and mounting materials.
→ The service manuals are available separately. See Chapter 1.3.

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.
→ Only repair and replace parts that are listed in the Chapter "Spare parts" and that are assigned to the unit.
→ Before all work on the device and in the event of work interruptions:
- Relieve pressure from spray guns and devices.
- Secure spray guns against actuation.
- Switch off the energy/compressed air supply.
- Disconnect the control unit from the mains.
→ Observe the operating manual and service manuals at all times when carrying out work.

13.1 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 quantity column "**Stk**" on the list. 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:
- Address for the invoice
- Address for delivery
- 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.

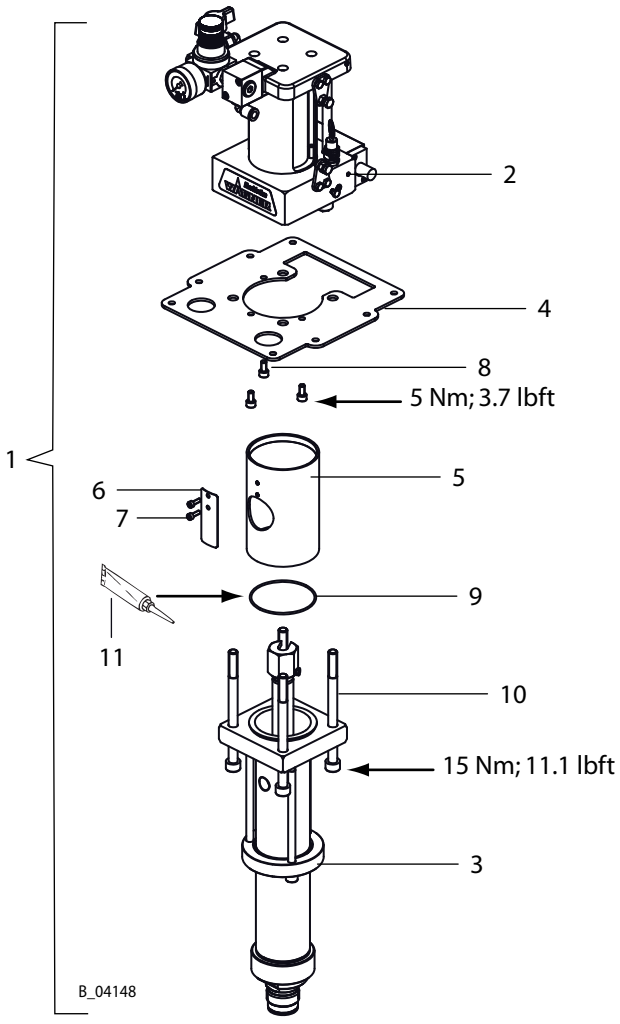
Explanation of column "**K**" (labeling) in the following spare parts lists:

◆ Wearing parts
Note: These parts are not covered by warranty terms.

● Not part of standard equipment, available, however, as additional extra.

13.2 OVERVIEW OF THE COMPONENTS

			EvoMotion 5 - 60	EvoMotion 5 - 60 for sensor
Pos	**Designation**	**Stk**	**Order No.**	**Order No.**
1	EvoMotion 5-60 PE/T	1	2329535	2330596
2	Air motor M50 EM	1	U3B05012075	U3B05012075S
3	Fluid section 60 PE/T EM	1	2329681	
4	Pump support plate	1	2332394	
5	M/P spacer	1	A359.71B	
6	Safety fixture spacer	1	E516.71A	
7	Hexagon socket cylinder head screw	2	9900353	
8	Hexagon socket cylinder head screw	3	9900346	
9	O-ring	1	L236.06A	
10	Hexagon socket cylinder head screw	4	9900385	
11	Mobilux® EP 2 grease	1	9998808	



13.3 AIR MOTOR

13.3.1 M50 AIR MOTOR WITH FIXING SENSOR

DANGER

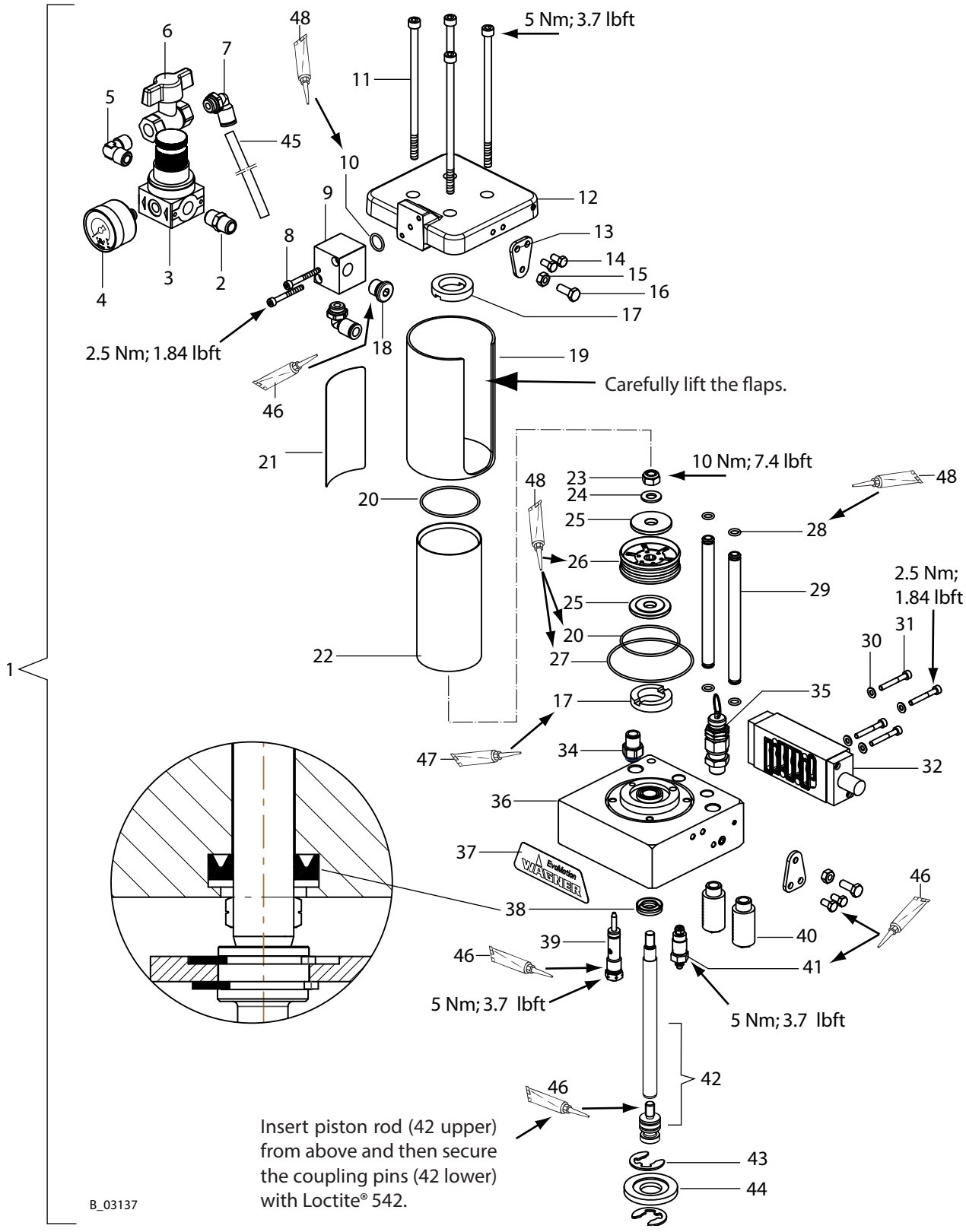
Incorrect maintenance/repair!
Danger to life and equipment damage.

- → Only a WAGNER service center or a suitably trained person may carry out repairs and replace parts.
- → Only repair and replace parts that are listed in the Chapter "Spare parts" and that are assigned to the unit.
- → Before all work on the device and in the event of work interruptions:
  - Relieve pressure from spray guns and devices.
  - Secure spray guns against actuation.
  - Switch off the energy/compressed air supply.
  - Disconnect the control unit from the mains.
- → Observe the operating manual and service manuals at all times when carrying out work.

Spare parts list for air motor with fixing sensor

Pos	K	Stk	Order No.	Designation
1		1	U3B05012075S	M50 Air Motor, sensor EM
2		1	M205.04	Double nipple
3		1	G123.00	Air pressure regulator
4		1	9998677	Pressure gauge
5		1	M215.04	Elbow fitting
6		1	M106.00	Ball valve
7		2	9998253	Male stud elbow
8		2	9906005	Hexagon socket cylinder head screw
9		1	T162.71	Housing air
10	◆ ★	1	9971123	O-ring
11		4	K1081.62	Hexagon socket cylinder head screw
12		1	T6191.00	Upper flange motor, complete M50 EM
13		2	E3366.03	Fixing plate sensor
14		4	9900129	Hexagon screw without shaft
15		2	9910102	Hexagon nut
16		2	9907198	Hexagon screw without shaft
17	◆ ★	2	G903.06	Steamer
18		1	9904307	Lock screws flange/ with hexagon
19		1	E0109.71	M50 Guard Tube, EM
20	◆ ★	2	L102.06	O-ring

◆ = Wearing part
★ = Included in service set.
● = Not part of the standard equipment but available as an accessory.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5 Nm; 3.7 lbft
2.5 Nm; 1.84 lbft
Carefully lift the flaps.
10 Nm; 7.4 lbft
2.5 Nm; 1.84 lbft
5 Nm; 3.7 lbft
5 Nm; 3.7 lbft
Insert piston rod (42 upper) from above and then secure the coupling pins (42 lower) with Loctite® 542.
B_03137

Spare parts list for air motor with fixing sensor

Pos	K	Stk	Order No.	Designation
21		1	--	Type plate
22		1	D636.71	Cylinder motor
23		1	9910208	Hexagon nut with clamp
24		1	9920102	Washer
25		2	B0445.01	Wheel piston
26	◆	1	R0074.00	Piston seal
27	◆ ★	1	L236.06A	O-ring
28	◆ ★	4	L109.06	O-ring
29		2	B0444.71	Air tube, M50 EM
30		4	9920104	Washer
31		4	9900386	Hexagon socket cylinder head screw
32	◆	1	G498.00	Reversing valve
34		1	9998254	Straight screw-in fitting
35		1	P484.00C0	Safety valve 1/4", blue ring
36		1	T6003.00EB	Lower flange motor, complete
37		1	Z5032.00	WAGNER EvoMotion label
38	◆ ★	1	L434.06	Lip seal
39	◆	1	2341115	Pilot valve
40	◆ ★	2	H505.07	Silencer
41	◆	1	2339340	Sensor above
42		1	T6190.00	Piston rod, complete motor
43		2	K606.02	Lock washer for waves
44		1	A160.01A	Washer
45		1	9982078	Hose, black
46		1	9992831	Loctite® 542
47		1	9998157	Loctite® 480
48		1	9998808	Mobilux® EP 2 grease

●	1	T9096.00	Service-Set, air motor, EvoMotion 5-60

◆ = Wearing part

★ = Included in service set.

● = Not part of the standard equipment but available as an accessory.

13.3.2 M50 AIR MOTOR WITHOUT FIXING SENSOR

DANGER

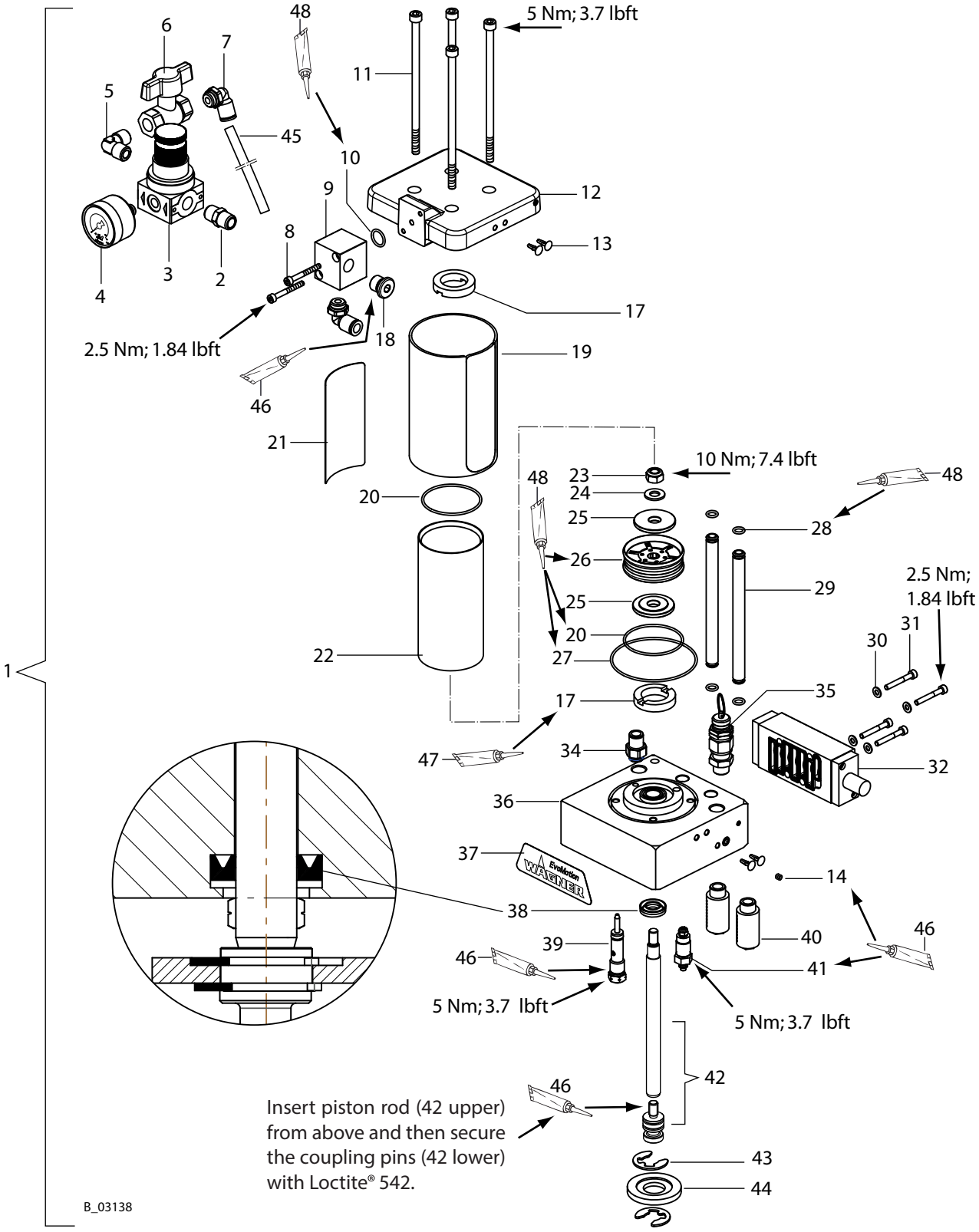
Incorrect maintenance/repair!
Danger to life and equipment damage.

- → Only a WAGNER service center or a suitably trained person may carry out repairs and replace parts.
- → Only repair and replace parts that are listed in the Chapter "Spare parts" and that are assigned to the unit.
- → Before all work on the device and in the event of work interruptions:
  - Relieve pressure from spray guns and devices.
  - Secure spray guns against actuation.
  - Switch off the energy/compressed air supply.
  - Disconnect the control unit from the mains.
- → Observe the operating manual and service manuals at all times when carrying out work.

Spare parts list for air motor without fixing sensor

Pos	K	Stk	Order No.	Designation
1		1	U3B05012075	M50 Air Motor, without EM Sensor
2		1	M205.04	Double nipple
3		1	G123.00	Air pressure regulator
4		1	9998677	Pressure gauge
5		1	M215.04	Elbow fitting
6		1	M106.00	Ball valve
7		2	9998253	Male stud elbow
8		2	9906005	Hexagon socket cylinder head screw
9		1	T162.71	Housing air
10	◆ ★	1	9971123	O-ring
11		4	K1081.62	Hexagon socket cylinder head screw
12		1	T6191.00	Upper flange motor, complete
13		4	R256.00	Drive fastener
14		1	9907109	Threaded pin with hexagon socket
17	◆ ★	2	G903.06	Steamer
18		1	9904307	Lock screws flange/ with hexagon
19		1	E0109.71	M50 Guard Tube, EM
20	◆ ★	2	L102.06	O-ring
21		1	--	Type plate
22		1	D636.71	Cylinder motor
23		1	9910208	Hexagon nut with clamp
24		1	9920102	Washer

◆ = Wearing part
★ = Included in service set
● = Not part of the standard equipment but available as an accessory.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5 Nm; 3.7 lbft
2.5 Nm; 1.84 lbft
10 Nm; 7.4 lbft
2.5 Nm; 1.84 lbft
5 Nm; 3.7 lbft
5 Nm; 3.7 lbft
Insert piston rod (42 upper) from above and then secure the coupling pins (42 lower) with Loctite® 542.
B_03138

Spare parts list for air motor without fixing sensor

Pos	K	Stk	Order No.	Designation
25		2	B0445.01	Wheel piston
26	◆	1	R0074.00	Piston seal
27	◆ ★	1	L236.06A	O-ring
28	◆ ★	4	L109.06	O-ring
29		2	B0444.71	Air tube motor
30		4	9920104	Washer
31		4	9900386	Hexagon socket cylinder head screw
32	◆	1	G498.00	Reversing valve
34		1	9998254	Straight screw-in fitting
35		1	P484.00C0	Safety valve
36		1	T6003.00EB	Lower flange motor, complete M50E
37		1	Z5032.00	WAGNER EvoMotion label
38	◆ ★	1	L434.06	Lip seal
39	◆	1	2341115	Pilot valve
40	◆ ★	2	H505.07	Silencer
41	◆	1	2339340	Sensor above
42		1	T6190.00	Piston rod, complete motor
43		2	K606.02	Lock washer for waves
44		1	A160.01A	Washer
45		1	9982078	Hose, black
46		1	9992831	Loctite® 542
47		1	9998157	Loctite® 480
48		1	9998808	Mobilux® EP 2 grease

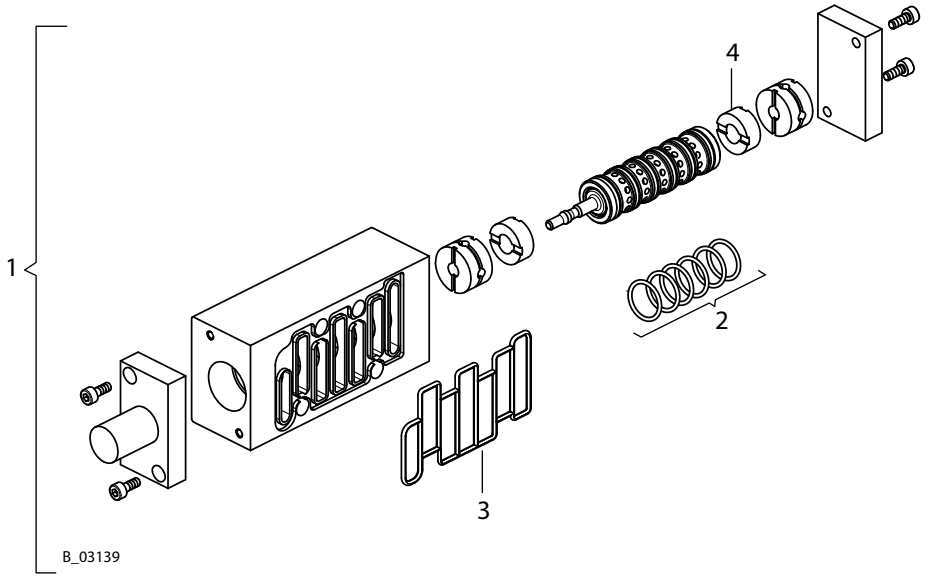
	●	1	T9096.00	Service-Set, air motor, EvoMotion 5-60

◆ = Wearing part

★ = Included in service set

● = Not part of the standard equipment but available as an accessory.

13.3.3 REVERSING VALVE



Spare parts list for the reversing valve

Pos	K	Stk	Order No.	Designation
1		1	G498.00	Reversing valve
2		6	9971123	O-ring
3		1	G521.00	Reversing valve gasket
4		2	G520.00	Steamer

13.4 FLUID SECTION 60

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.
- → Only repair and replace parts that are listed in the Chapter "Spare parts" and that are assigned to the unit.
- → Before all work on the device and in the event of work interruptions:
  - Relieve pressure from spray guns and devices.
  - Secure spray guns against actuation.
  - Switch off the energy/compressed air supply.
  - Disconnect the control unit from the mains.
- → Observe the operating manual and service manuals at all times when carrying out work.

Spare parts list for fluid section 60

Pos	K	Designation	Stk	Order No.
1		Fluid section 60 PE/T EM	1	2329681
2		Connector	1	T6158.00
3		Pump flange upper	1	B0448.62
4	◆ ★	O-ring	1	L237.05
5		Support ring	1	A150.03A
6	◆ ★	Packing upper	1	T9040.00
7		Pressure ring	1	A151.03A
8		Spring, upper	1	H210.03
9		Pump housing, upper	1	B0449.03
10	◆ ★	O-ring	2	L228.05
11	◆ ★	Piston seal	1	L484.05
12		Round wire snap ring for waves	1	K643.02
13		Cylinder tube, lower	1	B0450.03
14	◆	Piston 60	1	D223.53
15	◆	Ball	1	K802.03
16	◆	Valve rod housing	1	B0451.03
17	◆ ★	Ball guide, inlet	1	368507
18	◆	Ball	1	K814.03
19		Lower pump flange	1	B0453.62
20		Hexagon socket cylinder head screw	3	K1083.62
21	◆	Inlet fitting	1	2324434
22		Pump housing, lower	1	B0454.62
23		PE Seal	3	G124.08E
24		PTFE-seal	3	G124.05
25		Loctite® 542	1	9992831

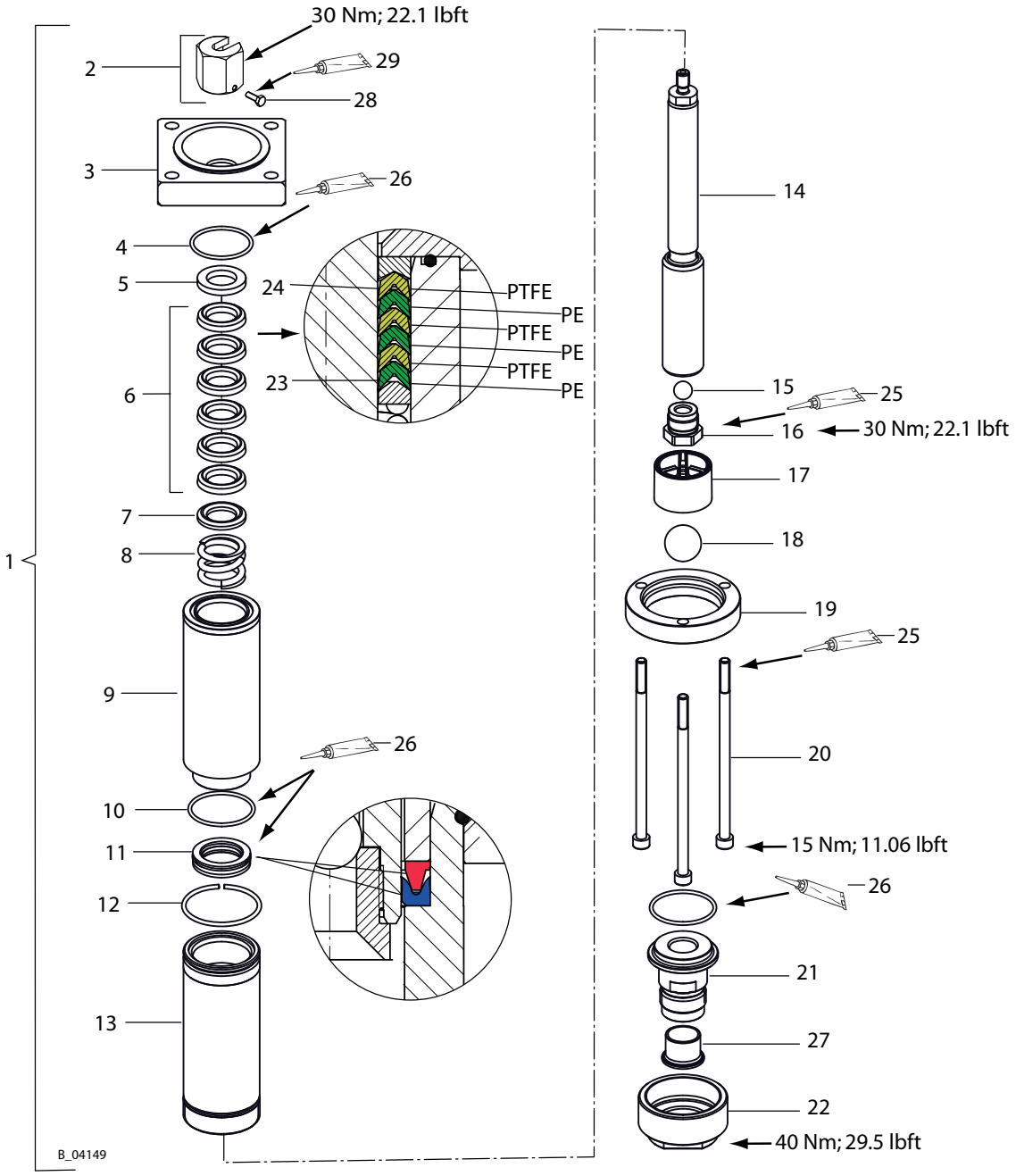
◆ = Wearing part
★ = Included in service set

Spare parts list for fluid section 60

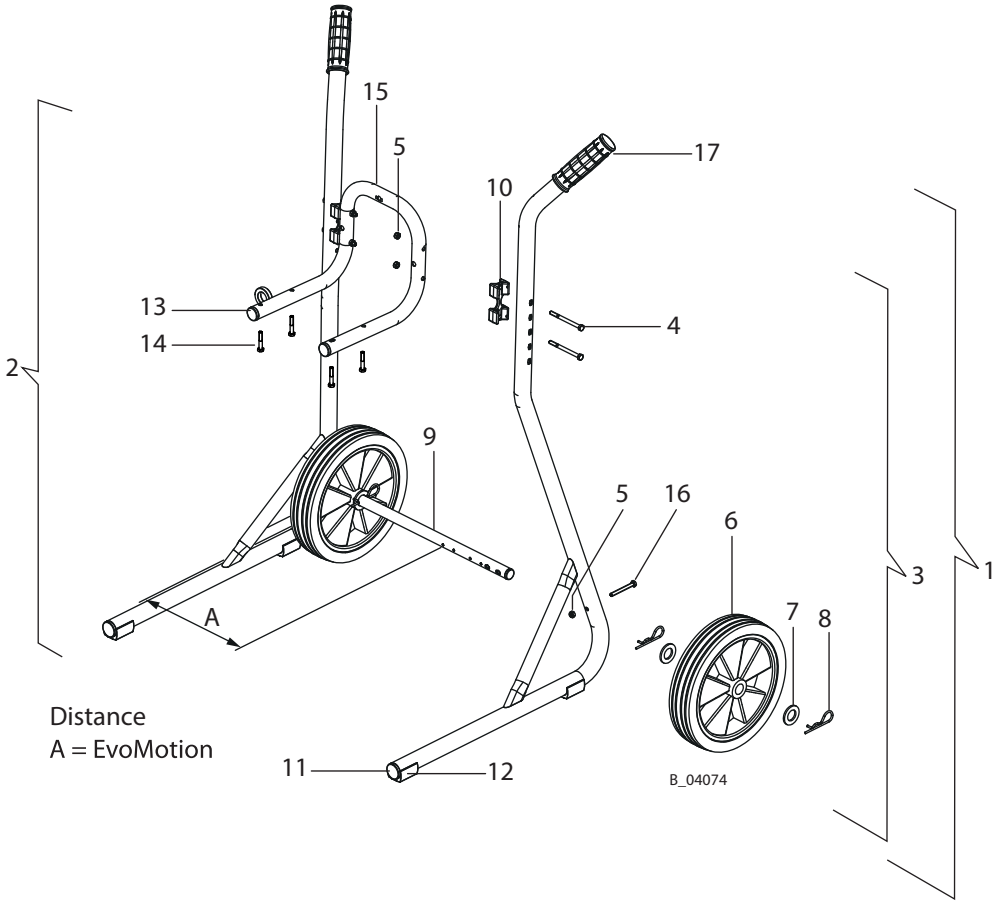
Pos	K	Designation	Stk	Order No.
26		Mobilux® EP 2 grease	1	9998808
27		Sealing sleeve	1	2329072
28		Hexagon screw without shaft	1	9900136
29		Loctite® 222	1	9992590
		Service-Set, EvoMotion fluid section 60	1	T9097.00

◆ = Wearing part

★ = Included in service set



13.5 TROLLEY 4"



Pos	K	Stk	Designation	Order No.
1		1	Trolley, complete	2325901
2		1	Frame left 4" (welded)	--
3		1	Frame right 4" (welded)	--
4		4	Hexagon screw DIN931 M6x75	9907140
5		6	Self-locking hexagon nut, M6	9910204
6	◆	2	Wheel, D250	2304440
7		4	Washer	340372
8		4	Cotter pin	9995302
9		1	Wheel axle 4"	--
10	◆	2	Connecting part 4"	367943
11		2	Tube plug, ribbed	--
12		2	Saddle feet for round tubes	--
13		2	Plug	--
14		4	Hexagon screw	9900218
15		1	Wall mount	2332143
16		2	Hexagon screw without shaft M6x55	3061695
17	◆	2	Handle	9998747

◆ = Wearing parts

14 WARRANTY AND CONFORMITY DECLARATIONS

14.1 IMPORTANT NOTES REGARDING PRODUCT LIABILITY

As a result of an EC regulation effective from January 1, 1990, the manufacturer shall only be liable for his product if all parts originate from him or are approved by him, and if the devices are properly mounted, operated and maintained.
The manufacturer will not be held liable or will only be held partially liable if third-party accessories or spare parts have been used.
With genuine WAGNER accessories and spare parts, you have the guarantee that all safety regulations are complied with.

14.2 WARRANTY CLAIM

Full warranty is provided for this device:
We will at our discretion repair or replace free of charge all parts which within 36 months in single-shift, 18 months in double-shift or 9 months in triple-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 type of warranty provided is such that the device or individual components of the device are either replaced or repaired as we see fit. 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 device to a location other than the address of the purchaser.
We do not provide warranty for damage that has been caused or contributed to for the following reasons:
Unsuitable or improper use, faulty assembly or commissioning by the purchaser or a third party, normal wear, negligent handling, defective maintenance, unsuitable coating products, substitute products and the influence of chemical, electrochemical 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 so forth reduce the service life of valves, packings, spray guns, nozzles, cylinders, pistons etc. Wear and tear due to such causes are not covered by this warranty.
Components that have not been manufactured by WAGNER are subject to the original warranty of the manufacturer.
Replacement of a component does not extend the period of warranty of the device.
The device should be inspected immediately upon receipt. To avoid losing the warranty, we or the supplier company are to be informed in writing about obvious faults within 14 days upon receipt of the device.
We reserve the right to have the warranty compliance met by a contracting company.
The services provided by this warranty are dependent on evidence being provided in the form of an invoice or delivery note. If the examination discovers that no warranty claim exists, the costs of repairs are charged to the purchaser.
It is clearly stipulated that this warranty claim does not represent any constraint on statutory regulations or regulations agreed to contractually in our general terms and conditions.

J. Wagner AG

14.3 CE DECLARATION OF CONFORMITY

Herewith we declare that the supplied version of pneumatic pumps and their spraypacks:

EvoMotion
5-60

complies with the following guidelines:

2006/42/EC	94/9/EC

Applied standards, in particular:

DIN EN ISO 12100: 2010	DIN EN ISO 13732-1: 2008	DIN EN 13463-1: 2009
DIN EN 809: 1998+A1: 2009+AC: 2010	DIN EN 14462: 2005+A1: 2009	DIN EN 13463-5: 2011
DIN EN ISO 4413: 2010	DIN EN 12621: 2006+A1: 2010	DIN EN ISO/IEC 80079-34: 2011
DIN EN ISO 4414: 2010	DIN EN 1127-1: 2011	

Applied national technical standards and specifications, in particular:

DGUV regulation 100-500	TRBS 2153

Identification: CE Ex II 2 G c IIB T3/T4 X

T3: Without dry running protection.
T4: With dry running protection.

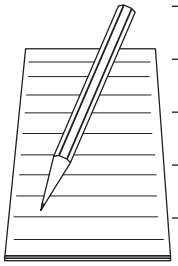
EC Certificate of Conformity
The CE certificate of conformity is enclosed with this product. If needed, further copies can be ordered through your WAGNER dealer by specifying the product name and serial number.

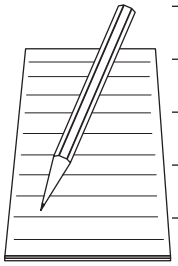
Order number: 2312813

14.4 NOTES ON NATIONAL REGULATIONS AND GUIDELINES

a) Betr.Sich.V. Plant Safety Ordinance
b) BGI 740 Painting rooms and equipment
c) BGR 180 Equipment for cleaning work pieces with solvents
d) DGUV regulation 100-500 Operating working materials
e) TRBS 2153 Avoidance of ignition dangers due to electrostatic charges
f) TRBS 1201 Checking working materials and systems which require monitoring
- Part 1: Checking systems in areas subject to explosion hazards and checking of work stations in areas subject to explosion hazards
- Part 3: Repairs to devices, protective systems, safety, control and regulation fixtures, in the sense of the 94/9/EC Directive - Determination of checking necessity according to § 14 sec. 6 BetrSichV (Industrial Safety Regulations)

Note: All titles can be ordered from Heymanns Publishing House in Cologne, or they can be found on the Internet.





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