WAGNER

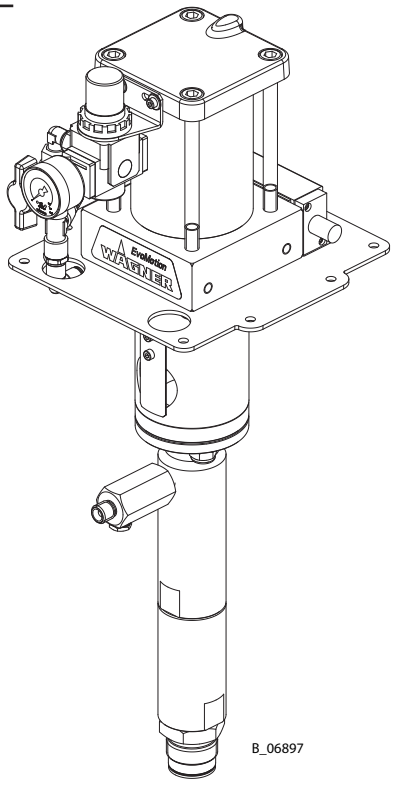
Translation of the Original Operating Manual

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

Version 01/2018

EvoMotion 40-15

Piston pump
Delivery volume 15 cm³



B_06897

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

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 risk. Non-observance can result in death or serious injury.
⚠ **CAUTION**	Potentially hazardous situation. Non-observance may result in minor injury.
ⓘ **NOTICE**	Potentially hazardous situation. Non-observance may result in damage to property.
Notice	Provides information about particular characteristics and how to proceed.

Explanation of warning notice:

⚠ **LEVEL OF DANGER**

This notice warns you of a hazard!
Possible consequences of not observing the warning notice.
→ The measures for preventing the hazard and its consequences.

1.3 LANGUAGES

The operating manual is available in the following languages:

Original operating manual

Language	Order No.
German	2333557

Translation of the original operating manual

Language	Order No.
French	2333559
Italian	2333560
Russian	2367138

Language	Order No.
English	2333558
Spanish	2333561
Hungarian	2352156

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

1.4 ABBREVIATIONS

Stk	Number of pieces
Pos	Position
K	Marking in the spare parts lists
Order No.	Order number
DH	Double stroke
DN	Nominal diameter
PN	Nominal pressure
2K	Two components

SSt	Stainless steel
PE	Polyethylene
UHMWPE	Ultra-high molecular weight polyethylene
PTFE	Polytetrafluorethylene
TG	PTFE with graphite
T	PTFE
L	Leather
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1.5 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, experience and knowledge of the 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 TYPES

Pneumatic piston pump and its spray packs:

EvoMotion 40-15

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 IIA or 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 products 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.

2.3 FOR USE IN POTENTIALLY EXPLOSIVE AREAS

The device can be employed in potentially explosive areas (Zone 1) (see Chapter 3).

2.4 PROCESSIBLE WORKING MATERIALS

→ Fluid materials like paints and lacquers.

Application	EvoMotion 40-15
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	↘

↗ 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 Chapter 5.5.

→ Check if the fluids and solvents used are compatible with the pump construction materials as indicated in Chapter 5.5.1.

→ Use suitable device combinations (packings, valves etc.)

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

Typical applications

Fields of application	EvoMotion 40-15
Furniture industry	↗
Kitchen manufacturers	↗
Joinery	↗
Window factories	⇾
Steel-processing industry	⇾
Construction of vehicles	↗
Shipbuilding	↘

↗ 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.

3 IDENTIFICATION

3.1 EXPLOSION PROTECTION IDENTIFICATION

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

Device types: EvoMotion 40-15 **piston pump**

Manufacturer: Wagner International AG
CH-9450 Altstätten, Switzerland

CE Ex 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	Explosion 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	High safety level
X	There are special instructions to ensure safe operation. → See the following 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 5.5.3 (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 or components.

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 50 °C; 41 °F to 122 °F.

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.

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 PLATES

Pos	Designation
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 BASIC 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 DEVICES AND EQUIPMENT

Electric shock hazard!
Danger to life from electric shock
→ Prepare device 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, the mains voltage poses a danger.
→ Operate device in accordance with the safety regulations and electrotechnical regulations.
→ Must be repaired immediately in the event of problems.
→ Decommission if it poses a hazard or is damaged.
→ Must be de-energized before work is commenced. 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

Hazard due to dangerous fluids or vapors!
Severe or fatal injuries due to explosion hazard 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 (see Chapter 4.2.1) 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 electrically conductive gloves. The grounding takes place via the spray gun handle or the 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 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

Hazard 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 follow the information in this manual, particularly the safety instructions and the warning instructions.
→ Always follow local regulations concerning occupational safety and accident prevention.
→ In electrostatics applications: anyone who belongs to a risk group according to EMF Directive 2013/35/EU (e.g. those with active implants), must not enter the high-voltage area.

4.2.1 PERSONAL SAFETY EQUIPMENT

Hazard 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.
→ Take the specified protective measures. In particular wear safety goggles, protective clothing and gloves, as well as hand protection cream if necessary.
→ Use a mask or breathing apparatus if necessary.
→ For sufficient health and environmental safety: Operate the 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

Hazard 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.
- → 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.
  - – Secure 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 necessary, or at least every 12 months, the liquid ejection devices must be checked for safe working conditions by an expert (e.g. WAGNER service technician) in accordance with the guidelines for liquid ejection devices (DGUV 100-500 Chapters 2.29 and 2.36).
  - – For shut-down devices, the check can be postponed 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 UNIT

Hazard due to electrostatic charge!

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.
- → 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 or the trigger.

4.2.4 PRODUCT HOSE

Hazard 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 hose 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 lift trucks), 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 equipment.
- → 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. 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.

4.2.5 CLEANING AND FLUSHING

Hazard due to cleaning and flushing!
Explosion hazard and damage to the device.

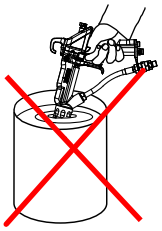
- → Preference should be given to non-ignitable cleaning and flushing agents.
- → When carrying out cleaning work with flammable cleaning agents, make sure that all equipment and resources (e.g., collection tank, funnel, transport cart) are conductive or static dissipative and grounded.
- → Observe the specifications of the 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.

- → Explosive gases are produced when aluminum comes into contact with halogenated hydrocarbons. To clean aluminum, do not use liquids containing halogenated hydrocarbons.
- → Take measures for workplace safety (see Chapter 4.1.2).
- → When commissioning or emptying the device, please note that:
  –depending upon the coating product used,
  –depending on the flushing agent (solvent) used.
  an explosive mixture may temporarily exist inside the lines and components 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:



- → 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 spray 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

Hazard 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:
  – Identify the device with a warning label "Warning – hot surface".
  Order No.
  9998910 instruction label
  9998911 protection label
  Note: Order the two stickers together.

4.2.7 MAINTENANCE AND REPAIR

Hazard 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.
- → 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 Chapter 13 and Chapter 14 that are assigned to the unit.
- → Do not use any defective components.
- → Exclusively use accessories listed in Chapter 13 and that are assigned to the unit.
- → Before all work on the device and in the event of work interruptions:
  - Relieve the pressure from the spray gun, high-pressure hoses and device.
  – 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.

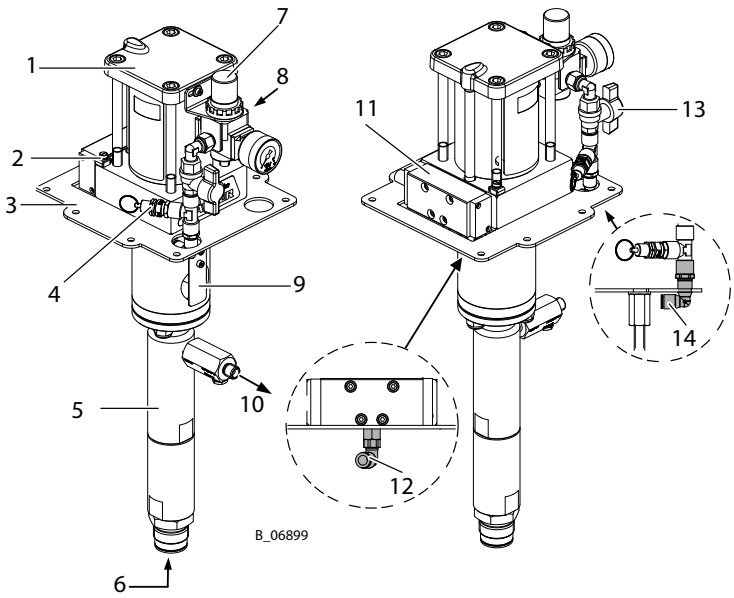
4.2.8 PROTECTIVE AND MONITORING EQUIPMENT

Hazard 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

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



5.2 MODE OF OPERATION

The piston pump is driven with compressed air (8). This compressed air moves the air piston in the air motor (1) and the associated pump pistons in the fluid section (5) up and down. At the end of each stroke, the compressed air is redirected by a reversing valve (11). The working material is sucked up during the upwards stroke and is continuously conveyed towards the product outlet (10) in both stroke directions.

5.2.1 AIR MOTOR

The air motor with its pneumatic reverse (11) does not require pneumatic oil.
The compressed air is fed to the motor via an air regulator (7) and the ball valve (13).
The air motor is fitted with a safety valve (4) in accordance with Chapter 5.3.1.

5.2.2 FLUID SECTION

The fluid section has been designed as a piston pump with exchangeable ball valves. The hard chrome-plated 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 (9) for holding the separating agent.

5.3 PROTECTIVE AND MONITORING EQUIPMENT

5.3.1 SAFETY VALVE

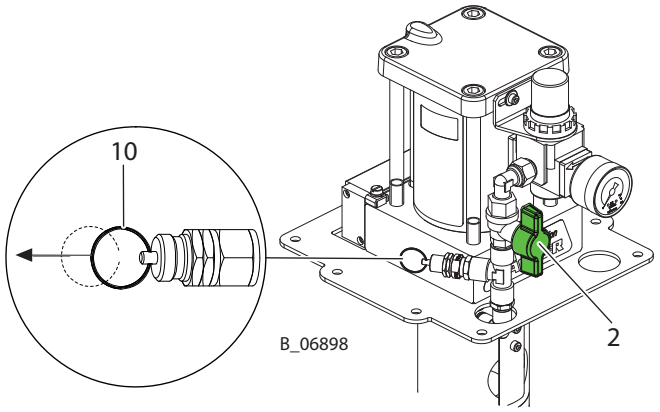
⚠ WARNING

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 (10) has been set and sealed at the factory. In case of pressures over and above the permissible operating pressure, the spring-loaded valve, 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 (2).
2. Pull the ring on the safety valve (10) and hold it until the pressure in the air motor has been equalized.



5.4 INCLUDED ITEMS

Pneumatic piston pump	
–	Fluid section
–	Air motor
–	Connection set for air motor - fluid section
–	Air pressure regulator for air motor

The standard equipment includes:

Stk	Order No.	Designation
1	9992504	Separating agent 250 ml
1	2333537	Operating manual, in German
1	see Chapter 15	Declaration of Conformity
1	see Chapter 1.3	Operating manual in the local language

The delivery note shows the exact scope of delivery. Accessories: see Chapter 13.

5.5 DATA

5.5.1 MATERIALS OF PAINT-WETTED PARTS

Description	EvoMotion 40-15
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 = Polytetrafluorethylene (PTFE)

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 40-15
Pump ratio		40:1
Volume flow per double stroke (DH)	cm^3/ cc	15
Maximum operating pressure	MPa bar psi	25.0 250 3626
Maximum possible strokes in operation	DH/min	60
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	
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	3.9; 0.14
Air motor piston diameter	mm; inch	80; 3.15
Air motor piston stroke	mm; inch	60; 2.4
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)	65
Product inlet (outside thread)	mm	M36×2
Product outlet (outside thread)	inch	NPS 1/4"
Weight	kg; lb	9; 19.8
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	°C; °F	5–50; 41–140
Relative humidity	%	10–95 (without condensation)
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

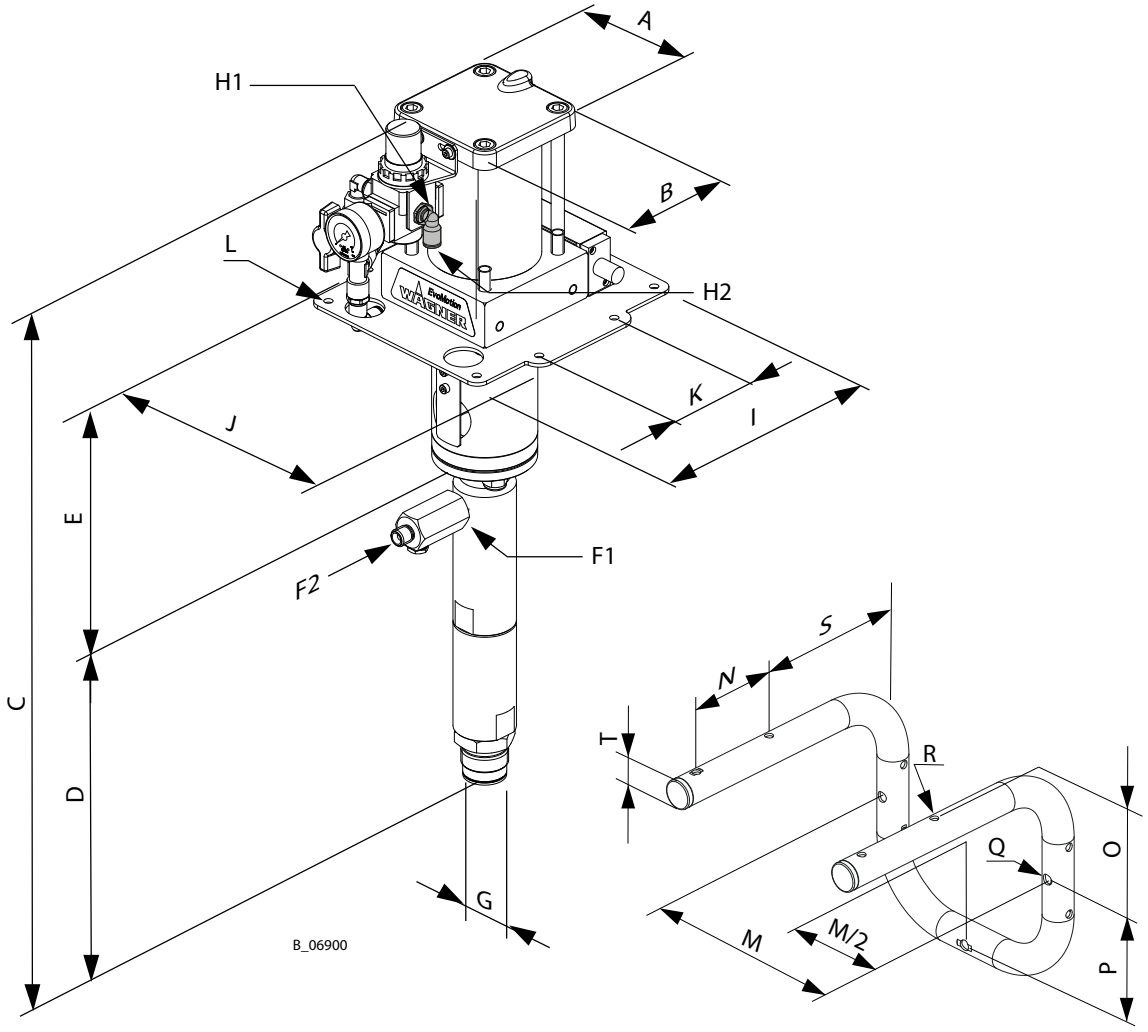
Exhaust air containing oil!
Risk of poisoning if inhaled.

→ Provide compressed air free from oil and water.

5.5.4 DIMENSIONS AND CONNECTIONS

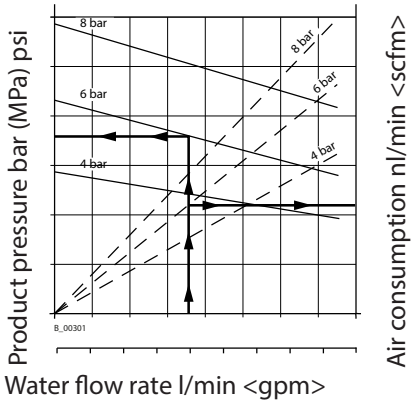
Pos	mm	inch
A	104	4.09
B	108.5	4.27
C	592	23.31
D	276.5	10.89
E	134	5.28
F1	G 1/4"	
F2	NPS 1/4"	
G	M36×2	
H1	G 1/4"	
H2	ø 8	ø 0.31
I	210	8.27

Pos	mm	inch
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	3.8
Q	ø 9	ø 0.35
R	ø 7	ø 0.28
S	149	5.87
T	ø 25	ø 1

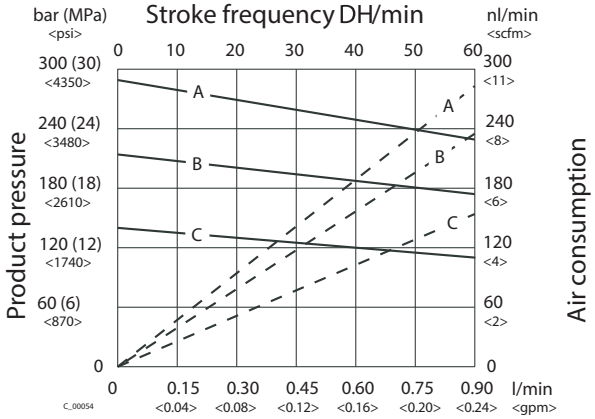


5.5.5 PERFORMANCE DIAGRAMS

Example Stroke frequency DH/min



EvoMotion 40-15

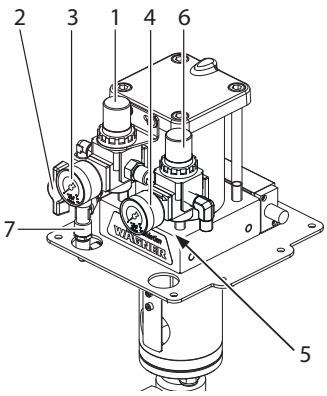


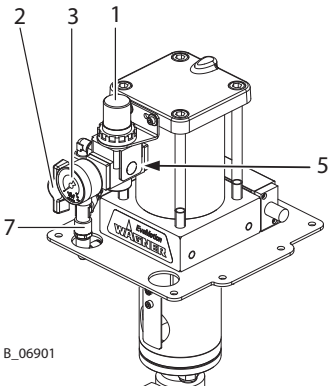
Product flow – water
A = 8 bar; 0.8 MPa; 116 psi air pressure
B = 6 bar; 0.6 MPa; 87 psi air pressure
C = 4 bar; 0.4 MPa; 58 psi air pressure

5.6 OPERATING ELEMENTS

5.6.1 PRESSURE REGULATOR UNIT

Pos	Designation
1	Pressure regulator
2	Ball valve
3	Pressure gauge (air inlet pressure)
4	Pressure gauge – AirCoat air (option)
5	Compressed air inlet
6	Pressure regulator – AirCoat air (option)
7	Safety and motor pressure relief valve (see Chapter 5.3.1)

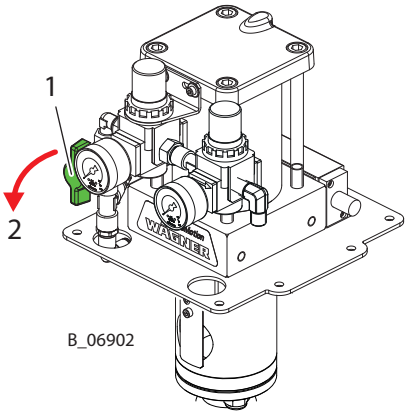




Ball valve positions:

open

closed

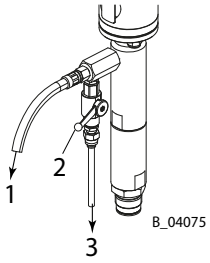


Pos	Designation
1	Open: working position
2	Closed: The air motor can still be under pressure.

5.6.2 RETURN VALVE

Installing a return valve is absolutely necessary for carrying out a complete depressurization of the pump (see Chapter 7.4).
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 Product return line



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 installed 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.

The air temperature at the storage location must be between -20 °C and 60 °C (-4 °F and 140 °F).

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 TRANSPORTATION

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

6.5 ASSEMBLY AND INSTALLATION

⚠ WARNING

Inclined ground!

Risk of accidents if the device rolls away/falls.

→ Place device on level ground.

→ If the floor is inclined, position the feet of the trolley towards the gradient.

→ Secure the trolley.

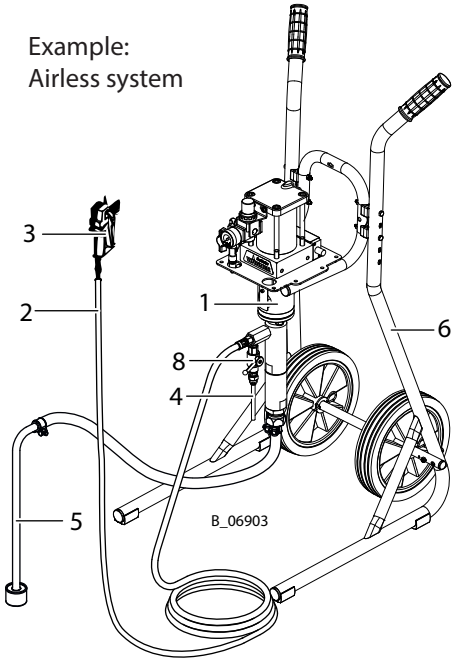
National regulations

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

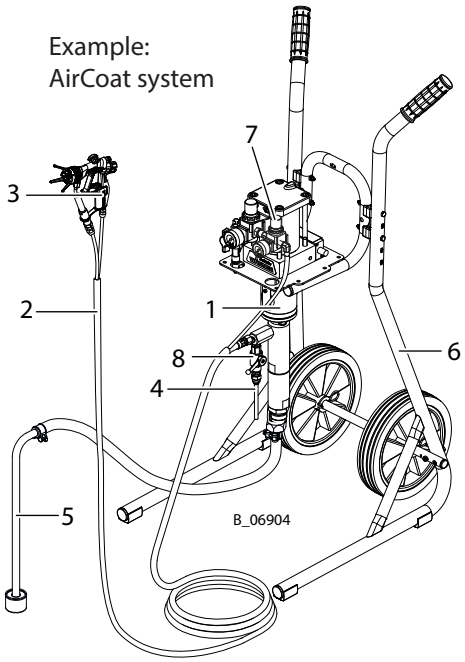
This pump can be used as part of a spraying system for Airless or AirCoat applications. Individual supplement components for this pump can be found in the Wagner accessories catalogue, or can be put together with a spraypack configurator. The nozzles must be selected according to the spray gun operating manual. In the case of spraypack orders, the pump (1) is already pre-mounted on a trolley (6) or on a frame at the factory.

1. Mount pump (1) on frame, trolley (6) or wall mount.
2. Mount an AirCoat system with the pressure regulator (7) and secure the thread at the air inlet to the pump (1) with Loctite® 270.
3. Mount suction system (5).
4. Mount the return valve (8) for pressure relief or product circulation.
5. Mount return tube (4) or return hose
6. Connect high-pressure hose (2) and spray gun (3) according to spray gun operating manual.

Example:
Airless system



Example:
AirCoat system



6.5.1 VENTILATION OF THE SPRAY BOOTH

→ 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.

6.5.2 AIR SUPPLY LINES

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.

⚠ WARNING

Hose connections!
Risk of injury and damage to the device.
→ Do not mix up hose connections of product hose and air hose.

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

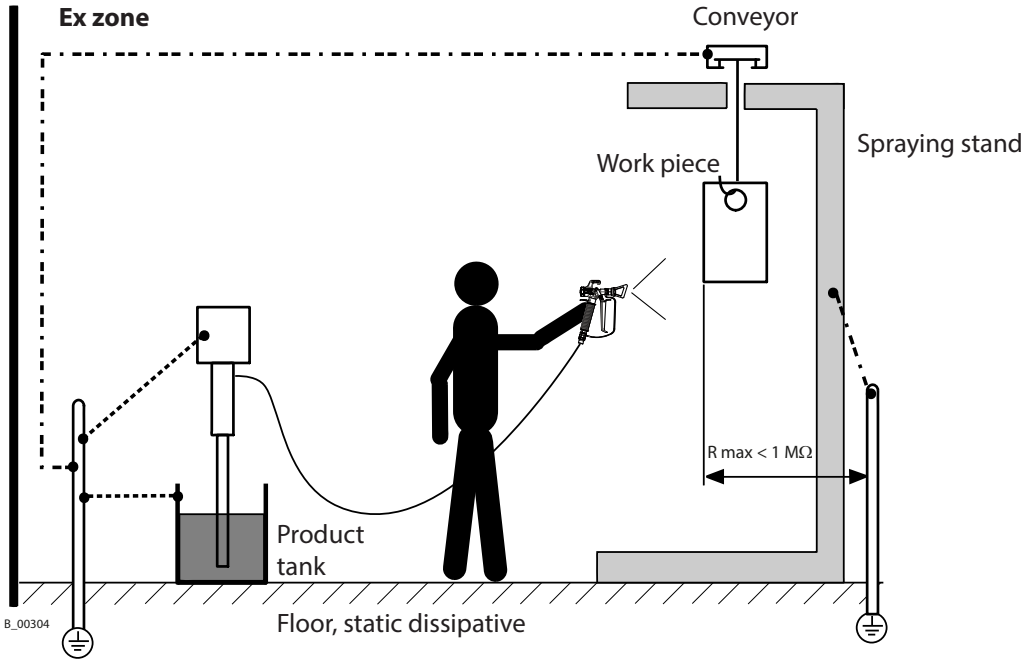
⚠ WARNING

Discharge of electrostatically charged components in atmospheres containing solvents!
Explosion hazard from electrostatic sparks.
→ Clean the pump only with a damp cloth.

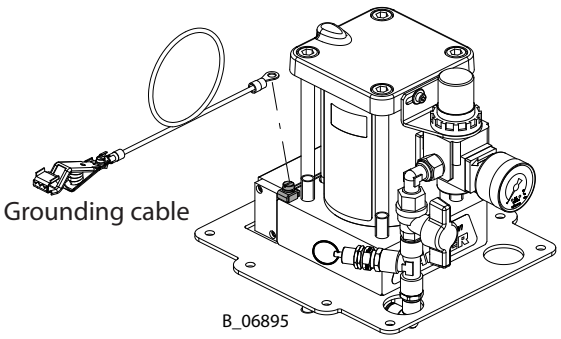
⚠ WARNING

Heavy paint mist if grounding is insufficient!
Danger of poisoning.
Insufficient paint application quality.
→ Ground all device components.
→ Ground the work pieces to be coated.

Grounding scheme (example)



Part / workstation	Cable cross sections
Pump	4 mm²; AWG 12
Product tank	6 mm²; AWG10
Conveyor	16 mm²; AWG 6
Spray booth	16 mm²; AWG 6
Spraying stand	16 mm²; AWG 6



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

Procedure

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 product, flushing agent 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.

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

→ Emergency stop, see Chapter 7.2.

Preparation

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

– Secure spray gun with safety lever.
– Check the permissible pressures.
– Check all connections for leaks.
– Check hoses for damage in accordance with Chapter 8.2.3.2.
– Fill the separating agent in accordance with Chapter 8.2.3.1.

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 8.2.5.

Pressure tightness test

⚠ WARNING

Overpressure!

Risk of injury from bursting components.

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

– 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 7.4.

Verifying a Safe Operational Condition

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

This includes:

– Carry out safety checks in accordance with Chapter 8.2.3.

Filling with Working Material

– According to Chapter 8.2.5.

7 OPERATION

7.1 TRAINING THE OPERATING PERSONNEL

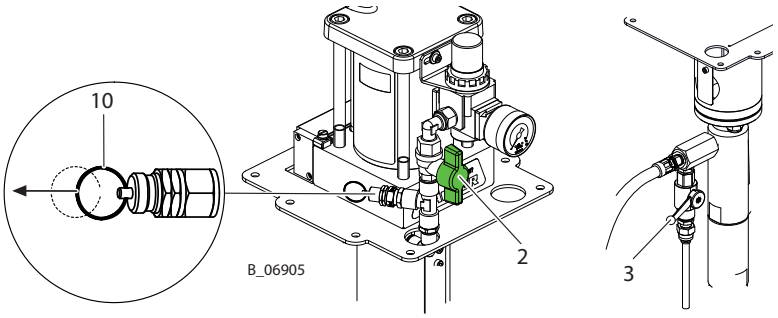
→ The operating personnel must be qualified to operate the entire system.

→ The operating personnel 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:

– Close ball valve (2).
– Open the safety valve (10) until the piston pump is entirely depressurized. Relieve the product-conveying parts of pressure via the return valve (3).

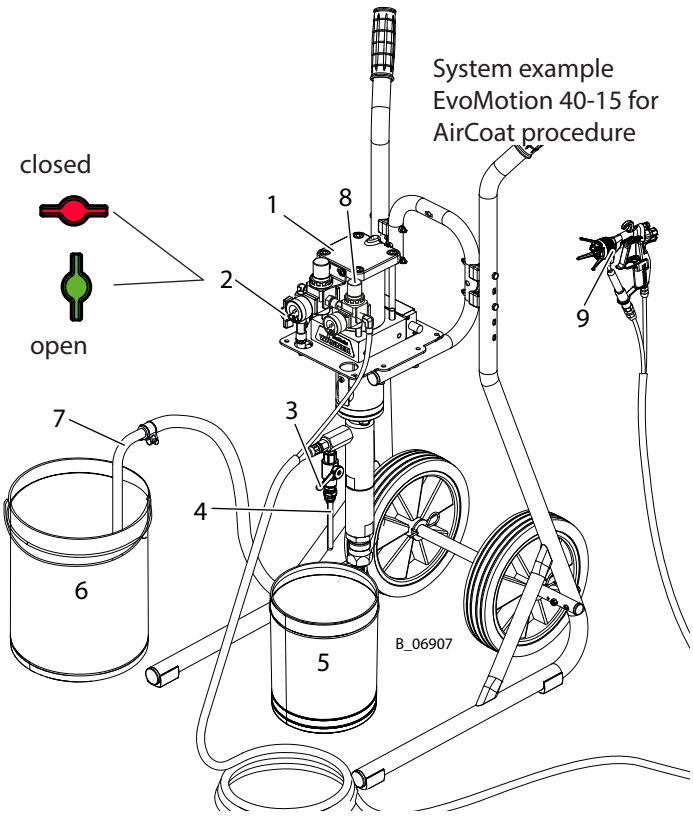


7.3 TASKS

Ensure that:

→ commissioning was carried out in accordance with Chapter 6.7.

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



7.4 PRESSURE RELIEF/WORK INTERRUPTION

The pressure must always be relieved when:

- after the spraying tasks are finished,
- before servicing or repairing the spraying system,
- before carrying out cleaning tasks on the spraying system,
- Before moving the spraying system to another location.
- before something must be checked on the spraying 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 (10).
- Outlet equipment (return valve) mounted between pump and spray gun.

Process for relieving pressure

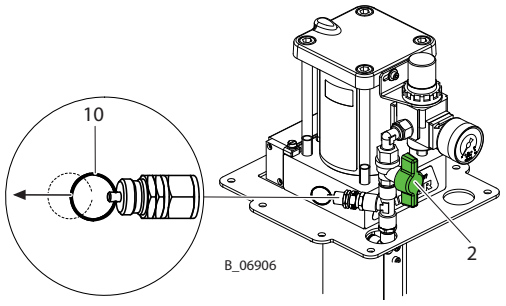
1. Close the spray gun.
2. Close ball valve (2).
3. Release the system of pressure by opening the spray gun.

→ Attention: If a blocked nozzle is preventing relief, first carry out the additional steps 4 and 5, then clean the nozzle.

4. Close and secure the spray gun.
5. Open and close the return valve (3) slowly to completely depressurize the system.

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 (10) and hold it until the pressure in the air motor has been equalized.



If the spraying system has been used with 2K products:

NOTICE

Hardened product in the spraying system when 2K product is processed!

Destruction of pump and injection system.

→ Observe the manufacturer's processing rules, particularly in regards to the pot life.

→ Flush thoroughly before the end of the pot life.

→ The pot life is decreased by warmth.

7.5 BASIC FLUSHING

Regular flushing

→ Regular flushing, cleaning and maintenance ensures the pump's high pumping and extraction 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

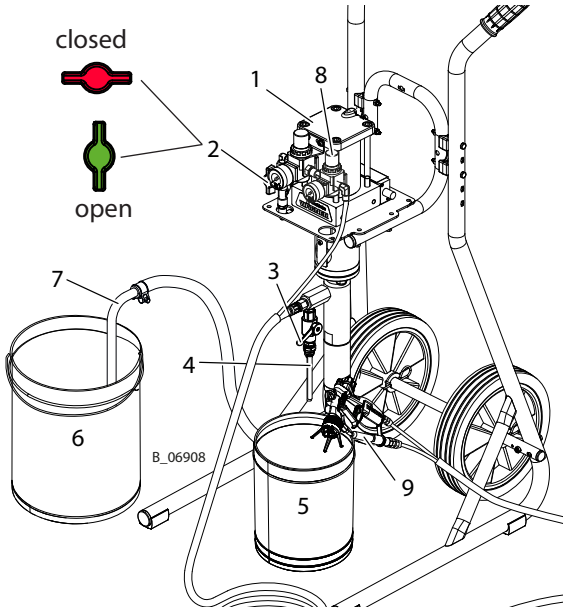
Incompatibility of flushing / cleaning agent with the working medium!
Risk of explosion and danger of poisoning by toxic gases.
→ Examine the compatibility of the flushing and cleaning agents and working media on the basis of the safety data sheets.

Flushing procedures

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 (4).
3. Place the suction hose (7) in the grounded tank with flushing agent (6).
4. Adjust the pressure regulator (1) to approx. 0.05 MPa; 0.5 bar; 7.25 psi.

Flushing via the return valve

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



Flushing via spray gun

11. With AirCoat systems, carry out the basic flushing without atomizing air.
12. Point the spray gun, without nozzle, into the tank (5) and open it.
13. Slowly open the ball valve (2).
14. Rinse until clean flushing agent flows from the spray gun.
15. Close ball valve (2).
16. As soon as there is no pressure remaining in the system, close the spray gun.
17. Secure the spray gun.
18. Dispose of the contents of the tank (5) according to the local regulations.

External Cleaning

19. Clean the outside of the system.
20. Fully assemble the system.
21. Relieve the pump's pressure according to Chapter 7.4.
22. Dispose of the contents of the tank (5) according to the local regulations.

7.6 FILLING WITH WORKING MATERIAL

After basic flushing, the pump can be filled with working material. Proceed according to Chapter 8.2.5, but use working material 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:

- Health hazard 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.
Procedure

1. Carry out work interruption → Chapter 7.4.
2. Carry out the basic flushing → Chapter 7.5.
3. Empty system in a controlled manner → Chapter 8.2.4.
4. Service spray gun in accordance to its operating instructions.
5. Clean and check the suction system and the suction filter.
6. Clean the outside of the system.
7. Fully assemble the system.
8. Check fill level of the separating agent → Chapter 8.2.3.1.
9. Fill the system with flushing agent in accordance with Chapter 8.2.5.

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 cup with separating agent.
Procedure

1 Perform points 1 to 8 in Chapter 8.1.2.
2 Fill the system with preservative in accordance with Chapter 8.2.5.
3 Empty the system in a controlled manner in accordance with Chapter 8.2.4 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:

- 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 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 unit.

→ Before all work on the device and in the event of work interruptions:
- Relieve the pressure from the spray gun, high-pressure 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 device is in the following state before carrying out any work on it:

- Flush and clean the system. → Chapter 8.1.2
- Interrupt the air supply.

After maintenance

- Carry out safety checks in accordance with Chapter 8.2.3.
- Put the system into operation and check for leaks as described in Chapter 6.7.
- Have the system checked for safe condition by an authorized person.
- Function test in accordance with Chapter 11.

8.2.3 SAFETY CHECKS AND MAINTENANCE INTERVALS

Every day

→ Check grounding: see Chapter 6.6.
→ Check hoses, tubes and couplings: see Chapter 8.2.3.2
→ Check the level of separating agent in the separating agent tank and top up, if necessary, in accordance with Chapter 8.2.3.1.
→ For each decommissioning, the process according to Chapter 8.1.2 must be followed.
→ If the pump has to be emptied for maintenance work, proceed according to Chapter 7.5 and Chapter 8.2.4.

Weekly

→ Check spraying system for damage.
→ Check that the safety fixtures function properly (see Chapter 5.3).

Yearly or as required

→ In accordance with DGUV regulation 100-500 Chapter 2.29 and 2.36:
- 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.

8.2.3.1 FILLING WITH SEPARATING AGENT

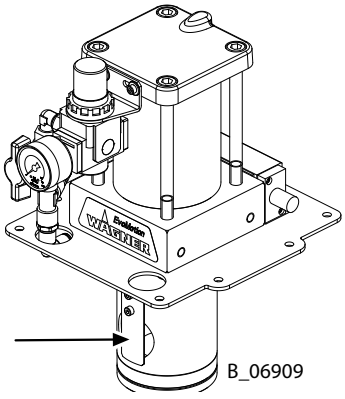
NOTICE

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.

Pour the supplied separating agent into the separating agent cup.

Filling level: 1 cm; 0.4 inch under the cup edge.

Separating agent: order no. 9992504



Inclination angle of the pump

Maximum permissible tilt of the pump for moving, transporting, etc. after filling separating agent is ± 30°.
The pump must be vertical during operation.

8.2.3.2 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.

- → 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	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

8.2.4 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 pump 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.

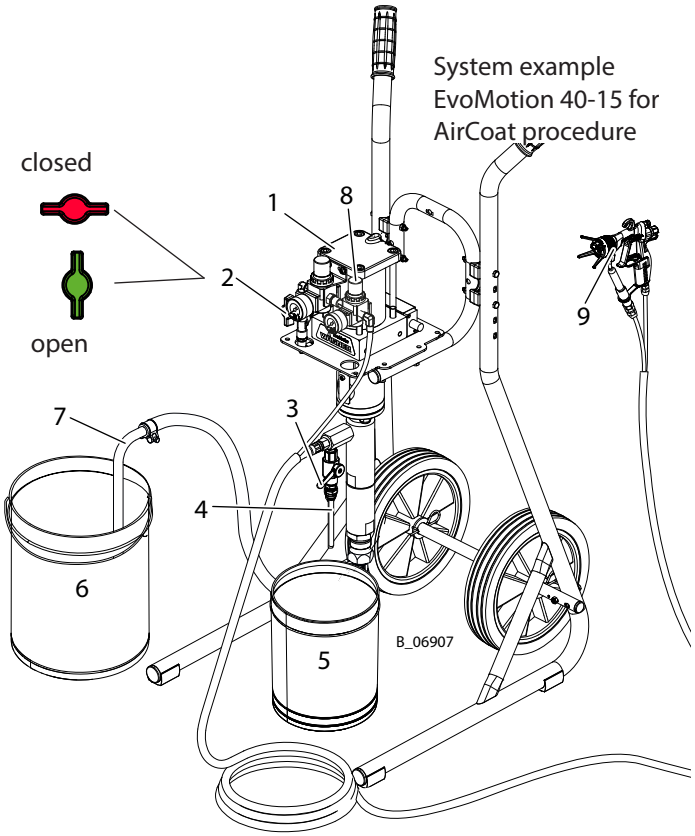
1. Place an empty, grounded collection tank (5) under the return tube (4).
2. Place the suction hose (7) in an empty, grounded tank (6).
3. Close pressure regulator (1) (0 MPa; 0 bar; 0 psi).

Emptying via return line

4. Open return valve (3).
5. Slowly open the ball valve (2).
6. 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).
7. 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).
8. As soon as working material is no longer flowing from the return tube (4), close the ball valve (2).
9. Close return valve (3).

Emptying up to the spray gun

10. Point the spray gun, without nozzle, into the tank (5) and open it.
11. Slowly open the ball valve (2). Be ready for the switch from working material to air.
12. As soon as working material is no longer flowing, close ball valve (2).
13. Close and secure the spray gun.
14. Depressurization in accordance with Chapter 7.4.
15. Dispose of the contents of the tank (5) according to the local regulations.



8.2.5 FILLING THE EMPTY PUMP

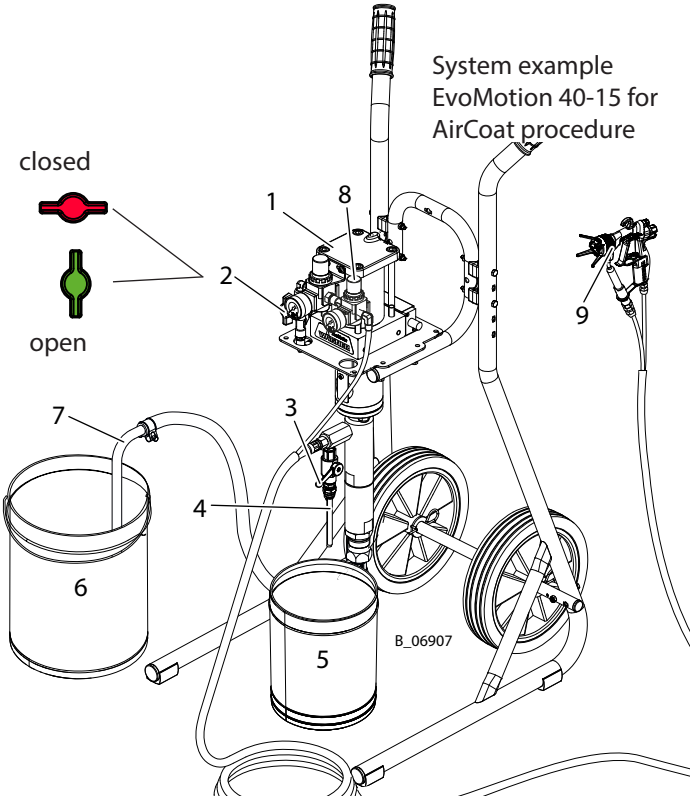
⚠ WARNING

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

Danger to life from flying parts.
Ignition of potentially explosive surrounding atmosphere.
→ Fill the device slowly and in a controlled manner.
→ Avoid potentially explosive atmosphere in the surroundings.

Before each filling, the nozzle must be removed from the spray gun. Here, the specifications in the spray gun operating manual must be followed.
With AirCoat systems, carry out the filling of the system without atomizing air (8).

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 (4).
3. Place suction hose (7) in the tank with working material (6).
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 air pressure up on the pressure regulator (1) and only until the pump is running regularly.
8. Close ball valve (2) as soon as pure working material starts coming from the return tube (4).
9. Close return valve (3).
10. Point the spray gun (9), without nozzle, into tank (5) and pull the trigger.
11. Slowly open the ball valve (2). Be ready to switch from air to working material and prevent back spray.
12. As soon as pure working material without air bubbles is flowing, close the ball valve (2).



13. Close and secure the spray gun.
14. Depressurization in accordance with Chapter 7.4.
15. Dispose of the contents of the tank (5) according to the local regulations.

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 gauge (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 high-pressure hose are blocked (e.g., 2K product hardened).	Dismount and clean fluid section, replace high-pressure hose.
	Sometimes, the pump stops at a switching point.	Press the starter on the reverse valve and restart the pump. Clean the slide on the reversing valve carefully and, if necessary, lubricate it with a light layer of oil.
Poor spray pattern	See spray gun operating manual.	
Irregular operation of the pump; spray jet collapses (pulsation)	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 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 -> Technical data, Chapter 5.5.3.
	Valves, packings, or pistons are worn out.	Replace the parts.
	Pressure regulator filter is clogged.	Check and clean it if necessary.
The pump runs smoothly but does not suck in any product.	The suction system's union nut is loose; the pump is sucking in air.	Tighten union nut.
	Suction filter is clogged.	Clean filter.
	Ball in suction or piston valve is stuck.	Clean balls and valve seats.
The pump is working with a closed spray gun.	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 REPAIRS

10.1 REPAIR PERSONNEL

Repair work must be carried out carefully and by qualified and trained personnel. They should be informed of specific hazards during their training.
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.
Carry out function test in accordance with Chapter 11.

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 unit.
→ Before all work on the device and in the event of work interruptions:
- Relieve the pressure from the spray gun, high-pressure 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

- Flush and clean the system. → Chapter 8.1.2
- Interrupt the air supply.

After Repair Work

- Carry out safety checks in accordance with Chapter 8.2.3.
- Put the system into operation and check for leaks as described in Chapter 6.7.
- Have the system checked for safe condition by an authorized person.
- Function test in accordance with Chapter 11.

10.3 TOOLS

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

- Torque wrench 2.5 Nm; 1.84 lbft / 4.5; 3.3/ 20; 14.7/ 30; 22.1/ 35; 25.8
- Circlip pliers 30mm (inside)
- Slotted screw driver
- Phillips screwdriver
- 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:

→ Thoroughly clean all reusable parts with a suitable cleaning agent.

→ 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 14 the order numbers for device spare parts can be found, as well as for wearing parts such as seals.

→ Defective parts, O-rings and seal sets must always be replaced.

→ Use greases and glues in accordance with Chapter 14.

→ Observe torque specifications in accordance with Chapter 14.

Assembly aids:

Order No.	Quantity	Designation	Smaller tanks
9992590	1 pc ≙ 50 ml	Loctite® 222	
9992511	1 pc ≙ 50 ml	Loctite® 243	
9992528	1 pc ≙ 50 ml	Loctite® 270	
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 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	Means
1.1 Filling with separating agent → See Chapter 8.2.3.1.	
1.2 EX-relevant inspections – Check grounding connection between ground connection of the pump and the frame/trolley and between the individual components of the frame/ trolley: < 1MΩ – Check conductivity between piston and grounding connection: < 1MΩ **These inspections are**  **- relevant!**	Ohmmeter (measurement voltage 500...1000 VDC)
1.3 Testing for leaks – Connect the air motor to the air supply 7 bar. To perform a leak test 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. Close pump outlet. In each position (forward stroke and reverse stroke), let sit for 0.5-1 minutes and listen for audible blowing off. When the air supply is turned off, a drop in pressure must be watched for. Check seal of following modules: – fluid section – mounted fittings and regulators	Air motor: Test medium compressed air Leak spray Fluid section: Test medium: suitable flushing agent
1.4 General inspections – Check tightening torque of various screws. See Chapter 14. – Check all fittings. – Empty device in a controlled manner (Chapter 8.2.4) and depressurize (Chapter 7.4). – Check function of frame or transport trolley.	Torque wrench Visual check

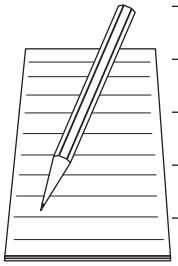
12 DISPOSAL

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

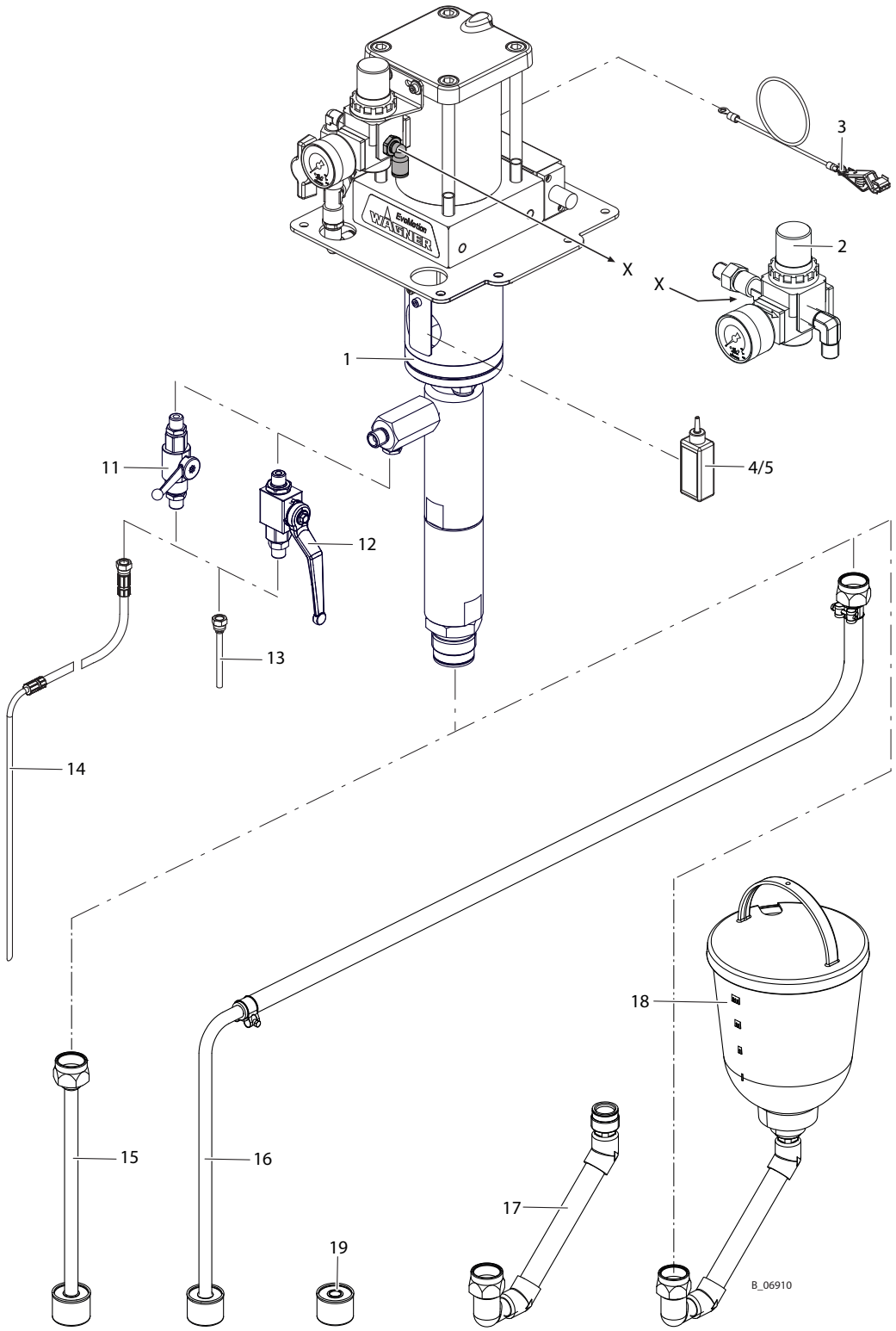
The following materials have been used:

→ Stainless steel
→ Aluminum
→ Elastomers
→ Plastics
→ Carbide

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



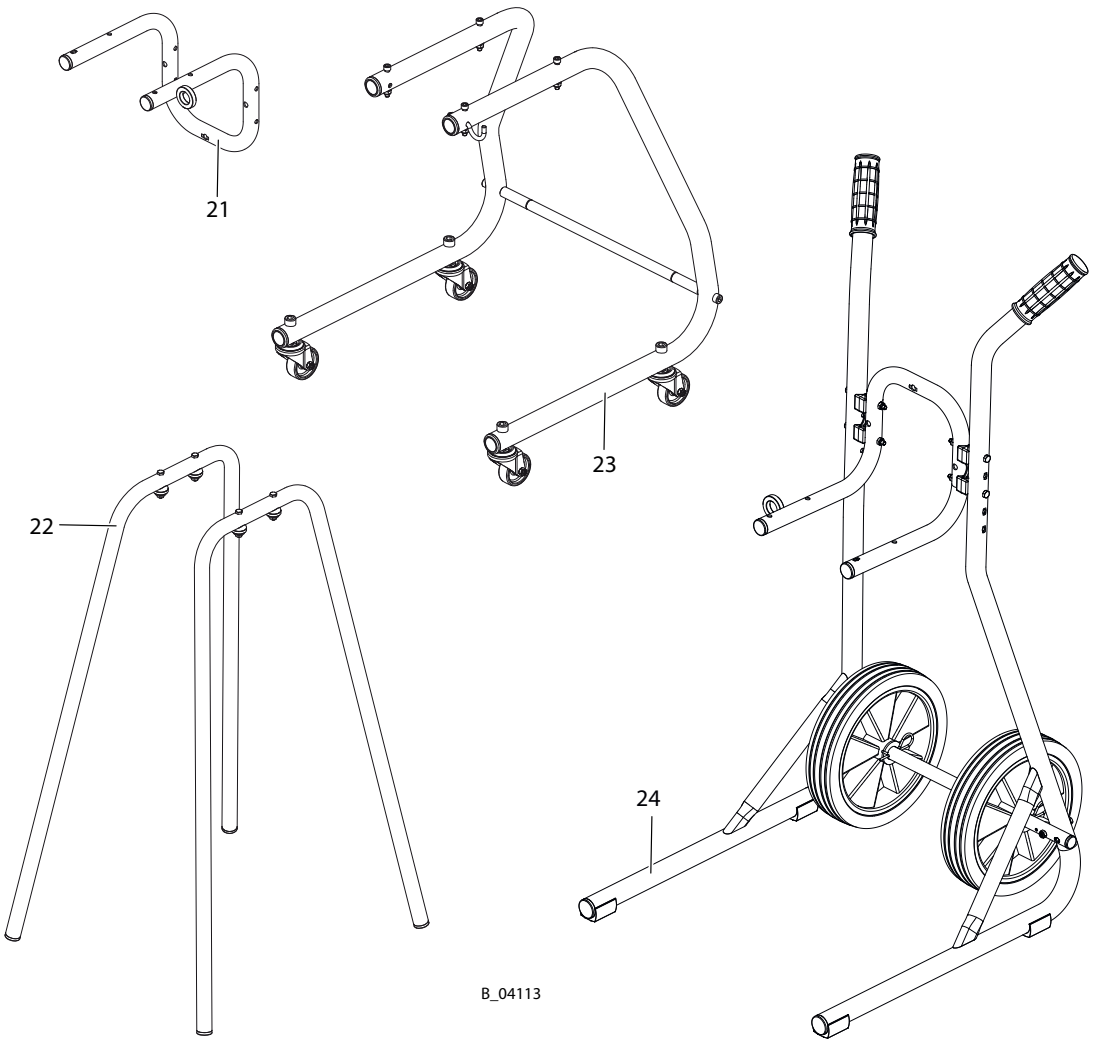
13 ACCESSORIES



Pos	K	Order No.	Designation
1		2329450	EvoMotion 40-15 PE/T
2	◆	T6145.00A	AirCoat regulator set
3		236219	Grounding cable, complete 3 m; 9.8 ft
4		9992504	Separating agent 250 ml
5		9992505	Separating agent 500 ml
11	◆	2334488	Ball valve R1/4"-G1/4"-PN350-SSt
12	◆	2334472	Ball valve R1/4"-G1/4"-PN350-CS
13	◆	2331752	Return tube, DN6-G1/4"-100mm-PA
14	◆	2329046	Return hose DN6-G1/4“-PA
15		2324158	Suction tube DN16-SSt, complete
16	◆	2324110	Suction hose DN16-SSt, complete
17		2323225	Suction elbow for hopper SSt
18	◆	2332169	Hopper set, 5 l for piston pump
19	◆	2323396	Suction filter, DN16-18mesh-SSt

◆ Wearing parts

13.1 WALL MOUNT AND TROLLEY



Pos	K	Order No.	Designation
21		2332143	Wall mount 4“, complete
22		2332374	4-leg stand
23		T6196.00	Trolley, 4 wheels
24		2325901	Trolley 4", complete

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 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:

- 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**" (labeling) in the following spare parts lists:

◆ Wearing parts/ Wearing parts are not included in the warranty terms.
★ Included in service set

Notice
These parts are not covered by warranty terms.

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

Explanation of order no. column

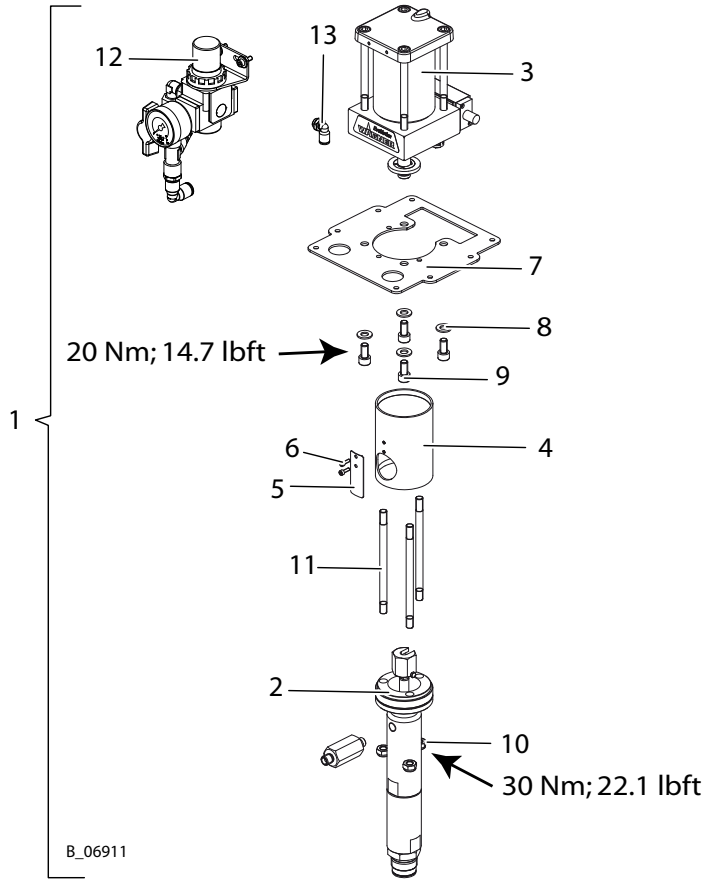
-- Item not available as spare part.
/ Position does not exist.

⚠ DANGER

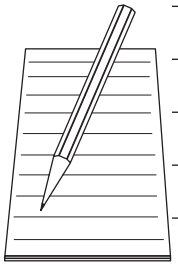
Incorrect maintenance/repair!
Danger to life and equipment damage.

→ 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 unit.
→ Before all work on the device and in the event of work interruptions:
- Relieve the pressure from the spray gun, high-pressure 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.

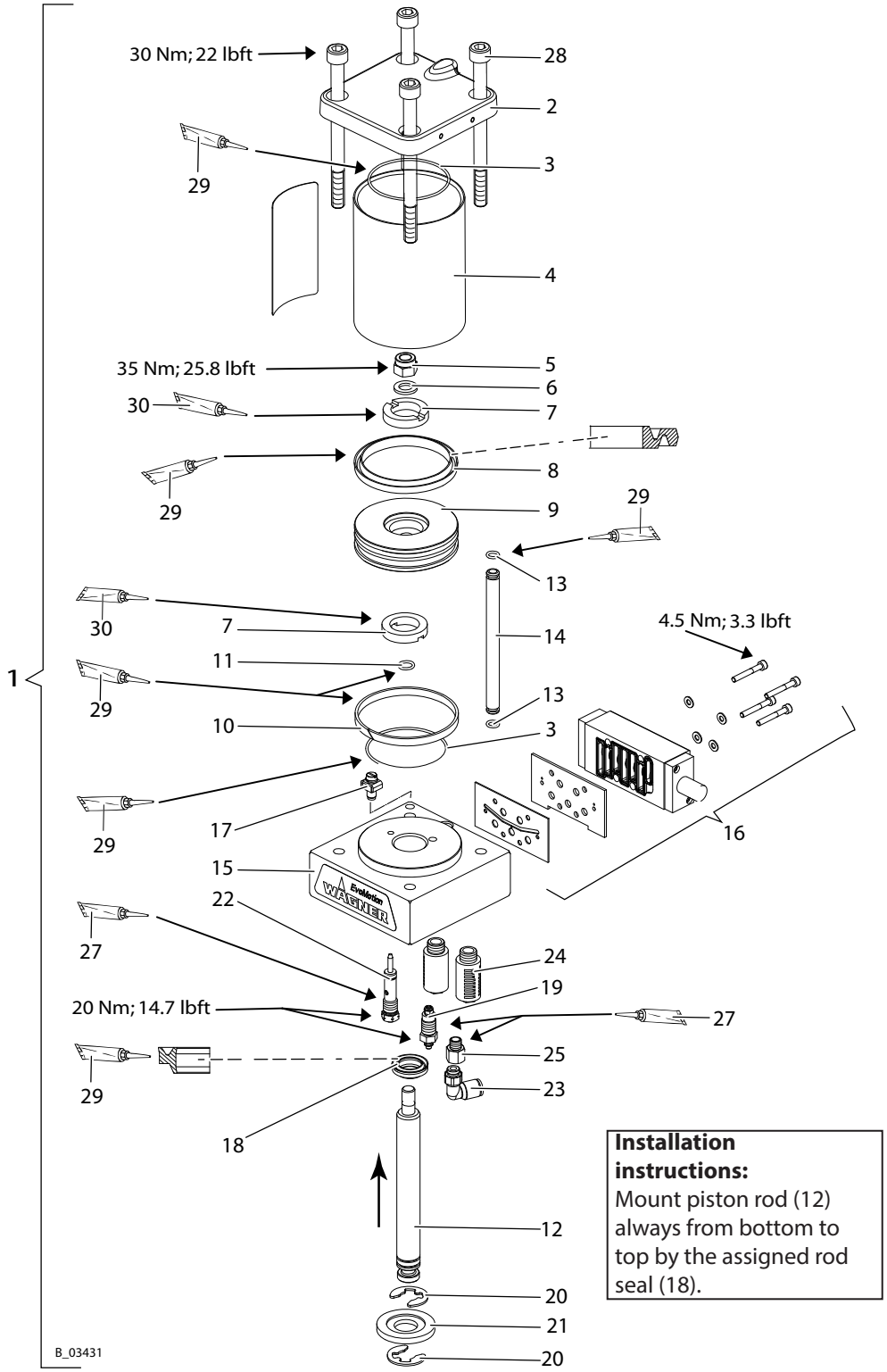
14.2 OVERVIEW OF PUMP COMPONENTS



Pos	K	Stk	Order No.	Designation
1		1	2329450	EvoMotion 40-15 PE/T
2		1	2329635	Fluid section 15 PE/T EM
3		1	U3B08018060	Air motor M80 EM
4		1	A359.71A	D 25 X 160 Spacer
5		1	E516.71A	Safety fixture spacer
6		2	9900353	Hexagon socket cylinder head screw
7		1	2332394	Holder plate
8		4	9920106	Washer
9		4	9900330	Hexagon socket cylinder head screw
10		3	3055157	Hexagon nut with clamp
11		3	H115.62	Tie rod
12		1	2318438	Set - pump air regulator
13		1	9998253	Male stud elbow 8-1/4



14.3 AIR MOTOR



Installation instructions:
Mount piston rod (12) always from bottom to top by the assigned rod seal (18).

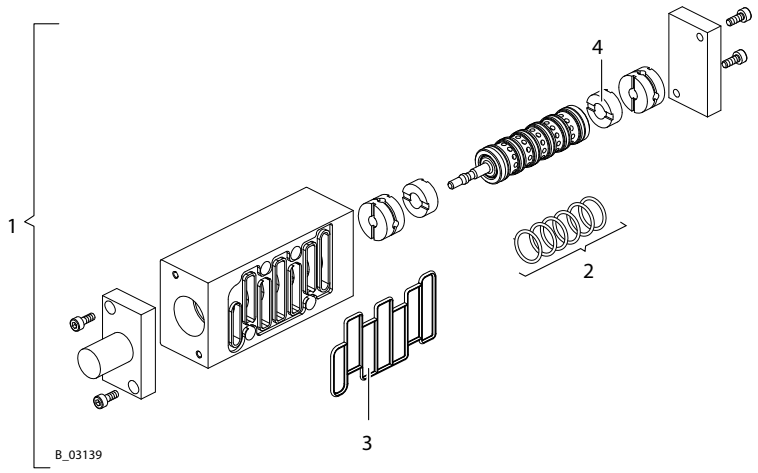
Pos	K	Stk	Order No.	Designation
1		1	U3B08018060	Air motor EM M80
2		1	F132.91C	Motor flange, upper, M50 EM
3	◆ ★	2	L108.06	O-ring
4		1	D608.81	Cylinder motor
5		1	3055157	Hexagon nut with clamp
6		1	9920106	Washer
7	◆ ★	2	G903.06	Damper
8	◆ ★	1	L413.06	Seal DE 80
9		1	A164.01	Motor piston
10	◆ ★	1	L802.08	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 (spare parts list, see Chapter 11.3.1.)
17		1	367258	Grounding, complete
18	◆ ★	1	L403.06	Rod seal
19	◆ ★	1	2339340	Sensor below, M80
20		2	K606.02	Lock washer for shaft
21		1	A160.01A	Washer
22	◆ ★	1	2341115	Pilot valve
23		1	9992757	Threaded elbow fitting
24	◆	2	H505.07	Silencer
25		1	M432.00	Reducing nipple
27		1	9992831	Loctite® 542
28		4	9907241	Hexagon socket cylinder head screw
29		1	9998808	Mobilux® EP 2 grease
30		1	9998157	Loctite® 480
	●	1	T910.00	Service set EM air motor M80

◆ = Wearing parts

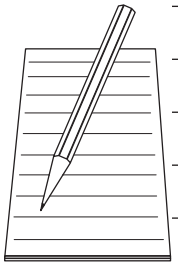
★ = Included in service set

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

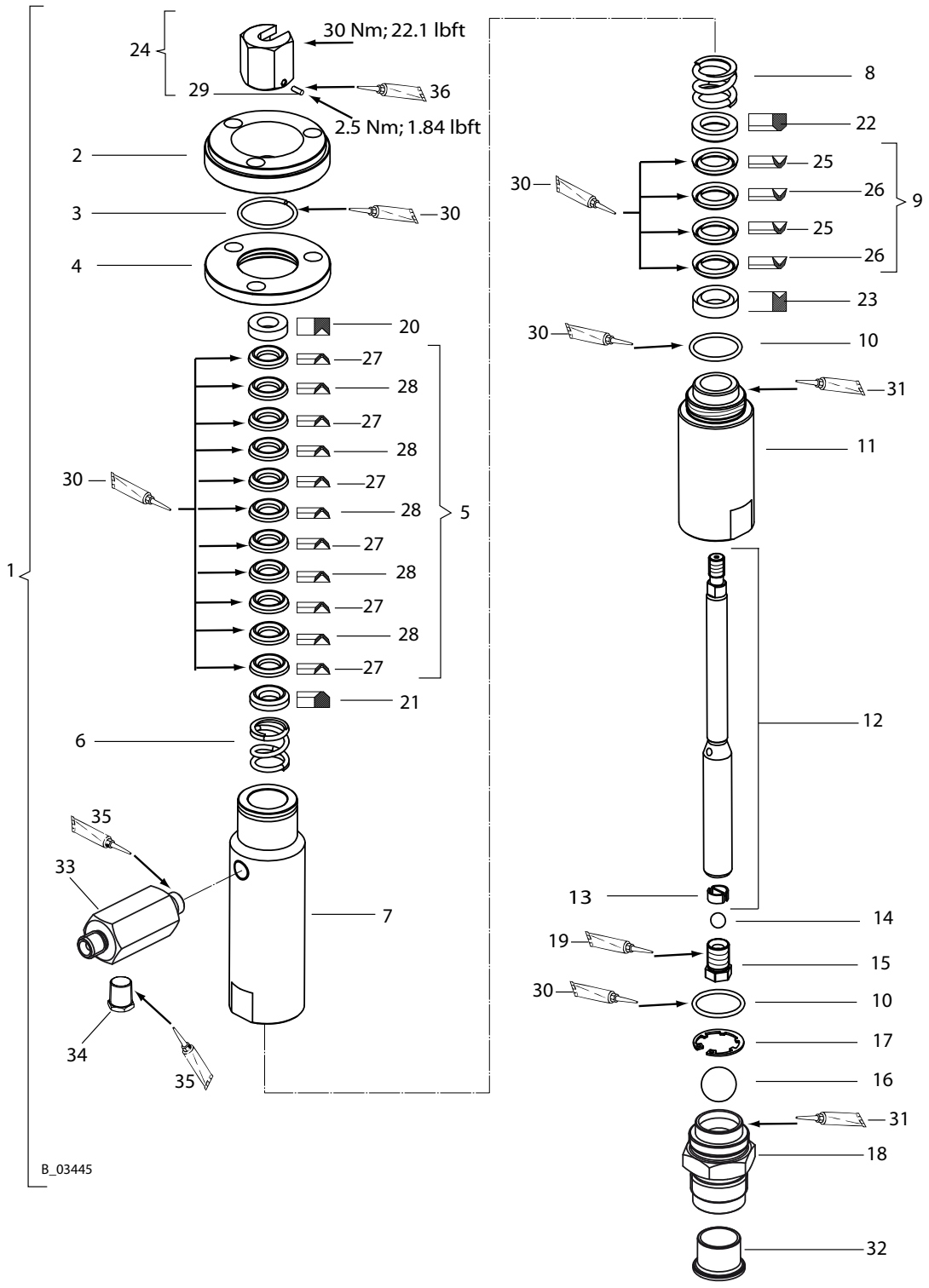
14.3.1 REVERSING VALVE



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



14.4 FLUID SECTION 15



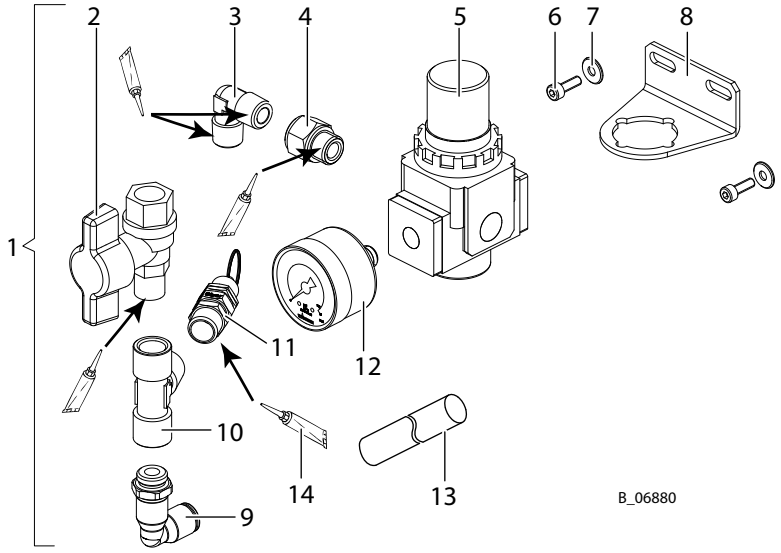
Pos	K	Stk	Order No.	Designation
1		1	2329635	Fluid section 15 SS PE/T EM
2		1	A661.12	Connecting flange 15
3		1	K617.03	Snap ring
4		1	A662.12	Snap ring flange 15
5	◆ ★	1	T9037.00E	Packing PE/T 13/25
6		1	H204.03	Spring, upper
7		1	A658.03	Tube 15
8		1	H203.03	Spring
9	◆ ★	1	T9038.00E	Packing PE/T 18/29
10	◆ ★	2	L107.06	O-ring
11		1	B534.03	Cylinder 15
12	◆	1	T6157.00I	Piston 15 SS
13		1	A170.03	Support spring
14	◆	1	K801.03	Ball
15	◆	1	A169.03	Valve screw 15
16	◆	1	K803.03	Ball
17	◆	1	K601.03	Securing ring
18	◆	1	2323838	Inlet housing 15
19	●	1	9992831	Loctite® 542
20		1	A171.03	Support ring, outside
21		1	A172.03	Support ring, inside
22		1	A411.03	Support ring, inside
23		1	A410.03	Support ring, outside
24		1	T6158.00	Connector
25	◆ ★	2	G101.05	Sealing collar T 18/29
26	◆ ★	2	G101.08E	Sealing collar PE 18/29
27	◆ ★	6	G104.05	Sealing collar T 13/25
28	◆ ★	5	G104.08E	Sealing collar PE 13/25
29		1	2394356	Grub screw with hexalobular socket
30		1	9998808	Mobilux® EP 2 grease
31	●	1	9992609	Anti-seize paste
32		1	2329898	Sealing sleeve
33		1	B0461.03A	Fitting DF-MM-R1/4"-1/4"NPS-PN350
34		1	2323718	Hexagon plug
35		1	9992528	Loctite® 270
36		1	9992590	Loctite® 222
	●	1	T9039.00E	Service set EM 15 PE/T

◆ = Wearing parts

★ = Included in service set

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

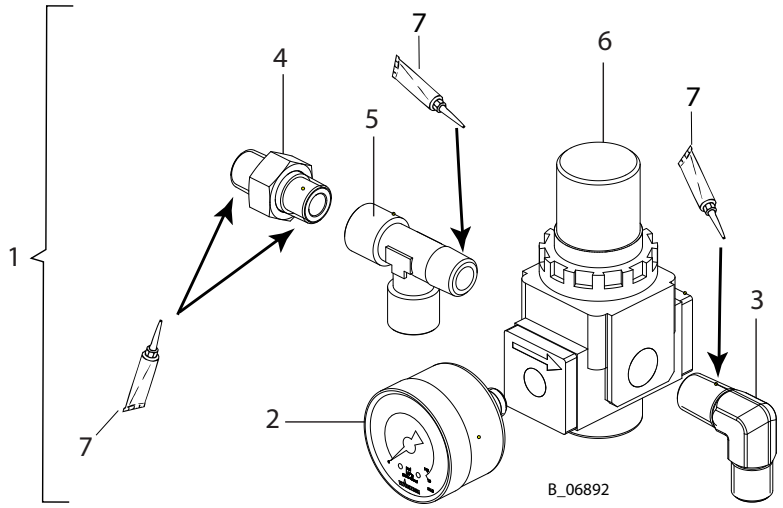
14.5 AIR REGULATOR SET FOR EVOMOTION 40-15



Pos	K	Stk	Order No.	Designation
1		1	2318437	Set - pump air regulator
2		1	M101.00	Ball valve, FM
3		1	9998039	Screw fitting ellbow
4		1	9985682	Reducer
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	P484.00C1	Safety valve 1/4", blue ring
12		1	9998677	Pressure gauge 0-10 bar (d40)
13		1	9982078	Hose, black AD8 x 1.25 (32 cm)
14		1	9992831	Loctite® 542

◆ = Wearing parts

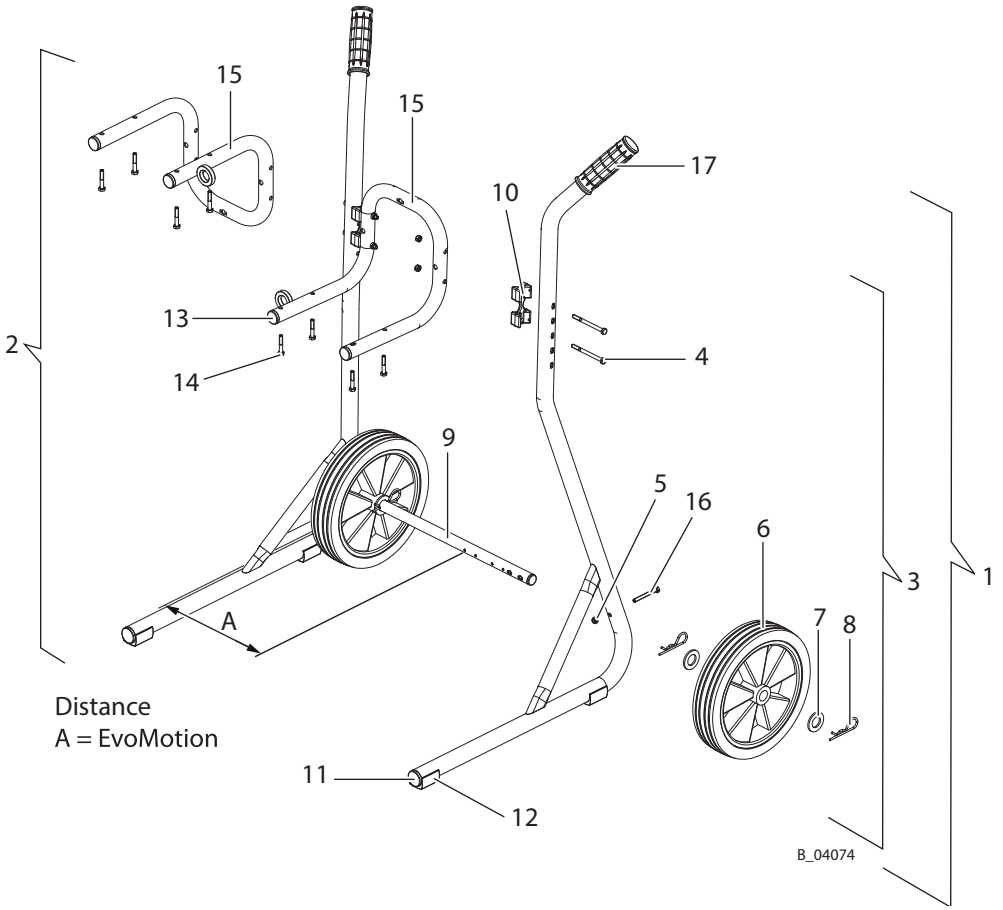
14.6 AIR REGULATOR SET FOR AIRCOAT AIR



Pos	K	Stk	Order No.	Designation
1		1	T6145.00A	AirCoat regulator set
2	◆	1	9998677	Pressure gauge 0-1 MPa; 0-10 bar; 0-145 psi (d40)
3		1	9992129	Elbow with taper
4		1	9998719	Detachable double fitting
5		1	9985694	T-piece
6	◆	1	2384362	Air pressure regulator, 1/4"
7		1	9992528	Loctite® 270

◆ = Wearing parts

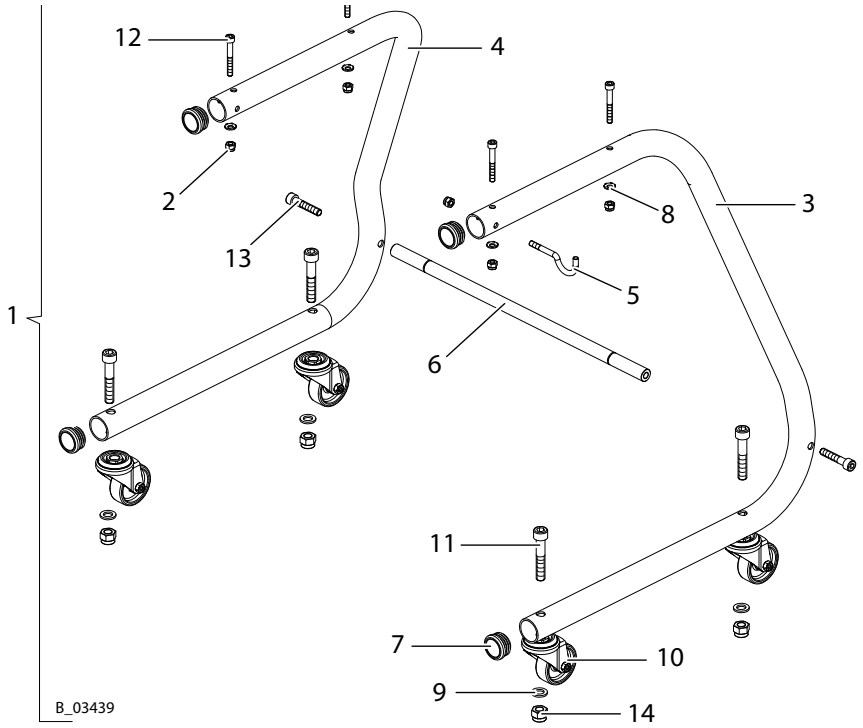
14.7 TROLLEY 4“



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

◆ = Wearing parts

14.8 4-WHEEL TROLLEY



Pos	K	Stk	Order No.	Designation
1		1	T6196.00	Trolley, 4 wheels
2		5	9910204	Hexagon nut with clamp
3		1	E3107.92B	Frame, right
4		1	E3107.92C	Frame, left
5		1	H009.62	Spray gun hook
6		1	H1156.62	Frame pin
7		4	R204.07	Plug
8		4	3155404	Contact washer, M08
9		4	9920106	Washer
10	◆	4	R120.00F	Wheel
11		4	9900311	Hexagon socket cylinder head screw
12		4	9900389	Hexagon socket cylinder head screw
13		2	9900309	Hexagon socket cylinder head screw
14		4	3055157	Hexagon nut with clamp

◆ = Wearing parts

15 GUARANTEE AND CONFORMITY DECLARATIONS

15.1 IMPORTANT NOTES ON 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.

15.2 WARRANTY CLAIM

Full warranty is provided for this device:
We will, at our discretion, repair or replace free of charge all parts which within 24 months in single-shift, 12 months in 2-shift or 6 months in 3-shift operation from date of receipt by the purchaser are found to be wholly or substantially unusable due to causes prior to the sale, in particular faulty design, defective materials or poor workmanship.
The 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, labor 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, packaging, 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.

Wagner International AG

15.3 EU DECLARATION OF CONFORMITY

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

EvoMotion 40-15

complies with the following guidelines:

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

Applied standards, in particular:

DIN EN ISO 12100:2010	EN 12621: 2006+A1: 2010
EN 809: 1998+A1:2009+AC:2010	EN 1127-1:2011
EN ISO 4413:2010	EN ISO 80079-36:2016
EN ISO 4414:2010	EN ISO 80079-37:2016
EN ISO 13732-1:2008	EN ISO/IEC 80079-34:2011
EN 14462:2015	

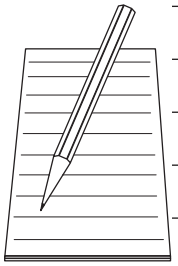
Applied national technical standards and specifications, in particular:

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

Identification: CE Ex 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



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