WAGNER

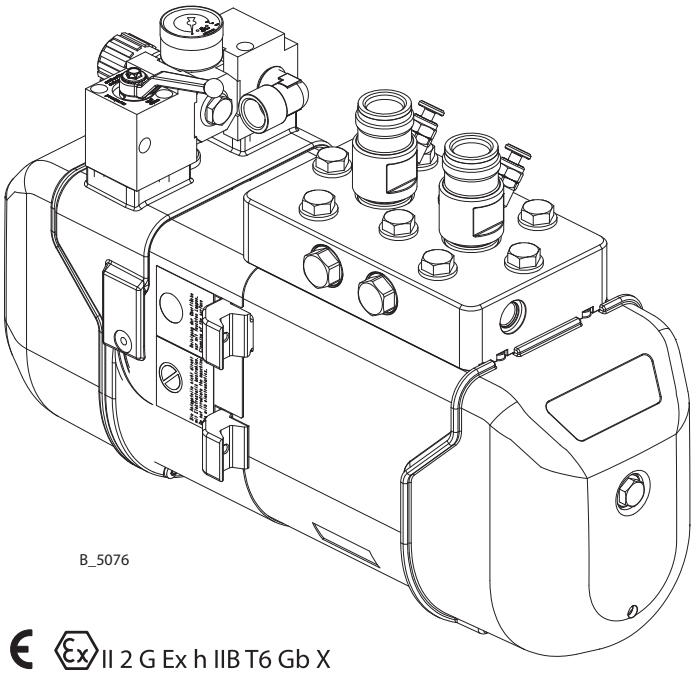
# Translation of the Original Operating Manual

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 04/2018

## Cobra 40-10 / 2K

## High Pressure Double Diaphragm Pump for 2-Component Products with Mixing Ratio 1:1



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CE Ex II 2 G Ex h IIB T6 Gb 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 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.<br>Non-observance will result in death or serious injury. |
| ⚠ **WARNING** | Potential risk.<br>Non-observance can result in death or serious injury. |
| ⚠ **CAUTION** | Potentially hazardous situation.<br>Non-observance may result in minor injury. |
| ⓘ **NOTICE** | Potentially hazardous situation.<br>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 | 2349649 |

**Translation of the original operating manual**

| Language | Order no. |
|---|---|
| English | 2349980 |
| Italian | 2349981 |
| Lithuanian | 2373423 |

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

## 1.4 ABBREVIATIONS

| | |
|---|---|
| Order no. | Order number |
| ET | Spare part |
| K | Marking in the spare parts lists |
| Pos | Position |

| | |
|---|---|
| Qty | Number of pieces |
| DH | Double stroke |
| SSt | Stainless steel |
| 2K | Two components |

## 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, knowledge and experience in relevant provisions. |
| Skilled person in accordance with TRBS 1203 (2010/Revision 2012) | A person, who, based on his/her technical training, experience and recent vocational experience, has sufficient technical knowledge in the areas of explosion protection, protection from pressure hazards and electric hazards (if applicable) and is familiar with the relevant and generally accepted rules of technology so that he/she can inspect and assess the status of devices and coating systems based on workplace safety. |

# 2 CORRECT USE

## 2.1 DEVICE TYPES

Double diaphragm pump and spray pack:

**Cobra 40-10 / 2K**

## 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 into explosion class IIB (see Chapter 2.4).

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 explosion hazard zones (Zone 1) (see Chapter 3).

## 2.4 PROCESSIBLE WORKING MATERIALS

→ Fluid materials like paints and lacquers.

| Application | Cobra 40-10 / 2K |
|---|---|
| Water-dilutable products | ↗ |
| Solvent-based lacquers and paints | ↗ |
| Emulsions | ↗ |
| UV lacquers | ↗ |
| Primers | ➙ |
| Epoxy and polyurethane lacquers, phenolic lacquers | ↗ |
| Liquid plastics | ➙ |
| Wax-based underside protection | ↗ |
| Shear-sensitive lacquers | ↗ |

↗ 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 combinations of devices (packings, valves etc.).

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

**Typical applications**

| Application | Cobra 40-10 / 2K |
|---|---|
| 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: **Cobra 40-10 / 2K** double diaphragm pumps
Manufacturer: Wagner International AG
CH-9450 Altstätten, Switzerland

CE Ex II 2 G Ex h IIB T6 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 |
| T6 | <85 °C |
| Gb | High safety level |
| X | Special notes (see Chapter 3.2)<br>→ 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 5.5.2 (Technical Data).

**Safe Handling of WAGNER Spray Devices**
Mechanical sparks can form if the device comes into contact with metal.
In an explosive atmosphere:
→ knocking or pushing metal against metal is to be avoided;
→ do not drop the device.

**Maximum surface temperature**
→ The maximum surface temperature of the pump depends on the operating conditions (heated product) and not on the device (frictional heat).

**Ignition temperature of the coating product**
→ Ensure that the ignition temperature of the coating product is above the maximum surface temperature.

**Ambient temperature**
→ The permissible ambient temperature range is: 10 °C to 60 °C; 50 °F to 140 °F.

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

**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 diaphragms.

→ Avoid operating the pump with damaged diaphragms.

→ Periodically check that the pump is working smoothly, paying special attention to the presence of air in the pumped fluid.

**Filling and emptying**

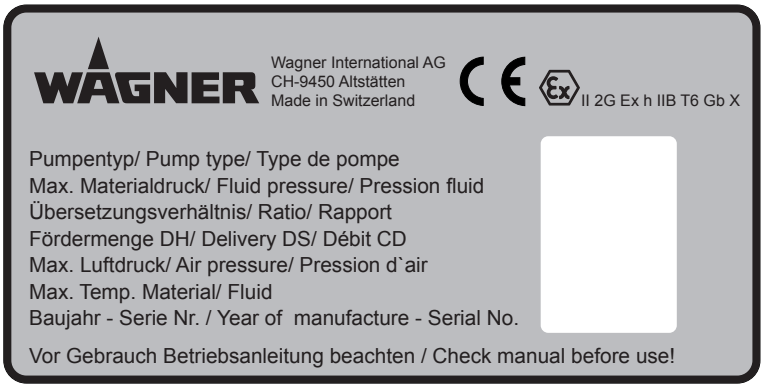
Ignitable gas mixtures can form in the fluid section or product hoses if the pump must be emptied for maintenance and/or repair purposes.

→ Empty and fill the device slowly and in a controlled manner.

→ Avoid potentially explosive atmosphere in the surroundings.

## 3.3 TYPE PLATE

**Cobra 40-10 / 2K**

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| Pos | Designation |
|---|---|
| 1 | Pump type |
| 2 | Max. product pressure |
| 3 | Pump ratio |
| 4 | Flow rate |
| 5 | Max. air pressure |
| 6 | Max. temp. product/fluid |
| 7 | Model year - serial number |
| 8 | Check 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 strength of the 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 (ZH 1/406 and 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.

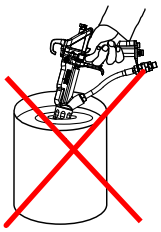
- → Preference should be given to non-ignitable cleaning and flushing agents.
- → When carrying out cleaning work with flammable cleaning agents, make sure that all equipment and resources (e.g., collection tank, funnel, transport cart) are conductive or static dissipative and grounded.
- → Observe the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

- → Never use chloride or halogenated solvents (such as trichloroethane and methylene chloride) with units containing aluminium or galvanized and zinc-plated parts. They may react chemically thus producing an explosion danger.
- → 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".
  **Part 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 all devices.
  - Secure the spray gun against actuation.
  - Switch off the energy and compressed air supply.
  - Disconnect the control unit from the mains. Secure the spray gun against actuation.
- → Observe the operating and service manual for all work.

### 4.2.8 PROTECTIVE AND MONITORING EQUIPMENT

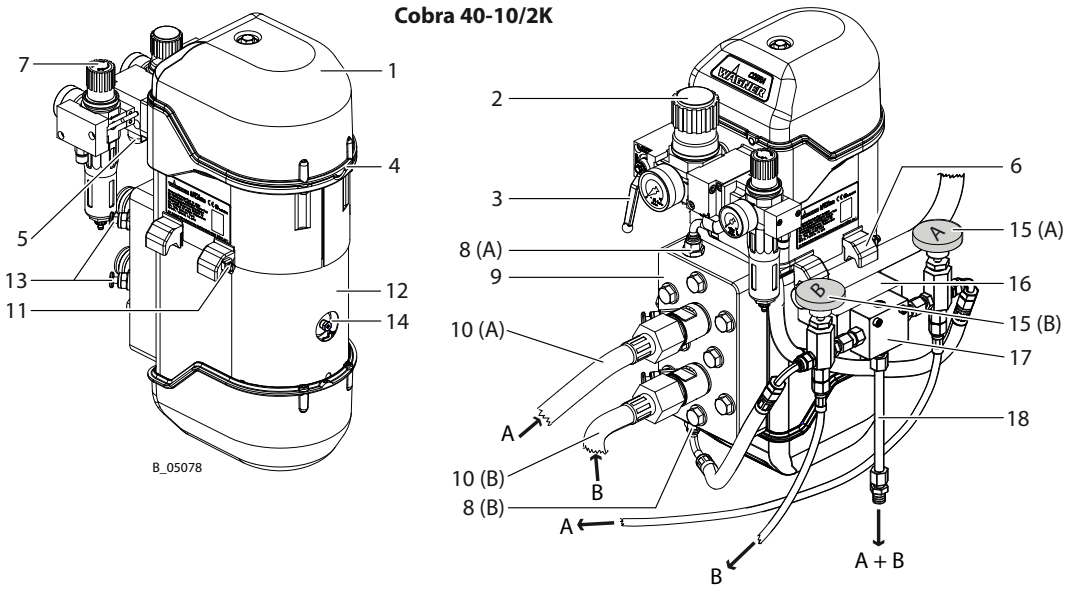
**Hazard due to removal of protective and monitoring equipment!**
Danger to life and equipment damage.

- → 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

**Cobra 40-10/2K**




| Pos | Designation |
|---|---|
| 1 | Control housing with integrated silencer |
| 2 | Air pressure regulator |
| 3 | Ball valve |
| 4 | Air motor |
| 5 | Compressed air inlet |
| 6 | Fastening flange |
| 7 | AirCoat pressure regulator (option) |
| 8 | Product outlet (A, B) |
| 9 | Fluid section |

| Pos | Designation |
|---|---|
| 10 | Suction system product inlet (A, B) |
| 11 | Grounding connection |
| 12 | Fluid section casing |
| 13 | Valve depressor (A, B) |
| 14 | Exhaust air opening |
| 15 | Relief valve (A, B) |
| 16 | Mixing block holder |
| 17 | Mixing block |
| 18 | Mixing tube |

## 5.2 MODE OF OPERATION

The double diaphragm pump is driven with compressed air. This compressed air moves the air piston in the air motor (4), and consequently the piston rod in the fluid section (9), up and down. At the end of each stroke, the compressed air is redirected by a reversing valve and the control piston. The up-and-down movement of both diaphragms in the fluid section is produced by hydraulic oil, which is moved by the piston rod in the fluid section. With every stroke of the piston rod, working product is sucked in and delivered to the spray gun at the same time.

### 5.2.1 AIR MOTOR

The air motor (4) with its pneumatic reverse (1) does not require pneumatic oil. The compressed air is fed to the motor via the air pressure regulator (2) and the ball valve (3).

### 5.2.2 FLUID SECTION

The fluid section (9) has been designed as a double diaphragm pump with exchangeable inlet and outlet valves. With the mixing block (17), upstream relief valves (15) can be switched from "Spraying mode" to "Product circulation mode".

### 5.3 PROTECTIVE AND MONITORING EQUIPMENT

**⚠ 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 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.

### 5.4 INCLUDED ITEMS

| Stk | Order no. | Designation |
|---|---|---|
| 1 | U850.00CA | Cobra 40-10/2K double diaphragm pump comprising: fluid section, air motor and connection elements mounted on trolley (vertical). |
| 1 | U850.00MA | Cobra 40-10/2K double diaphragm pump comprising: fluid section, air motor, connection elements and mounting brackets for wall mounting (vertical). |
| 1 | U850.00SA | Cobra 40-10/2K double diaphragm pump comprising: fluid section, air motor, connection elements and mounted on a special frame (horizontal). |

The standard equipment includes:

| Stk | Order no. | Designation |
|---|---|---|
| 1 | 322981 | Sign |
| 1 | 236219 | Grounding cable, complete |
| 1 | 341434 | Double open-end wrench |
| 1 | see Chapter 15 | Declaration of Conformity |
| 1 | 2349649 | Operating manual, in German |
| 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

| Paint-wetted parts | Product |
|---|---|
| Inlet housing | Consital® (aluminum alloy) |
| Fluid section | Consital® (aluminum alloy) |
| Valve balls | Stainless steel |
| Valve seats/valve cone | Carbide |
| Diaphragm | PA-resistant |
| Valve fitting | 1.4104 |

### 5.5.2 TECHNICAL DATA

| Description | Units | Cobra 40-10 / 2K |
|---|---|---|
| Pump ratio | | 40:1 |
| Volume flow per double stroke (DH) | $cm^3$<br>cu inch | 10<br>0.6 |
| Maximum operating overpressure | MPa<br>bar<br>psi | 25<br>250<br>3626 |
| Maximum possible strokes in operation | DH/min | 200 |
| Minimum/maximum air inlet pressure | MPa<br>bar<br>psi | 0.25–0.6<br>2.5–6<br>36.3–87 |
| Compressed air quality: free from oil and water | Quality standard 7.5.4 according to ISO 8573.1, 2010 | |
| | 7: Particle concentration 5 – 10 $mg/m^3$<br>5: Humidity: pressure dew point ≤ 7 °C<br>4: Oil content ≤ 5 mg/m3 | |
| ø Air inlet (inside thread) | inch | G 1/2" |
| Minimum Ø of the compressed air supply line | mm<br>inch | 13<br>0.51 |
| Air consumption at 0.6 MPa; 6 bar; 87 psi per double stroke | NL | 3.5 |
| Sound pressure level at maximum permissible air pressure* | dB(A) | 74 |
| Sound pressure level at 0.45 MPa; 4.5 bar; 65.27 psi air pressure* | dB(A) | 72 |
| Sound pressure level at 0.3 MPa; 3 bar; 43.5 psi air pressure* | dB(A) | 69 |
| Air motor piston diameter | mm<br>inch | 80<br>3.15 |
| Product inlet (outside thread)<br>Product outlet (inside thread)<br>Product outlet (outside thread) | mm<br>inch<br>inch | M36×2<br>G 3/8"<br>G 3/8" |
| Weight | kg; lb | 19; 41.9 |
| Product pH value | pH | 3.5–9 |
| Maximum product pressure at pump inlet | MPa<br>bar<br>psi | 2<br>20<br>290 |
| Product temperature | °C<br>°F | 10–80<br>50–176 |
| Ambient temperature | °C<br>°F | 10–60<br>50–140 |
| Allowable inclination for operation | ∠° | ±10 |
| Hydraulic oil filling amount (approximate) | L<br>cu inch | 0.110<br>6.71 |

*A-rated sound pressure level measured at 1 m distance, LpA1m, according to DIN EN 14462: 2015. Reference measurements have been made by SUVA (Swiss Accident Insurance Institute).

**⚠ WARNING**

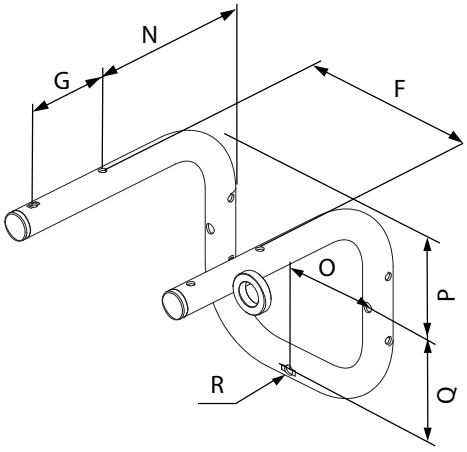
**Exhaust air containing oil!**
Risk of poisoning if inhaled.

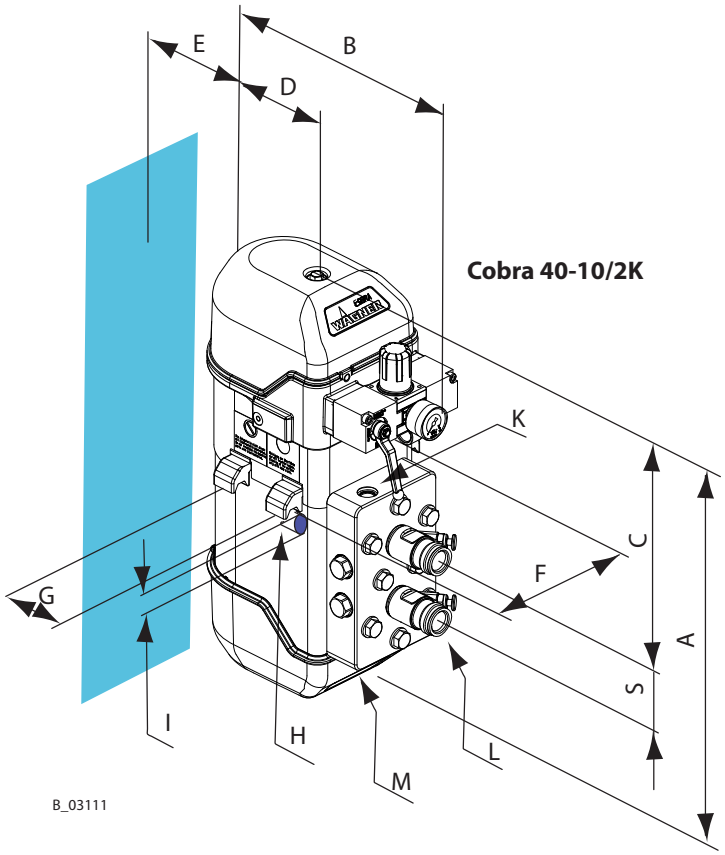
→ Provide compressed air free from oil and water.

### 5.5.3 DIMENSIONS AND CONNECTIONS

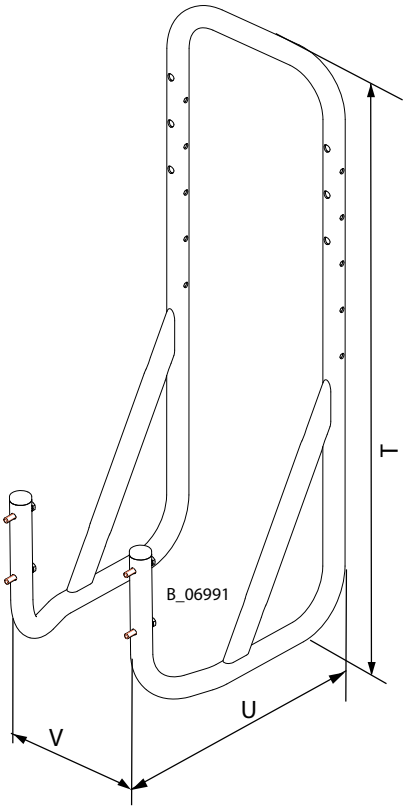
| Pos | mm; inch |
|---|---|
| A | 505; 19.88 |
| B | 313; 12.32 |
| C | 313; 12.32 |
| D | 134; 5.28 |
| E | 55; 2.16 |
| F | 182; 7.16 |
| G | 80; 3.15 |
| H | M6 |
| I | ø 25; ø 0.98 |
| K | G3/8 |
| L | M36×2 |

| Pos | mm; inch |
|---|---|
| M | G3/8 |
| N | 149; 5.87 |
| O | 91; 3.58 |
| P | 107; 4.21 |
| Q | 175; 6.89 |
| R | ø 7; ø 0.28 |
| S | 65; 2.56 |
| T | 725 |
| U | 318 |
| V | 262 |
| -- | -- |




**Cobra 40-10/2K**



### 5.5.4 VOLUME FLOW

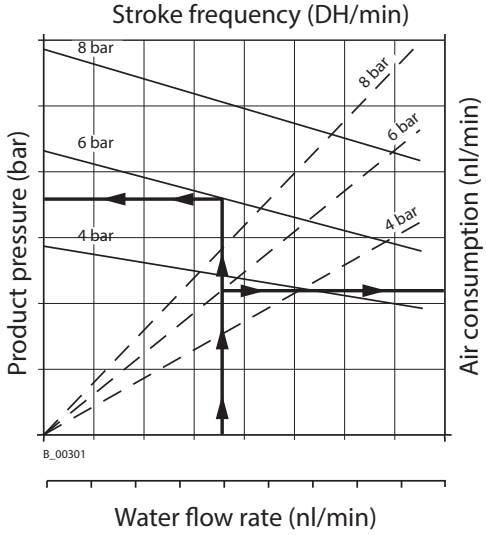
| **Wagner AL nozzles** | | | **Volume flow in l/min.*** | | | |
|---|---|---|---|---|---|---|
| ø inch | ø mm | Spray angle | at | at | at | |
| | | | 7 MPa | 10 MPa | 15 MPa | |
| | | | 70 bar | 100 bar | 150 bar | |
| | | | 1015 psi | 1450 psi | 2175 psi | |
| 0.007 | 0.18 | 40° | 0.1650 | 0.2000 | 0.2400 | |
| 0.009 | 0.23 | 20-30-40-50-60° | 0.2060 | 0.2500 | 0.3090 | |
| 0.011 | 0.28 | 10-20-30-40-50-60° | 0.2950 | 0.3450 | 0.4260 | |
| 0.013 | 0.33 | 10-20-30-40-50-60-80° | 0.4530 | 0.5280 | 0.6600 | |
| 0.015 | 0.38 | 10-20-30-40-50-60-80° | 0.5770 | 0.6720 | 0.8130 | |
| 0.017 | 0.43 | 20-30-40-50-60-70° | 0.7310 | 0.7860 | 1.0640 | |
| 0.019 | 0.48 | 20-30-40-50-60-70-80° | 0.9260 | 1.0920 | 1.3700 | |
| 0.021 | 0.53 | 20-40-50-60-80° | 1.1430 | 1.3600 | 1.6900 | |
| 0.023 | 0.58 | 20-40-50-60-70-80° | 1.3700 | 1.5900 | 2.0100 | Cobra 40-10 / 2K |
| 0.025 | 0.64 | 20-40-50-60-80° | 1.6200 | 1.9100 | -- | |
| 0.027 | 0.69 | 20-40-50-60-80° | 1.8300 | -- | -- | |

* Volume flow refers to water.

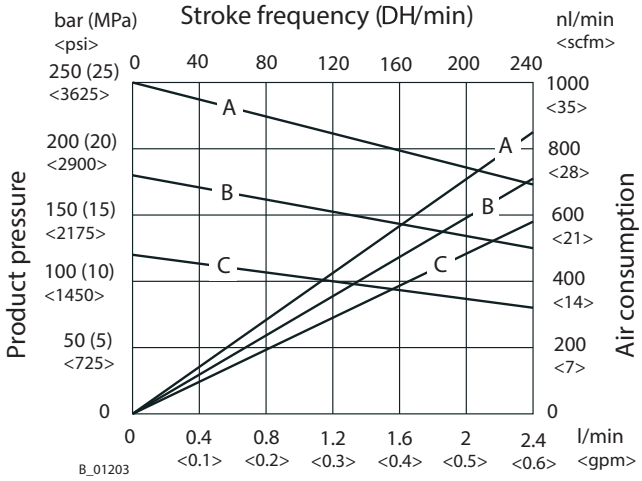
– Maximum ranges for continuous operation at 200 DH/min.

### 5.5.5 PERFORMANCE DIAGRAMS

**Example**




**Cobra 40-10/2K**




Water flow rate

A = 6 bar (0.6 MPa; 87 psi) air pressure

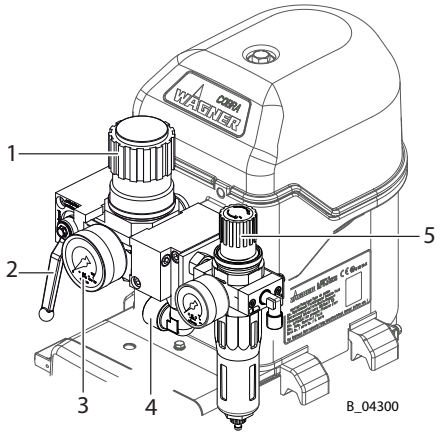
B = 4.5 bar (0.45 MPa; 65 psi) air pressure

C = 3 bar (0.3 MPa; 44 psi) air pressure

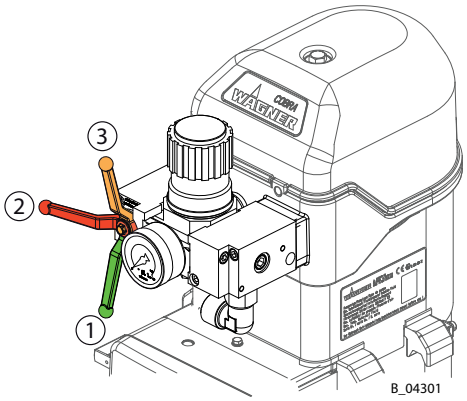
## 5.6 PRESSURE REGULATOR UNIT

| Pos | Designation |
|---|---|
| 1 | Pressure regulator |
| 2 | Ball valve |
| 3 | Pressure gauge |
| 4 | Compressed air inlet |
| 5 | AirCoat filter regulator Cobra (accessories) |

The AirCoat filter regulator must be mounted vertically in all installation positions for the diaphragm pump (see assembly manual for filter regulator, order number 2328614).




| Pos | Positions of the ball valve |
|---|---|
| 1 | **Open**: working position |
| 2 | **Closed:** the air motor can still be under pressure. |
| 3 | **Vent:** Operating pressure in the air motor is vented (control pressure is still present). |



# 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 0 °C and 40 °C (32 °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.

→ Position the trolley with the double diaphragm pump horizontally.

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

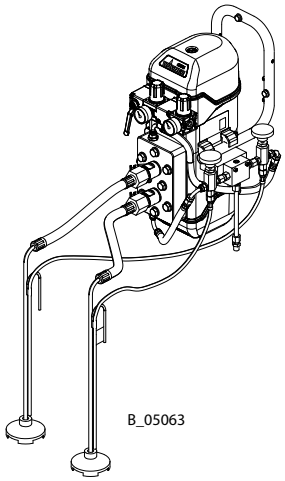
→ Secure the trolley.

**National regulations**

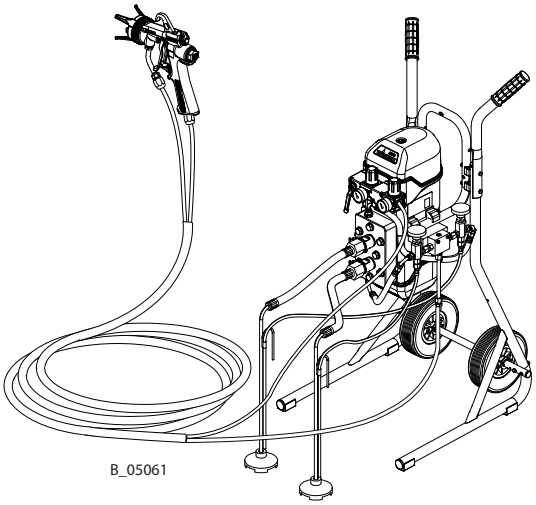
→ Ensure that the national explosion prevention rules and regulations are observed when setting up the device.

**Positioning**

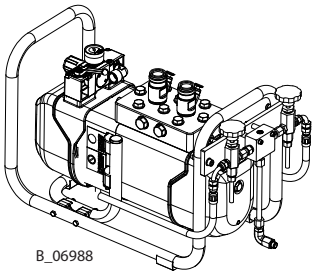
The Cobra 40-10 / 2K diaphragm pump may only be operated in the positions shown in the diagrams. Upside down operation is not permitted.




Vertical position on wall mount




Vertical position on trolley




Horizontal position on frame

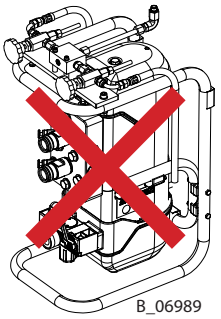
### ⓘ NOTICE

**Upside down operation or storage (air motor with pressure regulator below):**

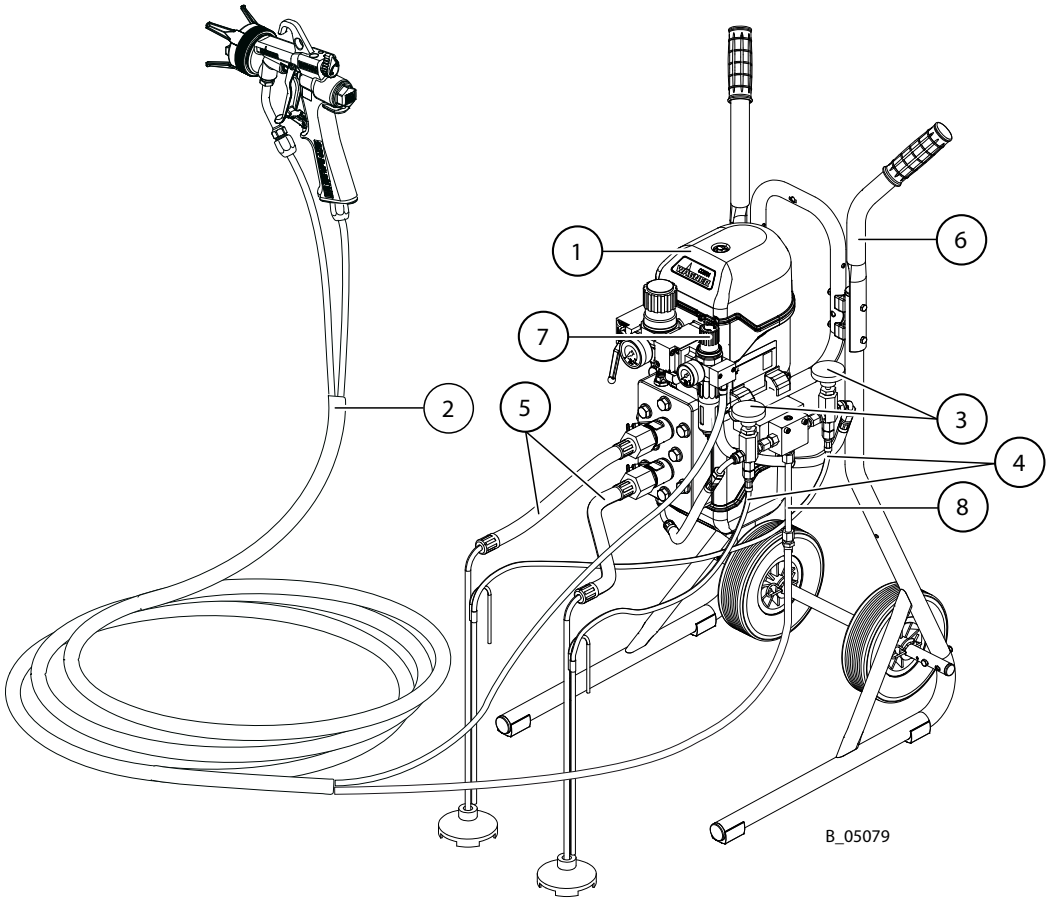
Air could get into the hydraulic circuit, causing a malfunction.

→ Avoid upside down operation or upside down storage at all costs.

→ Venting, see chapter 8.2.8 Oil change



This pump can be used as part of a spraying system for Airless or AirCoat applications. The components can be found in the accessories list, provided that the system was not obtained as a spray pack.
The nozzles must be selected according to the spray gun instructions.




**Procedure**

1. Mount pump (1) on trolley (6) or wall mount.
2. For AirCoat systems (picture above): mount the additional filter pressure regulator (7 - option).
3. Mount suction systems (5).
4. Connect the suction system's return hoses (4) to the return valves (3).
5. Connect the spray gun's high-pressure hose (2) to the static mixer (8) and, when using the AirCoat process, connect air hose to filter pressure regulator (7).

### 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 stand 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**

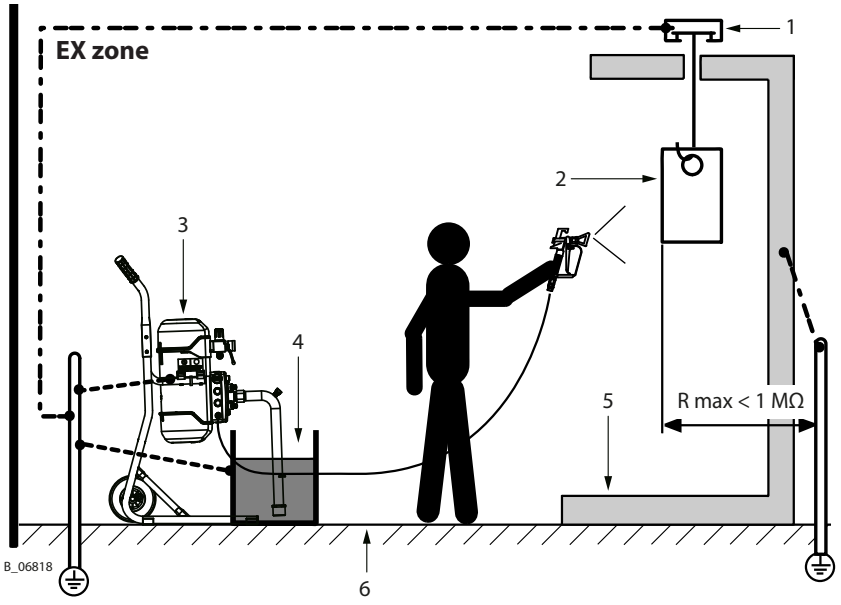
**Discharge of electrostatically charged components in atmospheres containing solvents!**
Explosion hazard from electrostatic sparks.
→ Clean the pump only with a damp cloth.

**⚠ 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.

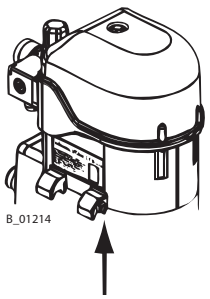
**Grounding scheme (example)**

| Pos | Designation |
|---|---|
| 1 | Conveyor |
| 2 | Work piece |
| 3 | Pump |
| 4 | Paint tank |
| 5 | Spraying stand |
| 6 | Floor, static dissipative |




| Part / workstation | Cable cross section |
|---|---|
| Pump | 4 mm²; AWG 12 |
| Paint tank | 6 mm²; AWG 10 |
| Conveyor | 16 mm²; AWG 6 |
| Booth | 16 mm²; AWG 6 |
| Spraying stand | 16 mm²; AWG 6 |

Safe operation of the Cobra 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.

**Ex zone**

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

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

## 6.7 COMMISSIONING

**⚠ WARNING**

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

Danger to life from flying parts.

→ Ensure that the pump and suction system are always completely filled with flushing agent or working medium.

→ Do not spray the device empty after cleaning.

**⚠ NOTICE**

**Impurities in the spraying system!**

Spray gun blockage.

→ 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.

**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

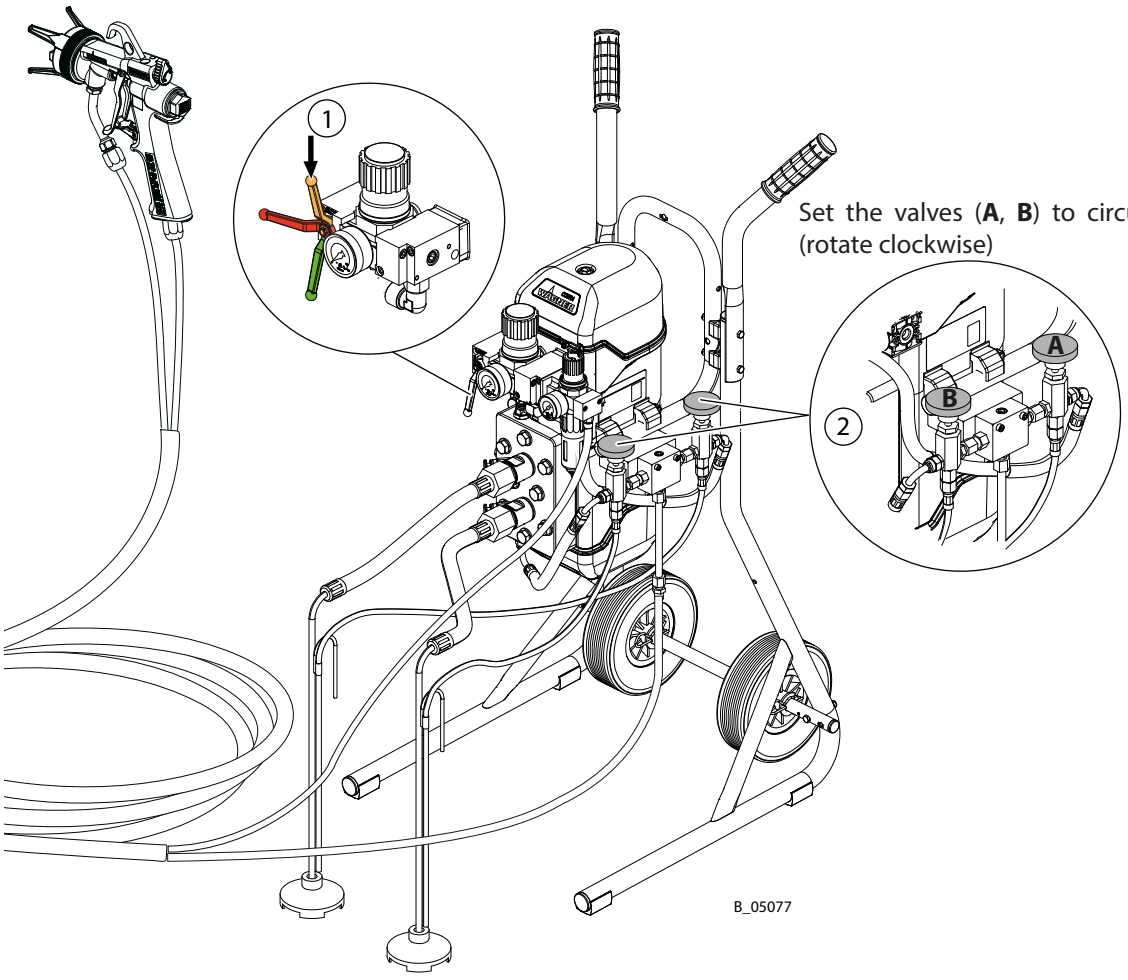
## 7.1 TRAINING THE OPERATING PERSONNEL

→ 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:
– Set ball valve (1) to vent.
– Open return valves (2).



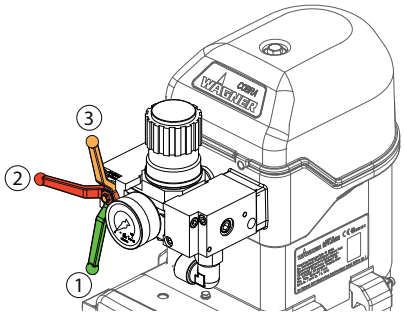

Set the valves (**A**, **B**) to circulation (rotate clockwise)

### 7.3 TASKS

Ensure that:

→ commissioning is carried out in accordance with Chapter 6.7.

| Pos | Ball valve position |
|---|---|
| 1 | Open: working position. |
| 2 | Closed: the air motor can still be under pressure. |
| 3 | Vent: Operating pressure in the air motor is vented (control pressure is still present). |




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. Slowly open the ball valve.
4. Set the required working pressure on the pressure regulator.
5. Optimize the spray pattern as laid down in the spray gun instructions.
6. Start work process.

**Note:** Depending on the function, the pump may continue running for 1 - 6 DH/min. after the spray gun is closed.

### 7.4 PRESSURE RELIEF/WORK INTERRUPTION

The pressure must always be relieved when:

– after the spraying tasks are finished,
– before servicing the system,
– before carrying out cleaning tasks on the system,
– before moving the system to another location,
– before something needs to be checked on the system,
– before the nozzle is removed from the spray gun.

**Process for relieving pressure**

1. Close the spray gun.
2. Close ball valve.
3. Vent air motor.
4. Release the system of pressure by opening the spray gun.
5. Close and secure the spray gun.

**Note:**
Control air pressure is still present.
If the system will process 2K products:

**NOTICE**

**Hardened working material 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.

**⚠ 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.

**Procedure**

1. Visual check: personal safety equipment, grounding and all devices ready to use.
2. Place empty, grounded tank (5a and 5b) under the return tubes (4a and 4b).
3. Place suction hoses (7a and 7b) in tanks with cleaning agent (6a and 6b).
4. Adjust the pressure regulator (1) to approx. 0.05 MPa; 0.5 bar; 7.25 psi.

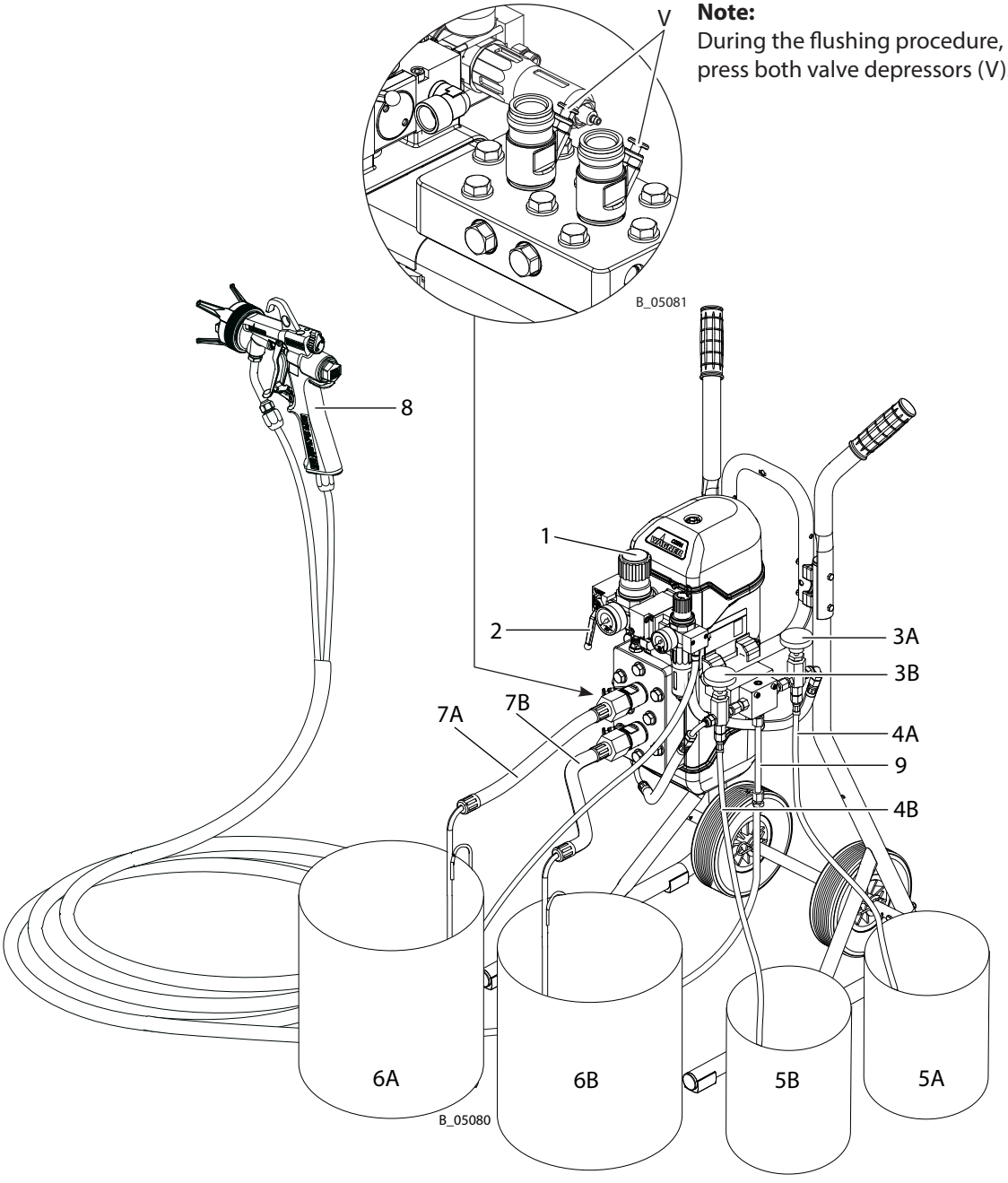
**Flushing via return tube**

5. Open return valves (3a and 3b).
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 the cleaning agent that flows into the tanks (5a and 5b) is clean.
9. Close ball valve (2).

**Flushing via spray gun**

10. Switch over return valves (3a and 3b).
11. Point the spray gun (8), without nozzle, into the tanks (5a or 5b) and pull the trigger.
12. Slowly open the ball valve (2).
13. Flush until clean cleaning agent flows from the spray gun.
14. Close ball valve (2).
15. When there is no pressure remaining in the system, close the spray gun.
16. Secure the spray gun.

17. Dispose of the contents of the tanks (5 and 5b) according to the local regulations.




**Note:**
During the flushing procedure, briefly press both valve depressors (V).

### 7.5.1 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. 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. Fill separating agent cup with separating agent.

**Procedure**

1. Carry out points 1 to 8 in Chapter 8.1.2 "Decommissioning and Cleaning".
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**

The following state is to be ensured 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 6.5.
→ Check hoses, tubes and couplings: see 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**

→ The oil change is to be performed as necessary, at least however, every 12 months in accordance with Chapter 8.2.8.
→ 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 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.
- → The complete hose is to be replaced as soon as 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)<br>e.g., 270 bar (27 MPa) | Pressure |
| XX | Internal code |
| DNxx (e.g., DN10) | Nominal diameter |

#### 8.2.3.2 CONDENSATE DRAIN FROM THE AIRCOAT FILTER REGULATOR

- → Frequently drain the condensate that may accumulate in the air filter.
  – Make sure the water level in the filter cup never reaches the max. level marked on the cup itself.

### 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 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.

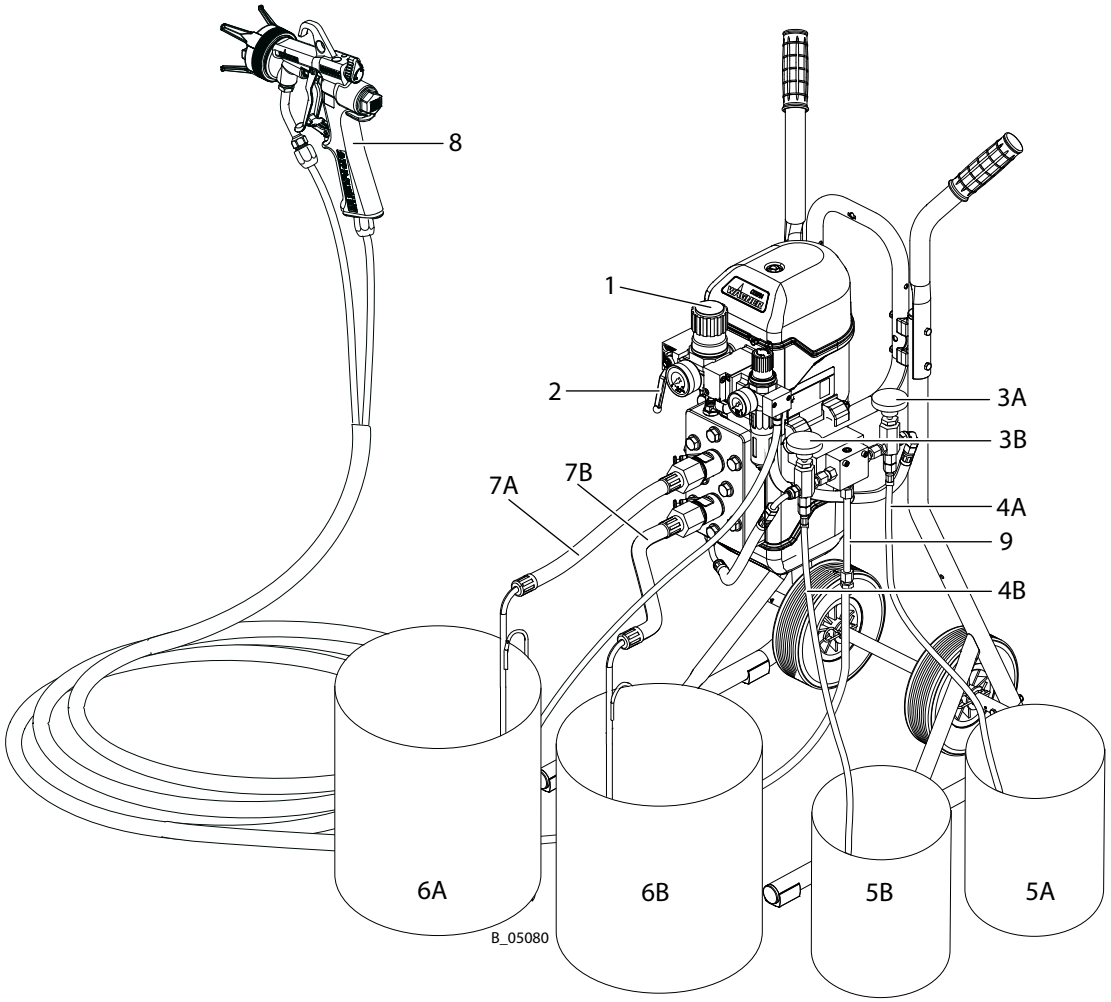
1. Visual check: personal safety equipment, grounding and all devices ready to use.
2. Place empty, grounded tank (5a and 5b) under the return tubes (4a and 4b).
3. Place suction hoses (7a and 7b) in tanks with cleaning agent (6a and 6b).
4. Close pressure regulator (1) (0 MPa; 0 bar; 0 psi).

**Emptying via return line**

5. Open return valves (3a and 3b).
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 normally (approx. 0.05 MPa; 0.5 bar; 7.25 psi).
8. 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).
9. Close ball valve (2) as soon as no more working product comes out of the return hoses (4a and 4b).
10. Close return valves (3a and 3b).

**Emptying up to the spray gun**

11. Point the spray gun without nozzle in an empty, grounded residual product container and pull the trigger.
12. Slowly open the ball valve (2). Be ready for the switch from working material to air.
13. As soon as working material is no longer flowing from the return tube, close the ball valve (2).
14. Close and secure the spray gun.
15. Depressurization in accordance with Chapter 7.4.
16. Dispose of the contents of the tanks (5 and 5b) and the residual product container according to the local regulations.


8
1
2
3A
3B
7A
7B
4A
9
4B
6A
6B
5B
5A
B_05080

### 8.2.5 FILLING THE EMPTY PUMP

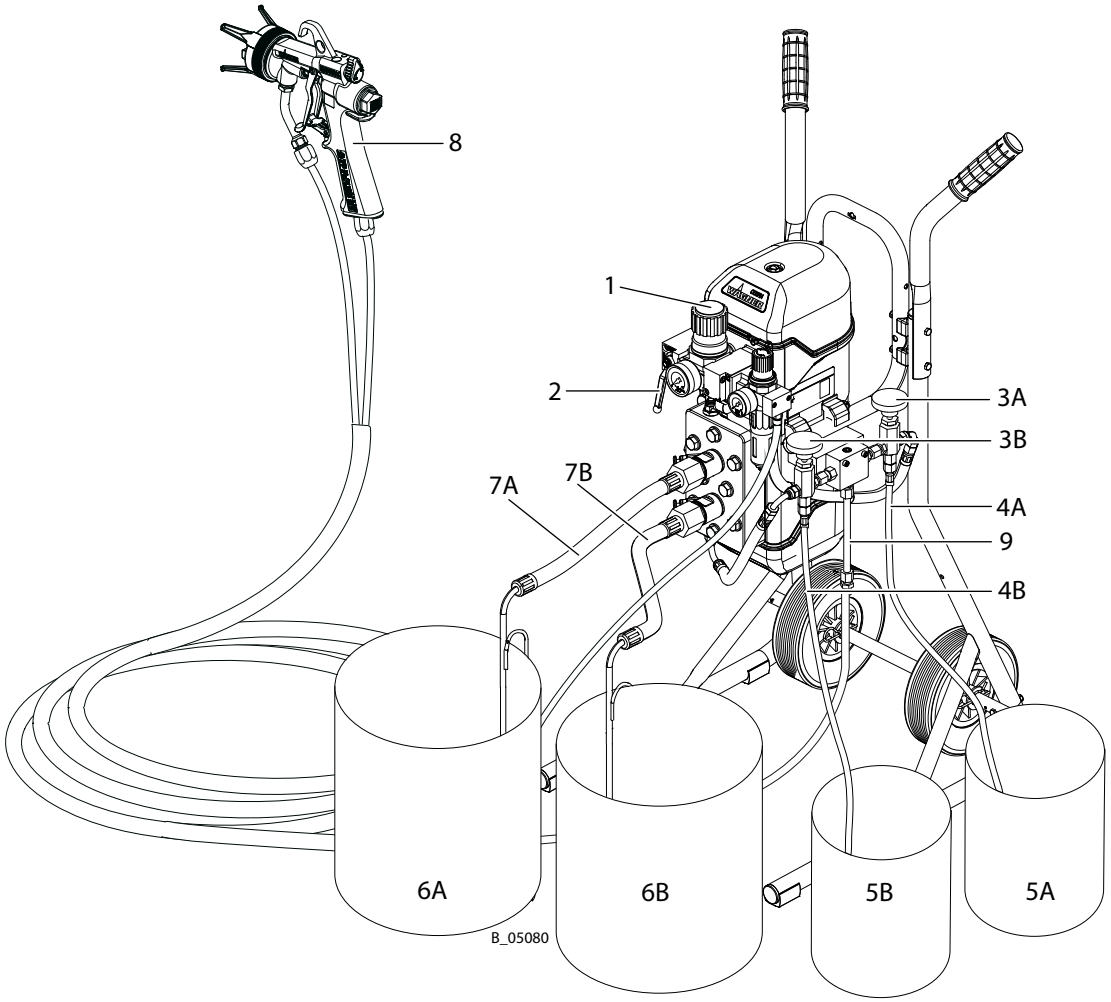
**⚠ WARNING**

**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.

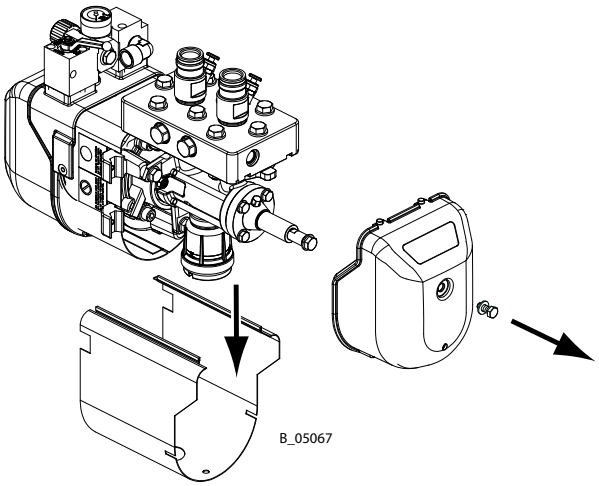
**Procedure**

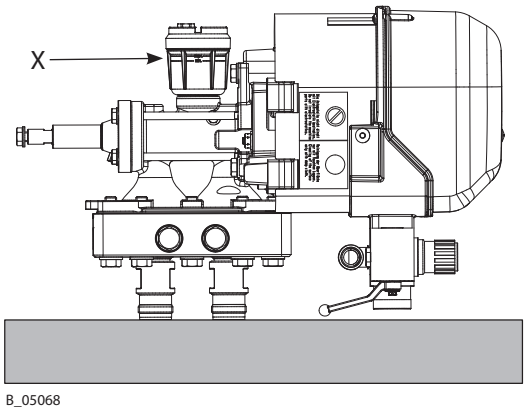
1. Visual check: personal safety equipment, grounding and all devices ready to use.
2. Place empty, grounded tank (5a and 5b) under the return tubes (4a and 4b).
3. Place suction hoses (7a and 7b) in the tanks with working material (6a) and hardener (6b).
4. Close pressure regulator (1) (0 MPa; 0 bar; 0 psi).
5. Open relief valves (3a and 3b).
6. Slowly open the ball valve (2).
7. Slowly turn the air pressure up on the pressure regulator (1) and only until the pump is running normally (approx. 0–0.05 MPa; 0–0.5 bar; 0–7.25 psi). Be ready to switch from air to working material and prevent back spray.
8. Close ball valve (2) as soon as pure working material starts coming from the return hoses (4a and 4b)
9. Open relief valves (3a and 3b) (turn counterclockwise).
10. Point the spray gun (8) without nozzle, into empty tank (5a) 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 tanks (5a and 5b) according to the local regulations.




8.2.6 HYDRAULIC STAGE **MAINTENANCE**

Dismount the pump and place it upside down on a suitable underlay and position it horizontally. Observe the fill level marking X on the oil tank.

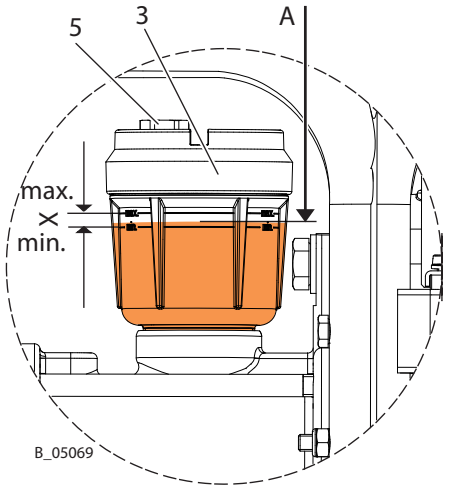


### 8.2.7 CHECKING THE OIL LEVEL

1. Start up the pump for a short time without any product.
2. Then read oil level A.

Dismount the pump and place it upside down on a suitable underlay and position it horizontally.
Observe the fill level marking X on the oil tank.
Oil level A in the oil tank (3) has to be within the specified markings (X).
If the level deviates from these markings, the hydraulic oil must be topped up or removed by extraction.




**Procedure**

1. Unscrew and remove threaded plug (5).
2. Top up oil to level A (middle of marking X).
3. Start up the pump for a short time without any product and check for air bubbles.
4. Screw in threaded plug (5) and tighten with 2 Nm; 1.5 lbft.

**NOTICE**

**Using hydraulic oil**

Using the wrong hydraulic oil can cause a malfunction.

→ Use only original hydraulic oil - Wagner order no. 322912 (250 ml or 15 cu inch).

### 8.2.8 OIL CHANGE

Perform oil change after 500 service hours or once a year.

**Necessary accessories:**
Order no. 322911 - Oil filling set

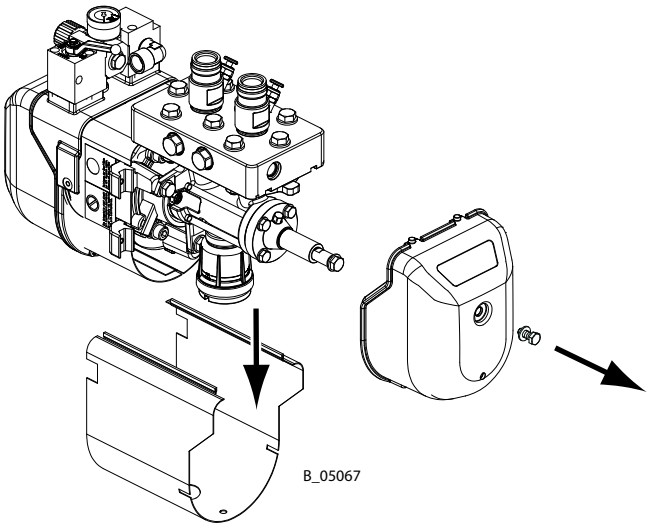
**NOTICE**

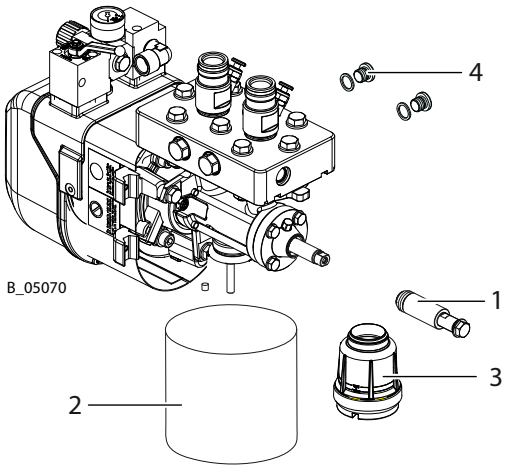
**Using hydraulic oil**

Using the wrong hydraulic oil can cause a malfunction.

→ Use only original hydraulic oil - Wagner order no. 322912 (250 ml or 15 cu inch).

### 8.2.8.1 DRAINING OIL




**Procedure**

1. Decommission and clean → Chapter 8.1.2 points 1 to 7.
2. Dismount the pump and place it upside down on a suitable underlay and position it horizontally.
3. Unscrew piston cover (1).
4. Place oil collector (2) under the oil tank.
5. Unscrew oil tank (3) and drain contents.
6. Unscrew and remove locking screws (4) and seals.
7. Slowly start up the pump until no more oil flows out of the oil suction tube.
8. Screw in clean oil tank (3) together with seal.

### 8.2.8.2 FILLING HYDRAULIC STAGE WITH OIL

**⚠ CAUTION**

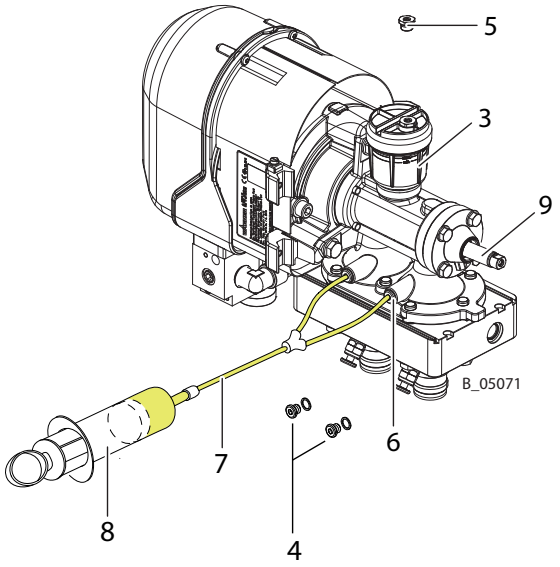
**Environmental pollution caused by waste oil!**

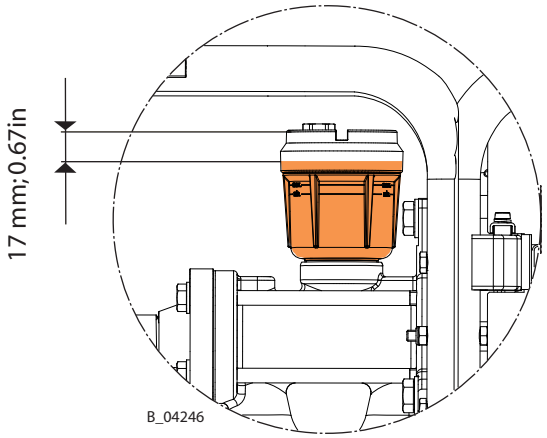
Waste oil in the sewage network or spilled on the ground causes severe environmental damage.

Groundwater pollution is liable to prosecution.

→ Collect waste oil and bring it to a collection point.

→ Waste oil is taken back by the seller at the time of purchasing hydraulic oil.

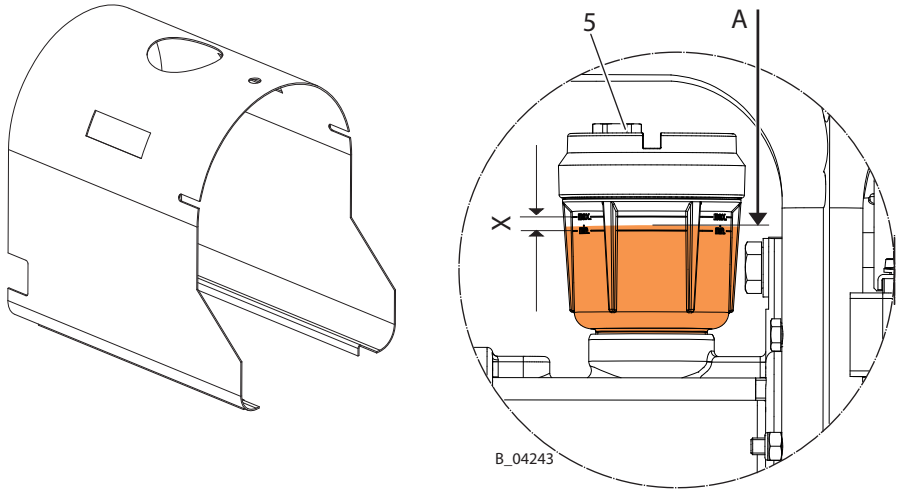


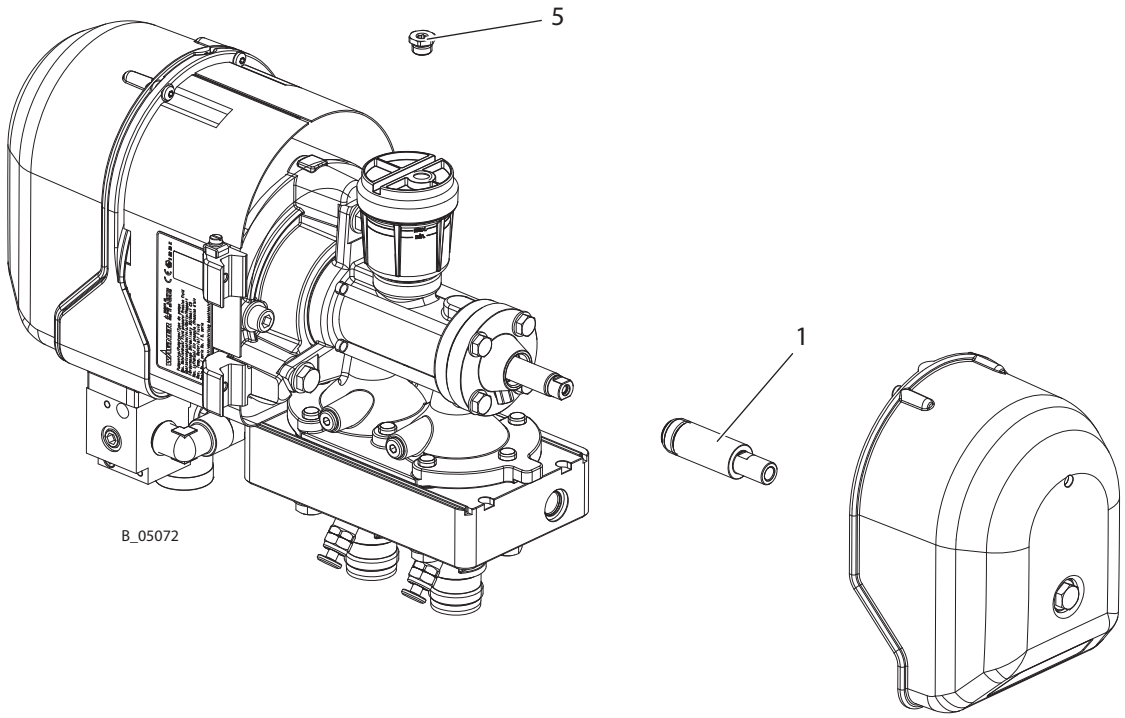




**Procedure**

1. Dismount the pump and place it upside down on a suitable underlay and position it horizontally.
2. Unscrew and remove threaded plug (5).
3. Unscrew 2 locking screws (4) and replace with 2 threaded fittings (6) from the oil filling set.
4. Connect hoses with Y-pieces (7).
5. Fill syringe (8) with hydraulic oil and insert into hose.
6. Move piston (9) into the first end position. Use the syringe to fill the hydraulic stage until the oil flows out of the suction tube into the oil tank (3) with no air bubbles.
7. Move piston (9) into the second end position. Use the syringe to fill the hydraulic stage until the oil flows out of the suction tube into the oil tank (3) with no air bubbles.
8. Continue to top up the oil until the level before venting is approx. 17 mm; 0.67 inches below the upper edge of the oil tank.
9. Screw in threaded plug (5) and tighten gently. Put pump on its side and dismount oil filling set. Seal the filler openings tightly with 2 locking screws (4).

### 8.2.8.3 VENT




**Procedure**

1. The dismounted pump is to be place upside down on a suitable underlay and positioned horizontally. Remove the threaded plug (5).
2. Slowly start up the pump (vent), until no more air bubbles rise from the oil suction tube.
3. Oil level A in the oil tank has to be within the specified markings X.
4. Screw in threaded plug (5) and tighten with 2 Nm; 1.5 lbft.
5. Mount piston cover (1) and hood with casing.
6. Return pump to correct setup position.
7. Pump is ready for use again.

# 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 or high-pressure filter is clogged. | Clean the parts and use suitable product. |
| | The fluid section or high-pressure hose is blocked (e.g., the 2K product has hardened). | Dismount and clean fluid section, replace high-pressure hose. |
| | Grease in spool and sleeve assembly. | Degrease spool and sleeve assembly. |
| | Occasionally, the pump stops at the reversal point. | Check detent body. |
| Poor spray pattern. | See spray gun instructions. | |
| Irregular pump operation: spray jet collapses (pulsation). | Viscosity is too high. | Thin product. |
| | Spraying pressure is too low. | Increase incoming air pressure. |
| | | Use a smaller nozzle. |
| | Valves are clogged. | Press valve depressor. |
| | | 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, see Chapter 5.5.2. |
| | Valves, packings, or pistons are worn out. | Replace the parts. |
| | Control air filter or work air filter is clogged. | Check and clean it if necessary. |
| Highly irregular operation of the pump. | Diaphragms "blocked" because suction is too fast. | Operate pump with ball valve opened a minimal amount for a while. |
| The pump runs evenly, does not however, suck up product. | The suction system's union nut is loose; the pump is taking in air. | Tighten. |
| | Suction filter is clogged. | Clean filter. |
| | Valves are clogged. | Press valve depressor. |
| | | Clean pump. If necessary, leave it to soak in cleaning agent. |
| Pump runs fast when the spray gun is closed. | Valves worn. | Replace the parts. |
| Loss of power due to severe icing. | 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 WORK

## 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 in accordance with Chapter 6.7 and check for leaks in accordance with Chapter 11.
- Function test in accordance with Chapter 11.

## 10.3 TOOLS

The following tools are required for carrying out the repair work described below on the Cobra pump:

- Open-end wrenches, size 3; 5; 7; 8; 10; 12; 13; 14; 15; 16; 17; 18; 19; 22; 24; 27; 36; 50.
- Allen wrench, size 10.
- Screwdriver, size 3.
- Torque wrench 40 Nm; 29.5 lbft.

### 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 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 ≙ 150 g | 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 |
| 322912 | 1 pc ≙ 250 ml | Hydraulic oil - Wagner | |

**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. **Piston travel**<br>– It must be possible to move the piston rod on both sides up to stop with a pre-assembled pressure stage. Balancing bore must be completely open in the respective end position (Visual inspection, see Chapter 14.4). | Manual inspection |
| 2. Oil filling<br>– Mount pressure and fluid section on frame. Push piston into air motor-side end position. Fill pre-assembled pump with oil via filling port until oil is visible in the oil tank. Push piston into the opposite end position. Fill pump further with oil until just below end of oil tank inspection window (see Chapter 8.2.8). | Oil filling unit |
| 3. EX-relevant inspections<br>– Check mass connection between grounding connection of the pump and the frame/trolley and between the individual components of the frame/ trolley: <100kΩ<br>– Check conductivity between the piston and the grounding connection: <100kΩ<br>**These inspections are**  **– relevant!!** | Ohmmeter |
| 4. Testing for leaks<br>– Connect the air motor to the air supply 6 bar.<br>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. Allow to stand in this position for 0.5-1 minute and listen for audible blowing off. When the air supply is turned off, a drop in pressure must be watched for.<br>Check seal of following modules:<br>– flange seal<br>– ball valve (in all positions)<br>– pressure stage<br>– fluid section | Air motor:<br>Test medium compressed air<br>Leak spray<br><br>Fluid section:<br>Test medium: suitable flushing agent |
| 5. **General inspections**<br>– Check tightening torque of various screws.<br>Tighten hexagon screws M12x65 and input valve housing with the prescribed torque (see Chapter 14).<br>– Check all fittings.<br>– Empty the device completely and relieve pressure.<br>– Check function of frame or transport trolley. Check whether the pump is mounted<br>horizontally on the frame. | Torque wrench<br>Visual check |

## 12 DISPOSAL

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

The following materials have been used:

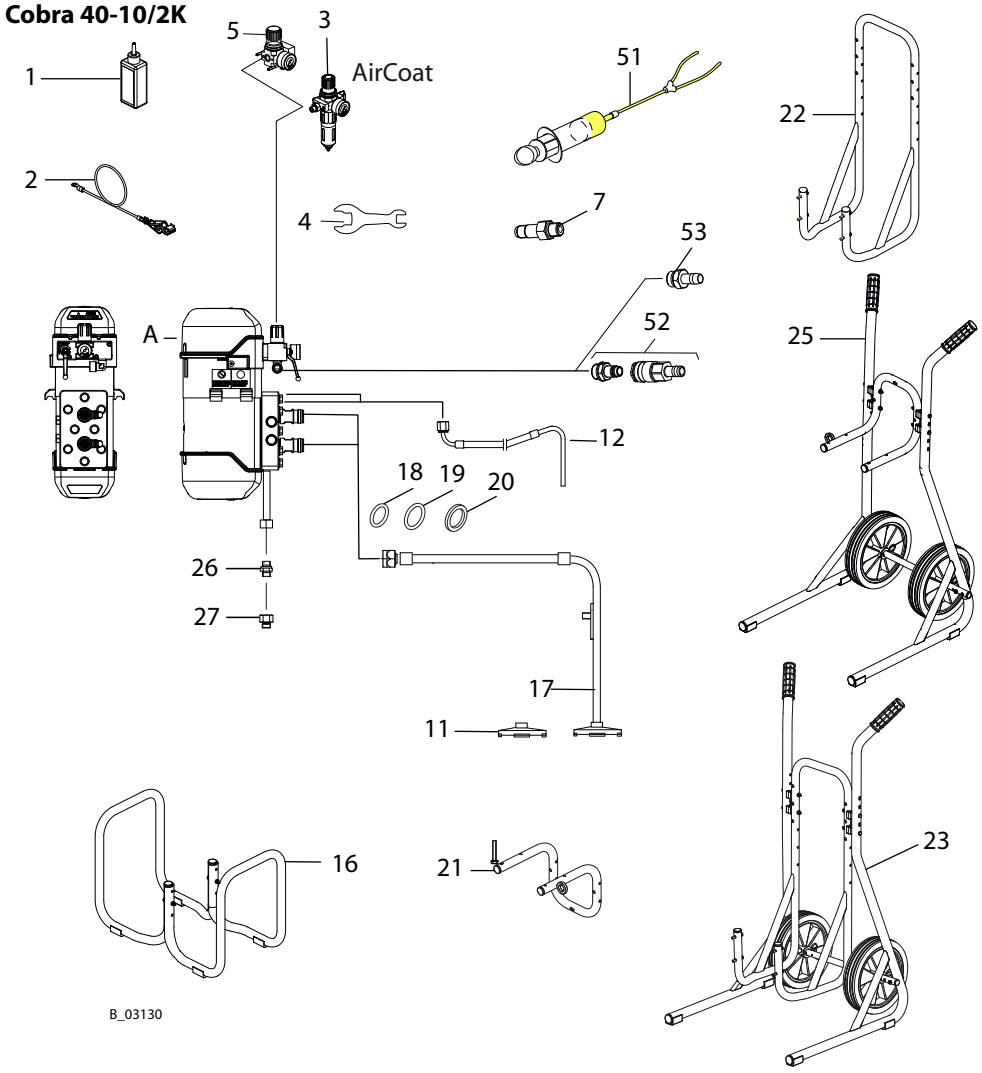
- → Stainless steel
- → Aluminum
- → Elastomers
- → Plastics
- → Carbide

**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

**Cobra 40-10/2K**



| Pos | K | Order no. | Designation |
|---|---|---|---|
| A | | 2341579 | Diaphragm pump Cobra 40-10/2K |
| 1 | ◆ | 322912 | Hydraulic oil (for pressure stage) 250 ml; 250 cc |
| 2 | ◆ | 236219 | Grounding cable 3 m; 9.8 ft |
| 3 | | 2382997 | AirCoat filter pressure regulator |
| 4 | | 341434 | Double open-end wrench |
| 5 | | 2328611 | AirCoat regulator set |
| 11 | | R033.00 | Suction hose cup GR, complete |
| 12 | | 367141 | Return hose DN 13; ID 0.51 inch, M20x2 |
| 16 | | 322052 | Frame, complete |
| 17 | | T423.00FA | Flexible suction hose, lacquer F36x2 |
| 18 | ◆ | 367527 | O-ring, PTFE |
| 19 | ◆ | 9974127 | O-ring FEP |
| 20 | ◆ | 367959 | Washer PTFE |
| 21 | | 2332143 | Wall mount |
| 22 | | 2349756 | Wall mounting, long |
| 23 | | 2341375 | Cobra trolley, complete |
| 25 | | 2325901 | Trolley, complete |
| 26 | | 369657 | Connector A=G3/4" -A=NPSM3/8" |
| 27 | | 367563 | Fitting RF FM 3/8" NPS M16x1.5 PN530-SSt |
| 28 | | 97073 | Suction hose complete, lacquer Niro, DN 13; ID 0.98 inch |
| 51 | ◆ | 322911 | Oil filling set with 100 ml; 100 cc syringe |
| 52 | ◆ | 322916 | Air coupling set DN 10 mm; 0.39 inch |
| 53 | ◆ | 9985619 | Hose fitting with sealing ring |

◆ = Wearing parts

# 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:

- 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/ 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.

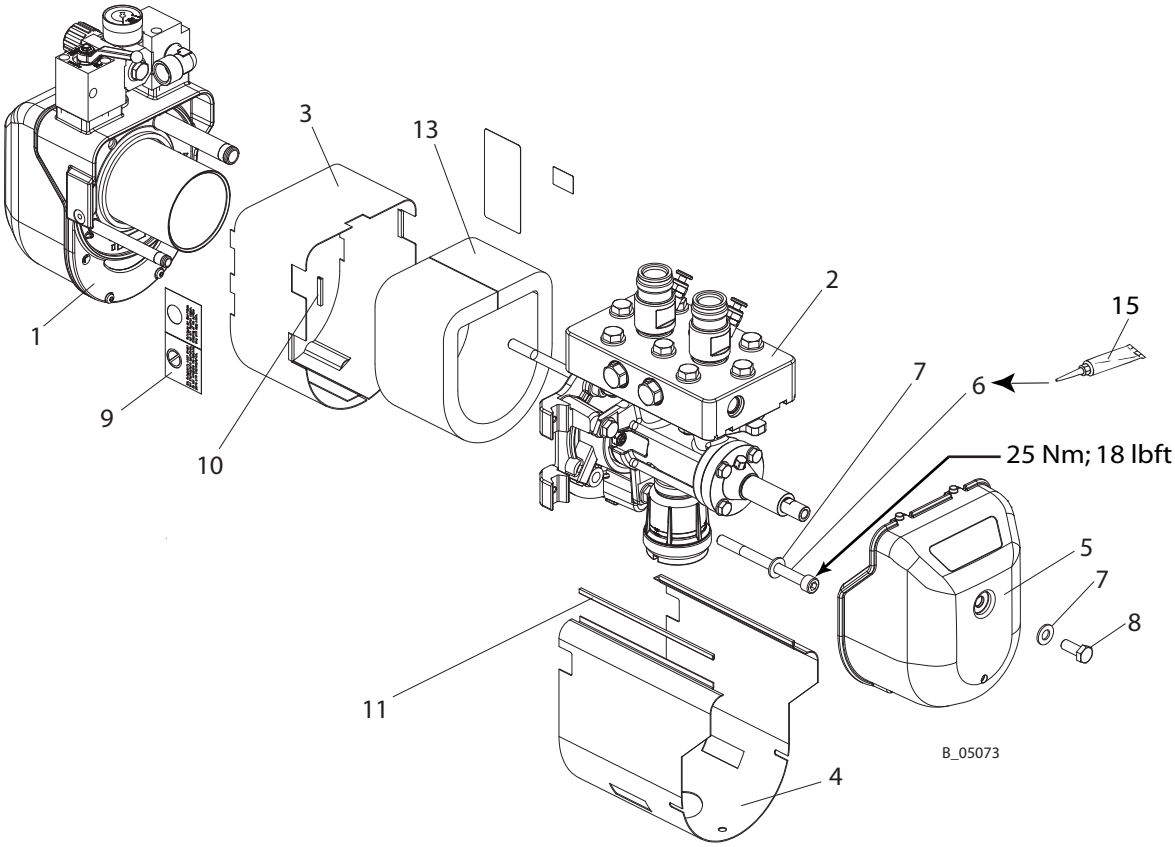
### ⚠ DANGER

**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.

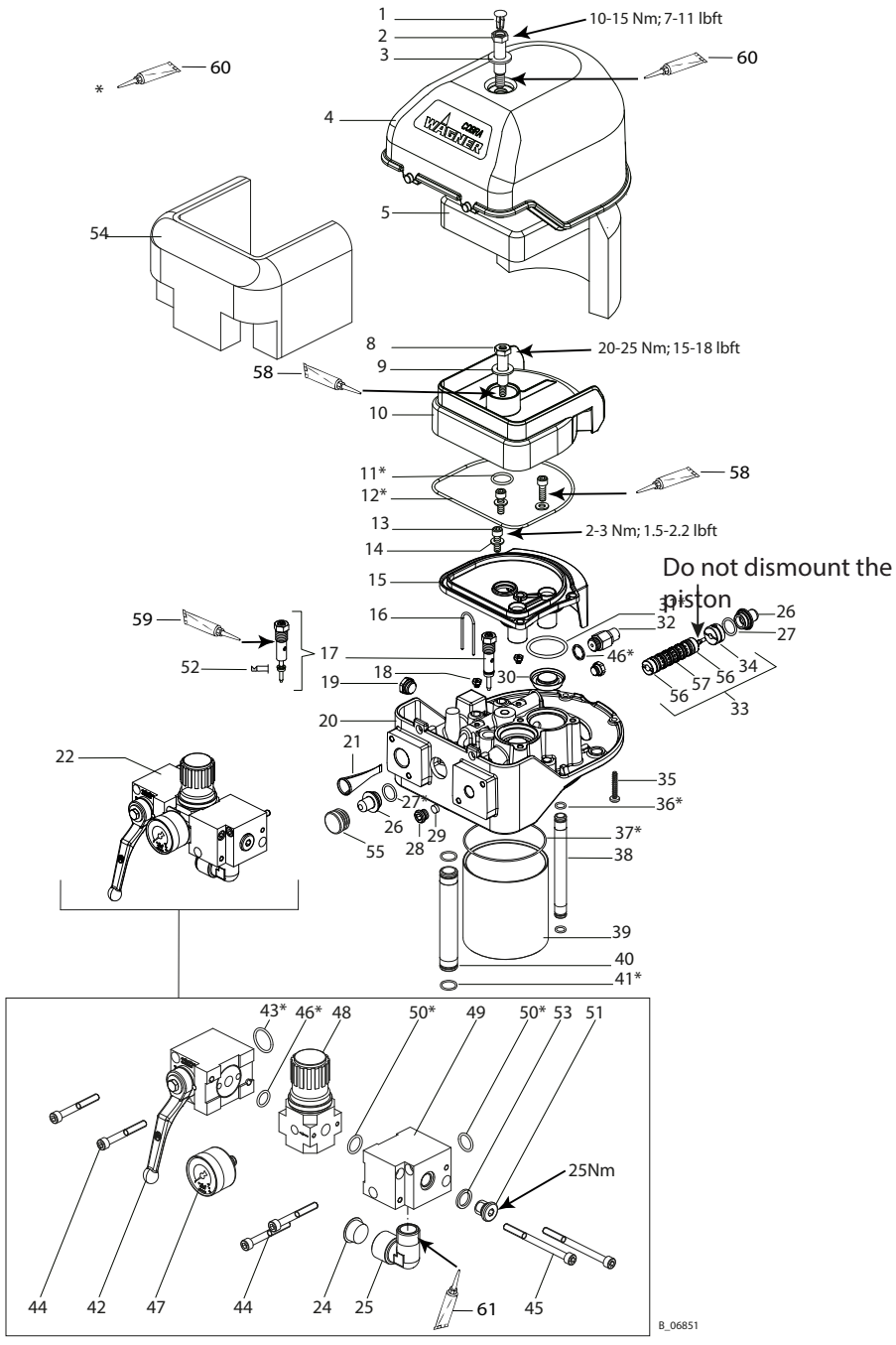
## 14.2 **OVERVIEW** OF THE COMPONENTS




| Pos | K | Stk | Part no. | Designation |
|---|---|---|---|---|
| 1 | | 1 | -- | Air motor 3/53 |
| 2 | | 1 | -- | Cobra 40-10 fluid section, preassembled |
| 3 | | 1 | 322436 | Air motor casing |
| 4 | | 1 | 322437 | Pressure stage casing |
| 5 | | 1 | 322235 | Hood 4 with air outlet |
| 6 | | 3 | 9907224 | Hexagon socket cylinder head screw |
| 7 | | 4 | 9920106 | Washer |
| 8 | | 1 | 9900107 | Hexagon screw |
| 9 | | 1 | 2332077 | Warning label |
| 10 | | 4 | 9999211 | Edge protection profile 30 mm; 1.18 inch |
| 11 | | 2 | 9999211 | Edge protection profile 164 mm; 6.46 inch |
| 13 | | 1 | 322438 | Cylinder noise insulation |
| 14 | ◆ | 1 | 9974112 | Sealing ring |
| 15 | | 1 | 9992616 | Molykote® DX grease |

◆ = Wearing part

### 14.3 AIR MOTOR

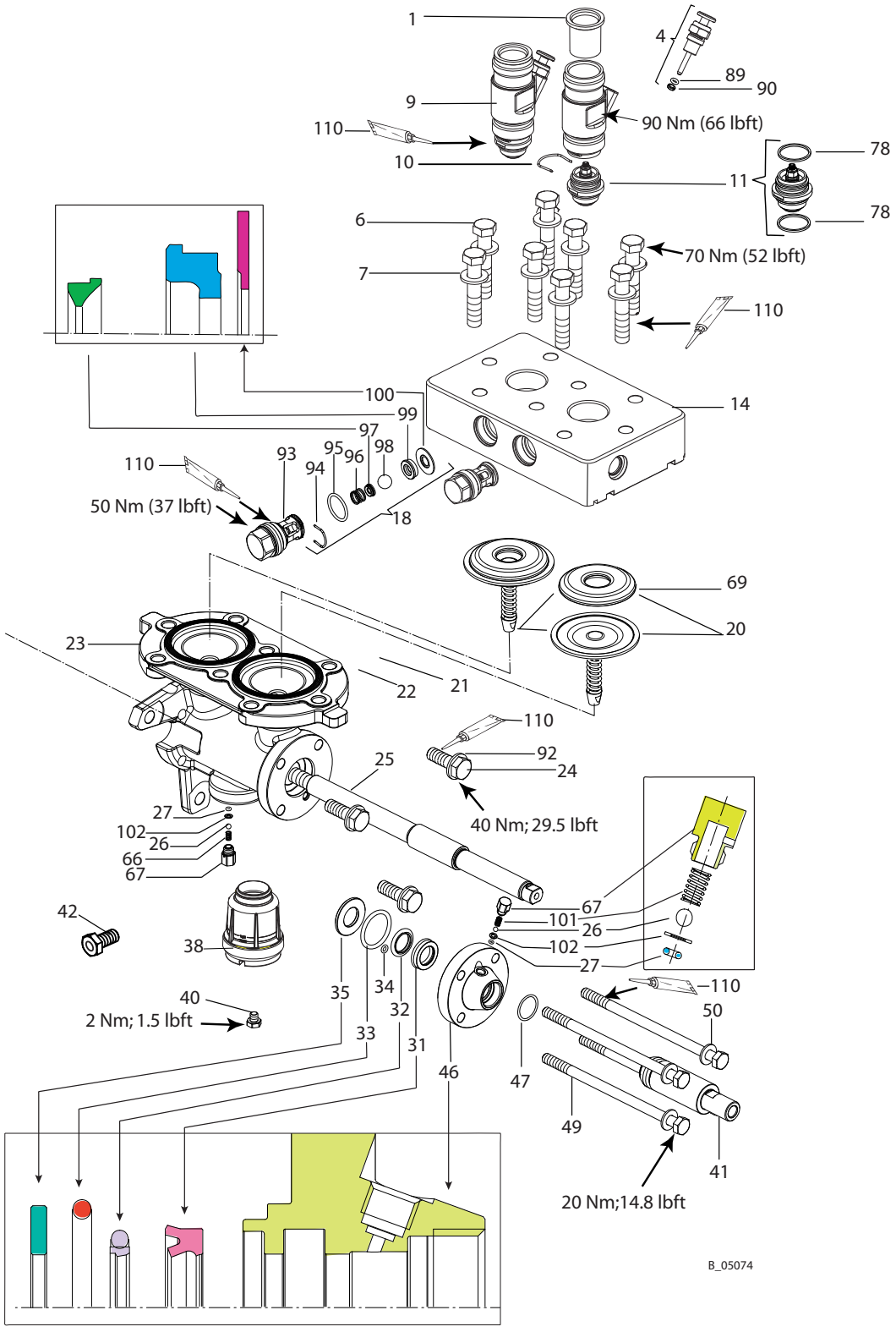



| Pos | K | Stk | Order no. | Designation |
|---|---|---|---|---|
| 1 | | 1 | 9998718 | Drive fastener |
| 2 | | 1 | 367318 | Shoulder screw 4 |
| 3 | | 1 | 9925033 | Washer |
| 4 | | 1 | 367311 | Hood 4 |
| 5 | ◆ | 1 | 367319 | Sound absorbing mat 4 |
| 8 | | 1 | 367318 | Shoulder screw 4 |
| 9 | | 1 | 9925033 | Washer |

| Pos | K | Stk | Order no. | Designation |
|---|---|---|---|---|
| 10 | | 1 | 367310 | Silencer 4 |
| 11 | ◆ ★ | 1 | 9974098 | O-ring |
| 12 | ◆ ★ | 1 | 9974097 | O-ring |
| 13 | | 3 | 9900325 | Socket cap screw |
| 14 | | 3 | 9920103 | Washer, A6.4 |
| 15 | | 1 | 367309 | Connecting part 4 |
| 16 | | 2 | 367320 | Cotter pin |
| 17 | ◆ | 1 | 369290 | Pilot valve |
| 18 | | 2 | 9998674 | Threaded plug |
| 19 | | 1 | 9998274 | Threaded plug |
| 20 | | 1 | 2359165 | Control housing 4 |
| 21 | ◆ ★ | 1 | 367313 | Compressed air filter 4/6 |
| 22 | | 1 | 2328606 | Pressure regulator unit 4 |
| 24 | | 1 | 9990506 | Cone plug, GPN 600 |
| 25 | | 1 | 9999228 | Fitting L |
| 26 | | 2 | 367307 | Sealing plug 4/6 |
| 27 | ◆ ★ | 2 | 9974085 | O-ring |
| 28 | | 1 | 367324 | Filter holder |
| 29 | ◆ ★ | 1 | 367314 | Control air filter |
| 30 | ◆ ★ | 1 | 322910 | Cobra outlet seal set (consisting of 2 seals) |
| 31 | ◆ ★ | 2 | 9974095 | O-ring |
| 32 | | 1 | 368285 | Safety valve 0.63 MPa; 6.3 bar; 91 psi |
| 33 | ◆ | 1 | 9943080 | Spool and sleeve assembly, complete |
| 34 | ◆ | 1 | 368038 | Detent body, complete, ISO 1/2 |
| 35 | | 2 | 9907126 | Screw SFS Plastite 45 |
| 36 | ◆ ★ | 2 | 9974089 | O-ring |
| 37 | ◆ ★ | 2 | 9974115 | O-ring |
| 38 | | 1 | 322432 | Control air pipe |
| 39 | | 1 | 322430 | Cylinder pipe |
| 40 | | 1 | 322431 | Compressed air pipe |
| 41 | ◆ ★ | 2 | 9971448 | O-ring |
| 42 | ◆ | 1 | 2360756 | Edge ball valve 4, cpl. |
| 43 | ◆ ★ | 1 | 9971137 | O-ring |
| 44 | | 4 | 9900316 | Hexagon socket head cap screw M6x50 |
| 45 | | 2 | 9907039 | Hexagon socket head cap screw M6x80 |
| 46 | ◆ ★ | 1 | 9971313 | O-ring |
| 47 | ◆ | 1 | 9998677 | Pressure gauge 0-10 bar RF40 |
| 48 | ◆ | 1 | 2309972 | Pressure regulator |
| 49 | | 1 | 2309744 | Distributor LR-D-I Mini 4 |
| 50 | ◆ ★ | 2 | 9974166 | O-ring |
| 51 | | 1 | 9904307 | Locking screw with collar/hexagon socket |
| 52 | ◆ | 1 | 9974217 | Rod seal |
| 53 | | 1 | 9970154 | Sealing ring |
| 54 | ◆ | 1 | 322439 | Air motor noise insulation |
| 55 | | 1 | 9990861 | Ribbed plug |
| 56 | ◆ | 2 | 368313 | Damper ISO1 and ISO2 |
| 57 | ◆ | 6 | 9971123 | O-ring |
| 58 | | 1 | 9992590 | Loctite 222 50 ml; 50 cc |
| 59 | | 1 | 9992831 | Loctite 542 50 ml; 50 cc |
| 60 | | 1 | 9992616 | Molykote DX grease |
| 61 | | 1 | 9992528 | Loctite 270 50 ml; 50 cc |
| | | | 2341627 | Cobra 40-10 air motor service set |

◆ = Wearing part
★ = Included in service set.

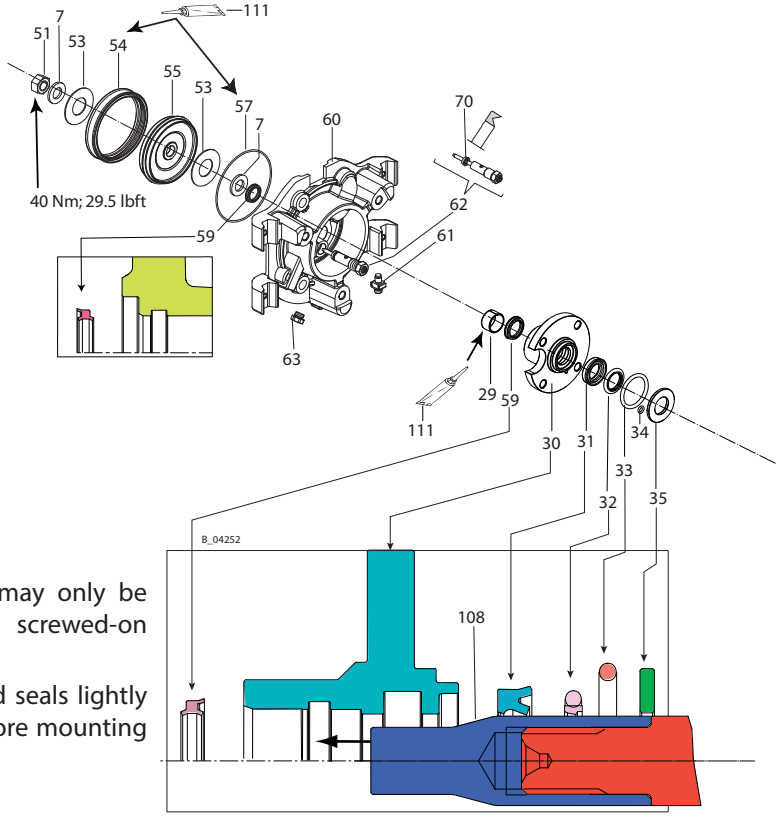
## 14.4 FLUID SECTION



| Pos | K | Stk | Order no. | Designation |
|---|---|---|---|---|
| 1 | | 2 | 340339 | Inlet |
| 4 | | 2 | 341241 | Inlet valve depressor, complete |
| 6 | | 8 | 9907234 | Hexagon screw |
| 7 | | 10 | 9920107 | Washer |
| 9 | | 2 | 341335 | Depressor housing |
| 10 | | 2 | 341336 | Clasp |
| 11 | ◆ ★ | 1 | 322914 | Inlet valve set, complete (consisting of 2 valves) |
| 14 | | 1 | 322460 | Cobra 40-10/2K fluid section |
| 18 | ◆ ★ | 1 | 322915 | Outlet valve set, complete (consisting of spare parts for 2 valves) |
| 20 | ◆ ★ | 1 | 322913 | Complete diaphragm set with insert (comprising 2 diaphragms) |
| 21 | | 2 | 9904306 | Screw plug |
| 22 | ◆ | 2 | 9970127 | Sealing ring |
| 23 | | 1 | 2338520 | Pressure stage D19/53 |
| 24 | | 3 | 9907041 | Hexagon screw |
| 25 | | 1 | 322402 | Piston rod D19/53 |
| 26 | | 2 | 9941502 | Ball |
| 27 | ◆ | 2 | 9971189 | O-ring |
| 29 | | 1 | 9962028 | Permaglide bushing |
| 30 | | 1 | 322403 | Pressure stage flange |
| 31 | ◆ | 2 | 9974182 | Rod sealing profile BS |
| 32 | ◆ | 2 | 9974183 | Rod sealing set |
| 33 | ◆ | 2 | 9974186 | O-ring |
| 34 | ◆ | 2 | 9971446 | O-ring |
| 35 | | 2 | 322405 | Pressure disk |
| 37 | ◆ | 1 | 115944 | O-ring |
| 38 | | 1 | 2333498 | Oil tank, complete |
| 40 | | 1 | 9998274 | Threaded plug M7x1 |
| 41 | | 1 | 322435 | Piston cover |
| 42 | | 2 | 2334842 | Check valve assy. |
| 46 | | 1 | 322404 | Pressure stage cover disk |
| 47 | ◆ | 1 | 9974074 | O-ring |
| 49 | | 4 | 9907233 | Hexagon screw |
| 50 | | 4 | 9920102 | Washer |
| 51 | | 1 | 2386160 | Hexagon nut (self-locking, new) |
| | | 1 | 9910101 | Hexagon nut (secure with Loctite® 243, old) |
| 53 | ◆ | 2 | 322427 | Damping washer |
| 54 | ◆ | 1 | 9974181 | Piston sealing profile Z5 |
| 55 | | 1 | 322426 | Piston air motor 3 |
| 57 | ◆ | 1 | 9974115 | O-ring |
| 59 | ◆ | 2 | 9974185 | Seal wiper ring, profile EM |
| 60 | | 1 | 2344068 | Air motor flange |
| 61 | | 1 | 367258 | Grounding, complete |
| 62 | ◆ | 1 | 369290 | Pilot valve |
| 63 | | 1 | 9998675 | Threaded plug |
| 66 | | 1 | 9998780 | Pressure spring |
| 67 | | 2 | 322407 | Oil valve screw |
| 68 | ◆ | 3 | 9971162 | O-ring |
| 69 | | 2 | 322415 | Insert |
| 70 | ◆ | 1 | 9974217 | Rod seal |
| 78 | ◆ | 4 | 341331 | Sealing ring |
| 89 | ◆ ★ | 2 | 9971486 | O-ring (solvent-resistant) |
| 90 | ◆ | 2 | 341316 | Scraper |

| Pos | K | Stk | Order no. | Designation |
|---|---|---|---|---|
| 92 | | 3 | 9920106 | Washer |
| 93 | | 2 | 341325 | Valve guide |
| 94 | | 2 | 341328 | Clasp |
| 95 | ◆ | 2 | 9971470 | O-ring |
| 96 | | 2 | 341326 | Pressure spring |
| 97 | | 2 | 253405 | Spring support ring |
| 98 | ◆ | 2 | 9941501 | Ball 11 HM |
| 99 | ◆ | 2 | 341327 | Outlet valve seat |
| 100 | ◆ | 2 | 341347 | Sealing ring |
| 101 | | 1 | 9994237 | Pressure spring |
| 102 | ◆ | 2 | 322408 | Oil valve pressure ring |
| 103 | ◆ ● | 1 | 9992590 | Loctite® 222 50 ml; 50 cc |
| 104 | ◆ ● | 1 | 9992831 | Loctite® 542 50 ml; 50 cc |
| 105 | | 1 | 2312288 | Service set for Cobra 40-10 fluid section |
| 107 | | 1 | 322917 | Service set for Cobra 40-10 piston (incl. items 25, 31, 32, 33, 59, and 108) |
| 108 | | 1 | 322930 | Piston rod assembly pin |
| 109 | ◆ ● | 1 | 9992511 | Loctite® 243 50 ml; 50 cc |
| 110 | ◆ ● | 1 | 9992616 | Molykote® DX grease |
| 111 | ◆ ● | 1 | 9998808 | Mobilux® EP2 grease |

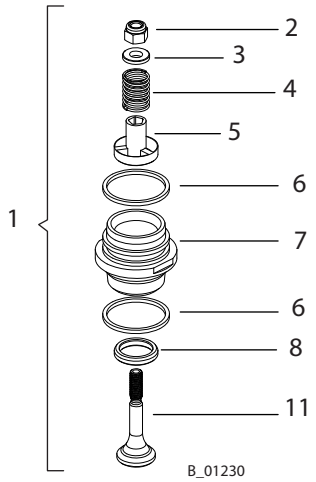
◆ = Wearing part
★ = Included in service set.
● = Not part of the standard equipment but available as a special accessory.

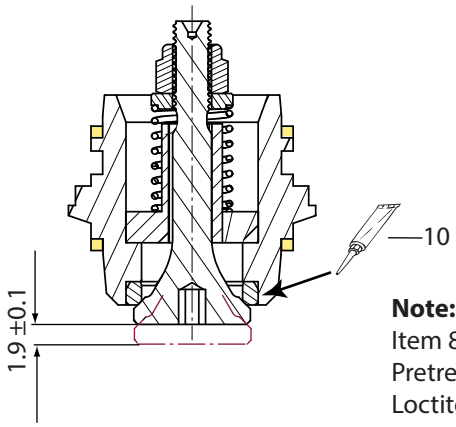



**Notes:**
The piston rod (25) may only be mounted with the screwed-on assembly pin (108).

Grease all O-rings and seals lightly with grease (111) before mounting them.

### 14.5 INLET VALVE




**Note:**
Item 8 ➞ adhesive area:
Pretreated with fast cleaner Loctite type 7063.

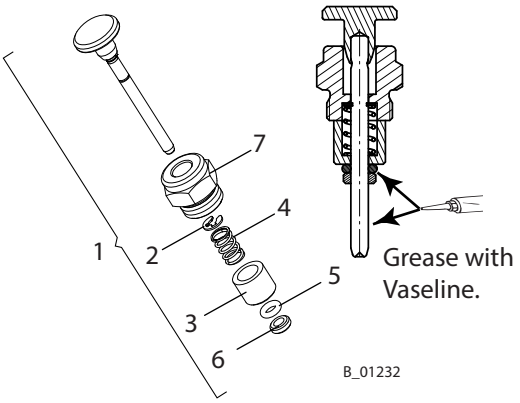
| Pos | K | Stk | Order no. | Designation |
|---|---|---|---|---|
| 1 | ◆ | 1 | 322914 | Complete Cobra 40-10 inlet valve set |
| 2 | | 2 | 9912100 | Hexagon nut with clamp |
| 3 | | 2 | 344334 | Spring guide |
| 4 | | 2 | 190304 | Pressure spring |
| 5 | | 2 | 158333 | Guide |
| 6 | ◆ | 4 | 341331 | Sealing ring |
| 7 | | 2 | 344322 | Valve housing |
| 8 | ◆ | 2 | 340346 | Valve seat |
| 10 | ◆ | 1 | 9992528 | Loctite 270 50 ml; 50 cc |
| 11 | | 2 | 340342 | Valve cone |

◆ = Wearing part

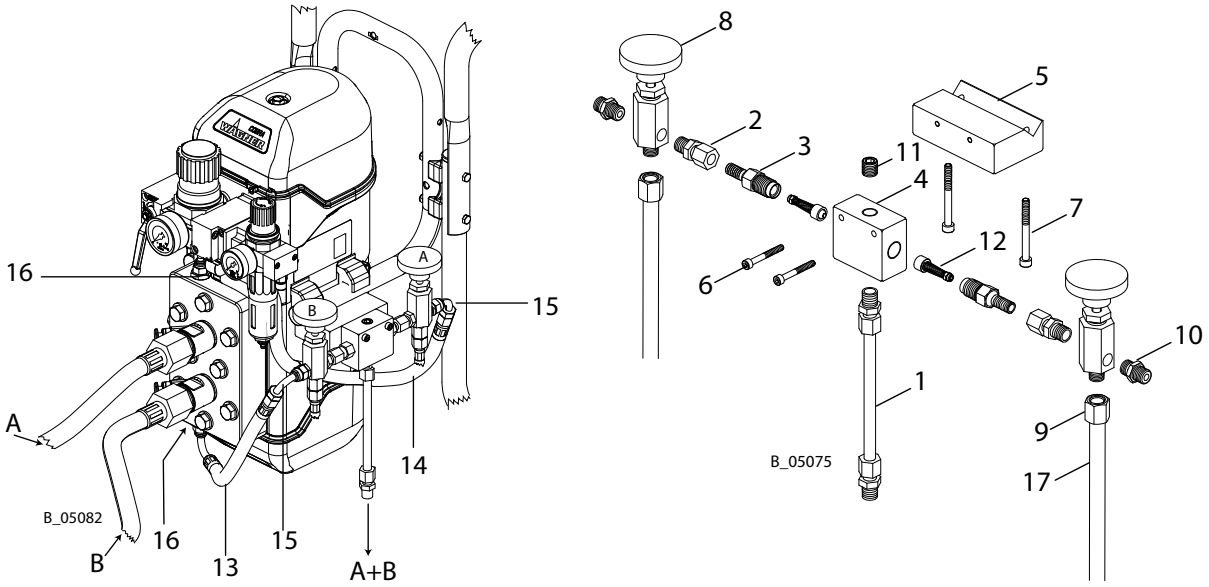
### 14.6 INLET VALVE DEPRESSOR

| Pos | K | Stk | Order no. | Designation |
|---|---|---|---|---|
| 1 | | 1 | 341241 | Inlet valve depressor, complete |
| 2 | | 1 | 9922724 | Lock washer 3.2 |
| 3 | | 1 | 341377 | Sleeve |
| 4 | | 1 | 9994275 | Pressure spring |
| 5 | ◆ | 1 | 9971486 | O-ring, 4x2 |
| 6 | ◆ | 1 | 341316 | Scraper |
| 7 | | 1 | 341375 | Screw plug |

◆ = Wearing part

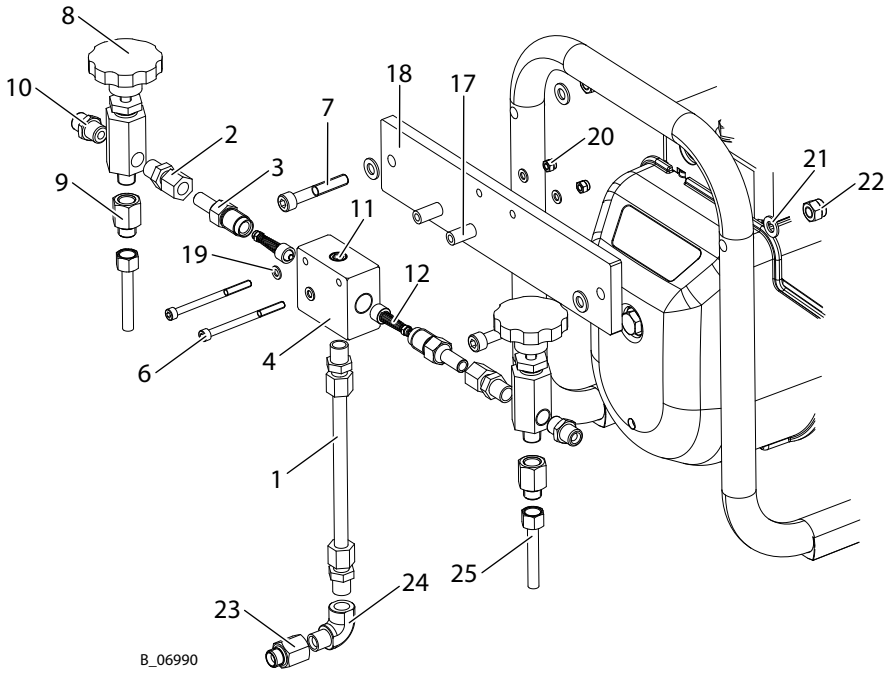


### 14.7 COMPLETE VERTICAL MIXER




| Pos | K | Stk | Order no. | Designation |
|---|---|---|---|---|
| 1 | | 1 | T678.00 | Mixing tube, complete D6 |
| 2 | | 2 | M604.12 | Fitting D 1/4x10 |
| 3 | | 2 | A194.22 | Valve body |
| 4 | | 1 | B0284.03 | Mixing block |
| 5 | | 1 | B0285.71 | Mixing block support |
| 6 | | 2 | K118.62 | Screw, M5x40 |
| 7 | | 2 | K151.62 | Screw, M6x60 |
| 8 | | 2 | M116.00A | Ball valve pin A 1/4 C/R |
| 9 | | 2 | M6014.00 | Fitting 1/4", adjustable |
| 10 | | 2 | M614.62 | Fitting, 1/4" |
| 11 | | 1 | M623.12 | Plug EI 1/4" |
| 12 | | 2 | T701.00 | Lock valve lacquer mix |
| 13 | | 1 | S521.00 | Hose AP 1/4 MT.0,500 |
| 14 | | 1 | S516.00 | Hose AP 1/4 MT.0.65 |
| 15 | | 2 | M6029.00 | Connection 90° M1/4xFG1/4 |
| 16 | | 2 | M618.62 | Fitting 3/8-1/4 |
| 17 | | 2 | S401.00 | Return hose BP MT 2 D 8 |

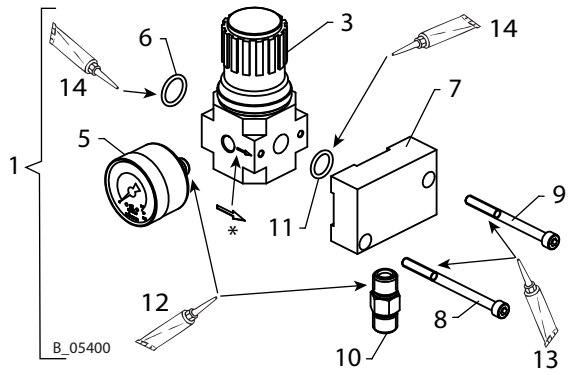
### 14.8 COMPLETE HORIZONTAL MIXER



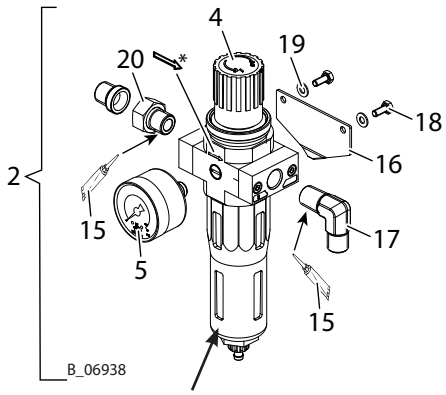

| Pos | K | Stk | Order no. | Designation |
|---|---|---|---|---|
| 1 | | 1 | T678.00 | Mixing tube, complete D6 |
| 2 | | 2 | M604.12 | Fitting D 1/4x10 |
| 3 | | 2 | A194.22 | Valve body |
| 4 | | 1 | B0284.03 | Mixing block |
| 6 | | 2 | K1003.62 | Screw, M5x50 |
| 7 | | 2 | K1003.62 | Screw, M8x50 |
| 8 | | 2 | M116.00A | Ball valve pin A 1/4 C/R |
| 9 | | 2 | M6014.00 | Fitting 1/4", adjustable |
| 10 | | 2 | M614.62 | Fitting, 1/4" |
| 11 | | 1 | M623.12 | Plug EI 1/4" |
| 12 | | 2 | T701.00 | Lock valve lacquer mix |
| 13 | | 1 | S501.00 | Hose AP 1/4 X MT 0.420 |
| 14 | | 1 | S506.00 | Hose AP 1/4 MT.0.65 |
| 15 | | 2 | M6029.00 | Connection 90° M1/4xFG1/4 |
| 16 | | 2 | M618.62 | Fitting 3/8-1/4 |
| 17 | | 2 | H188.62C | Spacer |
| 18 | | 1 | E0080.01 | Mounting plate |
| 19 | | 4 | K515.62 | Plain washer ø 5 |
| 20 | | 2 | K323.62 | Self-locking nut M5 |
| 21 | | 4 | K509.62 | Plain washer ø 8 |
| 22 | | 2 | K312.62 | Self-locking nut M8 |
| 23 | | 1 | M6014.00 | Extension MF 1/4" |
| 24 | | 1 | M6008.00 | Fitting L1/4 MF |
| 25 | | 2 | S401.00 | Return hose BP MT 2 D 8 |

### 14.9 AIRCOAT REGULATOR AND AIRCOAT FILTER REGULATOR

**AirCoat Regulator**




**AirCoat filter regulator**




Remove protective container. Mount contact plate. Screw on/unscrew protective container three times (provides contact point via container coating)

Pos 3 or 4:

* Observe the flow direction (direction of arrow on the housing)

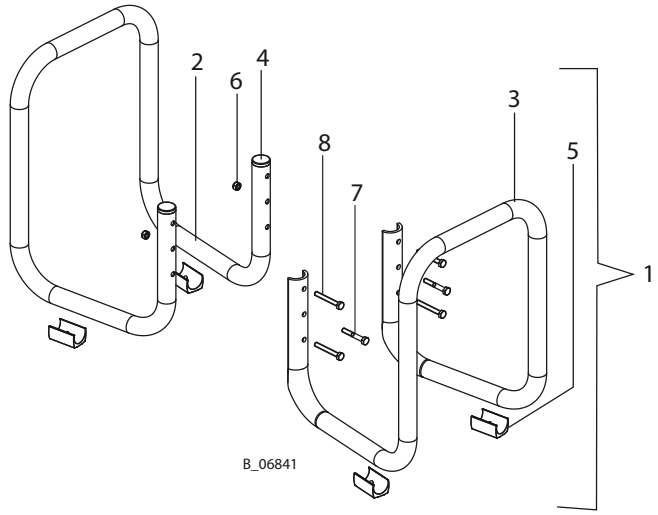
**Pos 5:**

Screw in the pressure gauge until the white sealing ring is completely in the filter control valve. Thereafter, continue turning the pressure gauge only to align the display scale.

| Pos | K | Stk | Order no. | Order no. | Designation |
|---|---|---|---|---|---|
| 1 | | 1 | 2328611 | / | AirCoat regulator set |
| 2 | | 1 | / | 2382997 | AirCoat filter regulator set |
| 3 | ◆ | 1 | 2309972 | / | Pressure regulator valve LR-1/4-D-O-I-Mini |
| 4 | ◆ | 1 | / | 2331950 | Filter control valve (manual drain) |
| | | | / | 2360259 | Option: filter pan (automatic drain) |
| 5 | ◆ | 1 | 9998677 | | Pressure gauge 0-10 bar RF40 (d40) |
| 6 | ◆ | 1 | 9974166 | / | O-ring |
| 7 | | 1 | 2325527 | / | Holding plate |
| 8 | | 1 | 9906021 | / | Hexagon socket cylinder head screw |
| 9 | | 1 | 9900320 | / | Hexagon socket cylinder head screw |
| 10 | | 1 | 9994627 | / | Double fitting R1/4-R1/4 |
| 11 | ◆ | 1 | 9971313 | / | O-ring |
| 12 | | 1 | 9992831 | / | Loctite® 542 |
| 13 | | 1 | 9992616 | / | Molykote® DX grease |
| 14 | | 1 | 9998808 | / | Mobilux® EP 2 grease |
| 15 | | 1 | / | 9992528 | Loctite® 270 |
| 16 | | 1 | / | 2366466 | Contact plate |
| 17 | | 1 | / | 2389277 | Fitting EF-MM-G1/4-R1/4-530 bar |
| 18 | | 2 | / | 9900152 | Hexagon screw without shaft |
| 19 | | 3 | / | 9920104 | Washer |
| 20 | | 1 | / | 9998719 | Double nipple, detachable |

◆ = Wearing part

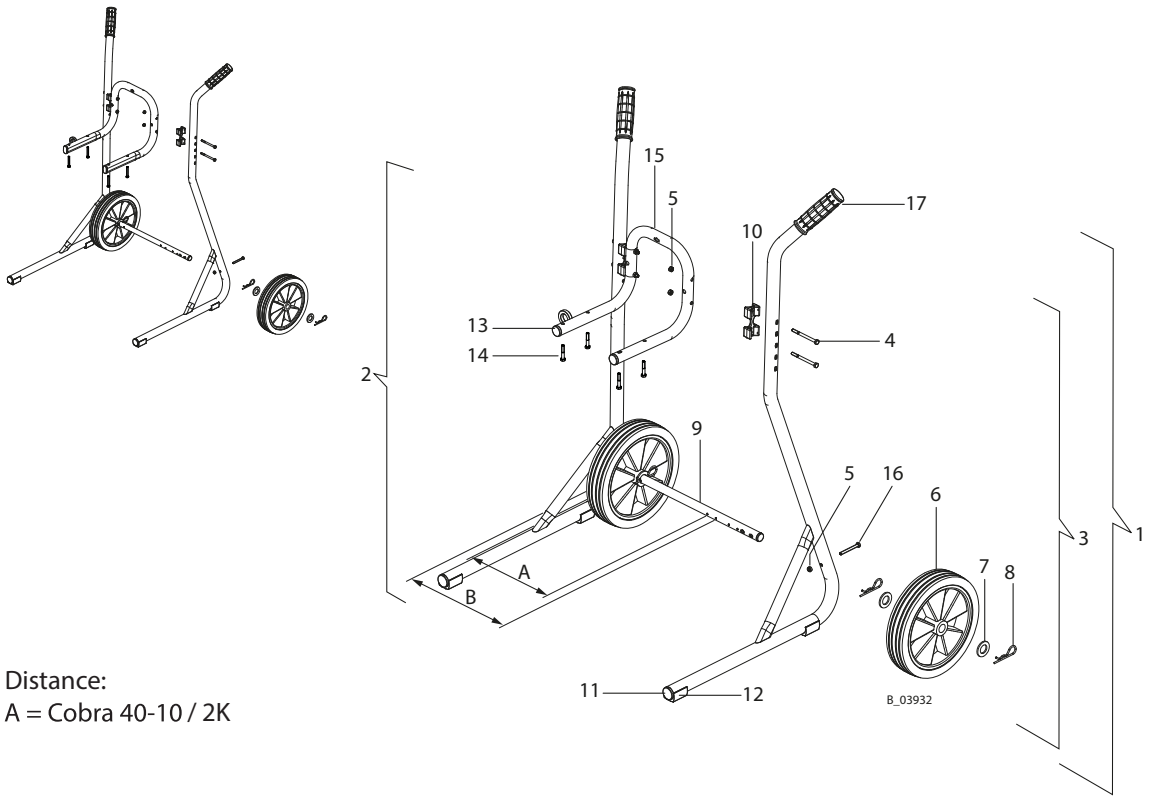
### 14.10 COMPLETE FRAME




| Pos | K | Stk | Order no. | Designation |
|---|---|---|---|---|
| 1 | | 1 | 322052 | Cobra 40-10 frame |
| 2 | | 1 | -- | Frame, pressed |
| 3 | | 1 | -- | Frame pipe |
| 4 | | 2 | 9990861 | Plug |
| 5 | ◆ | 4 | 9999209 | Saddle feet for round tubes |
| 6 | | 2 | 9910204 | Self-locking hexagon nut, M6 |
| 7 | | 2 | 9900202 | Hexagon screw M6x40 |
| 8 | | 4 | 9900126 | Hexagon screw M6x45 |

◆ = Wearing part

### 14.11 SLIDING TABLES

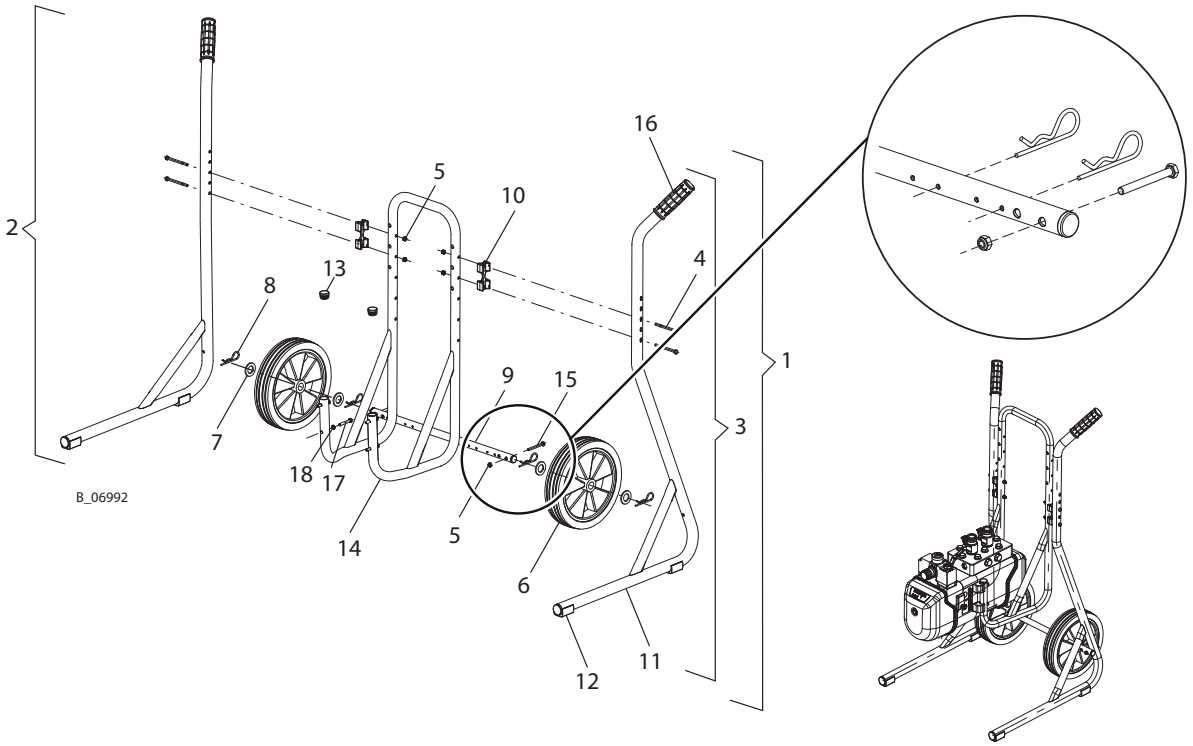



Distance:
A = Cobra 40-10 / 2K

| Pos | K | Stk | Order no. | Designation |
|---|---|---|---|---|
| 1 | | 1 | 2325901 | Trolley, complete |
| 2 | | 1 | -- | Frame, left 4"-6" (welded) |
| 3 | | 1 | -- | Frame, right 4"-6" (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"-6" |
| 10 | ◆ | 2 | 367943 | Connecting part 4"-6" |
| 11 | | 2 | -- | Tube plug, ribbed |
| 12 | ◆ | 2 | 9998685 | 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 |
| 18 | | 1 | 2329546 | Assembly manual of trolley |

◆ = Wearing part

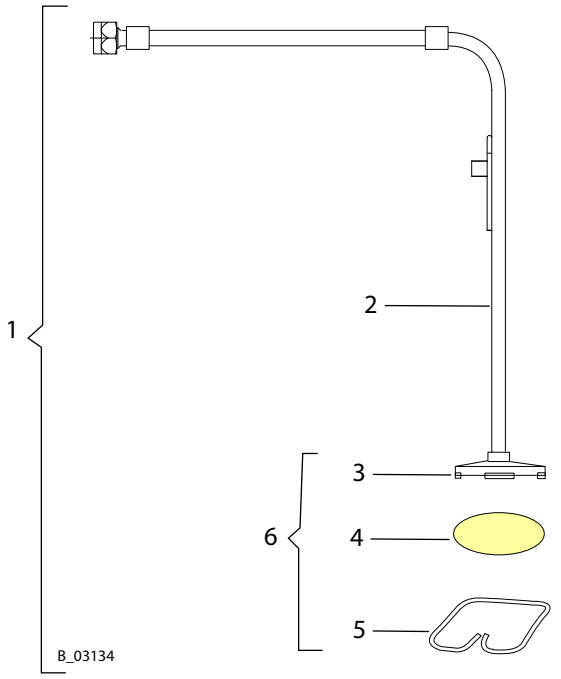
## 14.12 HORIZONTAL TROLLEY




| Pos | K | Stk | Order no. | Name |
|---|---|---|---|---|
| 1 | | 1 | 2341375 | Cobra trolley, complete |
| 2 | | 1 | -- | Frame, left 4"-6" |
| 3 | | 1 | -- | Frame, right 4"-6" |
| 4 | | 4 | 9907140 | Hexagon screw |
| 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"-6", complete |
| 10 | ◆ | 2 | 367943 | Connecting part 4"-6" |
| 11 | | 2 | -- | Tube plug, ribbed |
| 12 | ◆ | 4 | 9998685 | Saddle feet for round tubes |
| 13 | | 2 | -- | Plug |
| 14 | | 1 | -- | Frame pipe, long |
| 15 | | 2 | 3061695 | Hexagon screw without shaft |
| 16 | ◆ | 2 | 9998747 | Handle |
| 17 | | 4 | 3051666 | Hexagon screw M6x40 |
| 18 | | 4 | 9922017 | Serrated lock washer, externally toothed |
| 19 | | 1 | 2341412 | Assembly manual for Cobra horizontal trolley |

◆ = Wearing part

### 14.13 SUCTION SYSTEM




| Pos | K | Stk | Part no. | Designation |
|---|---|---|---|---|
| 1 | | 1 | T423.00FA | Suction system flexible, complete |
| 2 | | 1 | T423.00F | Suction tube |
| 3 | | 1 | R033.00A | Filter housing |
| 4 | | 1 | T468.00 | Filter sieve |
| 5 | | 1 | H220.03 | Retaining spring |
| 6 | | 1 | R033.00 | Filter housing, complete |