

# Pneumatic double diaphragm pump ZIP52 (PF Eco) Finishing

Translation of the original operating manual

CE  II 2 G Ex h IIB T4 Gb X

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

Edition: 08/2020



## TABLE OF CONTENTS

<b>1</b>	<b>About these instructions</b>	<b>5</b>
1.1	Preface	5
1.2	Warnings, Notices and Symbols in these Instructions	5
1.3	General Characters and Symbols	5
1.4	Languages	6
1.5	Abbreviations	6
1.6	Terminology for the Purpose of this Manual	6
<b>2</b>	<b>Correct Use</b>	<b>8</b>
2.1	Device Type	8
2.2	Type of Use	8
2.3	For Use in Potentially Explosive Areas	8
2.4	Processible Working Materials	8
2.5	Misuse	9
<b>3</b>	<b>Identification</b>	<b>10</b>
3.1	Explosion Protection Identification	10
3.2	Identification "X"	10
3.3	Type Plate	11
<b>4</b>	<b>Basic Safety Instructions</b>	<b>13</b>
4.1	Safety Instructions for the Operator	13
4.2	Safety Instructions for the Personnel	14
<b>5</b>	<b>Description</b>	<b>19</b>
5.1	Components of ZIP52 Finishing	19
5.2	Components of ZIP52 PF Eco-Finishing	19
5.3	Mode of Operation	19
5.4	Protective and Monitoring Equipment	20
5.5	Scope of Delivery	20
5.6	Data	20
<b>6</b>	<b>Assembly and Commissioning</b>	<b>28</b>
6.1	Training of Assembly/Commissioning Personnel	28
6.2	Storage Conditions	28
6.3	Installation Conditions	28
6.4	Transportation	28
6.5	Assembly and Installation	28
6.6	Grounding	30
6.7	Commissioning	32
<b>7</b>	<b>Operation</b>	<b>34</b>
7.1	Training the Operating Personnel	34
7.2	Emergency Stop	34
7.3	Tasks	34
7.4	Pressure Relief / Work Interruption	35
7.5	Basic Flushing	36
<b>8</b>	<b>Cleaning and Maintenance</b>	<b>38</b>
8.1	Cleaning	38
8.2	Maintenance	38
8.3	Replacing the Diaphragm (Preventive Maintenance)	44
8.4	Cleaning/Replacement of the Suction and Delivery Non-Return Valves	45
8.5	Replacement of the Reversing Valve	46

<b>9</b>	<b>Troubleshooting and Rectification</b>	<b>47</b>
<b>10</b>	<b>Repairs</b>	<b>48</b>
10.1	Repair Personnel	48
10.2	Repair Notes	48
10.3	Tools	49
10.4	Cleaning the Parts after Disassembly	49
10.5	Assembly of the Device	49
10.6	Replacing the Diaphragm (Due to Breakage)	49
<b>11</b>	<b>Function Test after Repair Work</b>	<b>51</b>
<b>12</b>	<b>Disposal</b>	<b>52</b>
12.1	Device	52
12.2	Consumable products	52
<b>13</b>	<b>Accessories</b>	<b>53</b>
<b>14</b>	<b>Spare Parts</b>	<b>55</b>
14.1	How Can Spare Parts Be Ordered?	55
14.2	Notes on Using Spare Parts	55
14.3	ZIP52 Finishing	56
14.4	ZIP52 PF Eco-Finishing	58
14.5	ZIP52 Pump - Metallic	60
14.6	ZIP52 Pump - Conductive Acetal	62
14.7	ZIP Motor	64
14.8	Trolley, Frame Set, and Wheel Set	66
14.9	Material Filter	67
14.10	Fine Flow Controller	68
14.11	Service Sets	69
<b>15</b>	<b>Declaration of Conformity</b>	<b>71</b>
15.1	EU Declaration of Conformity	71



# 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:

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

### Explanation of warning notice:

#### **WARNING**

**This notice warns you of a danger!**

Possible consequences of not observing the warning notice.

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



## 1.3 GENERAL CHARACTERS AND SYMBOLS

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

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

1. Step 1 of an action to be performed with several action steps.

- ▶ Second level action step

2. Step 2

⇒ Intermediate result of an action

⇒ Result of a complete action

- ▶ Action to be performed with an action step

1. Numbered list, first level

- Numbered list, second level

- Non-numbered list, first level
  - Non-numbered list, second level
- [ >> 8] = cross-reference on page
- ◆ = wearing parts
- \* = included in service set
- = not part of the standard equipment but available as a special accessory

## 1.4 LANGUAGES

The operating manual is available in the following languages:

### Original operating manual

Language	Order no.
German	2332847

### Translation of the original operating manual

Language	Order no.	Language	Order no.
English	2332848	Spanish	2335762
French	2335763	Russian	2357257
Italian	2332849	Swedish	2341254

Additional languages upon request or at: [www.wagner-group.com](http://www.wagner-group.com)

## 1.5 ABBREVIATIONS

Order no.	Order number
ET	Spare part
K	Marking in the spare parts lists
Pos	Position
Stk	Number of pieces
DH	Double stroke
SSt	Stainless steel
2K	Two components
Al	Aluminum
FFC	Fine Flow Controller
PP	Polypropylene
POM	Polyoxymethylene (Acetal)
PPS	Polypropylene sulfide
PTFE	Polytetrafluorethylene
UHMWPE	Ultra-high molecular polyethylene

## 1.6 TERMINOLOGY FOR THE PURPOSE OF THIS MANUAL

### Cleaning

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

### Personnel qualifications

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

## 2 CORRECT USE

### 2.1 DEVICE TYPE

Pneumatic double diaphragm pump with order no.:

#### A: Metallic versions in aluminum and stainless steel.

ZIP52 Finishing	ZIP52 Finishing	ZIP52 PF Eco-Finishing
U760.00 (aluminum)	U765.00 (stainless steel)	U731.00 (aluminum)

#### B: Conductive acetal versions.

ZIP52 Finishing
U773.00 (POM - acetal)

### 2.2 TYPE OF USE

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

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

WAGNER explicitly prohibits any other use!

The device may only be operated under the following conditions:

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

### 2.3 FOR USE IN POTENTIALLY EXPLOSIVE AREAS

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



### 2.4 PROCESSIBLE WORKING MATERIALS

Fluid materials like paints and lacquers.

Application	Finishing	Finishing SSt	Eco-Finishing	Finishing POM
Water-dilutable products	→	↗	↘	→
Solvent-based lacquers and paints	↗	↗	↗	↗
Two-component coating products	→	→	→	→
Emulsions	→	↗	→	↗
UV lacquers	↗	↗	↗	↗
Primers	→	→	→	→
Epoxy and polyurethane lacquers, phenolic lacquers	→	↗	→	↗
Wax-based underside protection	↘	↘	↘	↘
Shear-sensitive lacquers	→	↗	→	↗

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

## ! NOTICE

### Abrasive working materials and pigments!

Greater wear of product-wetted parts.

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

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

### Typical applications

Application	Finishing	Finishing SSt	Eco-Finishing	Finishing POM
Furniture industry	↗	↗	↗	↗
Kitchen manufacturers	↗	↗	↗	↗
Joinery	↗	↗	↗	↗
Window factories	↗	↗	↗	↗
Steel-processing industry	↗	↗	↗	↗
Construction of vehicles	↗	↗	↗	↗
Shipbuilding	↘	↘	↘	↘

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

## 2.5 MISUSE

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

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

### 3 IDENTIFICATION

#### 3.1 EXPLOSION PROTECTION IDENTIFICATION

Device types: **Metallic versions in aluminum, stainless steel and conductive acetal**

Pneumatic double diaphragm pumps with Order no.

ZIP52 Finishing	ZIP52 Finishing	ZIP52 PF Eco-Finishing
U760.00 (aluminum)	U765.00 (stainless steel)	U731.00 (aluminum)
U773.00 (POM - acetal)	--	--

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

Manufacturer Wagner International AG  
 9450 Altstätten  
 Switzerland



   II 2 G Ex h IIB T4 Gb X

- CE European Communities
- Ex Symbol for explosion protection
- II Device class II
- 2 Category 2 (zone 1)
- G Ex-atmosphere gas
- Ex Ignition protection
- h Ignition protection for non-electrical devices
- IIB Explosion group
- T4 Maximum surface temperature < 135 °C; 275 °F (with drying protection active)
- Gb Zone 1 high safety level
- X Special notes (see Chapter Identification "X" [▶▶ 10])



#### 3.2 IDENTIFICATION "X"

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

##### Safe Handling of WAGNER Spray Devices

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

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

##### Maximum surface temperature

The maximum surface temperature of the 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 40 °C; 50 °F to 104 °F.

**Electrostatic surface spraying**

- ▶ Do not spray device parts using electrostatic equipment.



**Cleaning**

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

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



**Air in the pump fluid**

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

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

Air in the pumped liquid 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**

1			II 2 G Ex h IIB T4 Gb X	3
	Wagner International AG CH-9450 ALTSTÄTTEN	Assembled by WAGNER in Switzerland		4
2	<b>ZIP52</b>	Max. Fluid pressure: 8bar-0.8MPa-116psi		5
		Max. Air pressure: 8bar-0.8MPa-116psi		6
7	Übersetzungsverhältnis / Ratio			12
8	Fördermenge DH / Delivery DS			
9	Max. Temp. Material / Fluid			
10	Art-Nr. / Part No.			
11	Baujahr - Serie Nr. / Year of manufacture - Serial No.			

Vor Gebrauch Betriebsanleitung beachten  
Check manual before use

B\_07800

Example type plate ZIP52



1	Manufacturer	7	Pump ratio
2	Device type	8	DH flow rate
3	CE identification	9	Max. product temperature
4	Indication of origin	10	Article number
5	Max. product pressure	11	Model year - serial number
6	Max. air pressure	12	Read the operating manual before use



## 4 BASIC SAFETY INSTRUCTIONS

### 4.1 SAFETY INSTRUCTIONS FOR THE OPERATOR

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



#### 4.1.1 Electrical Devices and Equipment

##### **Danger of electric shock!**

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.
- ▶ Do not disconnect any plug connections during operation.
- ▶ Label plug connections with the warning "Do not disconnect when energized".
- ▶ Must be repaired immediately in the event of problems.
- ▶ Decommission if device poses a danger or is damaged.
- ▶ Must be de-energized before work is commenced.
  - ▶ Secure the device against being switched back on without authorization.
  - ▶ Inform personnel about planned work.
  - ▶ Observe electrical safety regulations.
- ▶ Ground all devices to a common grounding point.
- ▶ Only operate the device with a properly installed socket with a protective ground wire connection.
- ▶ Keep liquids away from electrical devices.



#### 4.1.2 A Safe Work Environment

##### **Danger due to dangerous fluids or vapors!**

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

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



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

#### 4.1.3 Personnel Qualifications

##### **Danger due to incorrect use of device!**

Risk of death due to untrained personnel.

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

#### 4.2 SAFETY INSTRUCTIONS FOR THE PERSONNEL

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



##### **Danger due to high-voltage field!**

Danger to life from malfunction of active implants.

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



#### 4.2.1 Personal Safety Equipment

##### **Danger due to dangerous fluids or vapors!**

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

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



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

#### 4.2.2 Safe Handling of WAGNER Spray Devices

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

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

Avoid injection of lacquer or flushing agents:

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



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

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

#### 4.2.3 Grounding the Device

##### **Danger due to electrostatic charge!**

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

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

- ▶ Ensure that all devices and tanks are grounded before each spraying process.
- ▶ Make sure that the ground and potential equalization of all system parts are performed reliably and continuously and can withstand the expected stress (e.g., mechanical stress, corrosion).
- ▶ Ground the work pieces to be coated.
- ▶ Ensure that all persons inside the working area are grounded, e.g., that they are wearing static dissipative shoes.
- ▶ Wear static dissipative gloves when spraying. The grounding takes place via the spray gun's handle or its trigger.



#### 4.2.4 Product Hoses

##### **Danger due to bursting of product hose!**

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

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



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

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

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

#### 4.2.5 Cleaning and Flushing

##### **Danger due to cleaning and flushing!**

Explosion hazard and damage to the device.

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



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

An explosive gas/air mixture forms in closed tanks.

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

### External Cleaning

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

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



### 4.2.6 Touching Hot Surfaces

#### Danger due to hot surfaces because of hot coating products!

Risk of burn injuries

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



Instruction label: Order no. 9998910

Protection label: Order no. 9998911

#### Info

Order the two labels together.



### 4.2.7 Maintenance and Repair

#### Danger due to improper maintenance and repair!

Danger to life and equipment damage.

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

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

#### **4.2.8 Protective and Monitoring Equipment**

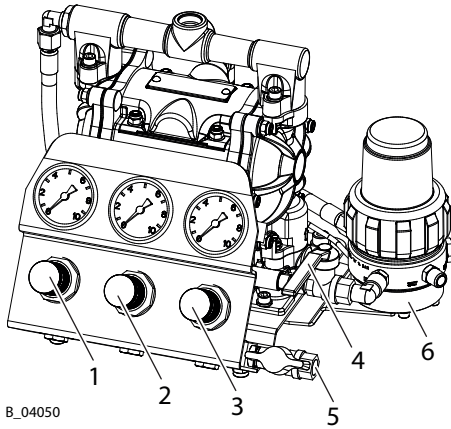
##### **Danger due to removal of protective and monitoring equipment!**

Danger to life and equipment damage.

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

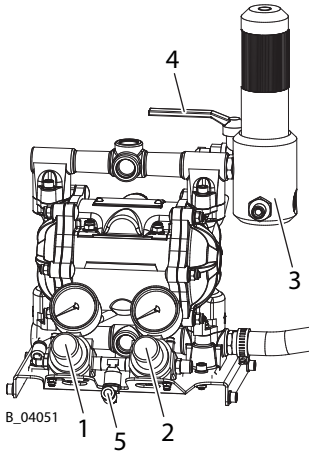
## 5 DESCRIPTION

### 5.1 COMPONENTS OF ZIP52 FINISHING



1	Pump pressure regulator	4	Product return valve
2	Product pressure regulator	5	Air cut-off valve
3	Atomizing air pressure regulator	6	Fine Flow Controller (precisely adjustable filter flow controller with integrated pulsation damper)

### 5.2 COMPONENTS OF ZIP52 PF ECO-FINISHING



1	Pump pressure regulator	4	Product return valve
2	Atomizing air pressure regulator	5	Compressed air connection
3	Material filter		

### 5.3 MODE OF OPERATION

The double diaphragm pump is driven with compressed air. A pneumatic manifold alternates in supplying two diaphragms with compressed air. Diaphragm motion is created in this manner. The product is thus sucked in and displaced again. A series of four non-return valves prevents the liquid from flowing back, thus producing the suction and delivery phases in each pumping chamber, and generating the pumping effect.

## 5.4 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.

## 5.5 SCOPE OF DELIVERY

Stk	Order no.	Designation
1	--	Diaphragm pump ZIP52 Finishing/ZIP52 PF Eco-Finishing
1	See Chapter Spare Parts [▶▶ 55]	Suction hose with filter
		Fine Flow Controller FFC (for ZIP52 Finishing)
		Product filter (for ZIP52 Eco-Finishing)
		Frame (for ZIP52 Eco-Finishing)
		Connection elements
The standard equipment includes:		
1	See Chapter EU Declaration of Conformity [▶▶ 71]	Declaration of Conformity
1	2332847	Operating manual, in German
1	See Chapter Languages [▶▶ 6]	Operating manual in the local language

The delivery note shows the exact scope of delivery. Accessories: see Chapter Accessories [▶▶ 53].

## 5.6 DATA

### 5.6.1 Materials of Paint-wetted Parts

Type	Order no.	Pump body	Diaphragm	Diaphragm disc	Valve seat	Valve ball	O-rings
ZIP52	U760.00	Aluminum	UHMWPE	PPS	Stainless steel	Stainless steel	PTFE
ZIP52	U765.00	Stainless steel	UHMWPE	PPS	Stainless steel	Stainless steel	PTFE
ZIP52	U773.00	Acetal (POM)	UHMWPE	POM	Stainless steel	Stainless steel	PTFE
ZIP52 PF	U731.00	Aluminum	UHMWPE	PPS	Stainless steel	Stainless steel	PTFE

Positions of the individual parts: See Chapter Spare Parts [▶▶ 55].



### 5.6.2 Technical Data

Pump body			AI	SSt	Acetal	AI
Description		Units	Zip 52	Zip 52	Zip 52	ZIP 52 PF
Pump ratio	--	--	1 : 1			
Volume flow per double stroke (DH)	--	cm <sup>3</sup>	108			62
		cu inch	6.59			3.78
Maximum operating pressure	--	MPa	0.8			
		bar	8			
		psi	116			
Maximum speed	--	DH/min	490			
Maximum flow rate	(1)	l/min	52			28
	(5)	GPM	13.7			7.4
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 <sup>3</sup> 5: Humidity: Pressure dew point: ≤ +7 °C 4: Oil content: ≤ 5 mg/m <sup>3</sup>			
Minimum air inlet pressure	--	MPa	0.15			0.10
		bar	1.5			1.0
		psi	22			15
Maximum air inlet pressure	--	MPa	0.8			
		bar	8			
		psi	116			
Air inlet connection (plug)	--	BSP(R)	1/4" F			ø 8 mm
Maximum suction height (1)	(2)	m	4.8			2.8
		ft	15.7			9.2
Maximum solid body size	(5)	mm	2.0			
		Inches	0.08			
Sound pressure equivalent of 50 cycles/min. (5 bar)	(3) (5)	dB(A)	73			
Sound pressure equivalent at max. flow rate (8 bar)	(3) (4)	dB(A)	85			
Sound power at maximum flow rate (8 bar)	(4) (5)	dB(A)	99			
Fluid connections (inlet & outlet bushing)	--	BSP(G)	1/4" M			
Weight	--	kg	9	11.8	8.9	7.9
		lb	19.8	26	19.6	17.4
Product temperature	--	°C	4 – 90		4 – 80	4 – 90
		°F	39 – 194		39 – 176	39 – 194
Ambient temperature	--	°C	4 – 40			
		°F	39.2 – 104			
Allowable inclination for operation	--	∠°	± 10°			

1. PF = Perfect Flow = low pulsation pump with a shorter stroke
2. Pump with stainless steel valves (start condition: empty pump / dry valves)
3. LqA (10s)
4. ISO 3744
5. Technical data applies to the pump without a filter connected

**⚠ WARNING**

**Exhaust air containing oil!**

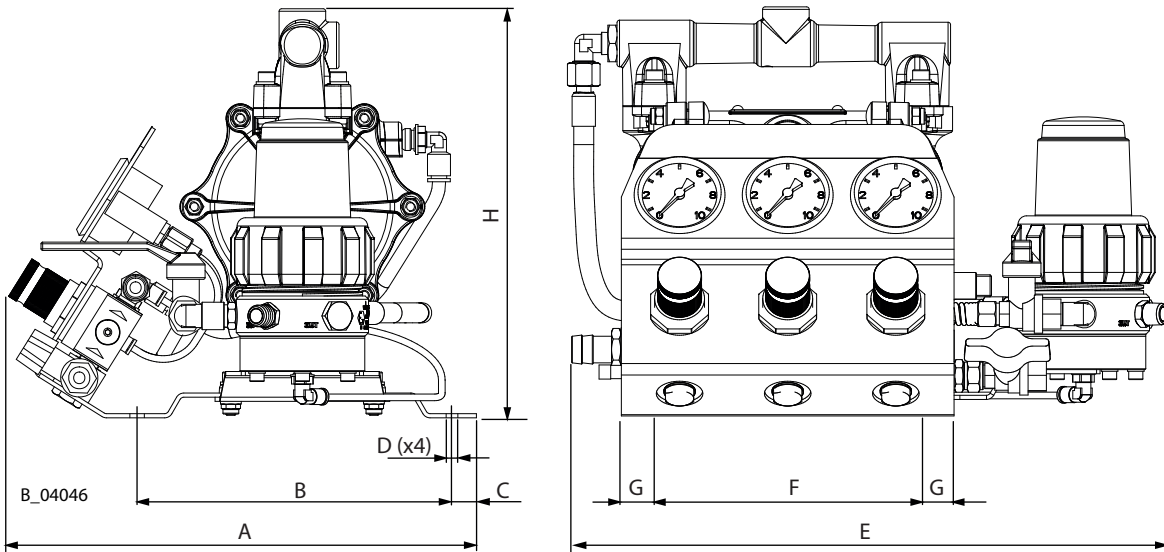
Risk of poisoning if inhaled.

- ▶ Provide compressed air free from oil and water.



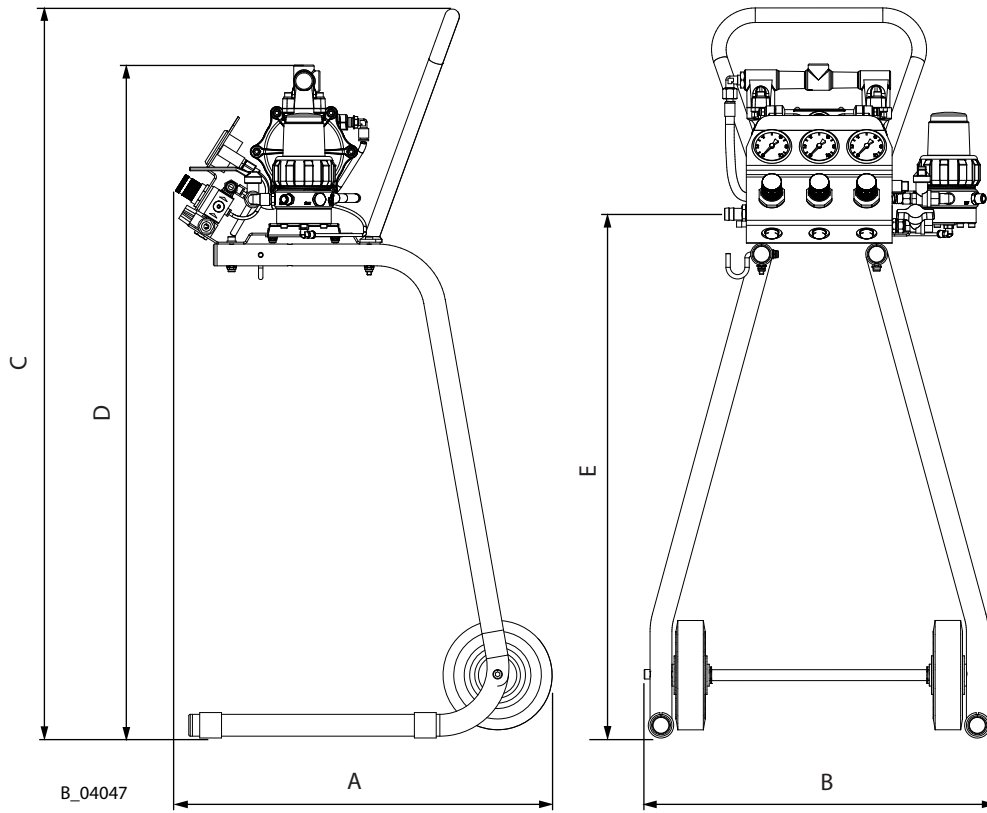
**5.6.3 Dimensions and Connections**

**ZIP52**



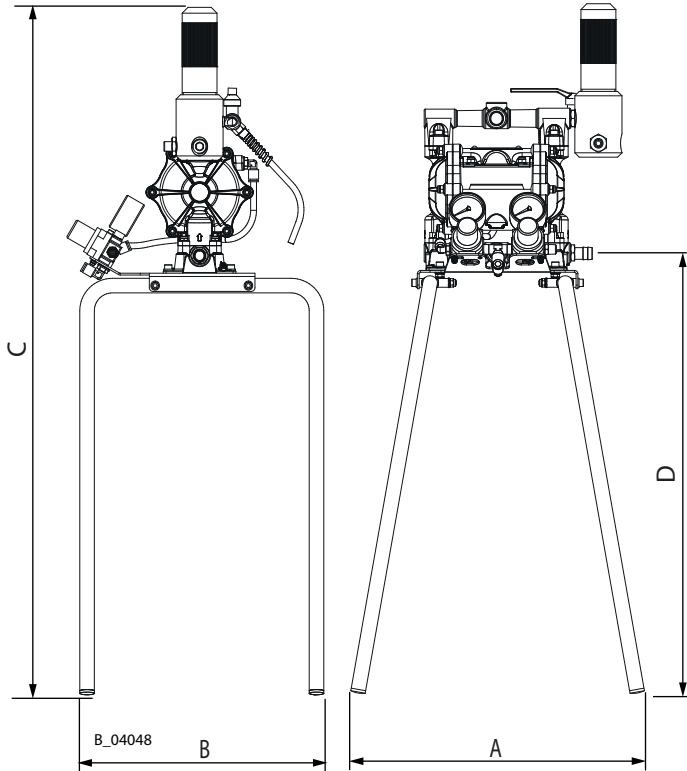
Pos	mm; inch	Pos	mm; inch
A	280; 11.02	E	360; 14.17
B	189; 7.44	F	158; 6.22
C	15; 0.59	G	21; 0.83
D	∅ 9; ∅ 0.35	H	250; 9.84

**ZIP52 on trolley**



Pos	mm; inch	Pos	mm; inch
A	520; 20.47	D	930; 36.61
B	481; 18.94	E	720; 28.35
C	1015; 39.96		

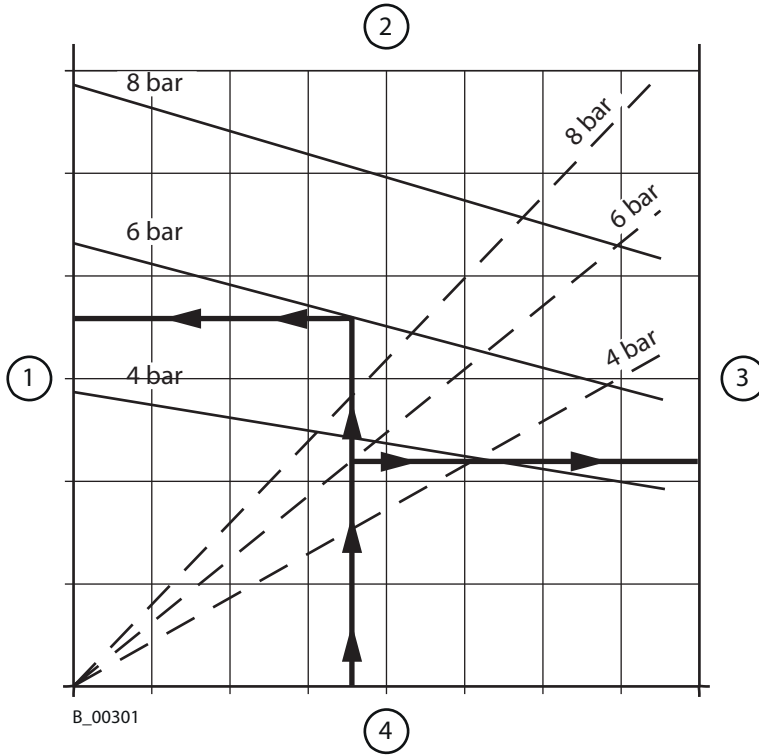
**ZIP52 PF**



Pos	mm; inch	Pos	mm; inch
A	405; 15.94	C	940; 37.01
B	335; 13.19	D	602; 23.70

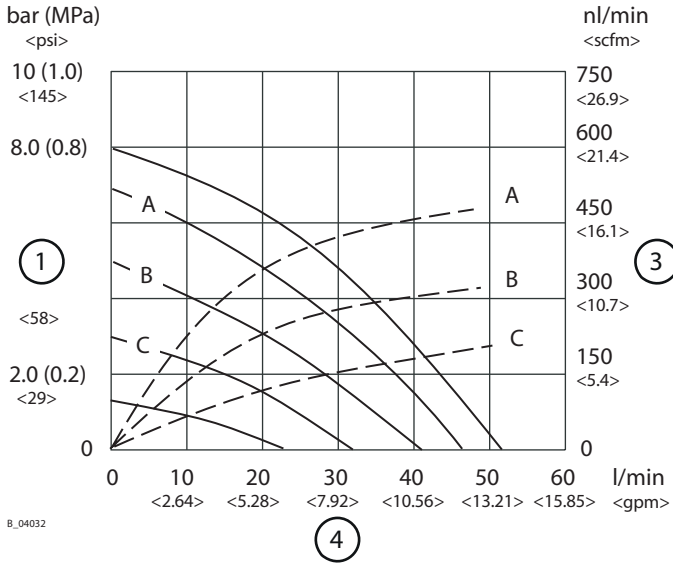
### 5.6.4 Performance Diagrams

#### Example



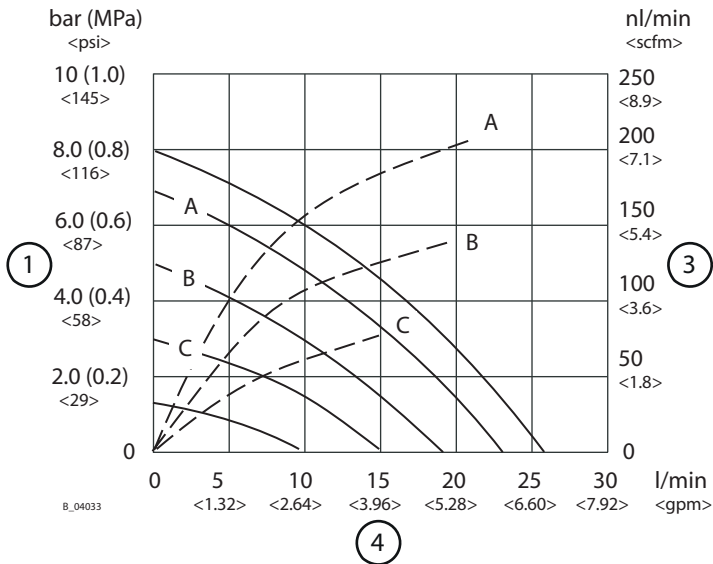
1	Product pressure in bar; (MPa); <psi>	3	Air consumption in nl/min.; <scfm>
2	Stroke frequency in DH/min.	4	Flow rate of water in l/min.; <gpm>

**Diagram ZIP52**



1	Product pressure in bar; (MPa); <psi>	A	Characteristic curve for air pressure 6 bar; 0.6 MPa; 87 psi
3	Air consumption in nl/min.; <scfm>	B	Characteristic curve for air pressure 5 bar; 0.5 MPa; 73 psi
4	Flow rate of water in l/min.; <gpm>	C	Characteristic curve for air pressure 4 bar; 0.4 MPa; 58 psi

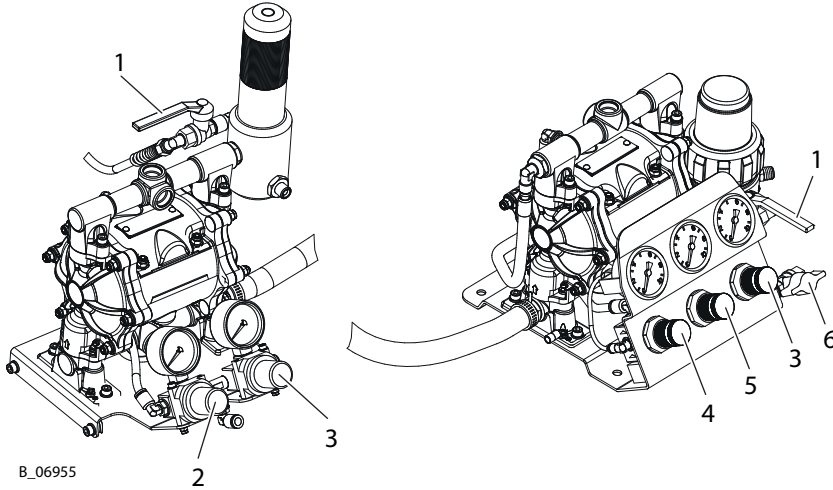
**Diagram ZIP52 PF**



1	Product pressure in bar; (MPa); <psi>	A	Characteristic curve for air pressure 6 bar; 0.6 MPa; 87 psi
3	Air consumption in nl/min.; <scfm>	B	Characteristic curve for air pressure 5 bar; 0.5 MPa; 73 psi
4	Flow rate of water in l/min.; <gpm>	C	Characteristic curve for air pressure 4 bar; 0.4 MPa; 58 psi

The charts above refer to the aluminium version with stainless steel valves without an attached filter.

### 5.6.5 Operating Elements



1	Return valve	4	Pump pressure regulator (ZIP52)
2	Pump pressure regulator (ZIP52 PF)	5	Product pressure regulator (ZIP52)
3	Atomizing air pressure regulator	6	Compressed air connection valve (ZIP52)

## 6 ASSEMBLY AND COMMISSIONING

### 6.1 TRAINING OF ASSEMBLY/COMMISSIONING PERSONNEL

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

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

### 6.2 STORAGE CONDITIONS

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

The air temperature at the storage location must be between  $-20\text{ °C}$  and  $+60\text{ °C}$  ( $-4\text{ °F}$  and  $+140\text{ °F}$ ).

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  $0\text{ °C}$  and  $40\text{ °C}$ ;  $32\text{ °F}$  and  $104\text{ °F}$ .

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 or a crane.

### 6.5 ASSEMBLY AND INSTALLATION

#### **WARNING**

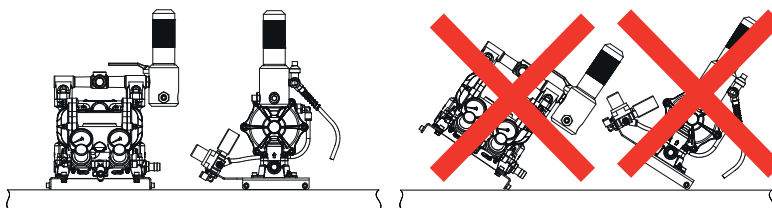
##### **Inclined ground!**

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.



#### **Positioning**

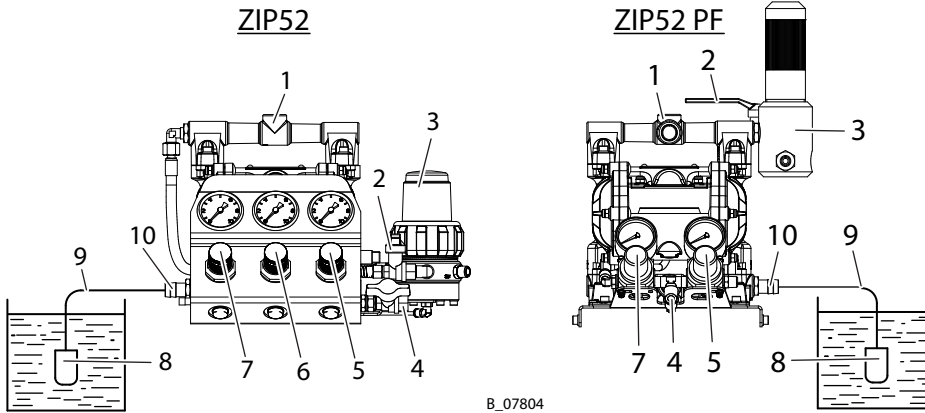


B\_06944



**Info**

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



B\_07804

1	Product output	6	Product pressure regulator (ZIP52)
2	Product return valve	7	Pump pressure regulator
3	Fine Flow Controller (ZIP52) Product filter (ZIP52 PF)	8	Air suction filter
4	Compressed air connection	9	Suction hose
5	Atomizing air pressure regulator	10	Product input

1. Mount the pump on a frame, trolley or wall mount.
2. Connect the suction system and air supply.
3. Connect the material and air supply in accordance with the superordinate operating manual.

**Product connection:**

Connect the suction hose (on the underside) and the lacquer/air double hose to the corresponding connections.

Properly connect the product hose and air hose.

Connect a suitable spray gun to the other end of the double hose.

For pumps installed in areas subject to explosion hazards, all hoses and pipes must be made of conductive material and must be grounded. All hoses, pipes and components connected to the supply line must be designed to operate at the pump's maximum pressure with the pump working at a vigorous rate.

**Compressed air connection:**

Connect the device's air inlet fittings to the distribution network.

Establish the connection at the device fitting. Do not replace the original connection. Use a line with a suitable diameter for the connection. Provide an external air cut-off valve for the ZIP52 PF Eco-Finishing. The pressure must not exceed the maximum value indicated on the type plate.

**6.5.1 Ventilation of the Spray Booth**

- Operate the device in a spray booth approved for the respective working materials.
- or -
- Operate the device on an appropriate spraying wall with the ventilation (extraction) switched on.

- Observe national and local regulations for the exhaust air speed.

### 6.5.2 Air Supply Lines

#### **WARNING**

##### **Hose connections!**

Risk of injury and damage to the device.

- ▶ Do not mix up hose connections of product hose and air hose.
- ▶ Ensure that only dry, clean atomizing air is used in the spray gun! Dirt and moisture in the atomizing air worsens the spraying quality and spray pattern.



### 6.5.3 Product Supply Lines

#### **DANGER**

##### **Bursting hose, bursting threaded joints!**

Danger to life from injection of product.

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



## 6.6 GROUNDING

#### **WARNING**

##### **Discharge of electrostatically charged components in atmospheres containing solvents!**

Explosion hazard from electrostatic sparks.

- ▶ Clean the pump only with a damp cloth.



#### **WARNING**

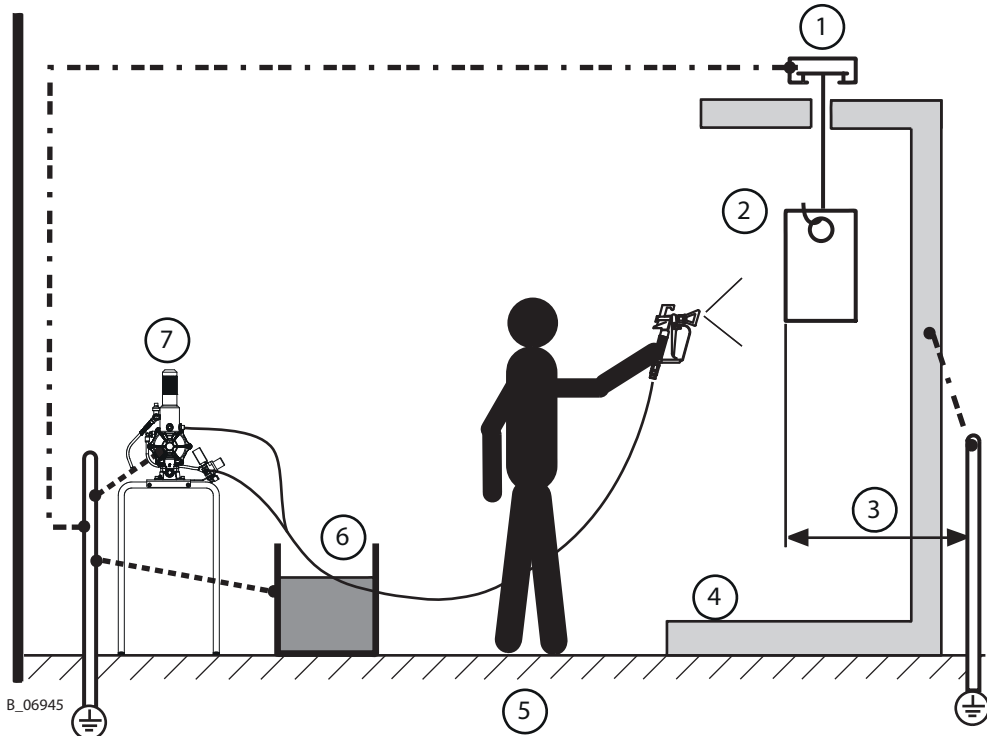
##### **Heavy paint mist if grounding is insufficient!**

Risk of poisoning.

Insufficient paint application quality

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



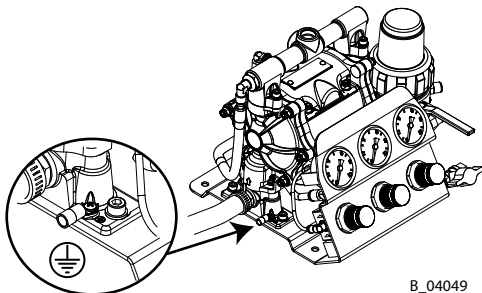


Grounding scheme (example)

Pos	Part / workstation	Cable cross section
1	Conveyor	16 mm <sup>2</sup> ; AWG6
2	Work piece	--
3	R <sub>max</sub> < 1 MΩ	--
4	Spraying stand Alternative: Spray booth	16 mm <sup>2</sup> ; AWG6
5	Floor, static dissipative	--
6	Product tank	6 mm <sup>2</sup> ; AWG10
7	Pump	4 mm <sup>2</sup> ; AWG12

### Info

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



1. Remove the crimp connection delivered with the pump.
2. Crimp the grounding cable on the connection and screw it back onto the pump's foot.
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, products harden in the spraying system.

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

Emergency stop, see Chapter Emergency Stop [▶▶ 34].

### 6.7.1 Preparation

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

1. Secure spray gun with safety lever.
2. Check the permissible pressures.
3. Check all connections for leaks.
4. Check hoses for damage in accordance with chapter Safety Checks and Maintenance Intervals [▶▶ 39].

### 6.7.2 Fill the Pump with Flushing Agent

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

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

- ▶ Fill the empty device with flushing agent in accordance with Chapter Filling the Empty Pump [▶▶ 42].

### 6.7.3 Pressure Tightness Test

#### **WARNING**

##### **Overpressure!**

Risk of injury from bursting components.

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



1. Gradually increase the pressure in pump with the pressure regulator until maximum pressure is reached. Maintain the pressure for 3 minutes and check all connection points for leaks.
2. Carry out pressure relief in accordance with Chapter Pressure Relief / Work Interruption [▶▶ 35].

### 6.7.4 Verifying a Safe Operational Condition

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

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



### 6.7.5 Filling with Working Product

- ▶ Proceed in accordance with Chapter Filling the Empty Pump [▶▶ 42].

## 7 OPERATION

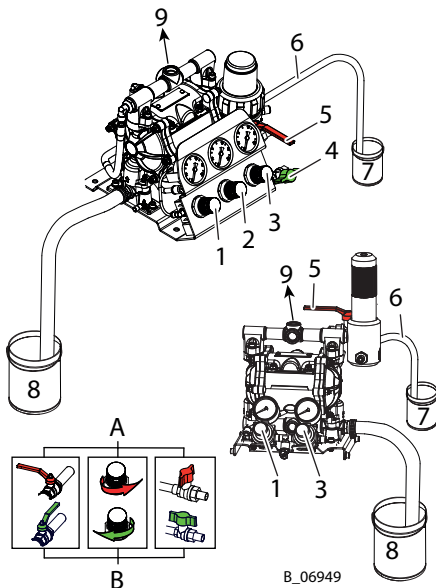
### 7.1 TRAINING THE OPERATING PERSONNEL

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

### 7.2 EMERGENCY STOP

In the case of unforeseen occurrences immediately:

1. Immediately close the air cut-off valve (4).  
 ZIP52 Finishing: An air cut-off valve is installed.  
 ZIP52 PF Eco-Finishing: An air cut-off valve must be provided by the user.
2. Open the return valve (5) and/or the delivery devices (valves or guns).



A	closed	B	open
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### 7.3 TASKS

Ensure that:

commissioning is carried out in accordance with Chapter Commissioning [ ▶▶ 32].

1. Carry out a visual inspection: Personal protective equipment, grounding and all devices ready for use.
2. Secure spray gun and insert nozzle into the spray gun.
3. Slowly open the shut-off valve (4).
4. The pump supplies the product (8) while the spray gun (9) is open.
5. Set the air pressure to 1–1.5 bar with the pump pressure regulator (1) and the product pressure regulator (2, for ZIP 52 Finishing), in order to reach the desired product amount and/or the desired product pressure.
6. Set the atomizing air pressure regulator (3) to 1.5–2 bar.

7. Start work process.

### 7.3.1 Pump Shaking / Air Suctioning

If the pump speeds up suddenly and starts to shake, there is no lacquer left inside the device and the pump is sucking in air. In this case, more lacquer must be supplied.

If enough lacquer is available and the pump still shakes, the suction filter is clogged and must be cleaned.

#### Info

In case air accidentally flows into the pump suction inlet, the air pressure must immediately be reduced to avoid the pump working at an excessive speed.



### 7.3.2 Product Pressure and Atomizing Air Pressure

The aforementioned values for the product pressure (1-1.5 bar) and atomizer air pressure (1.5-2 bar) should be regarded as guideline values, as the pressure always depends on the properties of the lacquer used, in particular its viscosity. If paints or other very liquid products are used, the product pressure must be set very low (approximately 0.5 bar or lower).

On the other hand, highly viscous lacquers require a pressure as high as 3 bar or even higher. The atomizing air pressure must be set to 1–2.5 bar, depending on the lacquer characteristics. To obtain perfect atomization and to avoid spray mist, the lowest possible atomizing air pressure must be used. In some cases, the spray gun must be provided with a very low product pressure and a very high atomizing air pressure. Carefully choose the appropriate atomizing cap for the spray gun.

## 7.4 PRESSURE RELIEF / WORK INTERRUPTION

The pressure must always be relieved:

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

The components for pressure relief on a CE-compliant spraying system include:

- Outlet equipment (return valve) mounted between pump and spray gun.

#### Process for relieving pressure

1. Close the product delivery valve or any other device installed on the delivery line (such as outlet valves or spray guns).
2. Close the air cut-off valve. Relieve the pressure in the product line, by opening the return valve (if installed) or the dispensing device (valve or spray gun).
3. Close and secure return valve and dispensing device.

**Info**



Control air pressure is still present.

**! NOTICE**

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

Using 2K materials can destroy the pump and spraying 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**

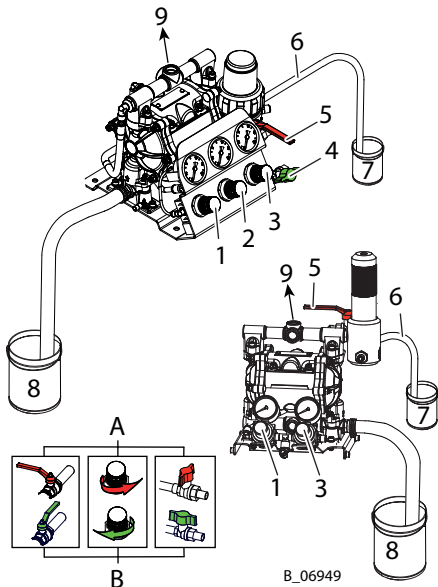
- Regular flushing, cleaning and maintenance ensures the pump's high conveying and suction capacity.
- The cleaning and flushing agents used must be compatible with the working material.

**! WARNING**

**Incompatibility of cleaning/flushing agent and working medium!**

Risk of explosion and danger of poisoning by toxic gases.

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



A	closed	B	open
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**Preparation**

1. Visual check: personal safety equipment, grounding and all devices ready to use.
2. Place empty, grounded tank (7) under the return tube (6).
3. Place the suction hose (7) in the grounded tank with flushing agent (8).



4. Fully close the pressure regulator (1) and atomizing air pressure regulator (3) (0 mpa; 0 bar; 0 psi).

#### **Flushing via the return valve**

1. Open return valve (5).
2. Slowly open the air cut-off valve (4).
3. Turn the pressure regulator (1) clockwise until the pump starts.
4. Flush the system until clean flushing agent flows into the tank (7).
5. Close the pressure regulator (1).
6. As soon as there is no pressure remaining in the system, close the return valve (5).

#### **Flushing via the gun**

1. Point the spray gun, without nozzle, into the tank (7) and open it.
2. Slowly open pressure regulator (1).
3. Rinse until clean flushing agent flows from the spray gun.
4. Close the pressure regulator (1).
5. When there is no pressure remaining in the system, close the spray gun.
6. Secure the spray gun.
7. Dispose of the contents of the tank (7) according to the local regulations.

#### **In case of start-up problems:**

1. Close the air cut-off valve (4).
2. Turn the pressure regulator (1) counterclockwise (0 bar pressure).
3. Open the air cut-off valve (4).
4. Turn the pressure regulator (1) clockwise until the pump starts. If necessary, repeat the operation several times.

#### **7.5.1 Filling with Working Product**

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

- ▶ Proceed according to Chapter Filling the Empty Pump [▶▶ 42], but use working product instead of flushing agent.

## 8 CLEANING AND MAINTENANCE

### 8.1 CLEANING

#### 8.1.1 Cleaning Personnel

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

The following hazards may arise during cleaning work:

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

#### 8.1.2 Decommissioning and Cleaning

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

1. Interrupt the work sequence in accordance with Chapter Pressure Relief / Work Interruption [▶▶ 35].
2. Carry out basic flushing in accordance with Chapter Basic Flushing [▶▶ 36].
3. Empty system in a controlled manner according to Chapter Emptying Pump [▶▶ 41].
4. Service spray gun in accordance to its operating manual.
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 Filling the Empty Pump [▶▶ 42].

#### 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.

1. Carry out decommissioning and cleaning (steps 1 to 7) in accordance with Chapter Decommissioning and Cleaning [▶▶ 38].
2. Fill the system with preservation agent in accordance with Chapter Filling the Empty Pump [▶▶ 42].
3. Empty the system in a controlled manner in accordance with Chapter Emptying Pump [▶▶ 41] and seal the openings.

### 8.2 MAINTENANCE

#### 8.2.1 Maintenance Personnel

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

The following hazards may arise during maintenance work:

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

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

## 8.2.2 Maintenance Instructions

### **DANGER**

#### **Incorrect maintenance/repair!**

Danger to life and equipment damage.

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



#### **Prior to maintenance**

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

- Flush and clean the system according to Chapter Decommissioning and Cleaning [▶▶ 38].
- Relieve the pressure from the pump, product hose and spray gun.
- Secure spray gun with safety lever.
- Interrupt the air supply.
- Depending on the operation, disconnect the product and air-side connection pipes.
- Remove the pump from the base or support it is fastened to.

#### **After maintenance**

- Carry out safety checks in accordance with Chapter Safety Checks and Maintenance Intervals [▶▶ 39].
- Put the system into operation and check for leaks as described in Chapter Commissioning [▶▶ 32].
- Have the system checked for safe condition by a skilled person.
- Carry out functional check in accordance with Chapter Function Test after Repair Work [▶▶ 51].

## 8.2.3 Safety Checks and Maintenance Intervals

### **Every day**

1. Check grounding: see Chapter Grounding [▶▶ 30].
2. Check delivery and suction filters.
3. Check hoses, tubes and couplings: see Chapter Product Hoses, Pipes and Couplings [▶▶ 40]

### **Weekly**

1. Check system for damage.
2. Check and tighten fastening screws.

3. Check for air and liquid leakages.
4. Check that the safety fixtures function properly (see Chapter Protective and Monitoring Equipment [▶▶ 20]).

**Yearly or as required**

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

**8.2.4 Product Hoses, Pipes and Couplings**

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

1. Check hoses, pipes, and couplings every day and replace if necessary.
2. Before every commissioning, check all connections for leaks.
3. Additionally, the operator must regularly check the complete hoses for wear and tear as well as for damage at intervals that he/she has set. Records of these checks must be kept.
4. Replace the complete hose if one of the following two periods is exceeded:
  - ▶ 6 years from the date of the hose crimping (see fitting embossing).
  - ▶ 10 years from the date of the hose imprinting.

<b>Fitting embossing (if present)</b>	<b>Meaning</b>
xxx bar	Pressure
yymm	Crimping date (year/month)
XX	Internal code
<b>Hose imprinting</b>	<b>Meaning</b>
WAGNER	Name / manufacturer
yymm	Date of manufacture (year/month)
xxx bar (xx MPa) e.g. 270 bar (27MPa)	Pressure
XX	Internal code
DNxx (e.g., DN10)	Nominal diameter

### 8.2.5 Emptying Pump

#### WARNING

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

Danger to life from flying parts.

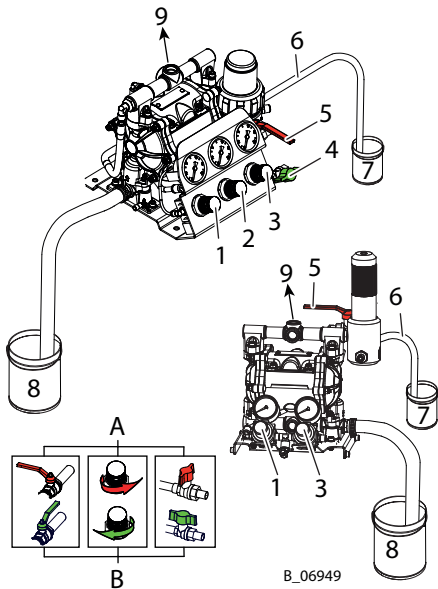
Ignition of potentially explosive surrounding atmosphere.

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



#### Info

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



A	closed	B	open
---	--------	---	------

1. Visual check: personal safety equipment, grounding and all devices ready to use.
2. Place an empty, grounded collection tank (7) under the return tube (6).
3. Place the suction hose in an empty, grounded tank (8).
4. Close the pump pressure regulator (1) and atomizing air pressure regulator (3) (0 MPa; 0 bar; 0 psi).

#### Emptying via return line

1. Open return valve (5).
2. Slowly open the air cut-off valve (4).
3. Slowly dial up the air pressure at the pressure regulator (1) until the pump operates smoothly (approx. 0.15 MPa; 1.5 bar; 21.75 psi).
4. Be ready for the switch from working product to air.
5. As soon as working material is no longer flowing from the return tube (6), close pressure regulator (1).

6. Close return valve (5).

### Emptying up to the gun

1. Point the spray gun, without nozzle, into the tank (7) and open it.
2. Slowly open pressure regulator (1). Be ready for the switch from working product to air.
3. As soon as working material is no longer flowing, close the pressure regulator (1).
4. Close and secure the spray gun.
5. Carry out pressure relief in accordance with Chapter Pressure Relief / Work Interruption [▶▶ 35].
6. Dispose of the contents of the tank (7) according to the local regulations.

### 8.2.6 Filling the Empty Pump

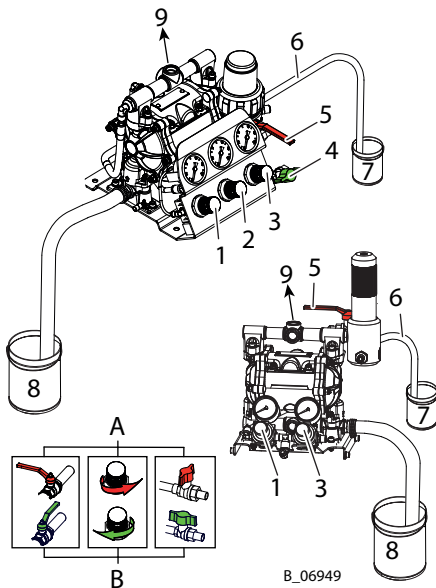
#### WARNING

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

Danger to life from flying parts.

Ignition of potentially explosive surrounding atmosphere.

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



A	closed	B	open
---	--------	---	------

1. Carry out a visual inspection: Personal protective equipment, grounding and all devices ready for use.
2. Place empty, grounded tank (7) under the return tube (6).
3. Place the suction hose in a grounded tank with working material (8).
4. Fully close the pump pressure regulator (1) and atomizing air pressure regulator (3) (0 MPa; 0 bar; 0 psi)
5. Open return valve (5).

6. Slowly open the air cut-off valve (4).
7. Turn the pump pressure regulator (1) clockwise until the pump starts.
8. Be ready to switch from air to working product and prevent back spray.
9. Close the pressure regulator (1) as soon as pure working material starts coming from the return tube (6).
10. Close return valve (5).
11. Point the spray gun, without nozzle, into the tank (7) and open it.
12. Slowly open pressure regulator (1). Be ready to switch from air to working product and prevent back spray.
13. As soon as pure working material without air bubbles is flowing, close pressure regulator (1).
14. Close and secure the spray gun.
15. Carry out pressure relief in accordance with Chapter Pressure Relief / Work Interruption [▶▶ 35].
16. Dispose of the contents of the tank (7) according to the local regulations.

**If the pump doesn't start up, carry out the following steps:**

1. Close the air cut-off valve (4).
2. Turn the pressure regulator (1) counterclockwise (0 bar pressure).
3. Open the air cut-off valve (4).
4. Turn the pressure regulator (1) clockwise until the pump starts.

If necessary, repeat the operation several times.

### 8.2.7 Cleaning the Filter

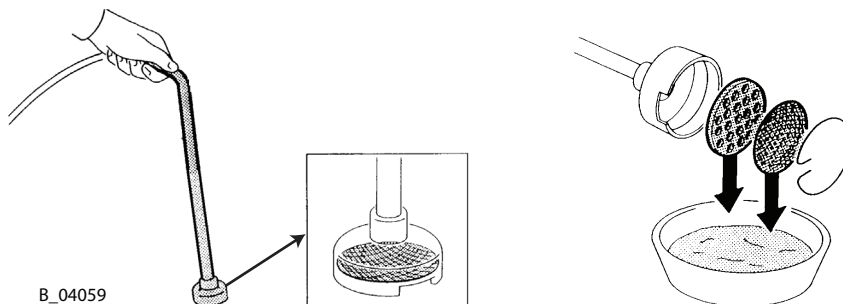
This pump has one filter inside the suction tube and another inside the delivery circuit (ZIP52 Finishing: Fine Flow Controller - ZIP52 PF Eco-Finishing: product filter).

The filters must be cleaned regularly.

Clean the filter every time that the lacquer color is changed.

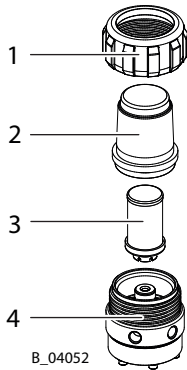
- Before cleaning the filters, close the air cut-off valve and release the pressure contained inside the pump and the pipes attached to it.

#### 8.2.7.1 Suction Tube Filter



To clean the suction tube filter, remove the spring, take out the suction filter and filter disc and place them in flushing agent. Then, blow them off with compressed air.

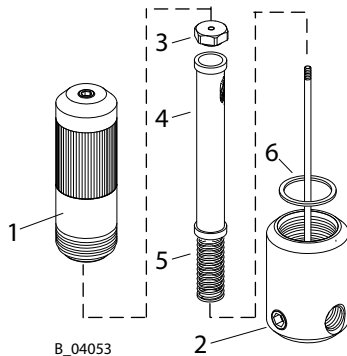
### 8.2.7.2 Fine Flow Controller (ZIP52 Finishing)



To clean the filter of the Fine Flow Controller, unscrew the union nut (1) from the metal body and lift the filter cup (2). When doing so, pay attention to the PTFE seal on the edge. Remove the filter (3) from the base (4), pulling it upward, since it has a very simple clip fixing. Place the filter cartridge in the flushing agent, then brush and blow it off. Make sure that the inside of the filter is cleaned with flushing agent and is blown out.

Re-insert the filter by simply pushing it onto the filter seat until the fixing clip audibly clicks into place. Do not push the filter downwards any further, to avoid damaging it. Reposition the filter cup making sure that the PTFE seal is in the perfect position. Then, screw the union nut tight.

### 8.2.7.3 Filter ZIP52 Eco-Finishing



To clean the filter of the ZIP52 Eco-Finishing device, simply remove the upper cover (1) from the filter housing (2), by unscrewing it, then unscrew the filter's lock-ring (3) and remove the filter element (4).

Remove the internal spring (5) from the filter element.

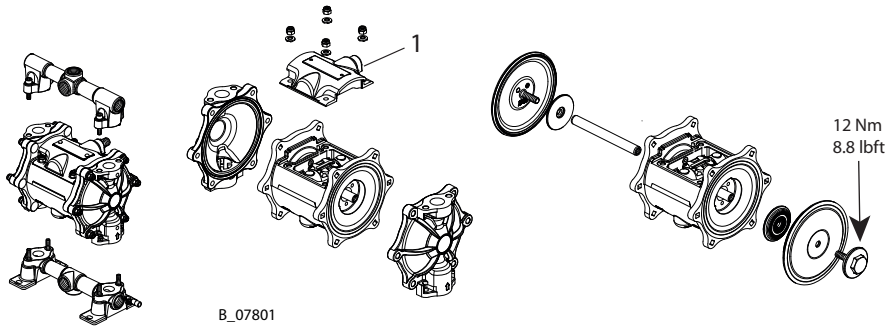
Place the filter cartridge and the internal spring in the flushing agent. Then brush them off and blow them out. Make sure that the inside of the filter is cleaned with flushing agent and is blown out.

Reassemble in reverse order, taking care not to damage the plastic seal (6).

## 8.3 REPLACING THE DIAPHRAGM (PREVENTIVE MAINTENANCE)

Mark the coupled parts (diaphragm covers, manifold, covers) with a felt-tip pen so as to make subsequent reassembly easier.





### Info

When executing the following operations it is imperative to avoid any rotation of the shaft in the motor block!



### Disassembly

1. Remove the suction and delivery manifolds.
2. Disassemble the fastening nuts and remove the outer diaphragm covers. Dismount the pressure side cover (1).
3. Hold the end nut of the outer diaphragm disc with a wrench. Loosen the end nut of the other diaphragm disc and dismount it.
4. Remove the released diaphragm with its corresponding internal disc, and remove the shaft from the motor block.
5. Clamp the end of the shaft released from the diaphragm in a bench vice (with soft jaws to avoid damaging it) and remove the external diaphragm disc from the opposite end of the shaft. Then remove the second diaphragm with its internal disc.

### Assembly

1. Assemble the new diaphragm with its internal disc and properly fasten it to the relevant external disc.
2. Remove the shaft from the bench vice and put it in the motor block. Grease the shaft inside and outside (beyond the underside of the motor block). Thereby move the shaft into different positions. See Chapter Spare Parts [▶▶ 55].
3. Mount the inner diaphragm disc, the diaphragm and the outer disc and tighten them properly onto the nut of the opposite outer discs using two wrenches.
4. Attach the silencer and the pressure side cover. Check the correct positioning of the cover and its seal.
5. Attach the outer diaphragm cover and the manifolds. Ensure correct position of seals of the ball valves when doing so.
6. Screw on and tighten the cover screws. Fasten the manifold screws. Apply the correct torque, in accordance with Chapter Spare Parts [▶▶ 55].

### 8.4 CLEANING/REPLACEMENT OF THE SUCTION AND DELIVERY NON-RETURN VALVES

1. Remove the suction and delivery manifold.
2. Remove the seals, seats and balls from the diaphragm covers and the manifold's housings.
3. Check the condition of wear of the ball guide/stops inside the diaphragm cover and manifold. Replace if worn.

4. Remove all dirt particles as well as hardened product residues. Check the balls and seats for excessive wear. Clean or replace the components.
5. Clean the contact surfaces of the manifolds and the diaphragm cover and mount the components. Apply the correct torque, in accordance with Chapter Spare Parts [ ▶▶ 55].

It is recommended that the static seals be replaced when reassembling.

### **8.5 REPLACEMENT OF THE REVERSING VALVE**

1. Dismount the pressure side cover and remove the reversing valve.
2. To clean it, blow the housing cavity of the reversing valve out with a jet of compressed air (wear safety goggles).
3. Install the new reversing valve. When doing so, apply the correct torque (see figure in Chapter Replacing the Diaphragm (Due to Breakage) [ ▶▶ 49]). Mount the valve slider on one of the stroke stop positions. There are four possible positions, each of them is suitable. Attach the pressure side cover.

During the performance of the operations described above, check the positioning of the valve's seals and cover including the seal. Apply the correct torque, in accordance with Chapter Spare Parts [ ▶▶ 55]. The reversing valve of the pump is lubricated at the factory and does not need any lubrication.

## 9 TROUBLESHOOTING AND RECTIFICATION

Problem	Cause	Remedy
The device does not work.	The device has no compressed air.	Check the compressed air supply line and the air cut-off valve. Check the compressed air maintenance device (if available).
	The product pressure regulator is set to 0 (ZIP52 Finishing).	Check the pressure setting on the product pressure regulator. If necessary, increase the pressure.
	The pump is blocked near the reversal point.	Close the air cut-off valve. Turn the pressure regulator knob approximately half a turn clockwise. Open the air cut-off valve again. Repeat until the pump starts.
	Fine Flow Controller (or product filter on the ZIP52 PF Eco-Finishing) is clogged.	Clean or replace the filter.
The device is operating (i.e. the pump is moving) but no liquid is being pumped.	No fluid is available at the pump's inlet.	Check the fluid level in the tank or container.
	Air suction filter clogged	Carefully clean the filter.
	The suction tube is clogged or leaking (is possibly sucking air in from the atmosphere).	Check the suction tube. Replace it if necessary.
The product flow is irregular or decreases during work.	Suction problems	Check the suction tube to see if it is partially clogged. Replace it if necessary.
	Conveying problems	Partial clogging of the delivery line or the paint hose. Clean or replace.
	Non-return valves are leaking.	Contamination or wear in the non-return valves. Check the non-return valves and replace them if necessary.
The device works even if the spray gun is closed.	Non-return valves are leaking.	Contamination or wear in the non-return valves. Check the non-return valves and replace them if necessary.
	The return valve is not closed properly.	Check the return valve to see if it is open or leaking.
The pump stops often.	Low air pressure to the pump.	Increase the air pressure.
	Non-return valves' guides/stops are worn.	Check the non-return valves. Replace the delivery manifold or pump cover if necessary. The ball guide of the acetal pump can be replaced.
	Ice formation inside the air outlet pipes	Check the compressed air quality.
		Check the compressed air quality.
		Install a condensation separator in the air line.
		Install an air dryer if necessary.
If necessary, install an oiler and fill it with special de-icing fluid.		

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

## 10 REPAIRS

### 10.1 REPAIR PERSONNEL

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

The following hazards may arise during repair work:

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

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

### 10.2 REPAIR NOTES

#### DANGER

##### **Incorrect maintenance/repair!**

Danger to life and equipment damage.

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



#### **Before Repair Work**

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

1. Flush and clean the system according to Chapter Decommissioning and Cleaning [▶▶ 38].
2. Interrupt the air supply.
3. Depending on the operation, disconnect the product and air-side connection pipes.
4. Remove the pump from the base or support it is fastened to.

#### **After Repair Work**

1. Carry out safety checks in accordance with Chapter Safety Checks and Maintenance Intervals [▶▶ 39].
2. Put the system into operation in accordance with Chapter Commissioning [▶▶ 32] and check for leaks in accordance with Chapter Function Test after Repair Work [▶▶ 51].
3. Have the system checked for safe condition by a skilled person.
4. Carry out functional check in accordance with Chapter Function Test after Repair Work [▶▶ 51].

### 10.3 TOOLS

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

- Torque wrench set
- Allen wrench set

### 10.4 CLEANING THE PARTS AFTER DISASSEMBLY

#### **WARNING**

##### **Incompatibility of cleaning agent and working medium!**

Risk of explosion and danger of poisoning by toxic gases.

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



#### **Please note:**

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

### 10.5 ASSEMBLY OF THE DEVICE

In Chapter Spare Parts [▶▶ 55] the order numbers for device spare parts can be found, as well as for wearing parts such as seals.

1. Defective parts, O-rings and seal sets must always be replaced.
2. Use greases and glues in accordance with Chapter Spare Parts [▶▶ 55].
3. Observe torque specifications in Chapter Spare Parts [▶▶ 55].

#### **Assembly Aids**

Order no.	Quantity	Designation
9992590	1 pc $\triangleq$ 50 ml	Loctite® 222
9992831	1 pc $\triangleq$ 50 ml	Loctite® 542
Z125.00	1 pc $\triangleq$ 1 kg	Grease

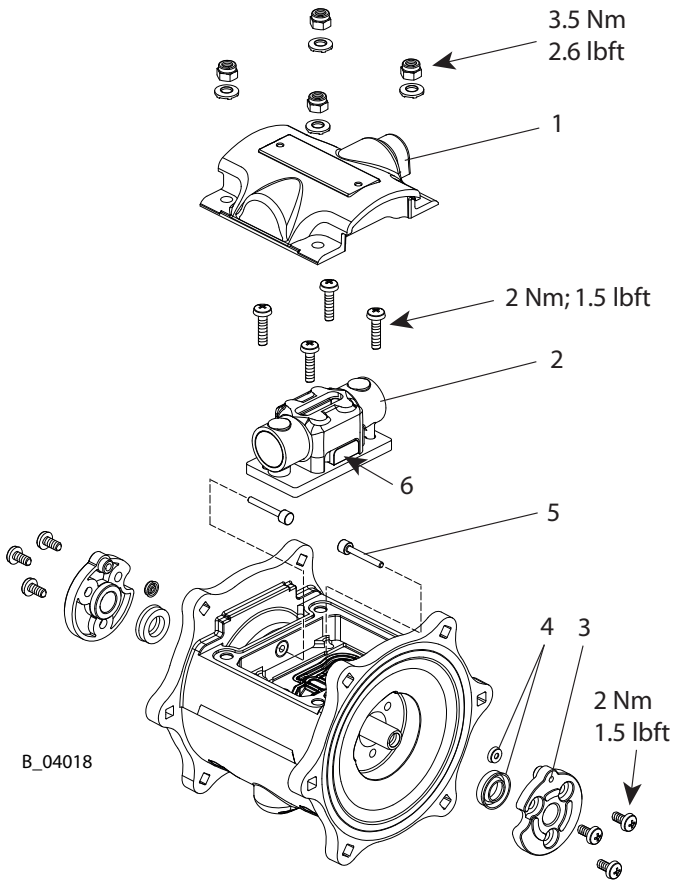
#### **Brand notice**

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

### 10.6 REPLACING THE DIAPHRAGM (DUE TO BREAKAGE)

If the diaphragms are replaced as a result of breakage, all the internal parts of the motor must be cleaned and the condition of the seals and reversing valve, which may have been damaged by contact with the pump fluid, must be checked.


Mark the coupled parts (diaphragm covers, manifold, covers) with a felt-tip pen so as to make subsequent reassembly easier.



1. Dismantle the motor in accordance with Chapter Replacing the Diaphragm (Preventive Maintenance) [▶▶ 44].
2. Remove the reversing valve (2).
3. Remove the shaft's plastic bushings (3) located at each end of the motor block, the lip seals (4) and the feeler pins (5).
4. Clean all the components, openings and spaces within the motor block. Blow the housing cavity of the reversing valve out thoroughly with a jet of compressed air (wear safety goggles).
5. Check the condition of the reversing valve. If necessary replace.
6. Grease feeler pins (5).
7. Reassemble all parts described in section 3 and ensure that the sealing lips are correctly aligned (see Chapter Spare Parts [▶▶ 55], exploded view).
8. Grease feeler pins (5) with lip seal (4) once more from outside.
9. Put the reversing valve back in its housing. When doing so, apply the correct torque. Position the valve slider (6) on one of the stroke stop positions. There are four possible positions, each of them is suitable.
10. Assemble the remaining components and reassemble the motor in accordance with Chapter Replacing the Diaphragm (Preventive Maintenance) [▶▶ 44].

## 11 FUNCTION TEST AFTER REPAIR WORK

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

Activity	Aid tools
<b>1. EX-relevant tests</b>	
<p>▶ Check the ground connection between the corresponding ground connection of the pump and the frame/trolley, and between the individual parts of the frame/trolley:                      &lt;100 kΩ</p> <p><b>These tests are -relevant!</b></p>	Ohmmeter
<b>2. Leaktightness check</b>	
<ol style="list-style-type: none"> <li>1. Connect the pump to the air supply (6 bar).</li> <li>2. To perform a tightness check on the device, the product pressure with the flushing agent is slowly increased in increments until the maximum pressure indicated on the type plate is reached.</li> <li>3. Close pump outlet.</li> <li>4. Allow to stand in this position for 0.5-1 minute and listen for audible blowing off.</li> <li>5. When the air supply is turned off, a drop in pressure must be watched for.</li> </ol>	Air motor: Test medium: Compressed air Leak spray Fluid section: Test medium: Suitable flushing agent
<b>3. General checks</b>	
<ol style="list-style-type: none"> <li>1. Check the tightening torques of various screws; see Chapter Spare Parts [▶▶ 55].</li> <li>2. Check all fittings.</li> <li>3. Empty device (Chapter Emptying Pump [▶▶ 41]) and relieve pressure (Chapter Pressure Relief / Work Interruption [▶▶ 35]).</li> <li>4. Check the functionality of the frame or transport trolley. Check whether the pump is mounted horizontally on the frame.</li> </ol>	Torque wrench Visual check

## **12 DISPOSAL**

### **12.1 DEVICE**

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

The following materials have been used:

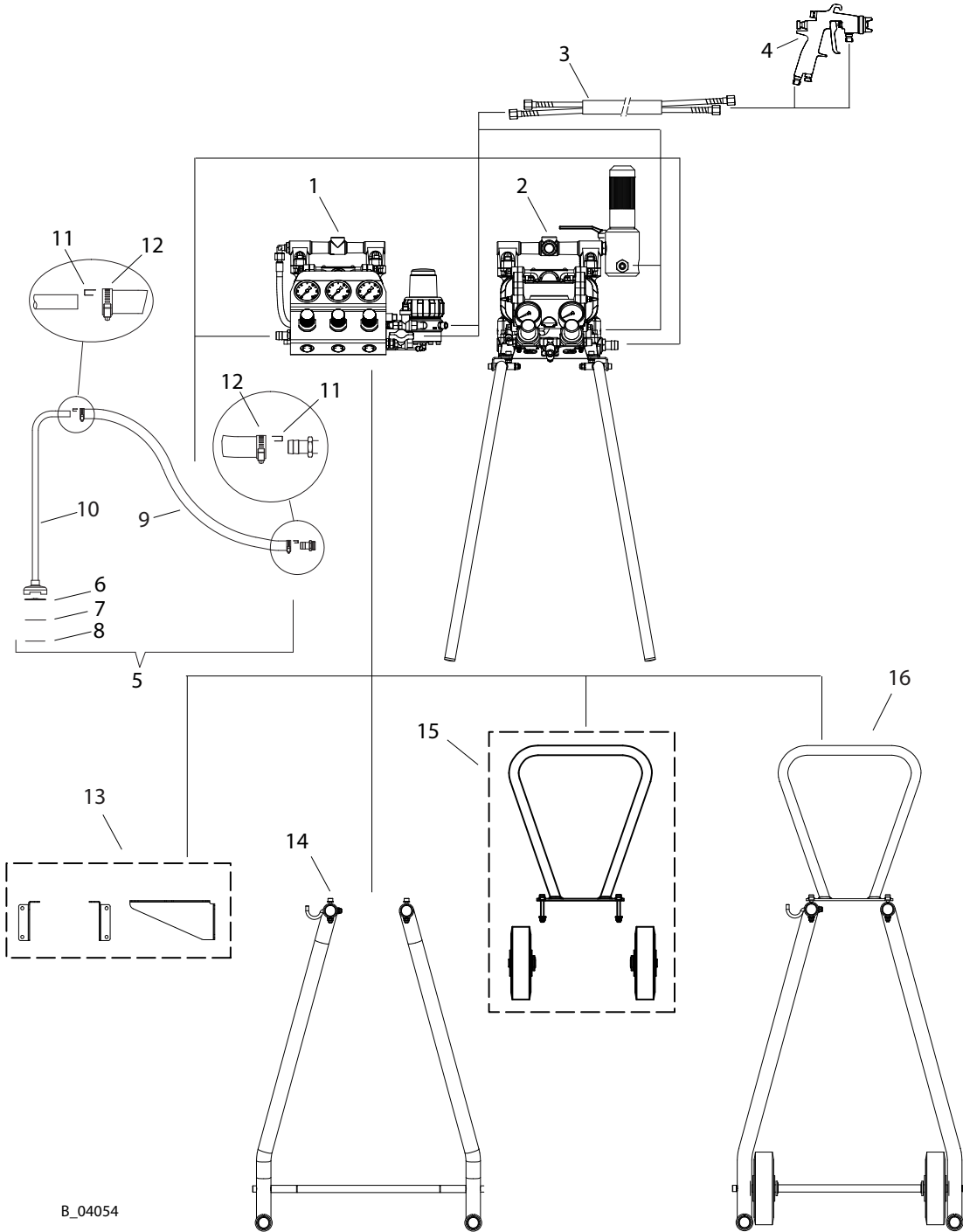
- Stainless steel
- Aluminum
- Elastomers
- Plastics
- Carbide

### **12.2 CONSUMABLE PRODUCTS**

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



### 13 ACCESSORIES



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Pos K	Order no.	Designation
1	U760.00	ZIP52 Finishing, aluminium
1	U765.00	ZIP52 Finishing, stainless steel
1	U773.00	ZIP52 Finishing, (POM) acetal
2	U731.00	ZIP52 PF Eco-Finishing
3	S419.00G	Low-pressure double hose



Pos	K	Order no.	Designation
3		S419.00GI	Low-pressure double hose, stainless steel
4		R950.xx	Spray gun, SP5
4		V1061304xx3	Spray gun, Pilot Trend MP
4		V1060203xx3	Spray gun, Pilot Trend HP
4		V1070203xx3	Spray gun, Pilot Premium HP
4		V1070404xx3	Spray gun, Pilot Premium HVLP PLUS
4		V1070603xx3	Spray gun, Pilot Premium HVLP
5		T406.00	Suction hose, stainless steel, complete
6		H401.07	Filter disk
7		T453.03	Air suction filter
8		H206.03	Spring
9		S402.06A	Solvent resistant suction hose
10		T420.00	Suction tube, stainless steel
11		E0107.03	Contact clamp, stainless steel
12		R601.00	Hose clamp
13		T760.00M	Wall mount
14		T760.00S	Frame set
15		T760.00R	Wheel set with handle
16		T760.00SR	Trolley, complete

## 14 SPARE PARTS

### 14.1 HOW CAN SPARE PARTS BE ORDERED?

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

#### **Order number, designation and quantity**

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

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

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

#### **Identification in spare parts lists**

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

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

\* = included in service set

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

Explanation of order no. column:

-- Item not available as spare part.

/ Position does not exist.

### 14.2 NOTES ON USING SPARE PARTS

#### **DANGER**

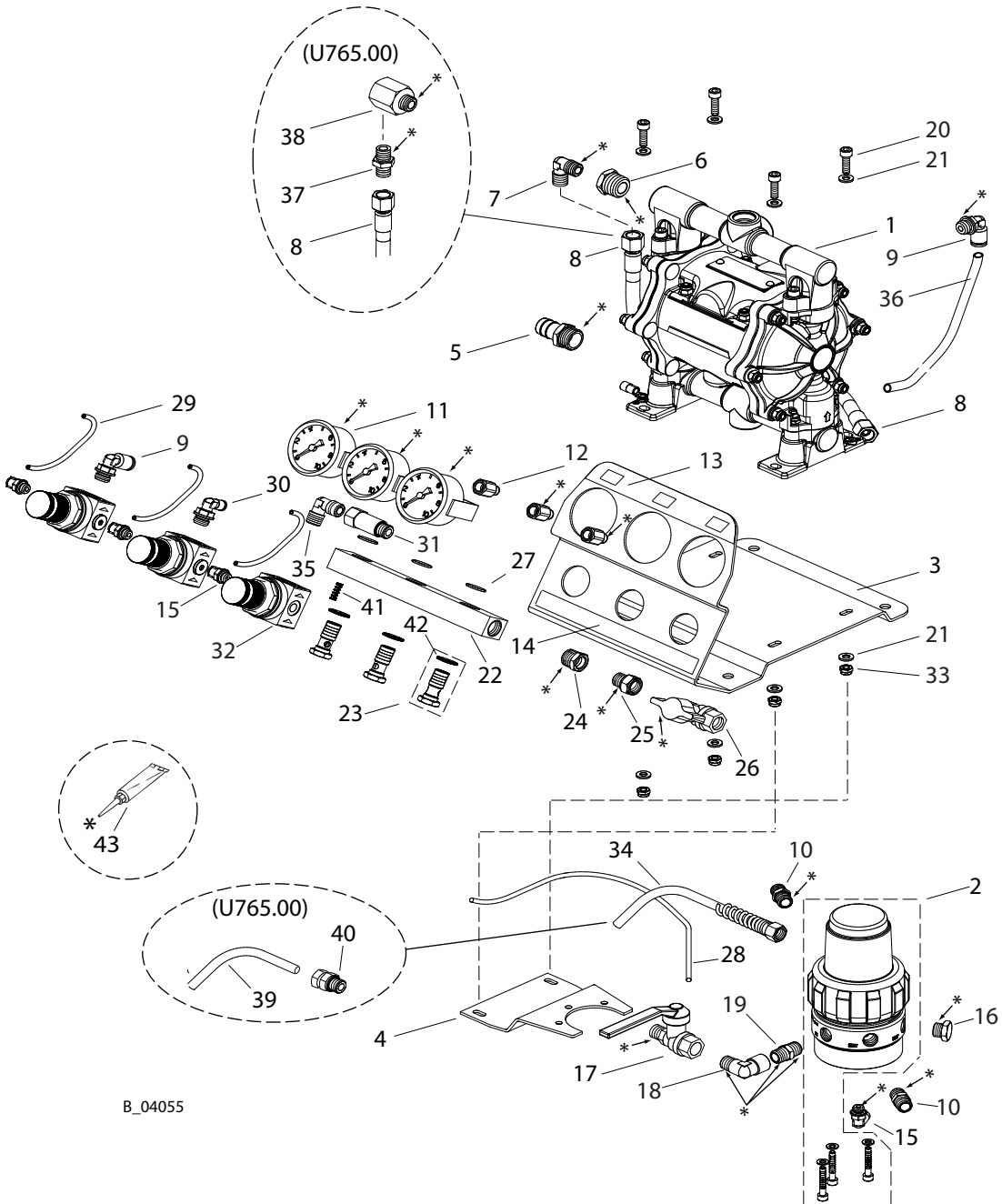
##### **Incorrect maintenance/repair!**

Danger to life and equipment damage.

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



14.3 ZIP52 FINISHING



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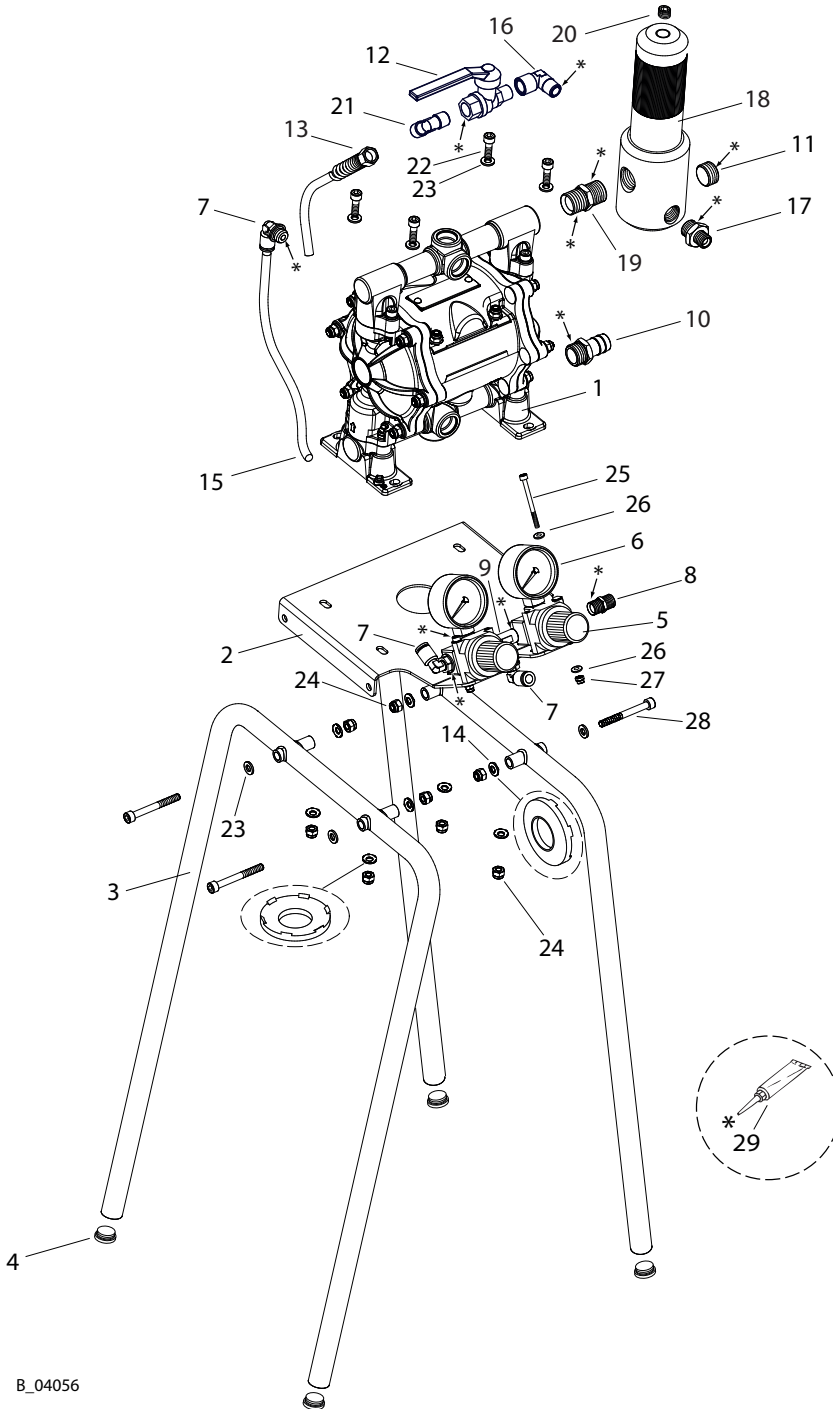
Pos	K	Stk	Order no.	Order no.	Order no.	Designation
1		1	U760.00	U765.00	U773.00	DDP ZIP52
2		1	T0180.00A	T0180.00AI	T0180.L0AI	FFC 14/0.5-8 bar pneum., aluminium Al
3		1		E3105.62		Zip52 pump bracket
4		1		E3106.62		Mounting plate for FFC
5		1	M208.04	B274.03		Hose connection, 1/2"x16
6		1	M247.00	--		MF reducer, 1/2"-1/4"



Pos	K	Stk	Order no.	Order no.	Order no.	Designation
7		1	M215.04	--	--	Elbow fitting, MM 1/4"
8		1		S591.00C		Paint hose
9		2		9998253		Screw-in fitting, 8-1/4"
10		2	M205.04A	M801.03B		Fitting, 1/4"
11		3		P904.00		Pressure gauge 0-10 bar
12		3		M286.00		Quick fitting, D F 1/8"x4
13		1		Z547.00		Controller plate
14		1		2416550		Zip52 Finishing Label
15		4		M335.00		Fitting, L 1/8"x4
16		1	9904307	M826.03B		Plug, E 1/4"
17		1	M109.00	M513.00IA		Ball valve, MF 1/4"
18		1	9992265	M881.03		Fitting, L MF 1/4"
19		1	M205.04	M801.03C		Double fitting, 1/4"
20		4		9900312		Screw, M6x20
21		8		9920103		Washer, A6.4, DIN 125
22		1		T139.01		Air manifold
23		3		M404.00		Hollow screw
24		1		M250.00		MF reducer, 3/8"-1/4"
25		1		M239.00		Reducing fitting, 1/4"A-1/4"l
26		1		M101.00		Ball valve, FM 1/4"
27	◆	3		9971448		O-ring
28		1		S455.07A		Paint reducer air pipe
29		3		S455.07		Pressure gauge reducer pipe
30		1		M354.00		Revolving quick fitting, L 1/4"x4
31		1		M204.14A		Extension MF 1/4"
32		3		P123.00		Air pressure regulator, 1/4"
33		4		9910204		Self-locking nut, M6
34		1	S401.00	--		Return hose, BP MT 2 D 8
35		1		M215.04		Screw fitting elbow, MM 1/4"
36		1		S455.07B		Pump feeding air tube
37		1	--	M801.03A	M801.03B	Fitting, 1/4" stainless steel
38		1	--	B0264.03		Fitting, 1/2" stainless steel
39		2 m	--	S103.07N		Hose, nylon D8
40		1	--	M057.07		Fitting, 1/4"x8
41		1		H261.03		Spring
42	◆	3		M404.00G		Seal
43		1		9992831		Loctite® 542, 50 ml; 50 cc

◆ = wearing parts

**14.4 ZIP52 PF ECO-FINISHING**

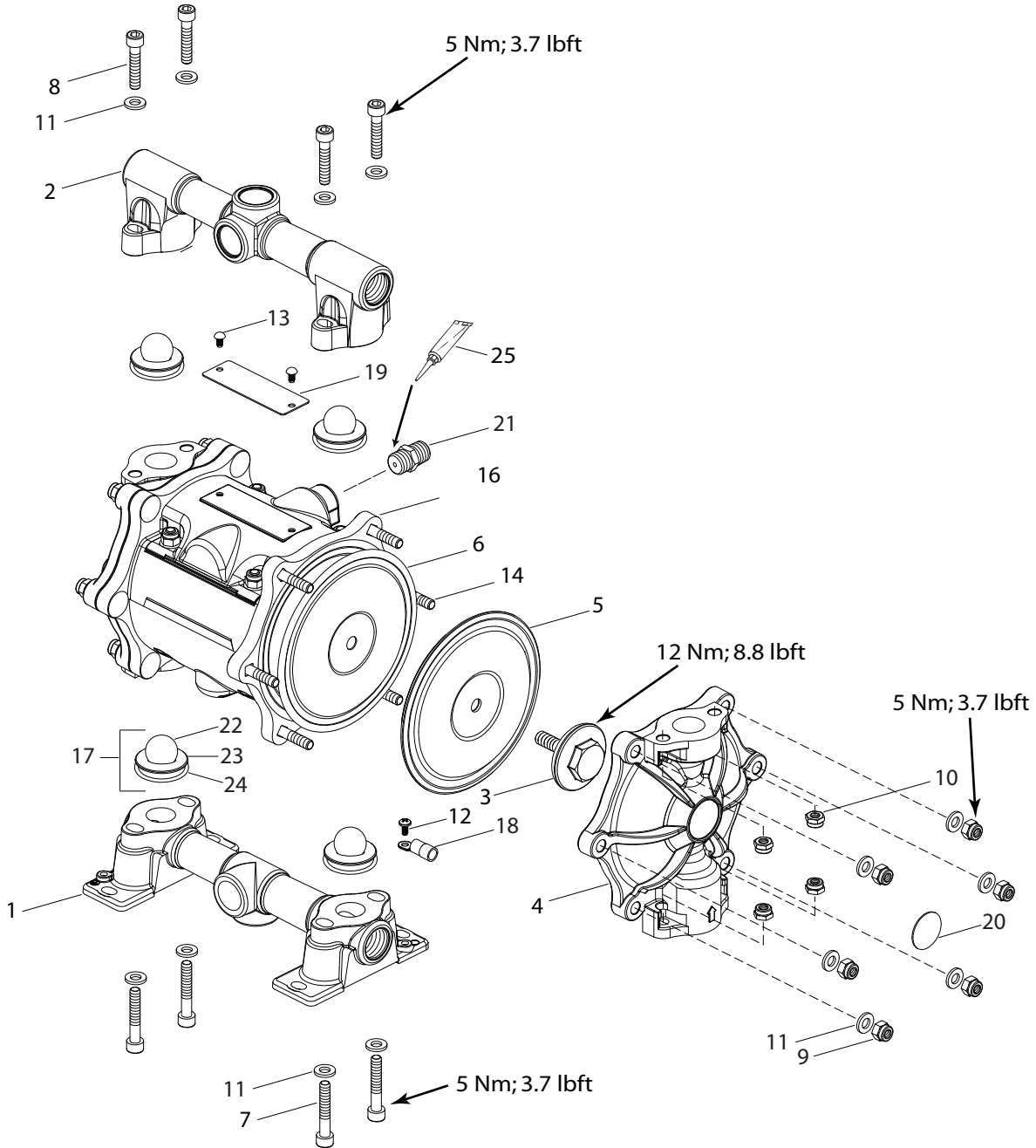


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Pos	K	Stk	Order no.	Designation
1		1	U731.00	ZIP52 PF Eco-Finishing
2		1	E3112.62	Mounting plate for Zip52
3		2	E111.92b	Leg ZIP52 Eco
4		4	R211.07	Closure cap D20
5		2	P123.00E	Compressed air regulator, 1/4"

Pos	K	Stk	Order no.	Designation
6		2	P936.00	Pressure gauge, 0-10 bar D50x1/8"
7		3	9998253	Male stud elbow, 8-1/4"
8		1	M205.04	Double fitting, 1/4"
9		1	M340.00	Fitting, T MFM 1/4"
10		1	M208.04	Hose connection, 1/2"x16
11		1	M254.14A	Plug, 1/2"
12		1	M109.00	Ball valve, MF 1/4"
13		1	S401.00	Return hose, D8
14		8	K564.72	Contact washer
15		0.3 m	S103.07N	Hose, nylon D8
16		1	M215.04	Screw fitting elbow, MM 1/4"
17		1	M618.62	Fitting, 3/8"-1/4"
18		1	T4005.00ALS	LP ZIP Filter, PN15 G1/4" CS
19		1	M631.62	Fitting, 1/2"
20		1	M623.12	Plug, 1/4"
21		1	9992265	Male stud elbow, MF 1/4"
22		4	9900312	Screw, M6x20
23		8	9920103	Washer, A6.4, DIN 125
24		8	9910204	Self-locking nut, M6
25		2	9906026	Screw, M4x50
26		4	K501.62	Washer, A4.3
27		2	9910202	Self-locking nut, M4
28		4	9906036	Screw, M6x55
29		1	9992831	Loctite® 542, 50 ml; 50 cc

**14.5 ZIP52 PUMP - METALLIC**



B\_04058

Pos	K	Stk	ZIP52 Aluminum Order no.	ZIP52 Stainless steel Order no.	ZIP52 PF Aluminum Order no.	Designation
1		1	F184.01	F188.03	F184.01	Suction manifold - left
2		1	F185.01	F189.03	F185.01	Delivery manifold - left
3		2		F834.07R		Outer diaphragm disc
4		2	F978.01	F192.03	F978.01	Diaphragm cover



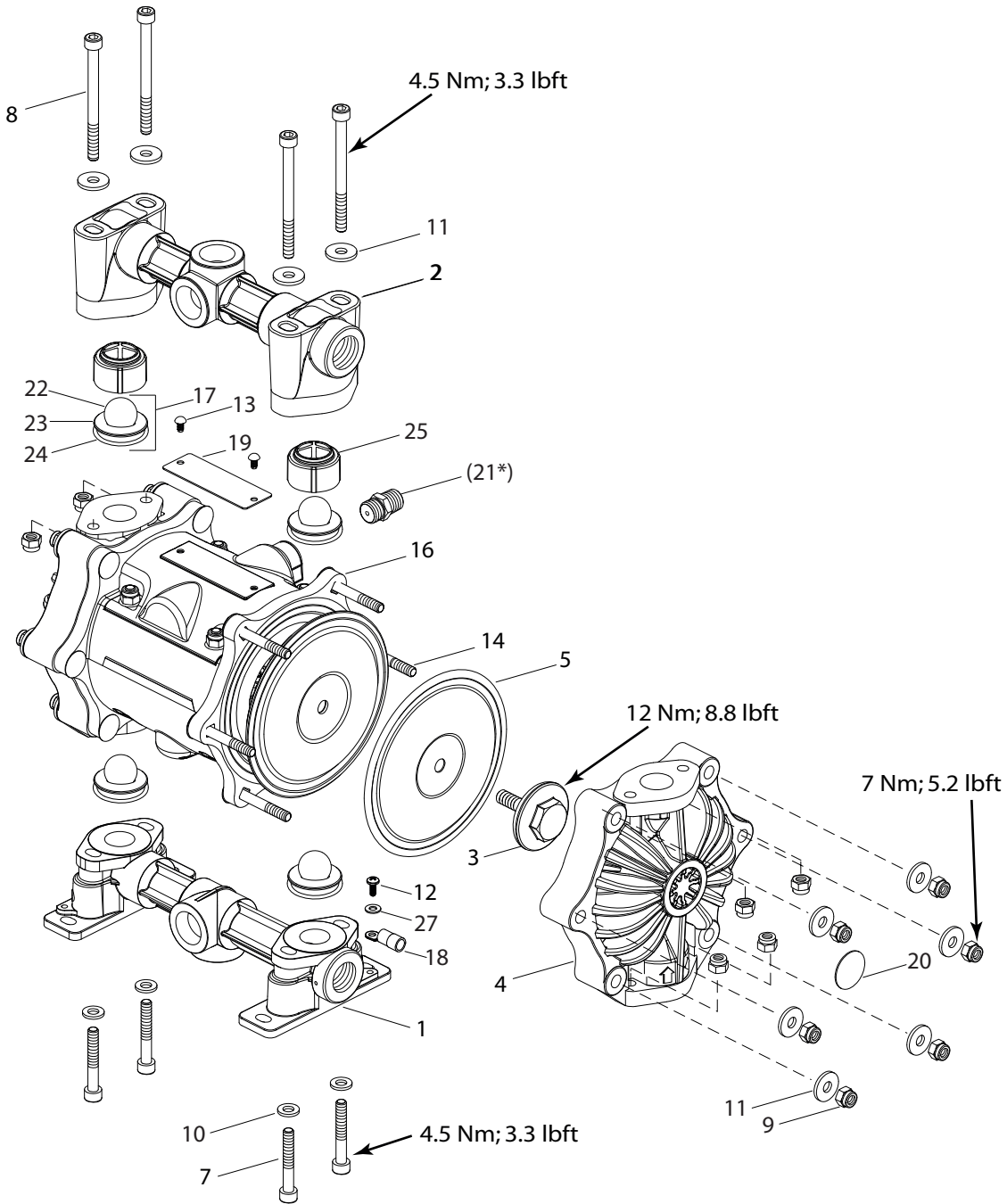
Pos	K	Stk	ZIP52		ZIP52 PF Aluminum Order no.	Designation
			Aluminum Order no.	Stainless steel Order no.		
5	* ♦	2	G921.07B			Product diaphragm
6		--	--			Support diaphragm
7		4	9900333			Screw, M6x35
8		4	9900338	--	9900338	Screw, M6x30
8		4	--	9900333	--	Screw, M6x35
9		12	9910204			Self-locking nut, M6
10		8	9910204			Self-locking nut, M6
11		20	9920103			Washer, A6.4
12		1	K1012.62			Screw
13		2	K1041.62			Rivet
14		12	K1044.62			Screw
15		--	--			Plug, 1/2"
16		1	T6103.00		T6103.00S	Motor
17	* ♦	4	T6105.00			ZIP52 valve unit
18		1	Y622.00A			Cable lug
19		1	--			Cover plate ZIP52 ATEX
20		2	--			Round type plate
21		1	--		B0177.14A	Reducing fitting
22	*	4	K805.03			Ball, 3/4"
23	*	4	B0148.03A			Seat
24	* ●	4	L206.05			O-ring
25		1	9992831			Loctite® 542, 50 ml; 50 cc
		1	T9080.00B			Pump service set
		1	T9077.00			O-ring set

♦ = wearing parts

\* = Included in service set

● = Included in O-ring set of product

**14.6 ZIP52 PUMP - CONDUCTIVE ACETAL**



B\_04063

Pos	K	Stk	Order no.	Designation
		1	U773.00	DDP ZIP52
1		1	F833.07G-A	Suction manifold - left
2		1	F859.07G	Delivery manifold - left
3		2	F834.07D	External diaphragm disc
4		2	F831.07G-A	Conductive diaphragm cover

Pos	K	Stk	Order no.	Designation
5	* ♦	2	G921.07B	Diaphragm
7		4	9907050	Screw, M6x40
8		4	9907249	Screw, M6x75
9		20	9910204	Self-locking nut, M6
10		4	9920103	Washer, 6
11		16	K508.62	Washer, 6x18
12		1	K1012.62	Screw
13		2	K1041.62	Rivet
14		12	K1043.62	Screw, M6x45
16		1	T6103.00	Motor
17	* ♦	4	T6105.00	Valve unit
18		1	Y622.00A	Cable lug
19		1	--	Cover type plate
20		2	--	Round type plate
21		1	--	Fitting
22	*	4	K805.03	Ball, 3/4"
23	*	4	B0148.03A	Seat
24	* ●	4	L206.05	O-ring
25	♦	2	F856.07D	Ball guide
26		1	9992831	Loctite® 542
27		1	K558.62	Washer

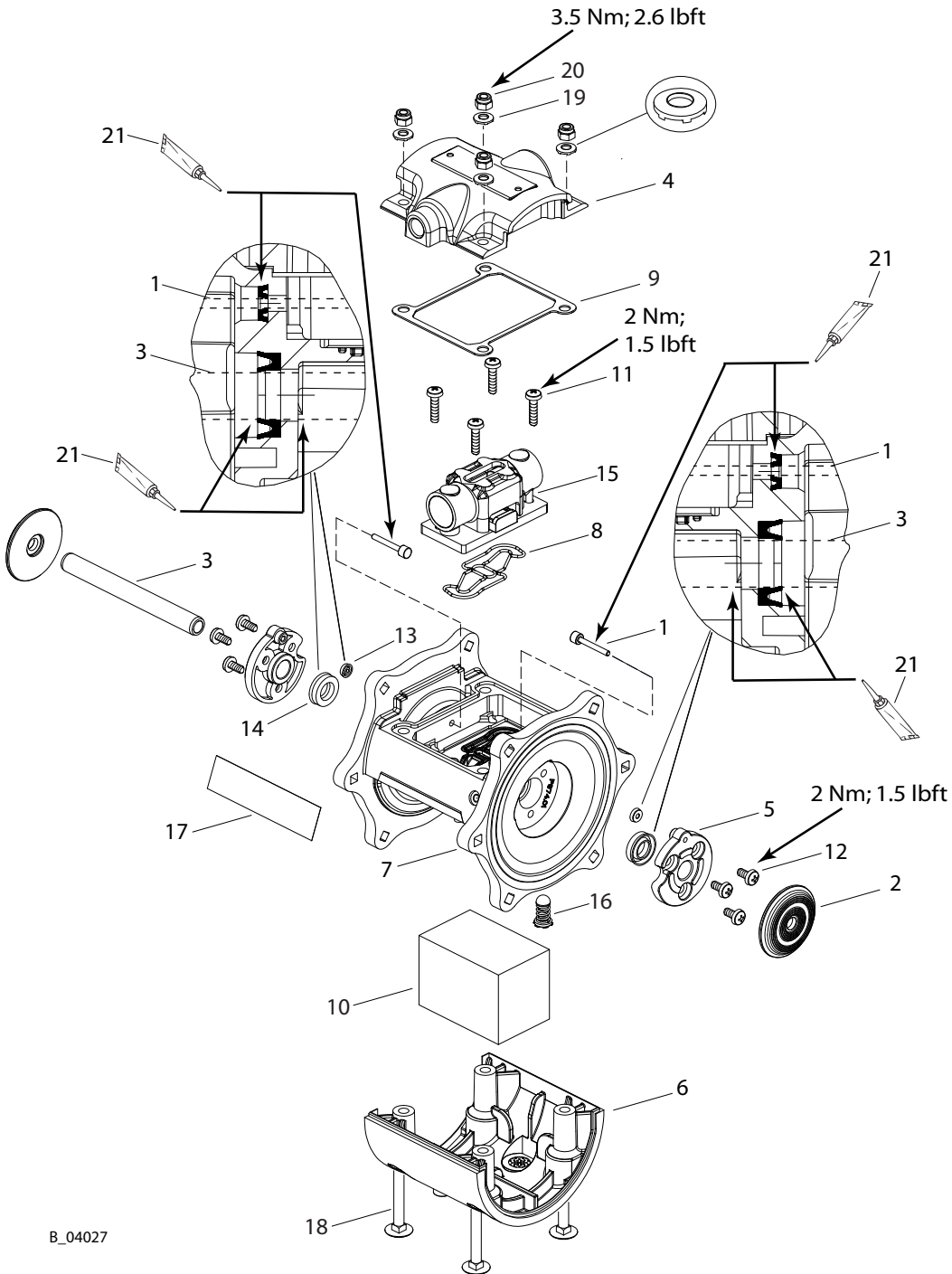
♦ = wearing parts

\* = Included in service set

● = Included in O-ring set of product

21\* If the complete double diaphragm pump was ordered as a spare part, the fitting (pos. 21) must be removed.

**14.7 ZIP MOTOR**



Pos	K	Stk	Zip 52 Order no.	ZIP 52 PF Order no.	Designation
		1	T6103.00	T6103.00S	Motor
1		2	B0146.04		Feeler pin
2		2	B0147.71		Inner diaphragm disc
3		1	B0150.03	B0150.03S	Shaft

Pos	K	Stk	Zip 52 Order no.	ZIP 52 PF Order no.	Designation
4		1	F194.91		Cover (pressure side)
5	* ♦	2	F829.07		Shaft guide bushing
6		1	F830.07		Cover (exhaust side)
7		1	T6103.00A		Motor block with safety valve
8	♦	1	G925.06		Reversing valve seals
9	♦	1	G7020.06		Pressure cover seals
10	♦	1	H618.07		Silencer
11		4	K1038.62		Screw
12		6	K1039.62		Screw
13	* ♦	2	L470.06		Lip seal
14	* ♦	2	L471.06		Lip seal
15		1	P4003.00		Reversing valve (*)
16		1	See pos. 7		Safety valve (**)
17		1	2416550		Side label
18		4	K1040.03		Screw
19		4	3155401		Contact washer
20		4	K311.03		Self-locking nut, M6

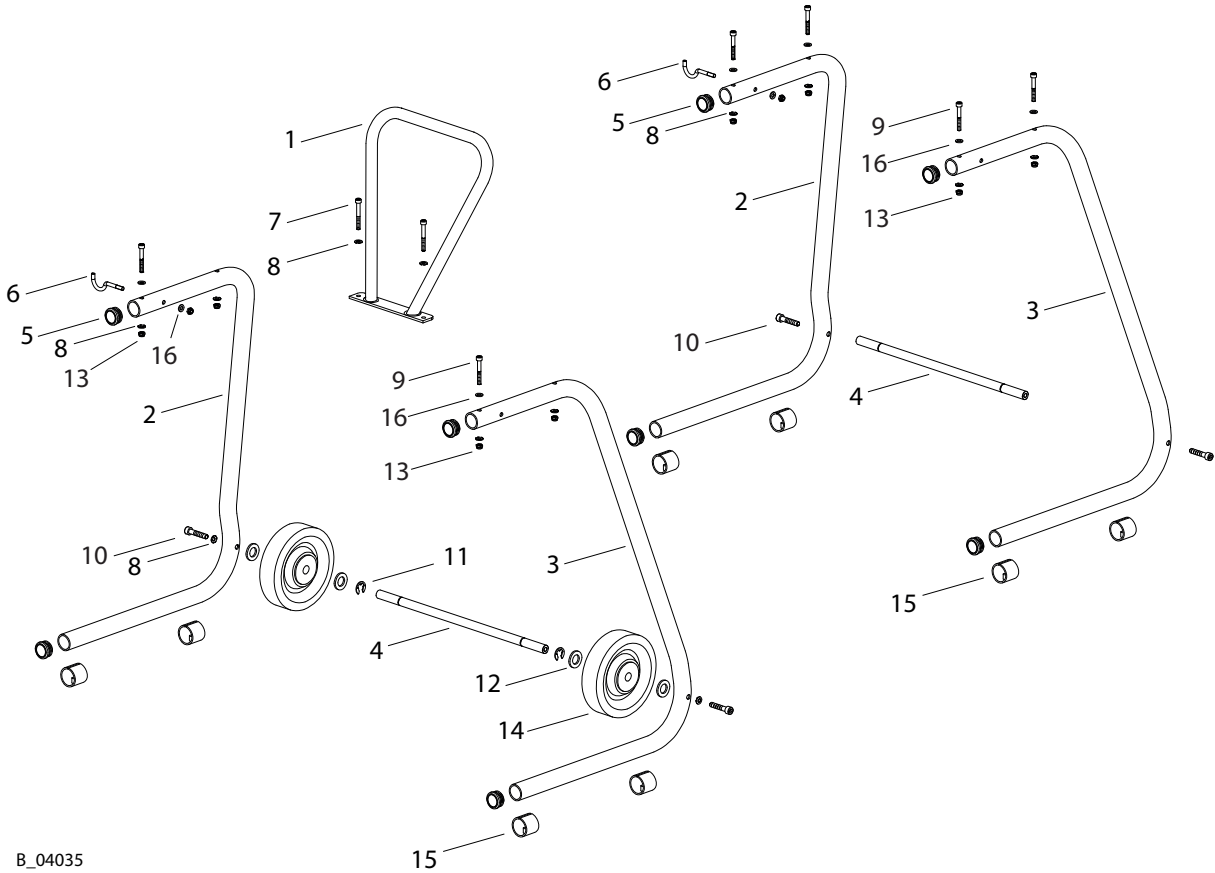
(\*) Includes pos. 8 and 9

(\*\*) Not available separately

♦ = wearing parts

\* = Included in service set

**14.8 TROLLEY, FRAME SET, AND WHEEL SET**

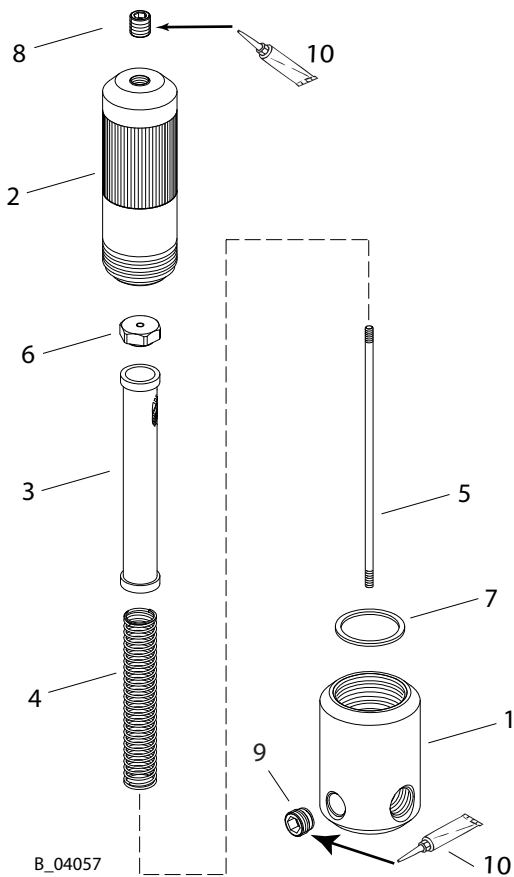


B\_04035

Pos	K	Stk	Sliding tables Order no.	Stk	Frame set Order no.	Stk	Wheel set Order no.	Designation
		1	T760.00SR		--		--	Sliding tables
		1	T760.00S		T760.00S		--	Frame set
		1	T760.00R		--		T760.00R	Wheel set with handle
1		1	E3108.92	--	--	1	E3108.92	Trolley handle
2		1	E3107.92A	1	E3107.92A	--	--	Frame, left
3		1	E3107.92	1	E3107.92	--	--	Frame, right
4		1	H1156.62	1	H1156.62	--	--	Frame pin
5		4	R204.07	4	R204.07	--	--	Plug
6		1	H009.62	1	H009.62	--	--	Spray gun hook
7		2	9900316	--	--	2	9900316	Socket cap screw, M6x50
8		9	3155404	--	--	4	3155404	Contact washer, M8
9		2	9900389	4	9900389	--	--	Socket cap screw, M6x45
10		2	9900309	2	9900309	--	--	Socket cap screw, M8x40

Pos	K	Stk	Sliding tables Order no.	Stk	Frame set Order no.	Stk	Wheel set Order no.	Designation
11		2	K607.02	--	--	2	K607.02	Lock washer for shaft
12		4	9925011	--	--	4	9925011	Washer
13		5	9910204	5	9910204	2	9910204	Self-locking nut, M6
14		2	R118.00	--	--	2	R118.00	Wheel, D150
15		4	R244.07	4	R244.07	--	--	Saddle feet for round tubes
16		2	9920103	--	--	--	--	Washer, A6.4

### 14.9 MATERIAL FILTER

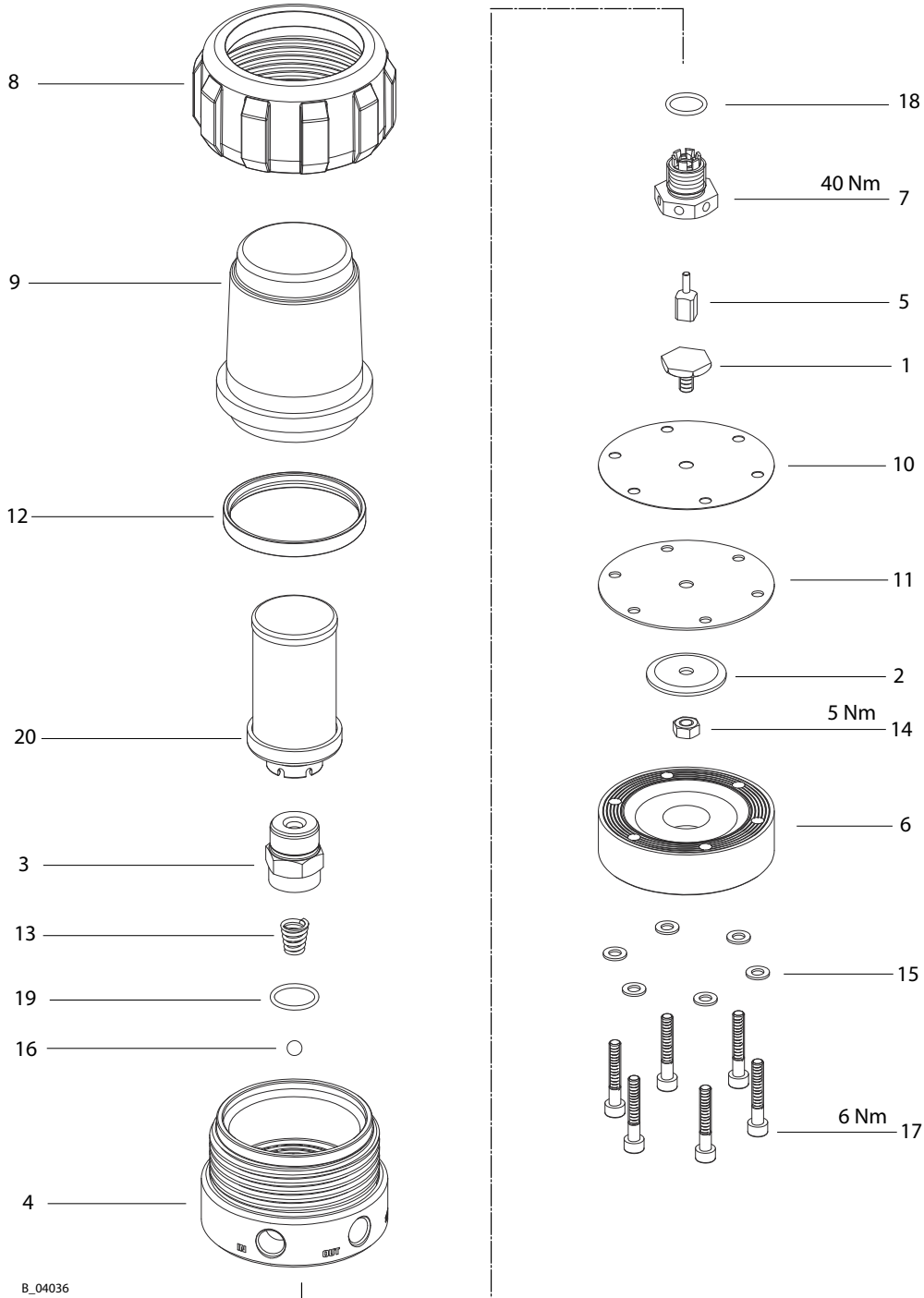


Pos	K	Stk	Order no.	Designation
		1	T4005.00ALS	Product filter: LP ZIP Filter, PN15 G1/4" CS
1		1	B0259.01	Filter housing
2		1	B0127.01	Filter cap
3	◆	1	T454.00	APS filter cartridge, 60 mesh
4		1	H282.03	Spring for filter, inox
5		1	H1152.03	Filter tension rod
6		1	B0128.03	Filter nut

Pos	K	Stk	Order no.	Designation
7	◆	1	G605.07	Seal
8		1	M623.12	Plug, 1/4"
9		1	M6016.12	Plug, 3/8"
10		1	9992831	Loctite® 542, 50 ml; 50 cc

◆ = wearing parts

### 14.10 FINE FLOW CONTROLLER



B\_04036



Pos	K	Stk	Order no.	Order no.	Designation
		1	T0180.00A	T0180.00Al	Fine Flow Controller, 14/0.5-8 bar
1		1	A588.03		Diaphragm disc - product side
2		1	A590.03		Diaphragm disc - air side
3		1	B0172.03		Ball guide
4		1	B0180.01	B0180.03	Housing - product side
5	* ♦	1	B391.03		Shut-off needle
6		1	B563.01		Housing - air side
7	* ♦	1	T6007.00A		Ball seat body, complete
8		1	F991.07		Union nut
9		1	F992.07		Filter cup
10	* ♦ ●	1	G725.05		RVO PTFE Diaphragm
11	* ♦ ●	1	G726.06		RVO Diaphragm
12	* ♦ ●	1	G640.05B		Seal
13	* ♦	1	H285.03		Conical spring
14		1	9910204		Self-locking nut, M6
15		6	K515.62		Plain washer
16	* ♦ ●	1	K811.03		Ball, 1/4"
17		6	9900329		Screw, M5x30
18	* ♦ ●	1	L148.06		O-ring
19	* ♦ ●	1	L118.06A		O-ring
20	♦	1	T500.00A		Filter insert, 100 mesh, white
20	♦	1	T500.00		Filter insert, 60 mesh, black
20	♦	1	T500.00B		Filter insert, 150 mesh
			T6193.00		FFC service set
			T9086.00		FFC sealing set

♦ = wearing parts

\* = Included in service set

● = Included in O-ring set of product

#### 14.11 SERVICE SETS

Pump No.	Di- aphragm	Valve seat	Valve ball	Service set	O-ring set	Air valve set
U731.00	UHMWPE	Stainless steel	Stainless steel	T9080.00	T9077.00	P4003.00
U760.00	UHMWPE	Stainless steel	Stainless steel	T9080.00	T9077.00	P4003.00
U765.00	UHMWPE	Stainless steel	Stainless steel	T9080.00	T9077.00	P4003.00
U773.00	UHMWPE	Stainless steel	Stainless steel	T9080.00	T9077.00	P4003.00

**Service set** comprising:

- See spare parts lists

**O-ring set** consists of:

- 4 O-rings for the valve units (non-return valves)

**Air valve set** consists of:

- 1 reversing valve
- 1 reversing valve seal
- 1 pressure cover seal

**Service sets for Fine Flow Controller**

Pump No.	FFC service set	FFC sealing set
U731.00	T6193.00	--
U760.00	T6193.00	T9086.00
U765.00	T6193.00	T9086.00
U773.00	T6193.00	T9086.00

**FFC service set**

- See spare parts lists

**FFC seal set**

- See spare parts lists

## 15 DECLARATION OF CONFORMITY

### 15.1 EU DECLARATION OF CONFORMITY

We hereby declare that the supplied version of diaphragm pumps and spray packs:

Type
ZIP52 Finishing
ZIP52 PF Eco-Finishing

complies with the following guidelines:

2006/42/EC	2014/34/EU (ATEX Directive)
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Applied standards, in particular:

EN ISO 12100:2010	EN 14462:2015
EN 809: 1998+A1:2009+AC:2010	EN 12621:2006+A1:2010
EN ISO 4413:2010	EN 1127-1:2019
EN ISO 4414:2010	EN ISO 80079-36:2016
EN ISO 13732-1:2008	EN ISO 80079-37:2016

Applied national technical standards and specifications, in particular:

DGUV regulation 100-500, Chapter 2.29 and Chapter 2.36	TRGS 727
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#### Identification:



#### EU Declaration of Conformity

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

Order number: 2334618









The logo features a black triangle above the word "WAGNER" in a bold, black, sans-serif font, all set against a yellow rectangular background.

Order number 2332848  
Edition 08/2020

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Version C



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