

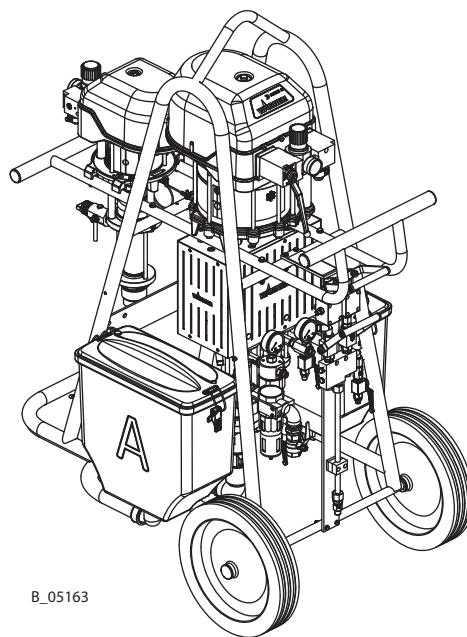


Translation of the Original Operating Manual

PROTEC 2K

Version 02/2016

2K System Protective Coating



B_05163



II 2 G c IIB T3/T4 Gb X

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1 ABOUT THESE INSTRUCTIONS

1.1 PREFACE

The operating manual contains information about safely operating, maintaining, cleaning and repairing the device.

The operating manual is part of the device and must be available to the operating and service personnel.

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

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

1.2 WARNINGS, NOTICES AND SYMBOLS IN THESE INSTRUCTIONS

Warning instructions in this operating manual highlight particular dangers to users and to the device and state measures for avoiding the hazard. These warning instructions fall into the following categories:

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

	! DANGER This notice warns you of a hazard! Possible consequences of not observing the warning instructions. The signal word indicates the hazard level. → The measures for preventing the hazard and its consequences.
---	---

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

	! WARNING This notice warns you of a hazard! Possible consequences of not observing the warning instructions. The signal word indicates the hazard level. → The measures for preventing the hazard and its consequences.
---	--

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

	! CAUTION This notice warns you of a hazard! Possible consequences of not observing the warning instructions. The signal word indicates the hazard level. → The measures for preventing the hazard and its consequences.
---	--

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

NOTICE This notice warns you of a hazard! Possible consequences of not observing the warning instructions. The signal word indicates the hazard level. → The measures for preventing the hazard and its consequences.	
---	--

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

1.3 LANGUAGES

The **operating manual** is available in the following languages:

Language	Order No.	Language	Order No.	Language	Order No.
German	2352823	English	2352824	French	2357841
Italian	2357842	Spanish	2357843	Russian	2359374

The corresponding **service manuals** are available under the following order number:

Language	Order No.	Language	Order No.
German	2357839	English	2357840

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

1.3.1 OPERATING MANUALS FOR THE INDIVIDUAL COMPONENTS

Operating manual for **flushing pump** (option): IceBreaker piston pumps 40 cm³–150 cm³

Language	Order No.	Language	Order No.	Language	Order No.
German	2333537	English	2333538	French	2333539
Italian	2333540	Spanish	2333541	Russian	2351629

Continuous-flow heater operating manual (option)

Language	Order No.	Language	Order No.
German	65860	English	65860
French	65860	Italian	65860

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

1.4 ABBREVIATIONS IN THE TEXT

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

Materials

SSt	Stainless steel
PE	Polyethylene
UHMWPE	Ultra-high molecular weight polyethylene
PTFE	Polytetrafluorethylene
TG	PTFE with graphite
T	PTFE
L	Leather

1.5 TERMINOLOGY FOR THE PURPOSE OF THIS MANUAL

Cleaning	Manual cleaning of devices and device parts with cleaning agent
Flushing	Internal flushing of paint-wetted parts with flushing agent

Staff qualifications

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

2 CORRECT USE

2.1 DEVICE TYPES

- PROTEC 2K with flushing pump
- PROTEC 2K without flushing pump
- Mixing ratio of 4:1 or 3:1 or 2:1 or 1.5:1 or 1:1

2.2 TYPE OF USE

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

2.3 FIELD OF APPLICATION

The 2K system can be employed in potentially explosive areas (Zone 1). → See Chapter 3.



2.4 SAFETY PARAMETERS

The 2K system may only be used as described in this operating manual. In particular, no conversions are permitted on the system otherwise the warranty ceases to apply and WAGNER is not liable for any claims.



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

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

The 2K system may only be operated under the following conditions:

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

2.5 PROCESSIBLE WORKING MATERIALS

Low- to high-viscosity 2K lacquer (e.g., epoxy, PU, DD) for processing with static mixer, hose, and gun.

- 2K water-based priming
- 2K solvent-based priming
- 2K PUR priming
- 2K PUR lacquers
- 2K epoxy priming
- 2K epoxy lacquers
- 2K high-solid priming
- 2K high-solid lacquers

However, 2K products containing solvents and aqueous 2K products should not be processed with the same system.

NOTICE

Abrasive working materials and pigments!

Greater wear of parts carrying the product.

- Do not use any grainy and abrasive working materials with large, sharp-edged pigments.
- Check if the fluids and solvents used are compatible with the pump construction materials.
- For explanations of the models and construction materials, consult the data in Chapter 5.5 or contact a WAGNER service technician.

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

2.6 RECOMMENDED APPLICATION AREAS

Application area	PROTEC 2K
Steel-processing industry	↗
Rail vehicle	↗
Shipbuilding	↗
Tank construction	↗
Pipeline construction	↗
Wind energy	↗

Legend

↗ recommended

⇒ limited suitability

↘ less suitable

2.7 REASONABLY FORESEEABLE MISUSE

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

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

2.8 RESIDUAL RISKS

Residual risks are risks which cannot be ruled out even in the event of correct use.

If necessary, warning and prohibition signs at the relevant points of risk indicate residual risks.

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

3 IDENTIFICATION

3.1 CE EXPLOSION PROTECTION IDENTIFICATION

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

CE  II 2 G c IIB T3/T4 Gb X



CE CE mark (European Communities)

 Explosion-proof equipment

II Device class II (not mining)

2 Category 2 device (suitable for zone 1)

G Ex-atmosphere gas

C Constructional security

IIB Device class (Gas) IIB

T3 Temperature class T3: maximum surface temperature 200 °C; 392 °F

T4 Temperature class T4: maximum surface temperature 135 °C; 275 °F

Gb Device protection level (EPL), suitable for use in Zone 1

X Special instructions exist for safe operation. → See the following Chapter "Identification X".

3.2 IDENTIFICATION X

Maximum surface temperature

The maximum surface temperature T3 of the piston pump can be reached if it runs dry.

→ Ensure that the piston pump is filled with sufficient working or flushing agent.

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

Temperature class T3: No dry running protection.

Temperature class T4: With dry running protection.

Ignition temperature

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

Ambient temperature

→ The permissible ambient temperature is:

- without heater: +5 °C to +50 °C; +41 °F to +122 °F
- with heater: +5 °C to +40 °C; +41 °F to +104 °F

Medium supporting atomizing

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

Electrical lines (where present)

- Mains connection: Only in the explosive area if the plug and socket are ex models.
- Lay all electrical cables with protection from mechanical damage, e.g., not near doors, routes used by industrial trucks etc.

Safe handling of WAGNER spray devices

Mechanical sparks can form if the device comes into contact with metal.

In an explosive atmosphere:

- Do not knock or push the device against steel or rusty iron.
- Do not drop the device.
- Use only tools that are made of a permitted material.

**Surface spraying, electrostatics**

- Do not spray device parts using electrostatic equipment.

**Cleaning**

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

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

**National regulations**

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

Air in the pump fluid

Flammable gas mixtures can form if air reaches the pump fluid.

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

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

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

Filling and emptying

Flammable gas mixtures can form in the fluid section or product hoses if the pump must be emptied for maintenance.

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

3.3 TYPE PLATE

The type plate consists of two parts.

1	WAGNER Made in Switzerland	J. Wagner AG CH 9450 Altstätten
2	CE Ex II 2 G c IIB T3/T4 Gb X	
3	Type / Typ:	PROTEC 2K
4	Serial No unit.: Serie Nr. Anlage:	
5	Year of manufacture / Baujahr:	
6	Pneumatic connection: Anschluss pneumatisch:	1" 0.6 - 0.65 MPa
7	Material temperature: Materialtemperatur:	5 - 80 °C
8	Ambient temperature: Umgebungstemperatur:	5 - 50 °C (40° C)
9	Check manual before use! Vor Gebrauch Betriebsanleitung beachten!	

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- 1 Manufacturer
- 2 CE identification
- 3 System type
- 4 Serial number of system
- 5 Year of manufacture
- 6 Pneumatic connection (thread and air inlet pressure)
- 7 Product temperature
- 8 Ambient temperature
- 9 Read operating manual before use!

Additional plate:

10	Data depending on mounted fluid sections Daten abhängig von montierten Farbstufen						PROTEC 2K
11							
12	Fluid section A: Farbstufe A:	cm ³	150	150	150	110	110
13	Fluid section B: Farbstufe B:	cm ³	38	50	75	75	110
14	Pressure ratio: Druckübersetzung:		75 : 1	70 : 1	64 : 1	77 : 1	65 : 1
15	Flow rate / DS: Materialmenge / DH:	cm ³	188	200	225	185	220
16	Mixing Ratio Vol.: Mischverhältnis Vol.:		4 : 1	3 : 1	2 : 1	1.5 : 1	1 : 1
17	Material pressure max.: Materialdruck max.:	MPa	48	45	41	49	41.5

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- | | |
|--|--------------------------------------|
| 10 Data on the additional plate depend on the mounted fluid sections | 14 Pump ratio |
| 11 Fields to identify the fluid section combinations used * | 15 Flow rate per double stroke A / B |
| 12 Fluid section A: Flow rate per double stroke | 16 Mixing ratio, volumetric |
| 13 Fluid section B: Flow rate per double stroke | 17 Maximum product pressure |

* **With several fluid section combinations A-B:**

- The fluid sections A and B are identified with labels: 38 cc / 50 cc / 75 cc / 110 cc / 150 cc
- Establish the fluid section combination currently installed from the labels.
- Read data on additional plate from the corresponding column.

4 GENERAL SAFETY INSTRUCTIONS

4.1 SAFETY INSTRUCTIONS FOR THE OPERATOR

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



4.1.1 ELECTRICAL EQUIPMENT

Electrical devices and equipment

- To be provided in accordance with the local safety requirements with regard to the operating mode and ambient influences.
- May only be maintained by skilled electricians or under their supervision. With open housings, there is a danger from line voltage.
- Must be operated in accordance with the safety regulations and electrotechnical regulations.
- Must be repaired immediately in the event of problems.
- Must be decommissioned if they pose a hazard or are damaged.
- Must be de-energized before work is commenced on active parts. Inform staff about planned work. Observe electrical safety regulations.
- Ground all devices to a common grounding point.
- Only operate the device with a properly installed socket with a protective ground wire connection.
- Keep liquids away from electrical devices.

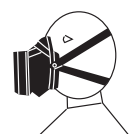


4.1.2 PERSONNEL QUALIFICATIONS

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

4.1.3 SAFE WORK ENVIRONMENT

- Ensure that the floor in the working area is static dissipative in accordance with EN 61340-4-1 (resistance must not exceed 100 megohms).
- Paint mist extraction systems/ventilation systems must be fitted on site according to local regulations.
- Ensure that product / air hoses adapted to the working pressure are used.
- Ensure that personal protective equipment is available and is used (breathing and skin protection).
- Ensure that all persons within the working area wear static dissipative shoes. Footwear must comply with EN 20344. The measured insulation resistance must not exceed 100 megohms.



- Ensure that during spraying, persons wear static dissipative gloves. The grounding takes place via the spray gun handle or the trigger guard.
- Protective clothing, including gloves, must comply with EN 1149-5. The measured insulation resistance must not exceed 100 megohms.
- Ensure that there are no ignition sources such as naked flames, sparks, glowing wires, or hot surfaces in the vicinity. 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 and connections, etc.)
 - Regular monitoring of leaks and defects via visual inspection and odor testing, e.g., daily before commissioning, at the end of work or weekly.
- In the event of defects, immediately bring the device or system to a stop and arrange to have repairs carried out immediately.

Grounding

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

4.2 SAFETY INSTRUCTIONS FOR STAFF

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

**4.2.1 SAFE HANDLING OF WAGNER SPRAY DEVICES**

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

Avoid injection of paint or flushing agents:

- Never point the spray gun at people.
- Never reach into the spray jet.
- Before all work on the device, in the event of work interruptions and functional faults:
 - Relieve pressure from spray guns and devices.
 - Secure spray guns against actuation.
 - Switch off the energy/compressed air supply.
 - Disconnect the control unit from the mains.
 - In the event of functional faults, remedy the fault as described in the "Troubleshooting" chapter.



- If needed, the liquid ejection devices must be checked by experts (e.g., WAGNER service technician) at least every 12 months to ensure they are safe for work in accordance with the DGUV regulation 100-500.
 - For shut down devices, the examination can be suspended until the next start-up.
- Carry out the work steps as described in the "Pressure Relief" chapter:
 - If pressure relief is required.
 - If the spraying work is interrupted or stopped.
 - Before the device is cleaned on the outside, checked or serviced.
 - Before the spray nozzle is installed or cleaned.

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

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

Avoid risk of injury from recoil forces:

- Ensure that you have firm footing when operating the spray gun.
- Only hold the spray gun briefly in a position.

4.2.2 GROUNDING THE DEVICE

Friction, flowing liquids and air or electrostatic coating processes create charges. Flames or sparks can form during discharge. Grounding prevents electrostatic charging.

- Ensure that the device is grounded. → See Chapter "Grounding".
- Ground the work pieces to be coated.
- Ensure that all persons inside the working area are grounded, e.g., that they are wearing static dissipative shoes.
- Wear static dissipative gloves when spraying. The grounding takes place via the spray gun handle or the trigger guard.
- The spray substance supply (spray substance tank, pump, etc.) must be grounded.

**4.2.3 PRODUCT HOSES**

- Ensure that the hose material is chemically resistant to the sprayed products and the flushing agents used.
- Ensure that the product hose is suitable for the pressure generated.
- Ensure that the following information can be seen on the high-pressure hose:
 - Manufacturer
 - Permissible operating pressure
 - Date of manufacture



- Make sure that the hoses are laid only in suitable places. Hoses should not be laid in the following places under any circumstances:
 - in high-traffic areas,
 - on sharp edges,
 - on moving parts or
 - on hot surfaces.
- Ensure that the hoses are never run over by vehicles (e.g., fork lifts), or that the hoses are never put under pressure from the outside in any other way.
- Ensure that the hoses are never kinked. Observe maximum bending radii.
- Make sure that the hoses are never used to pull or move the equipment.
- The electrical resistance of the product hose, measured at both valves, must be less than 1 megohm.
- Suction hoses may not be subjected to pressure.

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

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

4.2.4 CLEANING AND FLUSHING

- Relieve the pressure from the device.
- De-energize the device electrically.
- Preference should be given to non-flammable cleaning and flushing agents.
- When carrying out cleaning work with flammable cleaning agents, make sure that all equipment and resources (e.g., collection tank, funnel, transport cart) are conductive or static dissipative and grounded.
- Observe the specifications of the 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.
- Take measures for workplace safety (see Chapter 4.1.3).
- When commissioning or emptying the device, please note that an explosive mixture may temporarily exist inside the lines and components of equipment:
 - depending on the coating product used,
 - depending on the flushing agent (solvent) used,explosive mixture inside the lines and items of equipment.



- Only electrically conductive tanks may be used for cleaning and flushing agents.
- The tanks must be grounded.

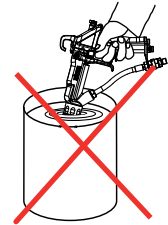
An explosive gas/air mixture forms in closed tanks.

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

External cleaning

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

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



4.2.5 HANDLING HAZARDOUS LIQUIDS, VARNISHES AND PAINTS

- When preparing or working with lacquer and when cleaning the device, follow the working instructions of the manufacturer of the lacquers, solvents and cleaning agents being used.
- Take the specified protective measures. In particular, use personal protective equipment: safety goggles, protective clothing and gloves, as well as respiratory protection and skin protection cream if necessary.
- Use a mask or breathing apparatus if necessary.
- For sufficient health and environmental safety: Operate the device in a spray booth or on a spraying wall with the ventilation (extraction) switched on.
- Wear suitable protective clothing when working with hot products.

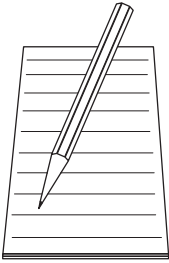


4.2.6 TOUCHING HOT SURFACES

- Only touch hot surfaces if you are wearing protective gloves.
- When operating the device with a coating product with a temperature of $> 43^{\circ}\text{C}$; 109°F : identify the unit with a warning label that says "Warning - Hot Surface".
 - Instruction label Order No. 9998910
 - Protection label Order No. 9998911**Note:** Order the two stickers together.



OPERATING MANUAL



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5 DESCRIPTION

5.1 COMPONENTS

Component A is mounted on the left side, component B on the right side (from the perspective of the operator).

- 1 2K air pressure regulator
- 2 2K air ball valve

3 Blue handle: Circulation on/off

- Circulation on: upper position (product flows directly back into product tank)
- Circulation off: bottom position (as in illustration)

- 4 Circulation valve with excess pressure protection (component A)
- 5 Circulation valve with excess pressure protection (component B)
- 6 Circulation hose A
- 7 Circulation hose B
- 8 Product tank A
- 9 Product tank B
- 10 PROTEC 2K air motor
- 11 Air motor–fluid section connection part (movement mechanism) with protection plates

12 Red handle: Spray on/off

- Spray off: Upper position (as in illustration)
- Spray on: Upper position (product flows to mixer and gun)

- 13 Product pressure gauge A
- 14 Product pressure gauge B
- 15 High-pressure filter A
- 17 Ball valve A (at the high-pressure filter A)
- 18 Ball valve B
- 20 Air inlet (1" inside thread)
- 21 Main air (ball valve)
- 22 Compressed air filter / water separator
- 22a Blow-off valve separator
- 23 Mixing block
- 24 Mixing tube
- 25 Connection for spray gun hose

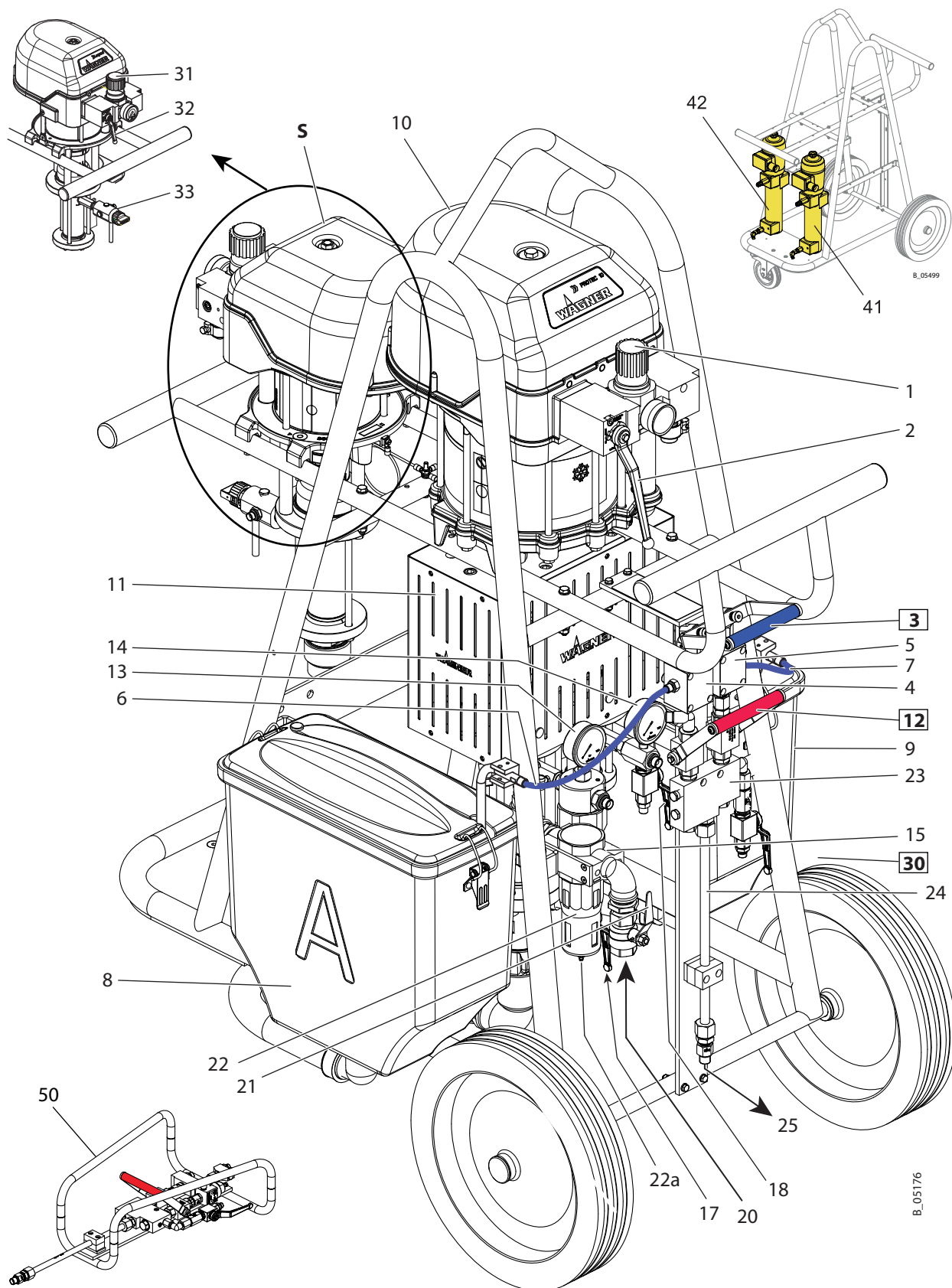
S Flushing pump (option)

30 Ball valve, flushing

- 31 Air pressure regulator of flushing pump
- 32 Air ball valve of flushing pump
- 33 Relief Combination of flushing pump

- 41 Heater A (option)
- 42 Heater B (option)

- 50 External mixer (option)



5.2 MODE OF OPERATION

The system is suitable for mixing of two-component products.

Components A and B

A 2K pump consisting of an air motor and two fluid sections, feeds the two components A and B in a fixed mixing ratio. Subsequently, each component flows to the mixer. Then the mixed product flows via the spray gun hose to the spray gun.

Flushing pump

With the help of a flushing pump, mixing block, mixing tube, spray gun hose and spray gun can be flushed.

Operation

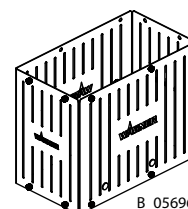
The most important functions of the system are controlled with two handles:

- Blue handle: Circulation on/off
- Red handle: Spray on/off

5.3 PROTECTIVE AND MONITORING EQUIPMENT

Protection plates for movement mechanism

Three protection plates of the air motor–fluid section connection part (11) ensure protection against contact. The protection plates may only be removed for maintenance and repairs.



	! WARNING Missing cover! Risk of crushing by moving device components. → Never operate device without protection plates.
--	---

Safety valve of air motor

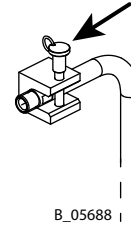
The 2K air motor is fitted with a safety valve. The safety valve has been set and sealed at the factory. If the permissible operating pressure is exceeded, the valve, which is held with a spring, automatically opens and releases the excess pressure. Here, the permissible operating pressure is maintained.

	! WARNING Overpressure! Risk of injury from bursting components. → Never change the safety valve setting.
--	--

Brackets for circulation and return hoses

The brackets prevent pressurized hoses from flying around.

→ Always secure circulation and return hoses with the locking pin.

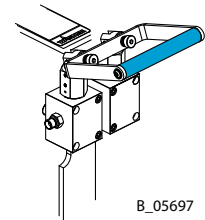


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Overpressure protection for circulation valves

Both circulation valves A (4) and B (5) for the internal return line are fitted with an overpressure protection set to 63 MPa; 630 bar; 9140 psi.

→ To prevent the overpressure protection from sticking, circulation must be regularly undertaken with the blue handle (3).



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	! WARNING Overpressure! Risk of injury from bursting components. → For several minutes a day, circulate product or flushing agent via the circulation valves with overpressure protection.
--	---

Burst disk

A burst disk (22) is installed with the following B fluid sections:

- 38 cm³ (pump ratio 4:1)
- 50 cm³ (pump ratio 3:1)
- 75 cm³ (pump ratio 2:1 or 1.5:1)

The burst disk is opposite the product outlet. Upon failure of the overpressure protection the burst disk derives the pressure. The burst disk reacts at 76 MPa; 760 bar; 11000 psi.

→ After a response, the burst disk must be replaced.

→ The 38 cm³, 50 cm³, and 75 cm³ fluid sections must not be operated without a burst disk.

5.4 SCOPE OF DELIVERY

2K system comprising:

- 2 fluid sections
- Air motor
- Air pressure regulator for air motor
- Movement mechanism
- Sliding tables
- Mixing unit
- Optional: flushing pump
- Optional: heater A and/or heater B

The scope of delivery also includes:

Separating agent 250 ml; 250 cc

Declaration of conformity

Operating manual German

Operating manual in the local language

Order no.: 9992504

see Chapter 14.3

Order no.: 2352823

see Chapter 1.3

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

5.5 DATA

5.5.1 MATERIALS OF PAINT-WETTED PARTS

Housing	Stainless steel and zinc-plated steel	
Piston	Stainless steel and hard chrome	
Valve balls	Stainless steel	
Valve seats	Carbide	
Valve seats (red handle)	Grey cast iron, GG25	
Valve balls (red handle)	SiC coated steel (SiC = silicon carbide)	
O-rings	PTFE	
Packings (4:1, 3:1, 2:1, 1.5:1)	Fluid section A: PE/TG	Fluid section B: PE/T
Packings (1:1)	Fluid section A: PE/T	Fluid section B: PE/T

PE = Ultra high molecular weight polyethylene

TG = PTFE with graphite

T = PTFE

Product hoses A / B	PA and FEP Option: Only FEP (see Chapter 13.2.3)
---------------------	---

PA = Polyamide

FEP = Fluorinated ethylene propylene

5.5.2 RECOMMENDED PACKINGS

WAGNER packings are manufactured in four different materials:

Code	Product	Color
L	Leather	dark brown
TG	PTFE with graphite	black
PE	Ultra high molecular weight polyethylene	transparent
T	PTFE	white

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

	L	TG	PE	T
Mechanical stability	poor	good	good	poor
Friction coefficient	poor	very good	good	very good
Sealing force	good*	good	good	good
Chemical resistance	poor	good	very good	very good
Temperature resistance	good	poor - good	very good	poor

* for abrasive products

Standard combinations

Standard pumps: PE/TG

Heavy duty (high-pressure) pumps: PE/L

Hardener pumps in 2K systems: PE/T

5.5.3 TECHNICAL DATA**5.5.3.1 TECHNICAL DATA FOR ENTIRE SYSTEM**

Description		Units	PROTEC 2K
Product inlet			27 liter tank
Mixing product outlet		NPS	External thread NPSM, 3/8"
Product pH value		pH	3.5–9
Maximum product viscosity		mPa s	5000
Product temperature		°C; °F	+5 ... +80; +41 ... +176
Ambient temperature	Construction and assembly (without heater)	°C; °F	+5 ... +50; +41 ... +122
	Construction and assembly (with heater)	°C; °F	+5 ... +40; +41 ... +104
	Suspension	°C; °F	-20...+60; -4...+140
Relative humidity		%	10–95 (without condensation)
Allowable inclination for operation		<) °	± 10

Pneumatic connection

Ø air inlet connection (inside thread)	inch	G1"
Minimum Ø of the compressed air supply line	mm; inch	G1"
Minimum/maximum air inlet pressure	MPa	0.25–0.65
	bar	2.5–6.5
	psi	36–94
Compressed air quality: free from oil and water		Quality standard 7.5.4 according to ISO 8573.1, 2010 7: Particle concentration 5 – 10 mg/m ³ 5: Humidity: pressure dew point ≤ +7 °C 4: Oil content ≤ 5 mg/m ³

	 WARNING
	Exhaust air containing oil! Risk of poisoning if inhaled. → Provide compressed air free from oil and water.

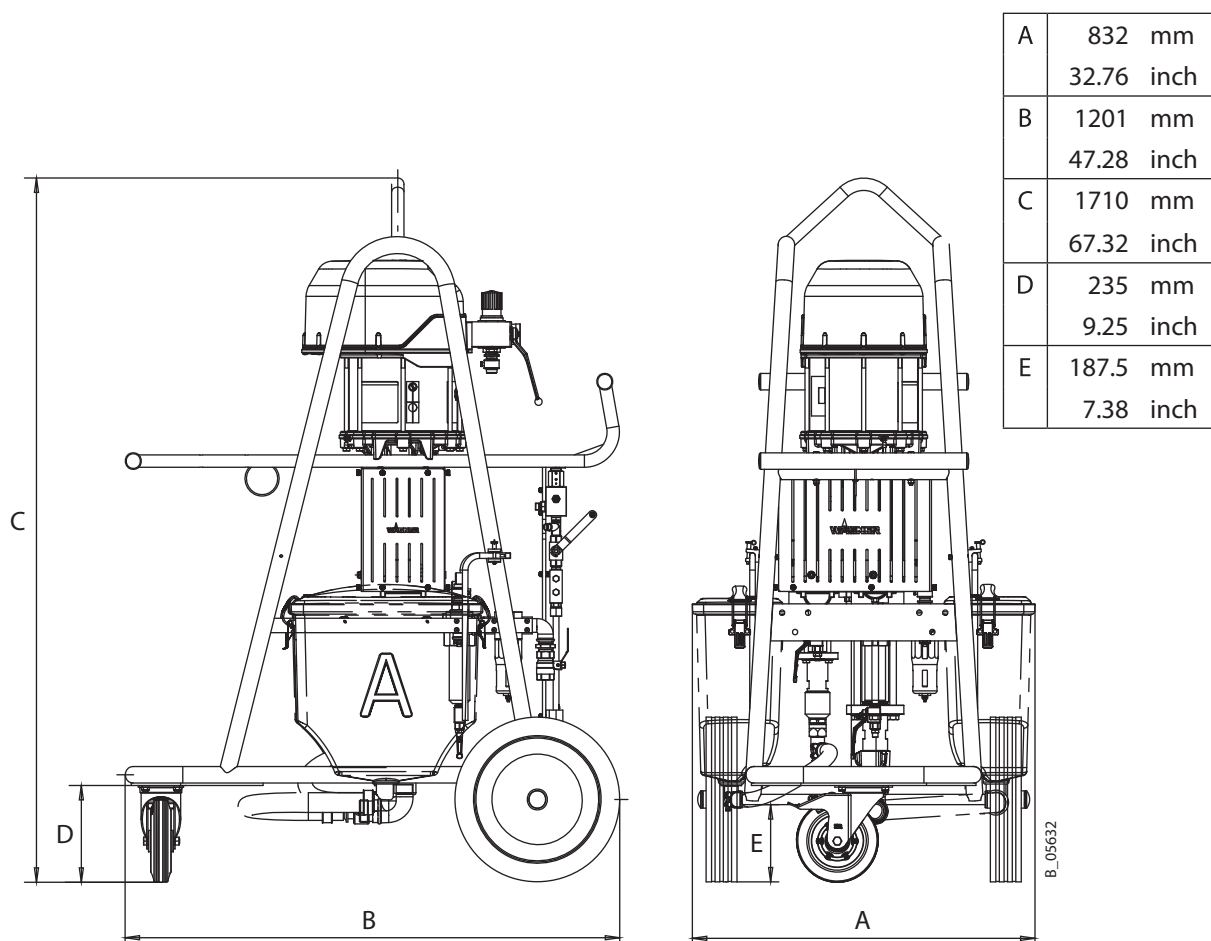
5.5.3.2 TECHNICAL DATA FOR PROTEC 2K PISTON PUMP

Description	Units	PROTEC 2K75- 150/38	PROTEC 2K70- 150/50	PROTEC 2K64- 150/75	PROTEC 2K77- 110/75	PROTEC 2K65- 110/110
Mixing ratio		4 : 1	3 : 1	2 : 1	1.5 : 1	1 : 1
Pump ratio		75 : 1	70 : 1	64 : 1	77 : 1	65 : 1
Maximum operating overpressure	MPa bar psi	48 480 7000	45 450 6500	41 410 5900	49 490 7100	41.5 415 6000
Fluid section A: Volume flow per DH	cm ³ ; cc	150	150	150	110	110
Fluid section B: Volume flow per DH	cm ³ ; cc	38	50	75	75	110
Fluid sections A+B: Volume flow per double stroke (DH)	cm ³ ; cc	188	200	225	185	220
Volume flow pro 30 DH	Liters US gallons	5.64 1.49	6 1.585	6.75 1.783	5.55 1.466	6.6 1.744
Maximum possible strokes in operation	DH/min.	30				
Maximum recommended strokes per minute in continuous operation	DH/min.	20				
Fluid section A: Product inlet (outside thread)		G 1½"				
Fluid section B: Product inlet (outside thread)		M36x2				G 1½"
Fluid sections A+B: Product outlet (outside thread)		M24x1.5				
Maximum product pressure at pump inlet	MPa bar psi	2 20 290				
Minimum / maximum air inlet pressure at the air motor (e.g., 0.5 bar for circulation)	MPa bar psi	0.05–0.63 0.5–6.3 7.25– 91.37				
Air consumption at 0.6 MPa; 6 bar; 87 psi per double stroke	NL scf	90 3.2				
Air motor piston diameter	mm; inch	250; 9.84				
Air motor piston stroke	mm; inch	150; 6				
Sound pressure level at maximum permissible air pressure*	dB(A)	81				
Sound pressure level at 0.4 MPa; 4 bar; 58 psi air pressure*	dB(A)	75				
Weight of 2K piston pump	kg; lb	190; 419				

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

Reference measurements have been made by SUVA (Swiss Accident Insurance Institute).

Note: A daily noise exposure level L_{EX,8h} as of 80 dB(A) requires staff to be informed and ear defenders to be provided.

5.5.4 DIMENSIONS AND WEIGHTS**Transport box**

Internal dimensions	mm	1220 x 850 x 1760
	inch	48.03 x 33.46 x 69.29

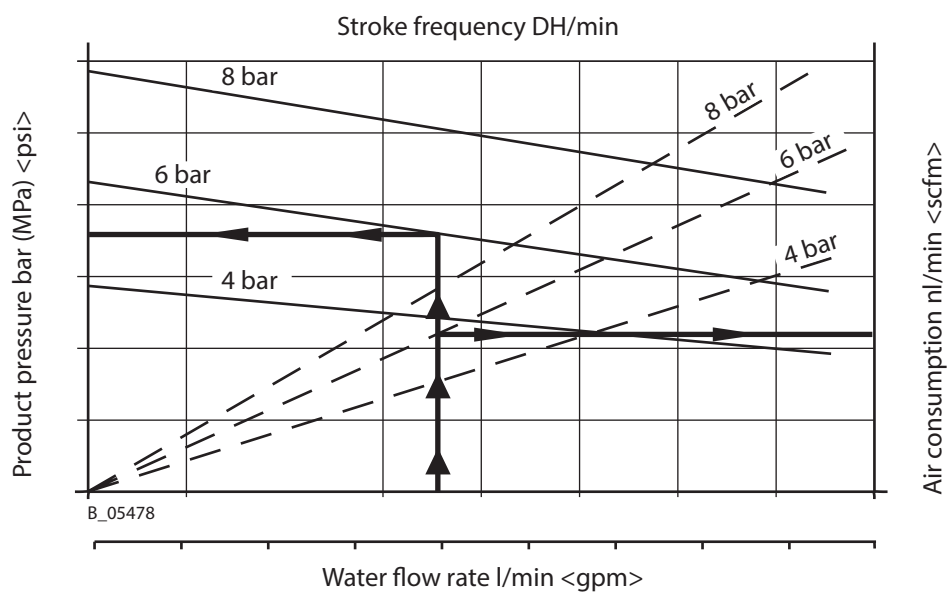
Weight of complete system

Without flushing pump (approx)	220 kg
	485 lb
With flushing pump (approx)	250 kg
	551 lb
Maximum configuration with flushing pump + 2 heaters (approx)	300 kg
	661 lb

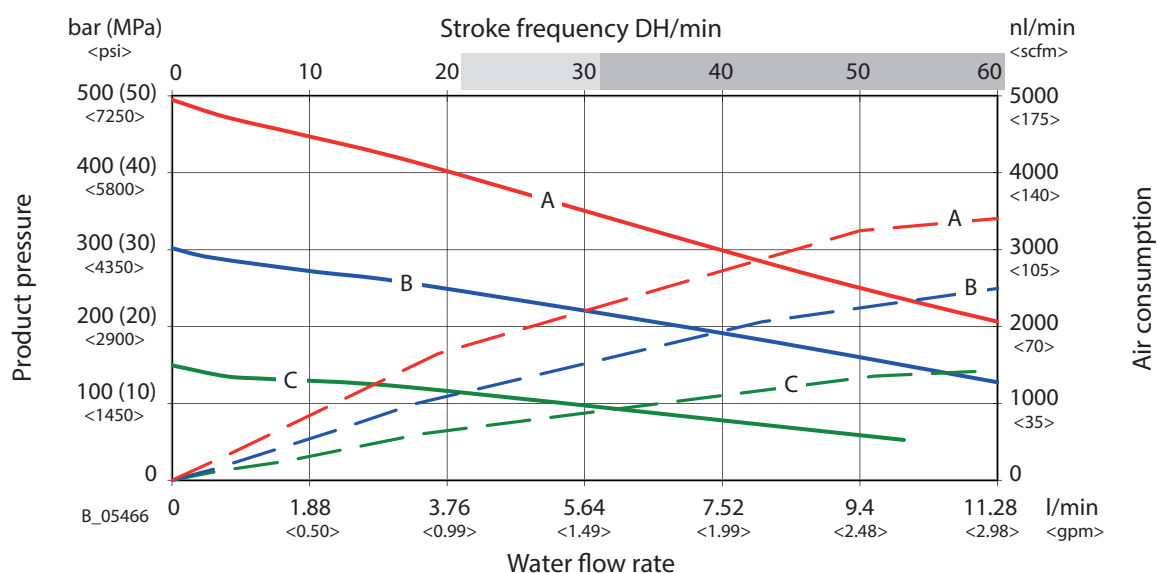
5.5.5 VOLUME FLOW**WAGNER AL nozzles****Volume flow* in l/min**

Ø inch	Ø mm	Spray angle	at 7 MPa 70 bar 1015 psi	at 10 MPa 100 bar 1450 psi	at 15 MPa 150 bar 2175 psi	at 20 MPa 200 bar 2900 psi	Maximum ranges for continuous operation at 20 DS/min
0.007	0.18	40°	0.17	0.20	0.21	0.22	
0.009	0.23	20-30-40-50-60°	0.21	0.25	0.31	0.36	
0.011	0.28	10-20-30-40-50-60°	0.30	0.35	0.43	0.50	
0.013	0.33	10-20-30-40-50-60-80°	0.45	0.53	0.62	0.68	
0.015	0.38	10-20-30-40-50-60-80°	0.58	0.67	0.81	0.91	
0.017	0.43	20-30-40-50-60-70°	0.73	0.79	1.06	1.23	
0.019	0.48	20-30-40-50-60-70-80°	0.93	1.09	1.37	1.47	
0.021	0.53	20-40-50-60-80°	1.14	1.36	1.69	1.78	
0.023	0.58	20-40-50-60-70-80°	1.37	1.59	2.01	2.24	
0.025	0.64	20-40-50-60-80°	1.62	1.91	2.40	2.60	
0.027	0.69	20-40-50-60-80°	1.83	2.13	2.68	3.12	
0.029	0.75	60°	2.19	2.51	3.17	3.63	1.5 : 1 – 2K77-110/75 4 : 1 – 2K75-150/38
0.031	0.79	20-40-50-60°	2.40	2.77	3.49	4.00	3 : 1 – 2K70-150/50 2 : 1 – 2K64-150/75 1 : 1 – 2K65-110/110
0.035	0.90	20-40-50-60°	3.22	3.74	4.69	5.14	
0.043	1.10	20-50°	5.07	6.04	7.46	7.84	
0.052	1.30	50°	5.12	6.10	7.52	8.06	

* Volume flow refers to water.

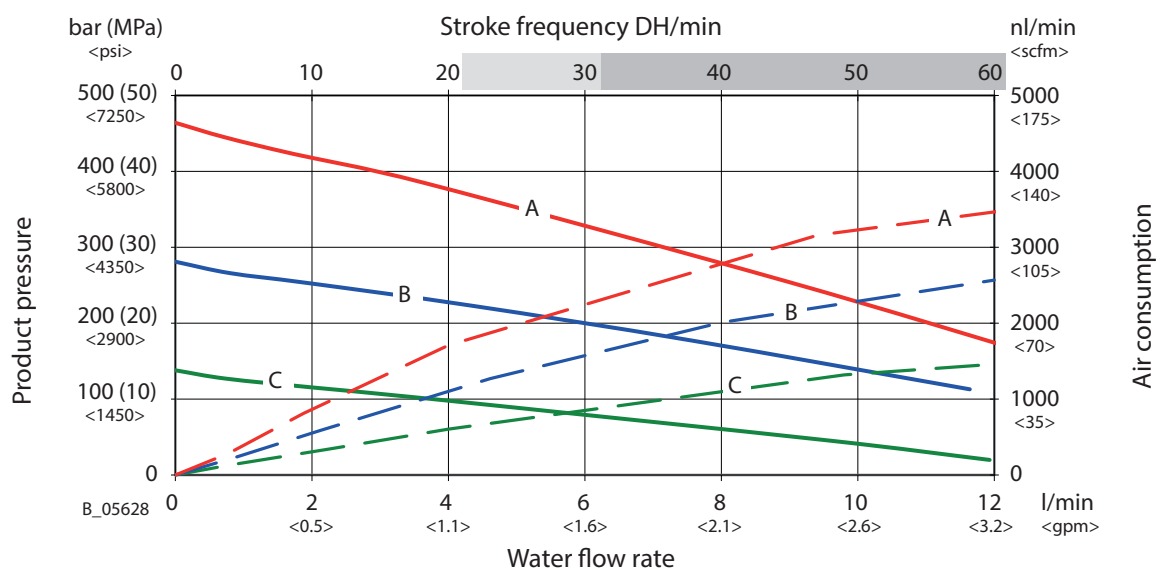
5.5.6 PERFORMANCE DIAGRAMS**Example**

PROTEC 2K75-150/38 4 : 1	PROTEC 2K77-110/75 1.5 : 1
---	---

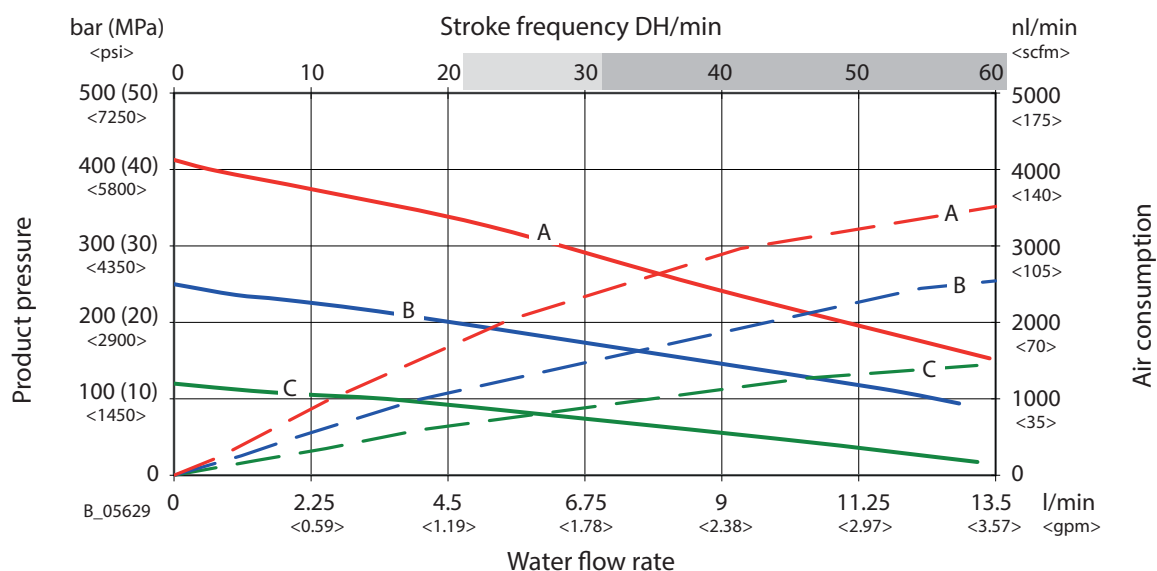


Air pressure: A = 6.5 bar; 0.65 MPa; 94 psi
 B = 4 bar; 0.4 MPa; 58 psi
 C = 2 bar; 0.2 MPa; 29 psi

PROTEC 2K70-150/50 3 : 1



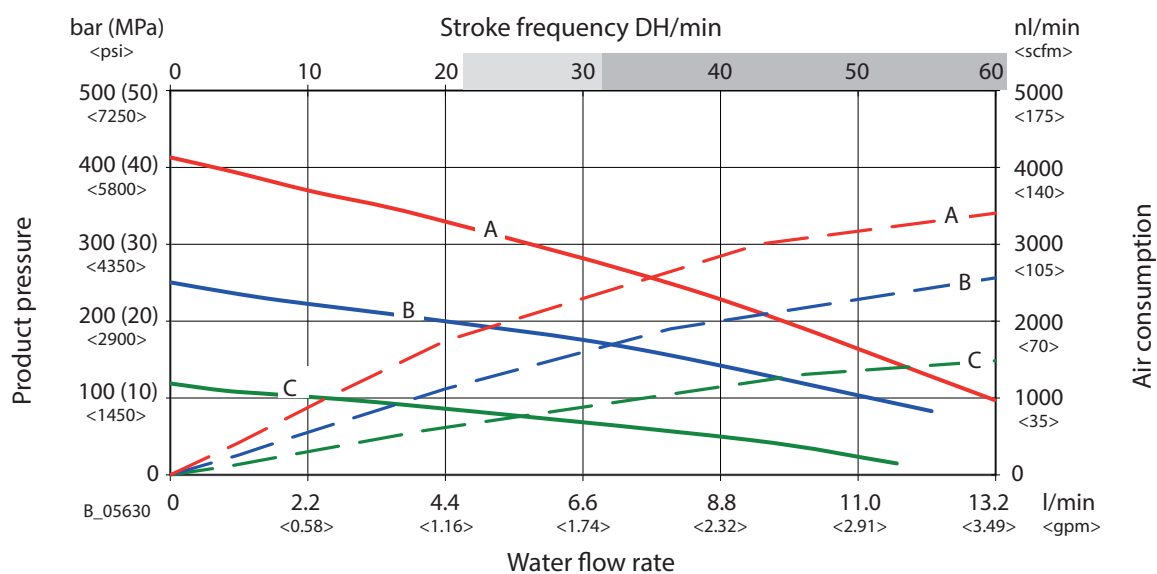
Air pressure: A = 6.5 bar; 0.65 MPa; 94 psi
 B = 4 bar; 0.4 MPa; 58 psi
 C = 2 bar; 0.2 MPa; 29 psi

PROTEC 2K64-150/75**2 : 1**

Air pressure: A = 6.5 bar; 0.65 MPa; 94 psi

B = 4 bar; 0.4 MPa; 58 psi

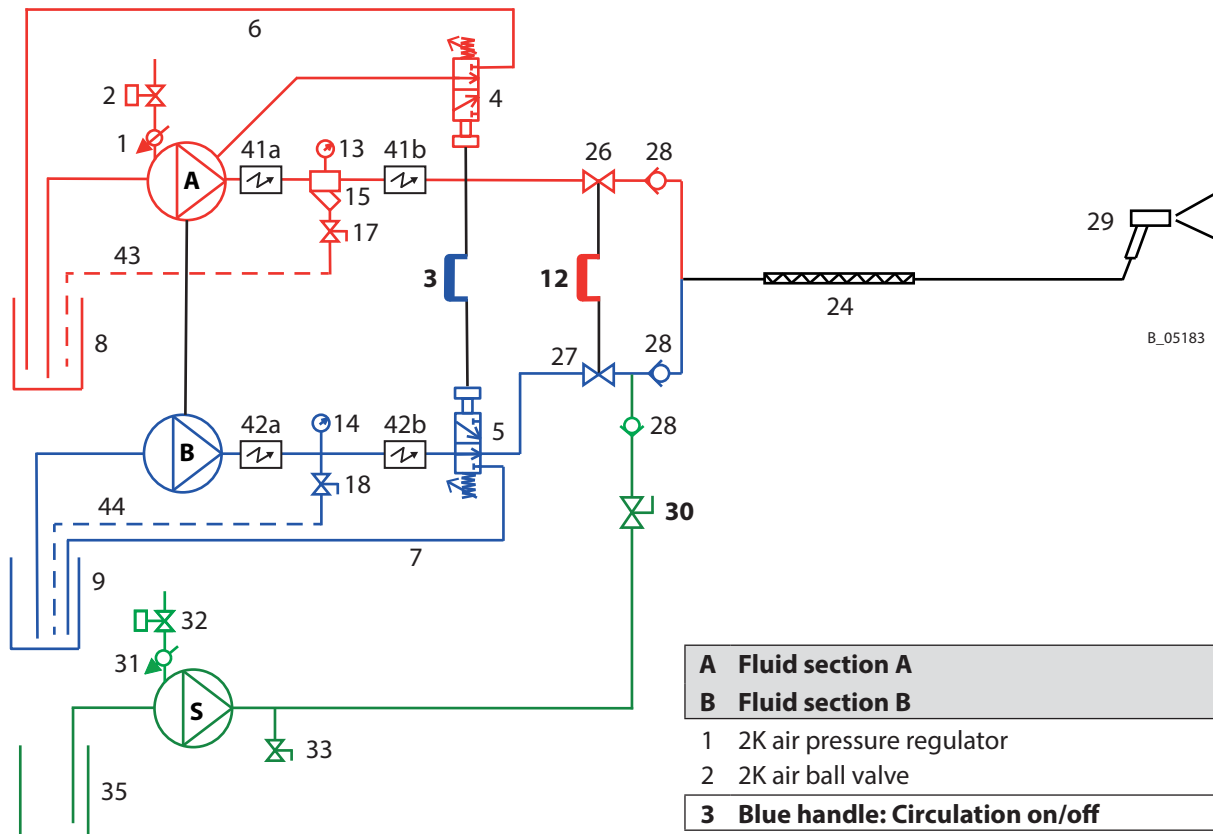
C = 2 bar; 0.2 MPa; 29 psi

PROTEC 2K65-110/110**1 : 1**

Air pressure: A = 6.5 bar; 0.65 MPa; 94 psi

B = 4 bar; 0.4 MPa; 58 psi

C = 2 bar; 0.2 MPa; 29 psi

5.6 FLOW DIAGRAM**Optional:****S Flushing pump****30 Ball valve, flushing**

- 31 Air pressure regulator of flushing pump
- 32 Air ball valve of flushing pump
- 33 Relief Combination of flushing pump
- 35 Flushing agent product tank

- 41a Heater A/return line
- 41b Heater A (without return line)
- 42a Heater B/return line
- 42b Heater B (without return line)

- 43 Return line A (via high-pressure filter)
- 44 Return line B (via 2K relief combination)

A Fluid section A**B Fluid section B**

- 1 2K air pressure regulator
- 2 2K air ball valve

3 Blue handle: Circulation on/off

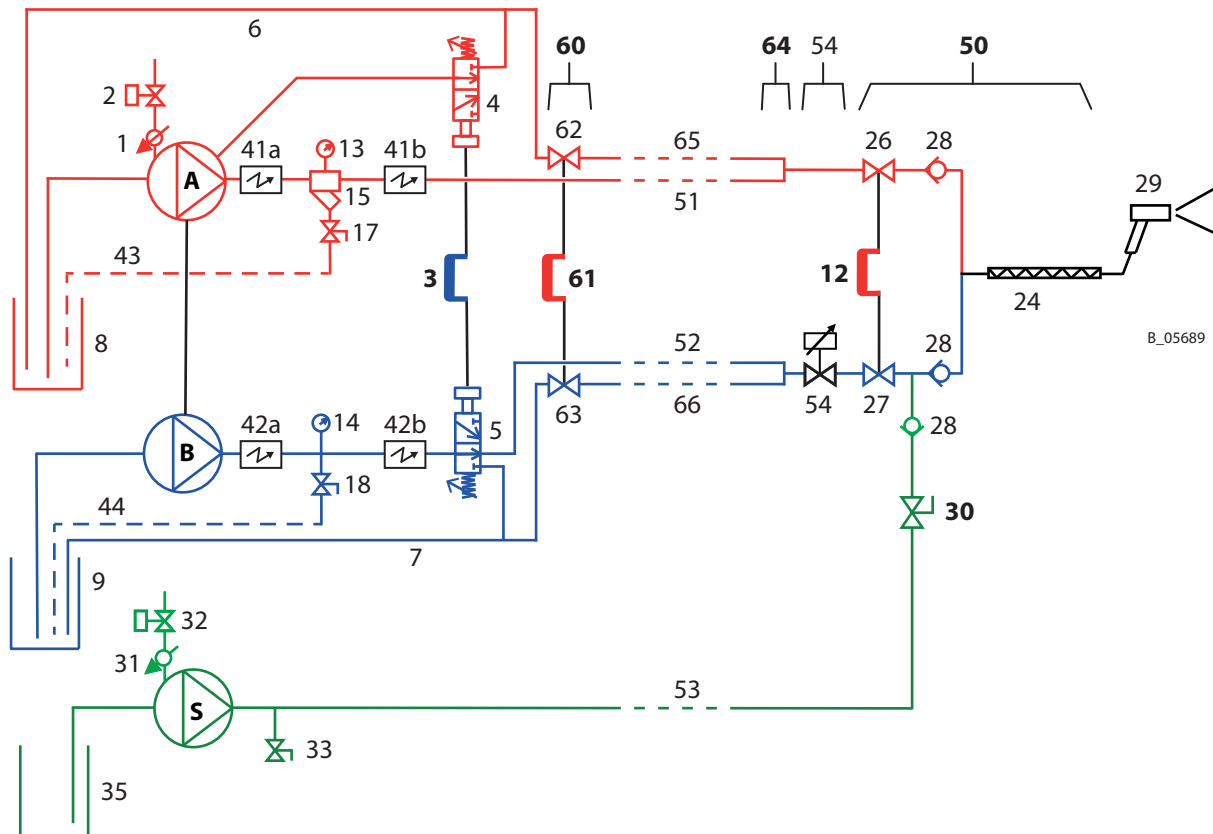
- 4 Circulation valve A with excess pressure protection
- 5 Circulation valve B with excess pressure protection
- 6 Circulation hose A
- 7 Circulation hose B
- 8 Product tank A
- 9 Product tank B

12 Red handle: Spray on/off

- 13 Product pressure gauge A
- 14 Product pressure gauge B
- 15 High-pressure filter A
- 17 Ball valve A (at the high-pressure filter A)
- 18 Ball valve B (2K relief combination)

- 24 Static mixer
- 26 Spray valve A
- 27 Spray valve B
- 28 Non-return valve
- 29 Spray gun

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5.6.1 FLOW CHART WITH EXTERNAL MIXER AND EXTERNAL CIRCULATION**50 External mixer** (option)**12 Red handle: Spray on/off**

24 Static mixer

26 Spray valve A

27 Spray valve B

28 Non-return valve

30 Ball valve, flushing (option)

51 Product hose A to external mixer

52 Product hose B to external mixer

53 Flushing hose to external mixer (option)

54 Throttle valve (option for external mixer)**60 + 64 External circulation**
(option for external mixer)**61 "External circulation" handle** (on trolley)

62 Circulation valve external A

63 Circulation valve external B

64 Distributor (on external mixer) for connecting the circulation hoses

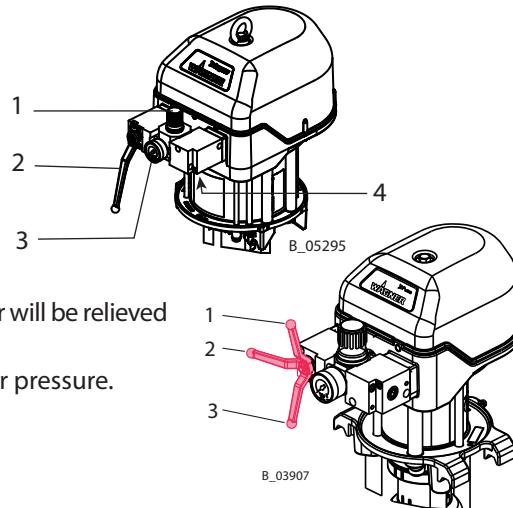
65 Circulation hose A

66 Circulation hose B

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5.7 PRESSURE REGULATOR UNIT

- 1 Pressure regulator
- 2 Ball valve
- 3 Pressure gauge
- 4 Compressed air Inlet



Positions of the ball valve

- 1 Closed: working pressure in the air motor will be relieved (control pressure is still present).
- 2 Closed: the air motor may still be under pressure.
- 3 Open: working position

5.8 PRESSURE RELIEF

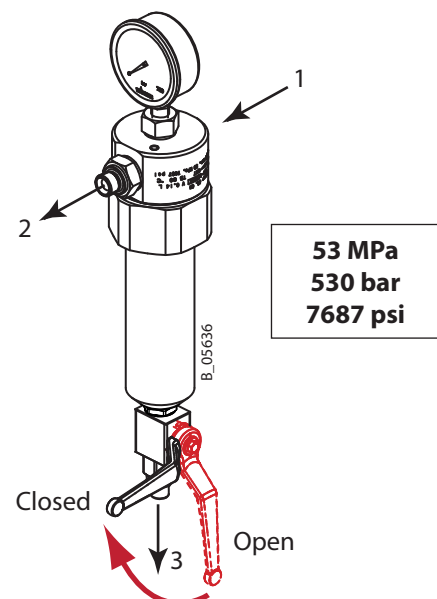
For carrying out a complete depressurization of the pump (see Chapter 7.5), are installed:

- for component A: high-pressure filter with return line
- for component B: 2K PC relief combination

5.8.1 HIGH-PRESSURE FILTER 530 BAR

A WAGNER high-pressure filter is installed to ensure smooth operation. These have been developed especially for WAGNER pneumatic pumps. The filter inserts can be exchanged depending on the product to be used. Appropriate filter inserts can be found in the "Spare Parts" chapter.

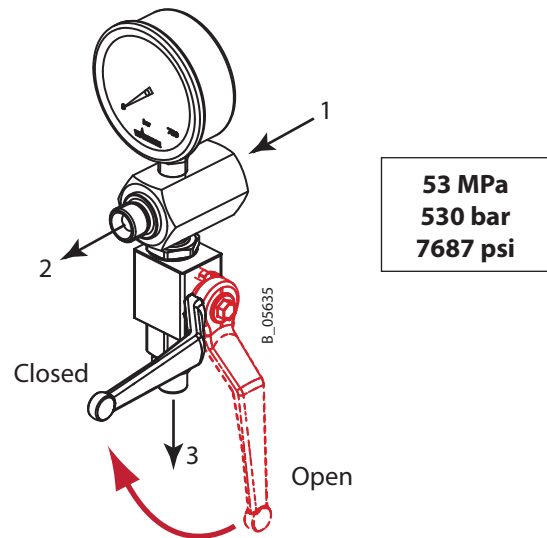
- 1 Fluid section A connection
- 2 Product outlet
- 3 Return line



5.8.2 2K PC RELIEF COMBINATION, 530 BAR

The component B is fitted with a 2K PC relief combination.

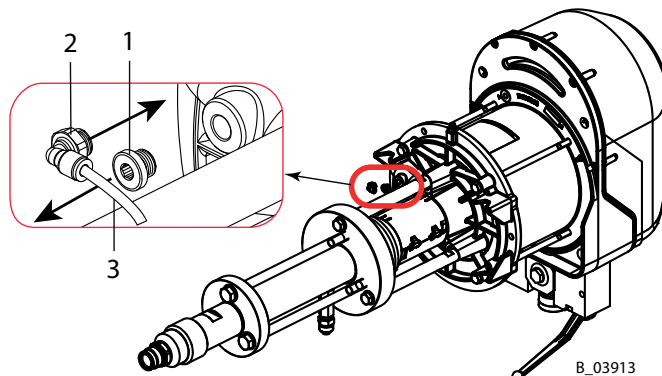
- 1 Fluid section B connection
- 2 Product outlet
- 3 Return line

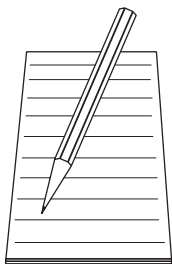
**5.9 STROKE COUNT (OPTION)**

Each air motor has a 1/8" air connection with which the air pressure in the lower air motor chamber can be measured. This signal can be used for counting the strokes in an external control, for example.

The pressure signal corresponds to the set working air pressure and is available during the complete upwards stroke of the pump. If both of the signal flanks are evaluated, the upper and lower reversal point can be determined. A 4/2-mm; 0.16/0.08-inch air hose is used as an air signal line.

Pos	Order No.	Designation
1	9998675	Threaded plug
2	9999066	Male stud elbow
3	9982072	Air hose (per meter)
4	9943049	Pneumatic pre-selection counter





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5.10 EXTERNAL MIXER AND EXTERNAL CIRCULATION

5.10.1 EXTERNAL MIXER (OPTION)

The red handle (12) with mixing block and mixing tube is on an external frame rather than being on the trolley. The same applies to ball valve, flushing (30, option).

External mixer

12 Red handle: Spray on/off

24 Static mixer

26 Spray valve A

27 Spray valve B

28 Non-return valve

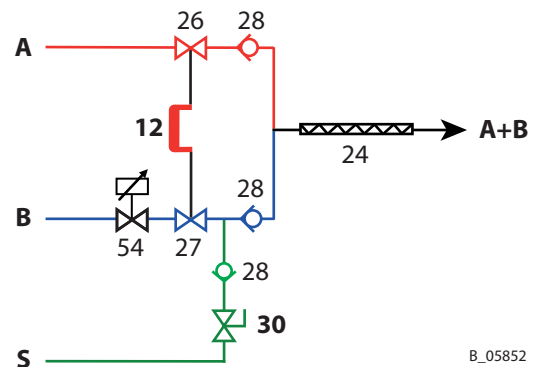
30 Ball valve, flushing (option)

54 Throttle valve (option)

A Product hose A

B Product hose B

S Flushing hose (option)



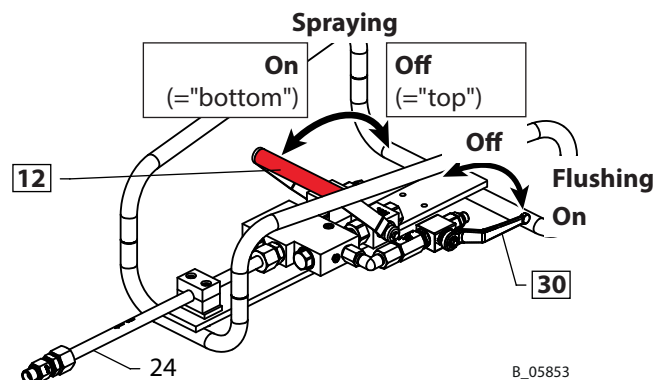
Throttle valve (54, option)

If short-term mixing mistakes occur when using an external mixer, this can be corrected with a throttle valve (see Chapter 5.10.3).

Operation

Operation remains unchanged. The only difference is the handle positions. Rather than turning the red handle (12) on the external mixer vertically up and down on the trolley, it is moved horizontally towards the hose set or towards the mixing tube.

Red handle (12)	Handle position	Description in instructions
- Spray off:	Towards hose set	"Handle (12) up"
- Spray on:	Towards mixing tube	"Handle (12) down"



5.10.2 HOSE SELECTION

Hose selection with external mixer

The volume ratio of product hoses A and B should match the mixing ratio. If this is not the case, the hoses will respond to changes in pressure at different speeds. One hose will reach the new pressure sooner than the other. This causes short-term errors in the mixing ratio.

Different levels of hose viscosity and flexibility also cause short-term errors in the mixing ratio. The longer the hoses the greater the effect.

Suitable hose combinations for different mixing ratios

Hose A		Hose B		Volume ratio *	Mixing ratio
Inside - Ø	Connection	Inside - Ø	Connection	Hose A : hose B	A : B
DN13	1/2"	DN6	1/4"	4 : 1	4 : 1 3 : 1
DN10	3/8"	DN6	1/4"	2.25 : 1	3 : 1 2 : 1
DN13	1/2"	DN10	3/8"	1.78 : 1	2 : 1 1.5 : 1
DN10	3/8"	DN10	3/8"	1 : 1	1.5 : 1 1 : 1

* with effective inner diameters of 6.4 mm (DN6), 9.6 mm (DN10), and 12.8 mm (DN13)

Select large hose diameters for viscous products.

Detecting short-term mixing errors

Should the pressure change, product pressure gauges A and B should respond as synchronously as possible. Short-term errors in the mixing ratio occur at the following points:

- At the reversal points of the air motor, pressure gauge B indicates a bigger drop in pressure than pressure gauge A.
- When opening the gun, pressure gauge B responds much later than pressure gauge A.

Rectifying short-term mixing errors

- Use a different hose combination (see Table).
- Too great a drop in pressure on the B side can be corrected with a throttle valve (see Chapter 5.10.3).

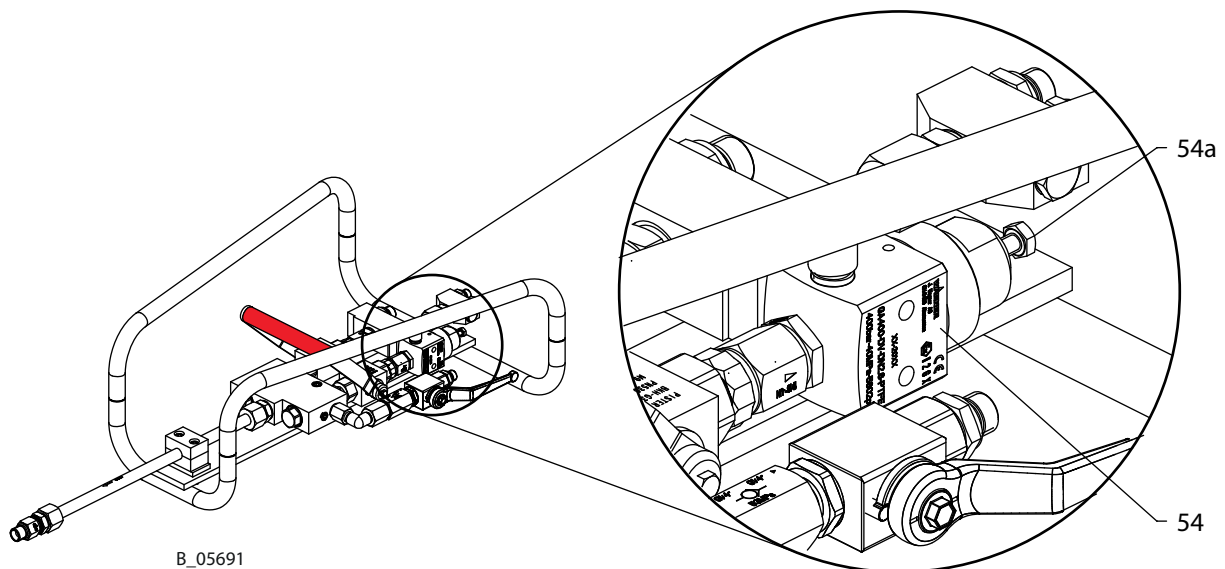
5.10.3 THROTTLE VALVE (OPTION)

Short-term mixing errors caused by too great a drop in pressure on the B side can be corrected with a throttle valve. Guideline for using a throttle valve:

- over-dimensioned B product hoses (see Chapter 5.10.2)
- viscous B product
- long hoses
- high flow (nozzle)

Procedure

1. Fit throttle valve (54) on external mixer (B side).
→ Throttle valve set: For Order No., see Accesories chapter.
2. Rough adjustment:
While spraying, screw in adjustment screw (54a) only until product pressure gauge B indicates a slight increase in pressure.
3. Fine adjustment:
At the reversal points of the air motor, check that product pressure gauges A and B are each indicating roughly the same drop in pressure. If necessary, readjust the adjusting screw (54a). Only screw in as far as necessary.

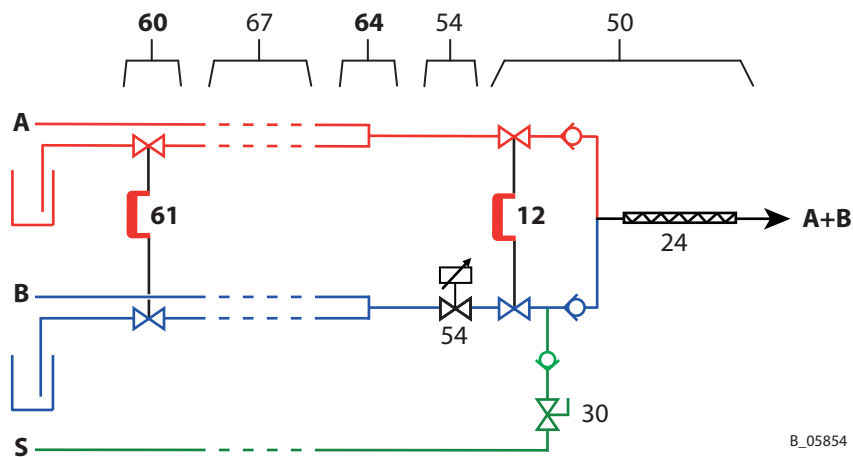


5.10.4 EXTERNAL CIRCULATION (OPTION)

With external circulation, the product can be circulated via the external mixer (50) and returned to the product tank.

The external circulation consists of two parts:

- Two distributors (64) in the external mixer for connecting circulation hoses A and B.
- Two circulation valves on the trolley. The "External circulation" handle (61) can be used to open and close the circulation valves.



50 External mixer (see Chapter 5.10.1)

54 Throttle valve (option, see Chapter 5.10.3)

External circulation

60 "External circulation" handle (61) with circulation valves (fitted on trolley)

64 Distributor (fitted on external mixer)

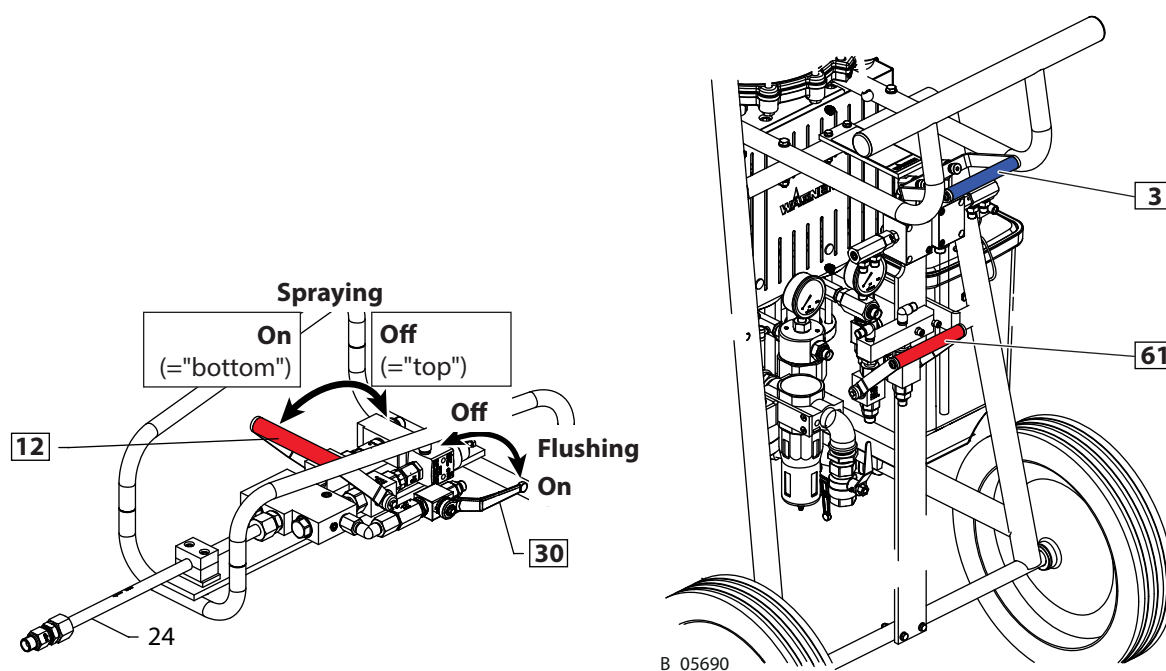
67 Material and circulation hoses between trolley and external mixer

Operation

The blue handle (3) remains unchanged. The product can therefore be circulated internally on the trolley.

The handle positions should be noted for the red handle (12) in the external mixer (see Chapter 5.10.1).

The "External circulation" handle (61) on the trolley is new. It controls external circulation.

**3 Blue handle: "Internal circulation"**

- Circulation on: upper position (product flows directly back into product tank)
- Circulation off: bottom position (as in illustration)

12 Red handle: Spray on/off

	Handle position	Description in instructions
- Spray off:	Towards hose set	"Handle (12) up"
- Spray on:	Towards mixing tube	"Handle (12) down"

24 Mixing tube

30 Ball valve, flushing**61 "External circulation" handle**

- Circulation on: Bottom position (product flows back into product tank via external mixer)
- Circulation off: Top position (as in illustration)

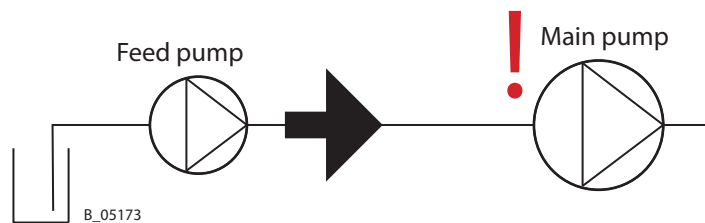
5.11 FEED PUMP (OPTION)

A feed pump can be used with high-viscosity products or longer feed lines.

Dimensioning of the feed pump

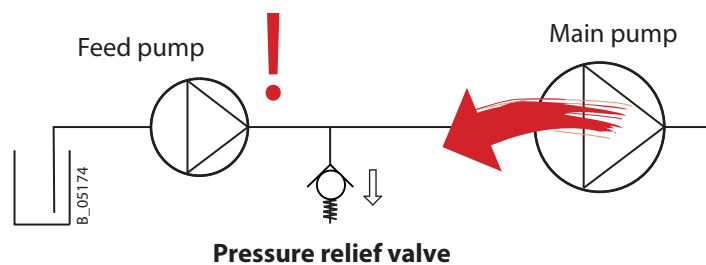
→ The piston pumps pump the working material to the product output with up and down strokes but only draw in new product on the up stroke. The feed pump therefore has to pump twice the volumetric flow.

→ The maximum product pressure at the pump inlet of the PROTEC 2K fluid sections may not be exceeded.



Protection of feed pump

→ If the maximum pressure of the feed pump is lower than the maximum pressure of the main pump, this could be exceeded if the main pump malfunctions. The feed pump and connection line must therefore be protected from excessive overpressure. An overpressure valve must then be installed between the feed pump and main pump. Observe the flow direction during installation.



6 ASSEMBLY AND COMMISSIONING

6.1 TRAINING ASSEMBLY/COMMISSIONING STAFF

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

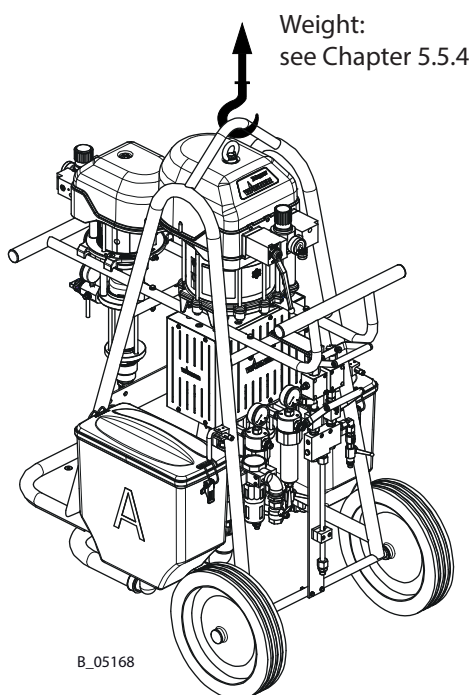
A skilled person must check to ensure that the device is in a reliable state after it is installed and before commissioning.

6.2 STORAGE AND INSTALLATION CONDITIONS

Until the point of assembly, the device must be stored in a dry location, free from vibrations and with a minimum of dust. The device must be stored in closed rooms. For specifications of temperatures and relative humidity, see, technical data (Chapter 5.5.3).

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

6.3 TRANSPORTATION

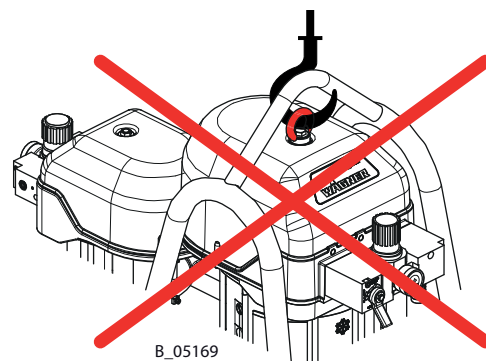


When lifting the system, always make sure that it remains in balance.

Only lift at transport bracket.

(Lifting eye nut at the air motor = option)

Transport box: see Chapter 5.5.4



6.4 ASSEMBLY AND INSTALLATION

	 WARNING
	Inclined ground! Risk of accidents if the device rolls away/falls. → Place the device on horizontal floor. → The wheels should be fixed or replaced by levelling feet and secured. → Do not tilt the device during shifting / transporting.

6.4.1 PNEUMATIC CONNECTIONS

→ Check whether the line pressure is sufficient (see technical data, Chapter 5.5.3).

	 WARNING
	Overpressure! Risk of injury from bursting components. → The operating pressure must not exceed the value shown on the type plate.

- Check whether efficient filter systems and condensate precipitators are available in the air line.
- The compressed air must be free of oil and water. Quality standard: see technical data (Chapter 5.5.3).
- Every day, discharge all impurities and the condensate (if any) accumulated in the system's air filter.

6.4.2 PRODUCT CONNECTIONS

- Connect high-pressure hose and gun to outlet of mixing tube (25) as laid down in the operating manual for the gun.

6.4.3 VENTILATION OF THE SPRAY BOOTH

Observe the safety instructions in Chapter 4.1.3.

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

6.5 GROUNDING

	 WARNING
	Discharge of electrostatically charged components in atmospheres containing solvents! Explosion hazard from electrostatic sparks. → Clean the piston pump only with a damp cloth. → Ground all device components. → Ground the work pieces to be coated.

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

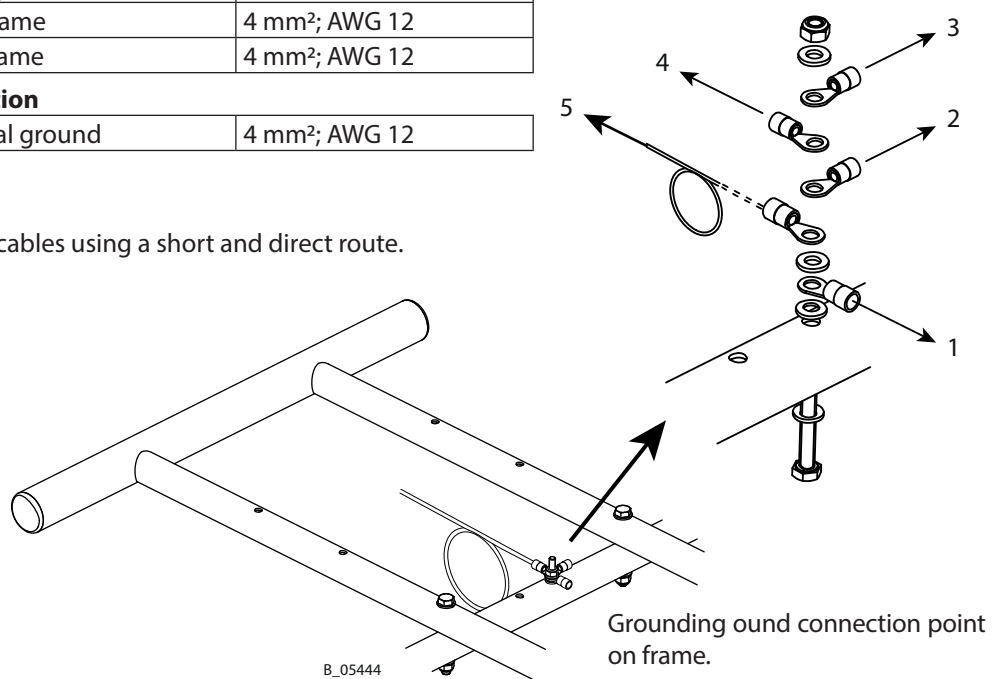
6.5.1 GROUNDING OF COMPONENTS ON TROLLEY

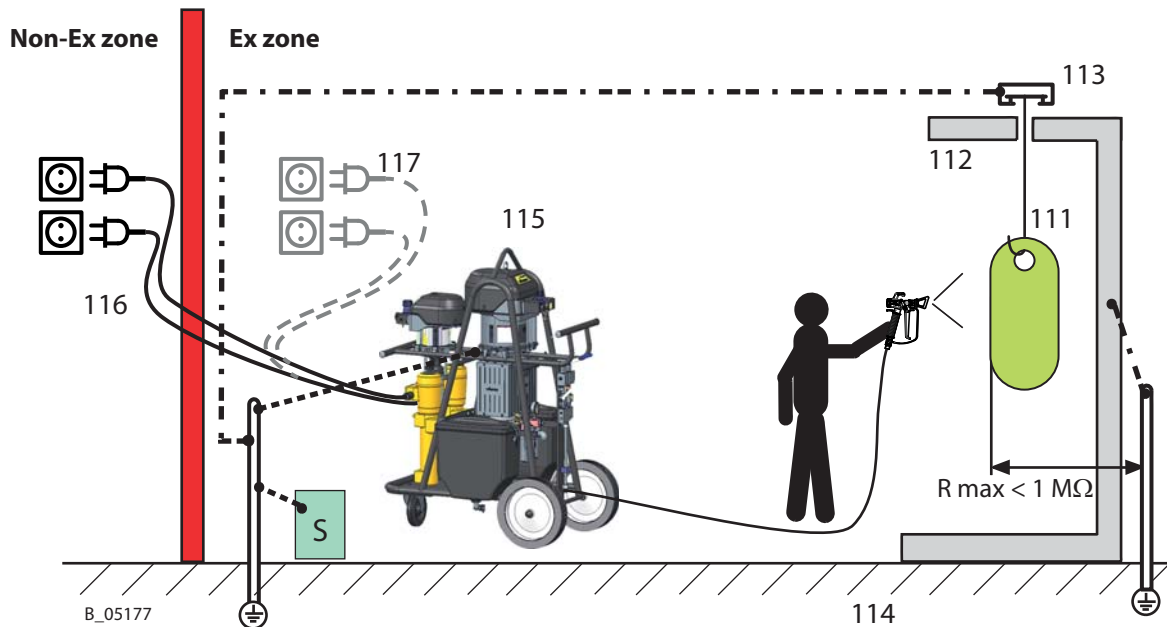
Pos	from - to	Grounding cable
1	2K pump on frame	4 mm ² ; AWG 12
2	Flushing pump on frame	4 mm ² ; AWG 12
3	Heater A on frame	4 mm ² ; AWG 12
4	Heater B on frame	4 mm ² ; AWG 12

Potential equalization

5	Frame to signal ground	4 mm ² ; AWG 12
---	------------------------	----------------------------

Connect all ground cables using a short and direct route.



6.5.2 GROUNDING SCHEMA (EXAMPLE)**Legend**

--- Grounding cables
 — Fluid hose, electrical lines

S	Flushing agent tank	114	Floor, static dissipative
111	Work piece	115	2K system, frame
112	Spraying stand	116	Electrical connection lines of heaters
113	Conveyor	117	Mains connection: Only in the explosive area if the plug and socket are ex models.

Cable cross sections

2K system, frame	4 mm ² ; AWG 12
Flushing agent tank	6 mm ² ; AWG 10
Conveyor	16 mm ² ; AWG 6
Spray booth	16 mm ² ; AWG 6
Spraying stand	16 mm ² ; AWG 6

Safe operation of the PROTEC 2K system is only guaranteed with a grounding connection. Connect all ground cables using a short and direct route.

Ex zone

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

Tank

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

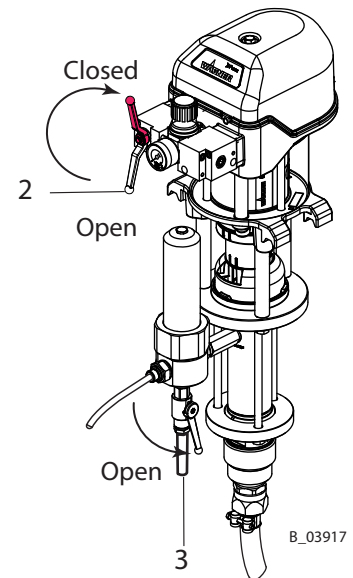
6.6 COMMISSIONING

6.6.1 SAFETY INSTRUCTIONS

- Observe all safety regulations in accordance with Chapter 4 and Chapter 7.2.
- Observe all safety regulations in accordance with Chapter 8.1.2 and Chapter 8.2.2.

EMERGENCY STOP

In the case of unforeseen occurrences, immediately switch off the system in accordance with Chapter 7.3.3.



6.6.2 PROCEDURE

Whenever starting up, the following points should be observed as laid down in the operating manual:

1. Secure the gun.
2. Check the permissible pressures.
3. Check all connections for leaks.
4. Check hoses for damage in accordance with Chapter 8.2.7.
5. Filling with separating agent in accordance with Chapter 8.2.3.3.

Filling the system (replace preservation)

On initial filling with the working material, the existing product (oil, flushing agent) must be completely removed from the system. This ensures that there are no hardenings.

- Ensure that no explosive atmosphere is present when filling or emptying the system.

Filling the flushing pump

- In accordance with flushing pump's operating manual.

Filling the fluid sections A and B (replace preservation)

1. Paint change flushing according to Chapter 7.7.
2. Empty 2K pump according to Chapter 8.2.4.
3. Fill 2K pump with new paint according to Chapter 8.2.5.

7 OPERATION

7.1 TRAINING THE OPERATING STAFF

- The operating staff 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 staff must receive appropriate system training.

7.2 SAFETY INSTRUCTIONS

Before carrying out any work, the following points must be observed in accordance with the operating manual:

- Observe all safety regulations in accordance with Chapter 4.
- Carry out commissioning in accordance with Chapter 6.6.

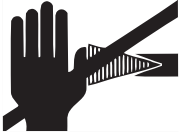
	 WARNING
	Incorrect operation! Risk of injury and damage to the device. → If contact with lacquers or cleaning agents causes skin irritation, appropriate precautionary measures must be taken, e.g., wearing protective clothing. → The footwear worn by operating staff must comply with EN ISO 20344. The measured insulation resistance must not exceed 100 megohms. → The protective clothing, including gloves, must comply with EN ISO 1149-5. The measured insulation resistance must not exceed 100 megohms.

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

	! WARNING Gas mixtures can explode if there is an incompletely filled pump! Danger to life from flying parts. → Ensure that the pump and suction system are always completely filled with flushing agent or working material. → Do not spray the device empty after cleaning.
---	---

7.2.1 GENERAL RULES FOR MAKING ADJUSTMENTS TO THE SPRAY GUN

→ Observe the operating manual of the spray gun.

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

7.2.2 DO NOT CONNECT RED HANDLE UNDER PRESSURE

The red handle (12) must not be connected under pressure.

After spraying, the red handle (12) first has to be relieved:

- Either via the gun:
 - Close 2K air ball valve.
 - Relieve gun.
- Or via the circulation:
 - Close 2K air ball valve.
 - Turn blue handle (3) up. The turn down again.

The red handle (12) may then be closed (turn up).

Take care if nozzle blocks

If a blocked nozzle prevents relief via the gun, relief via the circulation must be undertaken first (blue handle). The red handle can then be closed (turn up).

7.3 SWITCHING DEVICE ON AND OFF

7.3.1 SWITCHING ON DEVICE

- Ensure that the wheel brake is applied.
- Ensure that the 2K air ball valve (2) and air ball valve of the flushing pump (32) are closed.
- 1. Open main air (21).
- 2. Insert the power plug of the heaters (if present).

7.3.2 SWITCHING OFF DEVICE

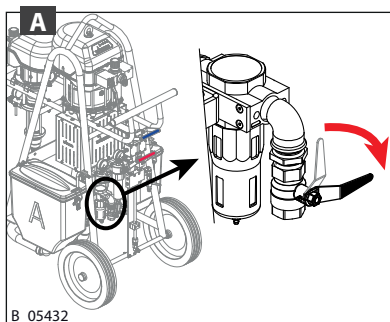
- Ensure that intermediate flushing and pressure relief are undertaken. 2K air ball valve (2) and air ball valve of flushing pump (32) are closed.
- 1. Close main air (21).
- 2. Unplug the power plug of the heaters (if present).

7.3.3 EMERGENCY STOP

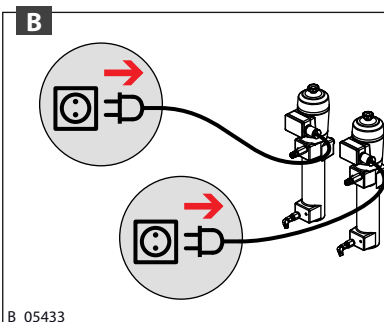
In the case of unforeseen occurrences:

1. Close main air (21).
 2. Unplug the power plug of the heaters (if present).
- If possible remedy problem immediately and flush spray gun hoses so the 2K product does not harden:
- Close 2K spraying air ball valve (2) and relieve 2K pump.
 - With flushing pump: Close air ball valve of flushing pump (32) and relieve flushing pump.
 - Remedy problem.
 - Open main air (21) again.
 - Perform intermediate flushing.

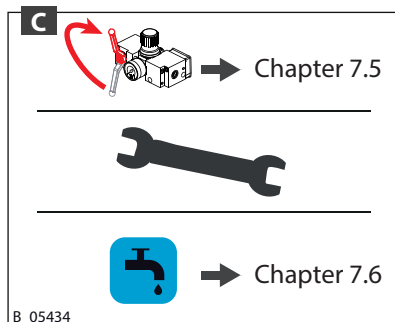
Not-Aus · Emergency Stop



Close main air.



With heater: unplug the power plug. Relieve. Solve problem. Intermediate flushing.



7.4 SPRAYING MODE

7.4.1 PREPARING

Prepare the object to be sprayed and the spray gun

1. Prepare the object to be sprayed and the entire work environment for spraying.
2. Secure the spray gun and place the nozzle in the gun.

Visual check

3. Visual check: personal safety equipment, grounding and all devices ready to use. Wheel brake applied. Blue handle (3) at bottom. Red handle (12) at top. All circulation and return hoses are secured and lead into the product tanks A or B.

Prepare flushing pump (if present)

- A. Fill flushing pump with flushing agent in accordance with flushing pump's operating manual.
- B. Place the suction hose of the flushing pump into a grounded tank with flushing agent.
- C. Adjust suitable flushing pressure at the air pressure regulator of the flushing pump (31).
- D. Open the air ball valve of the flushing pump (32).

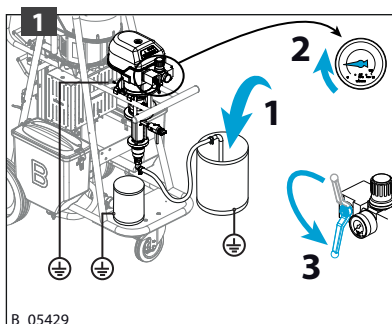
Prepare heater (if present)

- E. Insert the power plug of the heaters.
- F. Set the desired temperature at the heaters.
(The position "3.5" results a product temperature of 50 °C; 122 °F at the output of the heater.)

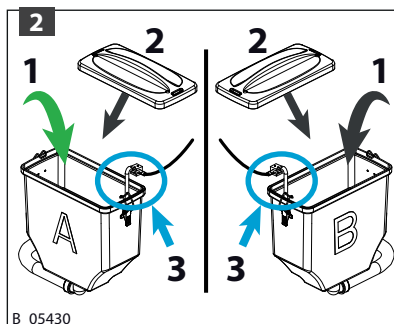
Prepare working material

- If the device is being filled with a new paint or new hardener, paint change flushing must be undertaken first in accordance with Chapter 7.7.
4. If the device is not yet filled up to the circulation valves with working material, fill in accordance with Chapter 8.2.5.
 5. Fill the corresponding product tanks with working materials A and B.
 6. Close cover.
 7. Fix return lines.

Preparing



B_05429



B_05430

Prepare flushing pump (option) and flushing agent.

Fill product A+B. Close cover. Fix return lines.

7.4.2 CIRCULATING

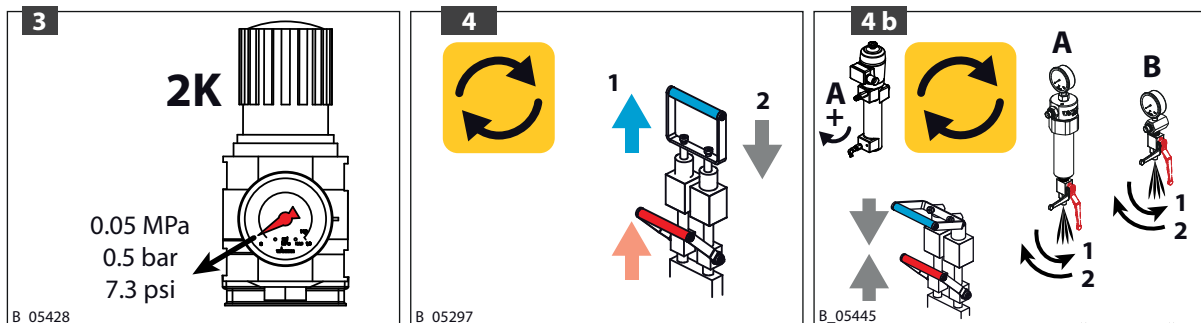
Circulate working material

Internal circulation

→ Important: Prevents the overpressure protection from sticking.

8. Adjust 2K air pressure regulator (1) to approx. 0.05 MPa; 0.5 bar; 7.3 psi.
9. Turn blue handle (3) up.
10. Slowly open 2K air ball valve (2).
11. → Allow to circulate for several minutes depending upon the product.
12. Close 2K air ball valve (2).
13. Turn down blue handle (3) again.

Circulate



Air pressure regulator approx. 0.5 bar. Circulate via blue handle.

With heater A/return line:
circulate via ball valves A and B.

With heater A/return line

- A. Internal circulation (points 8 to 13).
- B. Open ball valves A and B.
- C. Slowly open 2K air ball valve (2).
→ Circulating until the desired product temperature is reached.
- D. Close 2K air ball valve (2).
- E. Close the ball valves A and B again.

With external circulation (option for external heater)

- A. Internal circulation (points 8 to 13).
- B. Turn "External circulation" handle (61) down.
- C. Slowly open 2K air ball valve (2).
→ Allow to circulate for several minutes depending upon the product.
- D. Close 2K air ball valve (2).
- E. Turn "External circulation" handle (61) up again.

7.4.3 2K SPRAYING

Fill spray gun hoses with 2K product

14. Start spraying mode: Turn down red handle (12).
15. Close 2K air pressure regulator (1) (0 MPa; 0 bar; 0 psi).
16. Point the spray gun without nozzle toward the grounded collecting tray and pull off.
17. Slowly open 2K air ball valve (2).
18. Slowly turn the air pressure up on the 2K air pressure regulator (1) and only until the pump is running normally (approx. 0–0.05 MPa; 0–0.5 bar; 0–7.25 psi). Be ready to switch from working material to air (or flushing agent) and prevent back spray.
19. As soon as clean working material flows, close and secure the spray gun.
20. Insert nozzle in gun and start work process.

Spraying

- We recommend two people for spraying mode:
 - One person operates the spray gun.
 - A second person operates and monitors the system.
- 21. Set the required working pressure on the 2K air pressure regulator (1).
- 22. Unlock spray gun and spray until the spray jet is good. Set spraying pressure on 2K air ball valve (2).
- 23. Optimize the spraying results as laid down in the gun instructions.
- 24. Start the work process. At all times:
 - Monitor the **level** of the product tank.
 - Monitor **pot life**.
 - Monitor the **pressure gauges A and B** and ensure that the product pressures A and B always remain consistently high (see Chapter 7.4.3.1).

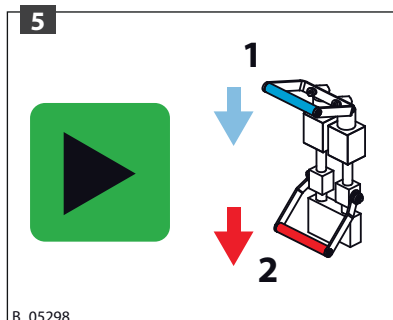
End spraying

25. Close and secure the spray gun.

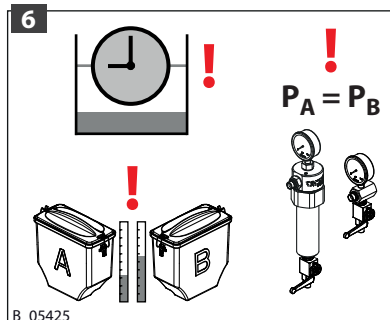
→ Next steps:

- Intermediate flushing in accordance with Chapter 7.6, or
- circulate in accordance with Chapter 7.4.2. Note pot life!

2K spraying



Blue handle (circulation) off.
Red handle (spray) on.



Monitor: Pot life, level, pressure A +
B the same.

7.4.3.1 PRESSURE DROP

If the pressure drops of the component A or B during spraying:

1. Intermediate flushing in accordance with Chapter 7.6.
2. Relieve the pressure according to Chapter 7.5.
3. Identify and correct the problem:
 - Product shortage A or B,
 - Pump valves are dirty,
 - Leakage of the pump packings A or B,
 - Leakage of the circulation valve.

7.4.3.2 NO-LOAD / VENT

When no-lead (2K fluid section sucks in air):

1. With flushing pump and very short pot life: Intermediate flushing in accordance with Chapter 7.6.1.

Vent fluid sections A/B

2. Fill 2K pump in accordance with Chapter 8.2.5.

Vent flushing pump

→ See flushing pump's operating manual.

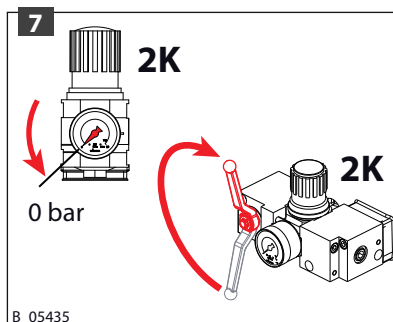
7.5 PRESSURE RELIEF/WORK INTERRUPTION

1. Turn 2K air pressure regulator (1) down to 0 MPa; 0 bar; 0 psi.
 2. Close 2K air ball valve (2).
 3. If no longer in spraying mode: Turn down red handle (12).
 4. Relieve pressure: Point the spray gun toward the grounded collecting tray and pull off.
→ Attention: If a blocked nozzle is preventing relief, first carry out the additional steps 5 to 8, then clean the nozzle.
 5. Close and secure the spray gun.
 6. End spraying mode: Turn red handle (12) up again.
 7. Relieve circulation: Turn up blue handle (3). Then turn down again.
 8. With external circulation (option):
- Turn "External circulation" handle (61) down. Then turn up again.
 9. For complete pressure relief, slowly open ball valves A and B (17 and 18) and close again.
- In case of longer work interruptions:
- Relieve flushing pump (if present): Chapter 7.6.1.1
 - Unplug the power plug of the heaters (if present)
- Before expiry of the pot life:
- Either continue working (Chapter 7.5.1)
 - or perform intermediate flushing (Chapter 7.6).

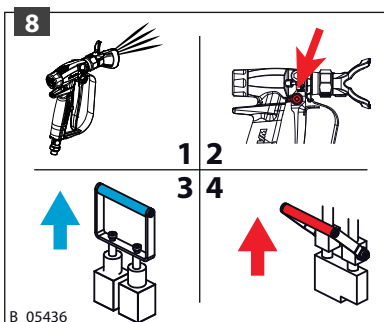
NOTICE**Hardened working material in the spraying system when 2K product is processed!**

Destruction of pump and injection system.

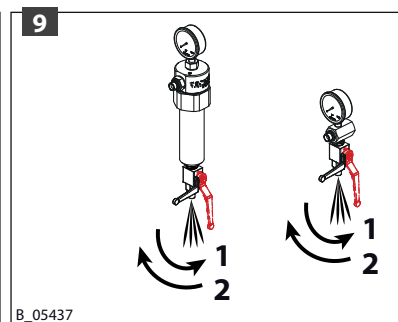
- Follow the manufacturer's processing rules, particularly regarding the pot life.
→ Perform intermediate flushing before end of pot life.
→ The pot life is decreased by warmth.

2K Relieving

Close 2K air pressure regulator and 2K air ball valve.



Relieve gun and circulation.
Red handle off.



Relieve ball valves A and B.

7.5.1 CONTINUING AFTER WORK INTERRUPTION

1. Visual check: personal safety equipment, grounding and all devices ready to use. Blue handle (3) at bottom. Red handle (12) at top. All circulation and return hoses are secured and lead into the product tanks A or B.

2. Check levels A and B.

If flushing pump present:

- A. Check level of flushing agent.
- B. Adjust suitable flushing pressure at the air pressure regulator of the flushing pump (31).
- C. Open the air ball valve of the flushing pump (32).

If heater is present:

- E. Insert the power plug of the heaters.

3. After long work interruptions: Circulate working material in accordance with Chapter 7.4.2.
4. Start spraying mode: Turn down red handle (12).
5. Slowly open 2K air ball valve (2).
6. Release the spray gun and spray. Optimize the spray jet and spraying results.
7. Restart work process. At all times:
 - Monitor the **level** of the product tank.
 - Monitor **pot life**.
 - Monitor the **pressure gauges A and B** and ensure that the product pressures A and B always remain consistently high (see Chapter 7.4.3.1).

End spraying

8. Close and secure the spray gun.

→ Next steps:

- Intermediate flushing in accordance with Chapter 7.6, or
- circulate in accordance with Chapter 7.4.2. Note pot life!

7.6 INTERMEDIATE FLUSHING

As soon as possible after work and before the pot life expires, the mixed product must be removed from the system by means of intermediate flushing.

NOTICE

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

- Follow the manufacturer's processing rules, particularly regarding the pot life.
- Perform intermediate flushing before end of pot life.
- The pot life is decreased by warmth.

7.6.1 INTERMEDIATE FLUSHING WITH FLUSHING PUMP

1. Visual check: personal safety equipment, grounding and all devices ready to use. Blue handle (3) at bottom. Red handle (12) at top. All circulation and return hoses are secured and lead into the product tanks A or B.
2. If necessary, top up flushing agent.
3. Point the spray gun toward the grounded collecting tray and pull off.
4. Open flushing ball valve (30).
5. Flush until clean flushing agent exits the gun.
6. Close flushing ball valve (30).
7. Close and secure the spray gun.

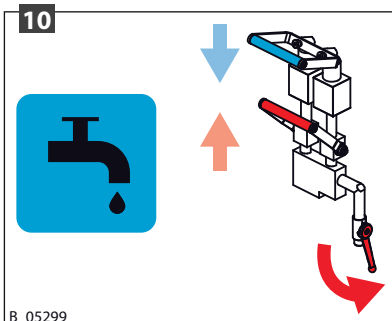
→ Next steps:

- Spraying (Chapter 7.4) or
- Paint change flushing (Chapter 7.7) or
- at the end of work:
 1. Pressure relief (Chapter 7.5)
 2. Relieve flushing pump (Chapter 7.6.1.1)
 3. Switch off device (Chapter 7.3.2)

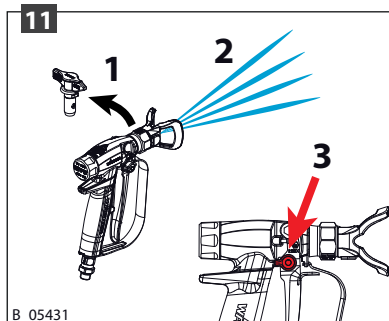
Flushing and circulation at the same time

If necessary, circulation can take place at the same time as intermediate flushing:

- Adjust 2K air pressure regulator (1) to approx. 0.05 MPa; 0.5 bar; 7.3 psi.
- Blue handle turned upward (circulation operating mode).

Intermediate flushing (with flushing pump)

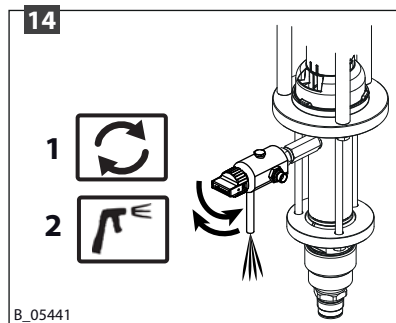
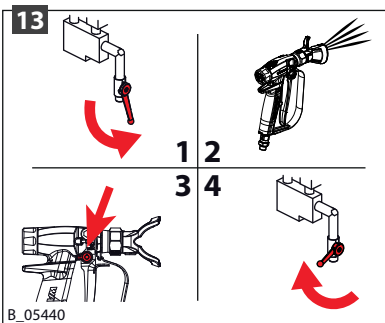
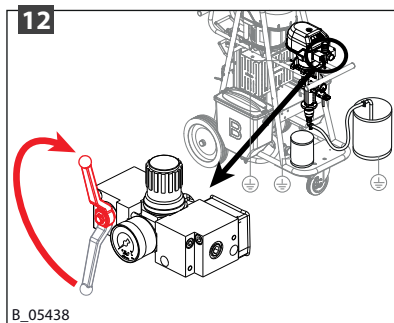
Red handle (spray) off.
Flushing ball valve on.



Flush gun without nozzle.
Secure the gun.

7.6.1.1 RELIEVING FLUSHING PUMP

1. Close the spray gun.
 2. Close air ball valve of flushing pump.
 3. Open flushing ball valve (30).
 4. Relieve pressure of the flushing pump by opening the gun.
 5. Close and secure gun.
 6. Close flushing ball valve (30) again.
 7. Open and close return valve of relief combination to completely depressurize the system.
- In case of longer work interruptions: unplug the power plug of the heaters (if present).

Relieving Flushing Pump

Close air ball valve of flushing pump. Relieve flushing pump via spray gun. Relieve via relief combination.

7.6.2 INTERMEDIATE FLUSHING WITHOUT FLUSHING PUMP

1. Visual check: personal safety equipment, grounding and all devices ready to use. Blue handle (3) at bottom. Red handle (12) at top. All circulation and return hoses are secured and lead into the product tanks A or B.

Empty 2K pump

2. Empty 2K pump according to Chapter 8.2.4.

Flush spray gun hoses

3. Fill product tanks A and B (8 and 9) with approx. 3 to 4 liters of flushing agent each.
4. Close 2K air pressure regulator (1) (0 MPa; 0 bar; 0 psi).
5. Start spraying mode: Turn down red handle (12).
6. Point the spray gun without nozzle toward the grounded collecting tray and pull off.
7. Slowly open 2K air ball valve (2).
8. Slowly turn the air pressure up on the 2K air pressure regulator (1) and only until the pump is running normally (approx. 0–0.05 MPa; 0–0.5 bar; 0–7.25 psi). Be ready to switch from working material to air and prevent back spray.
9. Allow flushing agent to run for several minutes so that the 2K product is flushed out of the system.
Maximize flow so that the entire filter cartridge is flushed.

Finish flushing

10. Close 2K air ball valve (2).
11. Relieve, close, and secure the spray gun.
12. End spraying mode: Turn red handle (12) up again.
13. Depressurization in accordance with Chapter 7.5.

→ Next steps:

- Spraying (Chapter 7.4) or
- Paint change flushing (Chapter 7.7) or
- at the end of work:
 1. Pressure relief (Chapter 7.5)
 2. Switch off device (Chapter 7.3.2)

7.7 PAINT OR HARDENER CHANGE

1. Intermediate flushing in accordance with Chapter 7.6.
2. Paint change flushing in accordance with Chapter 7.7.1.
3. Empty 2K pump according to Chapter 8.2.4.
4. Fill 2K pump with new working material in accordance with Chapter 8.2.5.

7.7.1 PAINT CHANGE FLUSHING

Before a paint or hardener change, the system must be thoroughly flushed using a paint change flush.

Regular flushing: Regular flushing, cleaning, and maintenance ensures the pump's high pumping and suction capacity.

Flushing agent: The flushing agent must be suited to working material A and/or B.

Hardener fluid section: Do not flush hardener fluid section with water, rather only using suitable flushing agents (solvents).

	! 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.
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- If the pumping product becomes heated, switch off all heaters and let the product cool off.
1. Visual check: personal safety equipment, grounding and all devices ready to use. Circulation/return hoses secured. Blue handle (3) at bottom. Red handle (12) at top.
 2. If intermediate flushing was not performed after the last process, remove the product from the system with intermediate flushing (see Chapter 7.6).

Use circulation to empty product tank

3. Remove circulation hoses (6 and 7) from product tanks A and B and route to empty, separate, and grounded tanks.
4. Close 2K air pressure regulator (1) (0 MPa; 0 bar; 0 psi).
5. Start circulation operating mode: turn blue handle (3) upwards.
6. Slowly open 2K air ball valve (2).
7. Slowly turn air pressure up on the pressure regulator (1) and only until the pump is running normally (approx. 0.05 MPa; 0.5 bar; 7.25 psi).
8. Be ready for the switch from working material to air. Turn down pressure regulator (1) far enough that the pump is still running normally (approx. 0–0.05 MPa; 0–0.5 bar; 0–7.25 psi).
9. As soon as working material is no longer flowing out of the circulation hoses (6 and 7), close the ball valve (2).

Circulate flushing agent

10. Route circulation hoses (6 and 7) into product tanks A and/or B (no lids).
11. Fill product tank A (8) and if necessary B (9) with approx 2 to 3 liters of flushing agent each.
→ If the hardener is not being changed, tank B can be left empty.
12. Ensure circulation mode: Blue handle (3) is turned up.
13. Close 2K air pressure regulator (1) (0 MPa; 0 bar; 0 psi).
14. Slowly open 2K air ball valve (2).
15. Slowly turn the air pressure up on the 2K air pressure regulator (1) and only until the pump is running normally (approx. 0–0.05 MPa; 0–0.5 bar; 0–7.25 psi). Be ready to switch from working material to air and prevent back spray.
16. Allow flushing agent to run for several minutes so that the circulation hoses are thoroughly flushed.
Clean the inner walls of product tank A (and if necessary B) with a separate damp brush and flushing agent.
→ With external circulation (option): Switch several times between internal circulation with blue handle (3) and external circulation with handle (61).
17. Close 2K air ball valve (2).
18. Repeat from Point 3 to this point if necessary.

Empty suction hoses

19. Points 3 to 9: Use circulation to empty product tanks.
20. Remove product tank A (8) and if necessary B (9) from trolley.
→ If the hardener is not being changed, intake hose B does not have to be emptied.
21. Loosen hose connections at inputs of fluid sections A (and if necessary B).
22. Empty hose contents into empty, separate, and grounded tanks.
23. Refit hoses on fluid sections A (and if necessary B).
24. Secure product tank A (and if necessary B) to trolley. Route circulation hoses back into product tanks.

End circulation operating mode

25. Turn down blue handle (3) again.
→ With external circulation: Blue handle (3) at bottom, handle (61) at top.

Empty using ball valves A + B

26. - When system without return hoses at the ball valves A and B (17 and 18):
For A and B, place one empty, grounded collection tank each under the ball valves A and B (17 and 18).
- When system with return hoses at the ball valves A and B (17 and 18):
Guide the return hoses (43 and 44) into empty, separated and grounded collection tanks.
27. Open ball valves A and B (17 and 18).
28. Slowly open 2K air ball valve (2). Be ready to switch from working material to air and prevent back spray.
29. Convey empty product tanks A and B. Be ready for the switch from working material to air. Turn down 2K air pressure regulator (1) far enough that the pump is still running normally (approx. 0–0.05 MPa; 0–0.5 bar; 0–7.25 psi).
30. As soon as working material is no longer flowing from the return tube, close the 2K air ball valve (2).
31. If necessary, top up fresh flushing agent and repeat from Point 26 to this point.
32. Close ball valves A and B (17 and 18).

When system with return hoses at the ball valves A and B (17 and 18): circulate via return line

- A. Guide the return hoses (43 and 44) into the product tanks A or B (no lids).
- B. Fill product tank A (8) and if necessary B (9) with approx. 3 to 4 liters of flushing agent each.
 - If the hardener is not being changed, tank B can be left empty.
- C. Open ball valves A and B (17 and 18).
- D. Slowly open 2K air ball valve (2). Be ready to switch from working material to air and prevent back spray.
- E. Allow flushing agent to run for several minutes so that the filter and the return hoses are thoroughly flushed.
Clean the inner walls of product tank A (and if necessary B) with a separate damp brush and flushing agent.
- F. Close 2K spraying air ball valve (2) and ball valves A and B (17 and 18).
- G. Repeat from Point 26 to this point if necessary.

Clean high-pressure filters

- 33. Points 26 to 32: empty using ball valves A + B.
- 34. Clean high-pressure filter (15) in accordance with Chapter 8.2.6. Refit on device.
- 35. When system with return hoses at the ball valves A and B (17 and 18): repeat if necessary:
 - Points A to F: circulate via return line.
 - Points 26 to 32: empty using ball valves A + B.

Flush spray gun hoses

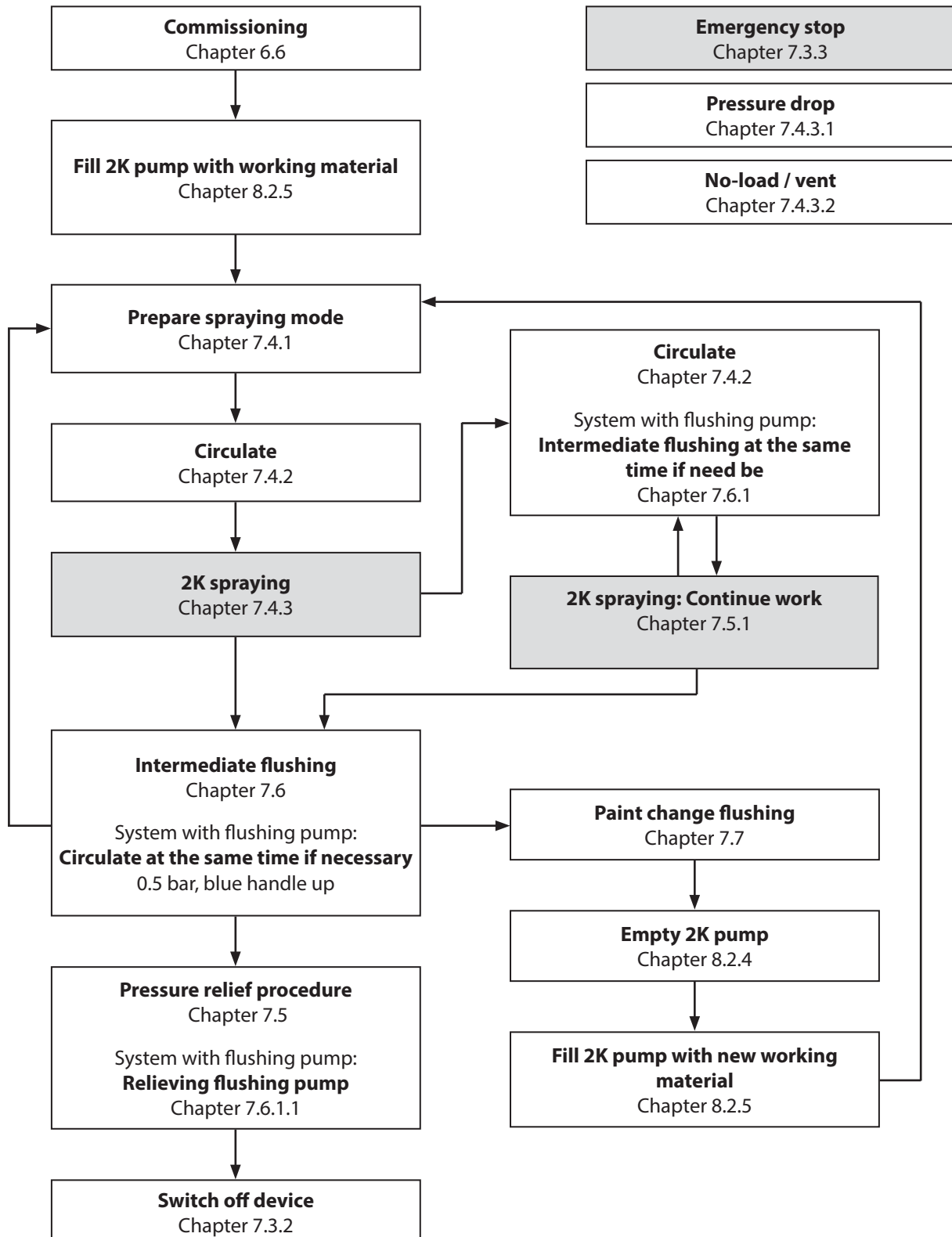
- 36. Fill product tank A (8) and if necessary B (9) with approx. 3 to 4 liters of flushing agent each.
 - If the hardener is not being changed, tank B can be left empty.
- 37. Start spraying mode: Turn down red handle (12).
- 38. Point the spray gun without nozzle toward the grounded collecting tray and pull off.
- 39. Slowly open 2K air ball valve (2). Be ready to switch from working material to air and prevent back spray.
- 40. Allow flushing agent to run for several minutes so that the spray gun hoses are thoroughly flushed.
- 41. Close 2K air ball valve (2).
- 42. Relieve, close, and secure the spray gun.
- 43. End spraying mode: Turn red handle (12) up again.

End paint change flushing

- 44. If necessary, repeat complete flushing process until the flushing agent remains clean and clear.
- 45. For system with flushing pump: Perform intermediate flushing in accordance with Chapter 7.6.
- 46. Clean the outside of the system.
- 47. Dispose of the contents of the collection tanks according to the local regulations.

→ Next steps:

- 1. Empty 2K pump according to Chapter 8.2.4.
- 2. Fill 2K pump with new working material in accordance with Chapter 8.2.5.

7.8 WORKFLOW

8 CLEANING AND MAINTENANCE

8.1 CLEANING

8.1.1 CLEANING STAFF

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

The following hazards may arise during cleaning work:

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

8.1.2 SAFETY INSTRUCTIONS

- Clean the piston pumps only with a damp cloth.
- Observe safety instructions in Chapter 4.

	 DANGER Incorrect maintenance/repair! Danger to life and equipment damage. → Only a WAGNER service center or a suitably trained person may carry out repairs and replace parts. → Only repair and replace parts that are listed in the "Spare parts" chapter and that are assigned to the unit. → Before all work on the device and in the event of work interruptions: - Relieve pressure from spray guns and devices. - Secure spray guns against actuation. - Switch off the energy/compressed air supply. - Disconnect the control unit from the mains. → Observe the operating and service manual for all work.
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8.1.3 CLEAN PRODUCT TANK

Ensure, that the product tanks not become electrostatically charged:

- Use only a damp cloth or a damp brush for cleaning.
- Remove external contamination by hardener or master batch.

8.1.4 DECOMMISSIONING AND CLEANING

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

1. Carry out work interruption → Chapter 7.5.
2. Perform intermediate flushing → Chapter 7.6.
3. Perform paint change flushing → Chapter 7.7.1.
4. Empty the pump in a controlled manner → in accordance with Chapter 8.2.4.
5. Maintain the gun according to the operating manual.
6. Clean and check the suction system and the suction filter.
7. Product filter: check and clean/replace filter insert and filter body. → Chapter 8.2.6.
8. Clean the outside of the system.

	 WARNING
	Brittle filter pressure regulator! The tank on the filter pressure regulator becomes brittle through contact with solvents and can burst. Flying parts can cause injury. → Do not clean the tank on the filter pressure regulator with solvents.

9. Fully assemble the system.
10. Check fill level of the separating agent → Chapter 8.2.3.3.
11. Fill the system with flushing agent in accordance with Chapter 8.2.5.

	 WARNING
	Gas mixtures can explode if there is an incompletely filled pump! Danger to life from flying parts. Ignition of potentially explosive surrounding atmosphere. → Ensure that the pump and suction system are always completely filled with flushing agent or working material. → Do not spray the device empty after cleaning.

8.1.5 LONG-TERM STORAGE

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

Procedure:

1. Carry out points 1 to 10 of Chapter 8.1.4 "Decommissioning and Cleaning".
2. Fill the system with preservative in accordance with Chapter 8.2.5.
3. Empty the pump in a controlled manner in accordance with Chapter 8.2.4 and seal the openings.

8.2 MAINTENANCE

8.2.1 MAINTENANCE STAFF

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

The following hazards may arise during maintenance work:

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

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

8.2.2 SAFETY INSTRUCTIONS

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

Prior to maintenance

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

- Relieve the pressure from pumps, high-pressure hoses and spray gun.
- The gun should be secured with the safety clip.
- The air supply should be interrupted.
- Unplug the power plug of the heaters (if present).

After maintenance

- Commissioning in accordance with Chapter 6.6.

→ According DGUV regulation 100-500:

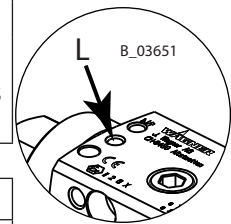
- The liquid ejection devices should be checked by an expert (e.g., WAGNER service technician) for their safe working conditions as required and at least every 12 months.
- For shut down devices, the examination can be suspended until the next start-up.

	 DANGER Incorrect maintenance/repair! Danger to life and equipment damage. → Repair or replacement of devices or parts of devices are only allowed to be performed outside the hazard area by qualified personnel.
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8.2.3 REGULAR MAINTENANCE WORK**Daily and as required**

1. Check the level of separating agent in the separating agent cup every day, and top up if necessary.
2. Check hoses, pipes, and couplings every day and replace if necessary.
3. Circulate working material or flushing agent for several minutes a day via the blue handle (3). Prevents the overpressure protection of the circulation valves from sticking.

→ Seal integrity check: Check pressure on the pressure gauges.
4. Check and clean the high-pressure filter every day or as required. See Chapter 8.2.6.
5. Throttle valve (option for external mixer): Check leakage holes (L) daily. If paint is escaping, replace seals.

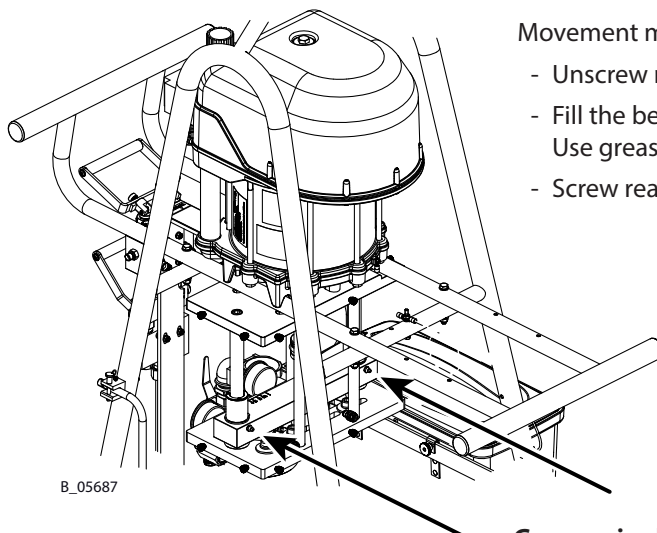
**Weekly and as required**

1. Check device for damage.
2. Check grounding.
3. Drain condensate in water separator in accordance with Chapter 8.2.3.2.
4. Check mixing tube: Eject mixing elements in accordance with Chapter 13.6 and replace if required.
5. Movement mechanism: Lubricate bearings in accordance with Chapter 8.2.3.1

If the pump has to be emptied for maintenance work, proceed according to Chapter 8.2.4.

Every shut down should be carried out as laid down in Chapter 8.1.4!

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

8.2.3.1 LUBRICATING BEARINGS

Movement mechanism:

- Unscrew rear protection plate.
- Fill the bearings with grease via the two grease nipples.
Use grease gun for DIN 71412 lubricant.
- Screw rear protection plate back on.

Grease nipple, DIN 71412

8.2.3.2 DRAINING CONDENSATE FROM WATER SEPARATOR

- Frequently drain the condensate that may accumulate in the water separator (22).
- Make sure the water level in the filter cup never reaches the max. level marked on the cup itself.

8.2.3.3 FILLING WITH SEPARATING AGENT**NOTICE****Piston pump dry run!**

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

- Ensure that the separating agent tank is filled with sufficient separating agent.
Filling level 1 cm; 0.4 inch under the cup edge.

2K pump

Check the separating agent every day in both fluid sections, and top up if necessary.

1. See through the cover of the connection part air motor fluid section (11). Ensure that the pistons of the pump is not in the lowest position.

Check in the opening of the fluid section the separating agent level.

2. Fill separating agent via two hermetic connections (see figure).

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

Separating agent: Order No. 9992504

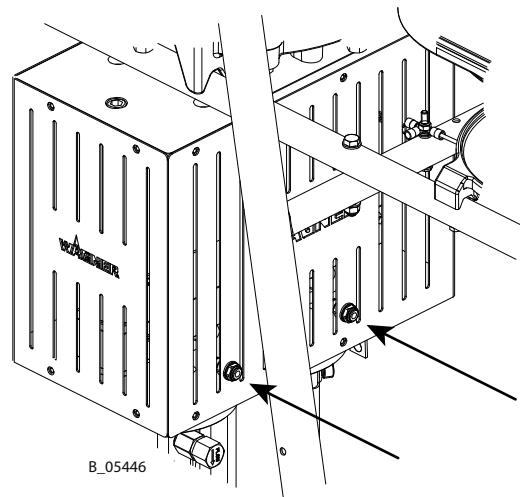
Inclination angle of the pump

Maximum permissible inclination of pump for moving, transportation, etc. $\pm 10^\circ$.

The pump must be vertical during operation.

Flushing pump

Fill separating agent of flushing pump:
See flushing pump's operating manual.



8.2.4 EMPTYING DEVICE

	WARNING Gas mixtures can explode if there is an incompletely filled pump! Danger to life from flying parts. Ignition of potentially explosive surrounding atmosphere. → Empty the device slowly and in a controlled manner. → Avoid potentially explosive atmosphere in the surroundings.
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The emptying process alone, without flushing, is described here. If the device is to be flushed and cleaned at the same time, paint change flushing must be performed in accordance with Chapter 7.7.1.

- If there is still mixed product in the spray gun hoses, perform intermediate flushing in accordance with Chapter 7.6.
 - If the pumping product becomes heated, switch off all heaters and let the product cool off.
1. Visual check: personal safety equipment, grounding and all devices ready to use. Circulation/return hoses secured. Blue handle (3) at bottom. Red handle (12) at top.

Use circulation to empty product tank

2. Remove circulation hoses (6 and 7) from product tanks A and B and route to empty, separate, and grounded tanks.
3. Close 2K air pressure regulator (1) (0 MPa; 0 bar; 0 psi).
4. Start circulation operating mode: turn blue handle (3) upwards.
5. Slowly open 2K air ball valve (2).
6. Slowly turn air pressure up on the pressure regulator (1) and only until the pump is running normally (approx. 0.05 MPa; 0.5 bar; 7.25 psi).
7. Be ready for the switch from working material to air. Turn down pressure regulator (1) far enough that the pump is still running normally (approx. 0–0.05 MPa; 0–0.5 bar; 0–7.25 psi).
8. As soon as working material is no longer flowing out of the circulation hoses (6 and 7), close the ball valve (2).
9. End circulation operating mode: Turn blue handle (3) down again.

Empty using ball valves A and B

10. - When system without return hoses at the ball valves A and B (17 and 18):
 For A and B, place one empty, grounded collection tank each under the ball valves A and B (17 and 18).
 - When system with return hoses at the ball valves A and B (17 and 18):
 Guide the return hoses (43 and 44) into empty, separated and grounded collection tanks.
11. Open ball valves A and B (17 and 18).
12. Slowly open 2K air ball valve (2). Be ready for the switch from working material to air.
13. As soon as working material is no longer flowing from the high-pressure filters, close ball valve (2) and ball valves A and B (17 and 18).

With external circulation (option)

- A. Turn "External circulation" handle (61) down.
- B. Slowly open 2K air ball valve (2). Be ready for the switch from working material to air.
- C. As soon as working material is no longer flowing out of the circulation hoses (6 and 7), close the ball valve (2).
- D. Turn "External circulation" handle (61) up again.

Empty up to the gun

- 14. Start spraying mode: Turn down red handle (12).
- 15. Point gun without nozzle toward the grounded collecting tray and pull off.
- 16. Slowly open 2K air ball valve (2). Be ready for the switch from working material to air.
- 17. As soon as working material is no longer flowing from the return tube, close the ball valve (2).
- 18. Relieve, close, and secure the spray gun.
- 19. End spraying mode: Turn red handle (12) up again.

Empty suction hoses

- 20. Remove product tanks A and B (8 and 9) from trolley.
- 21. Loosen hose connections on inlets of fluid sections A and B.
- 22. Empty hose contents into empty tanks.
- 23. Refit hoses on fluid sections A and B.
- 24. Secure product tanks A and B to trolley and guide all circulation and return hoses back into product tanks.

Empty flushing pump (option)

- A. Empty flushing pump in accordance with flushing pump's operating manual.
The flushing ball valve (30) must be open when emptying via the spray gun.
- B. Once the flushing ball valve (30) is empty, close again.

Pressure relief procedure

- 25. Depressurization in accordance with Chapter 7.5.
- 26. Guide all circulation and return hoses back into the product tanks.
- 27. Dispose of the contents of the collection tanks according to the local regulations.

8.2.5 FILLING EMPTY DEVICE

	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.
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→ If the device is being filled with a new paint or new hardener, paint change flushing must be undertaken first in accordance with Chapter 7.7.

1. Visual check: personal safety equipment, grounding and all devices ready to use. Blue handle (3) at bottom. Red handle (12) at top. All circulation and return hoses are secured and lead into the product tanks A or B.

Fill circulation

2. Fill product tanks A and B (8 and 9) with working material. Close cover and fix return lines.
3. Start circulation operating mode: turn blue handle (3) upwards.
4. Close 2K air pressure regulator (1) (0 MPa; 0 bar; 0 psi).
5. Slowly open 2K air ball valve (2).
6. Slowly turn the air pressure up on the 2K air pressure regulator (1) and only until the pump is running normally (approx. 0–0.05 MPa; 0–0.5 bar; 0–7.25 psi). Be ready to switch from working material to air and prevent back spray.
7. As soon as pure working material starts flowing out of the two circulation hoses (6 and 7), close 2K air ball valve (2).
8. End circulation operating mode: Turn blue handle (3) down again.

Fill high-pressure filter

9. Open ball valves A and B (17 and 18).
10. Slowly open 2K air ball valve (2). Be ready to switch from working material to air and prevent back spray.
11. As soon as pure working material starts flowing out of the two ball valves A and B (17 and 18), close 2K air ball valve (2).
12. Close ball valves A and B (17 and 18).
13. Check fill level of the separating agent → Chapter 8.2.3.3.

With external circulation (option)

- A. Turn "External circulation" handle (61) down.
- B. Slowly open 2K air ball valve (2). Be ready to switch from working material to air and prevent back spray.
- C. As soon as pure working material starts flowing out of the two circulation hoses (6 and 7), close 2K air ball valve (2).
- D. Turn "External circulation" handle (61) up again.

Spray gun hoses: The spray gun hoses are only filled when spraying mode is started.

→ **Next step:** Prepare spraying mode in accordance with Chapter 7.4.1.

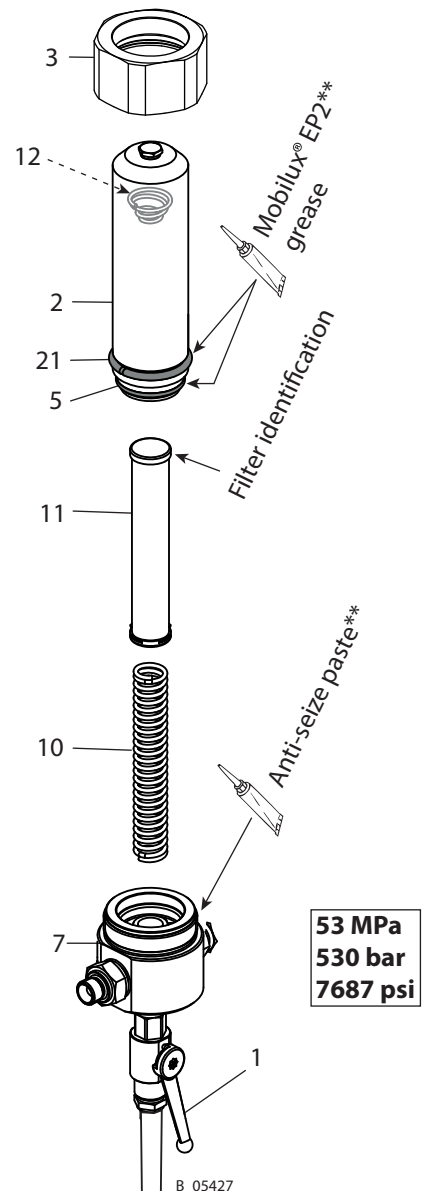
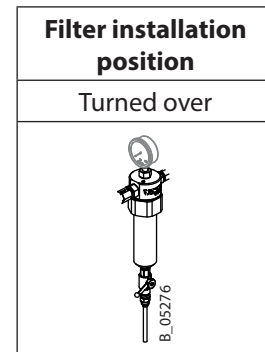
8.2.6 CLEANING AND REPLACING THE HIGH-PRESSURE FILTER**→ Paint change flushing**

To clean the high-pressure filter or change the filter cartridges, perform paint change flushing in accordance with Chapter 7.7. Reference is made there to this chapter.

- A. Place the grounded collection tank under the High-pressure filter.
- B. Open ball valve (1).
- C. Loosen union nut (3) with a size 70 wrench.
- D. Unscrew the union nut (3) and lift slightly so that it does not get dirty in the next step.
- E. Remove the filter housing (2) with the union nut (3). The cone spring (12) remains in the filter housing (2). If the O-ring (5) is not damaged, it remains on the filter housing (2).
- F. Remove the filter cartridge (11) and filter support (10) from the filter housing (2).
- G. Clean all parts:
 - Place the filter cartridge (11) and filter support (10) in solvent. Clean using brush.
 - Fill the filter housing (2) approx. 1/3 full with solvent, secure wearing a glove and shake well.
 - Clean the distribution housing (7) using a brush.
- H. If necessary, replace the O-ring (5) and/or filter cartridge (11). Order No., see Chapter 13.7.6.
- I. Assemble all parts in reverse order. While doing so:
 - Coat the thread of the distribution housing (7) with anti-seize paste**.
 - Coat the O-ring (5) and pressure ring (21) with Mobilux® EP2**.
 - Observe the installation position of the filter cartridge (11): Push the closed end with the filter identification ahead into the filter housing (2).
 - Make sure that the cone spring (12) is in the filter housing (note the installation position). Press on the cone spring after inserting the filter cartridge (11) and filter support (10); the spring action must be noticeable.
 - Tighten the union nut (3) by hand.
- K. Close ball valve (1).

→ Continue with paint change flushing in accordance with Chapter 7.7.

** Order No., see Chapter 10.2.



8.2.7 PRODUCT HOSES, TUBES AND COUPLINGS

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

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

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

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

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

9 TROUBLESHOOTING AND RECTIFICATION

Problem	Cause	Remedy
The pump does not work	Air motor does not work or stops.	Open and close ball valve on the pressure regulator unit or briefly disconnect compressed air supply.
	No pressure indication on the pressure gauge (air pressure regulator defective).	Disconnect compressed air supply briefly or repair or change pressure regulator.
	Spray nozzle is clogged.	Clean the nozzle according to the instructions.
	Insufficient compressed air supply.	Check compressed air supply.
	Filter insert in spray gun or high-pressure filter is clogged.	Clean the parts and use a suitable working material.
	Fluid section or high-pressure hose are blocked (e.g., 2K product hardened).	Dismount and clean fluid section, replace high-pressure hose.
	Grease in spool and sleeve assembly.	Degrease spool and sleeve assembly.
	Pump stops at the stroke end occasionally.	Check detent element (see service manual).
Poor spray pattern	See the gun instructions.	
Irregular operation of product pump: spray jet collapses (pulsation)	Viscosity is too high.	Dilute the working material.
	Spraying pressure is too low.	Increase incoming air pressure. Use a smaller nozzle.
	Valves are clogged.	Clean product pump, if necessary leave to soak in flushing agent.
	Foreign body in suction valve.	Dismantle suction valve housing, clean and check valve seat.
	Diameter of compressed air line too small.	Assemble a larger supply line. Technical data, Chapter 5.5.3.
	Valves, packings, or pistons are worn out.	Replace the parts.
	Control air filter or work air filter is clogged.	Check filter and clean it if necessary.
Pump is running uniformly, but does not take in any working material	The suction system's union nut is loose; the pump is taking in air.	Tighten union nut.
	Suction filter is clogged.	Clean filter.
	Ball in suction or piston valve is sticking.	Clean with flushing agent (if necessary vent device).
Pump runs when the gun is closed	Packings, valves, or pistons are worn out.	Replace the parts.
The air motor is iced up	There is a lot of condensation water in the air supply.	Install a water separator.

Problem	Cause	Remedy
During spraying mode, the product pressure A drops and B increases when the gun is closed or open.	Internal leakage on A-side of the pump, at the circulation valve or overpressure protection.	Check if this is the case during upwards or downwards stroke. If this is just the case at upwards stroke, then replace piston packing or piston valve A. If this is just the case at downwards stroke, then replace or clean the suction valve A. If this is the case at both strokes, check leakage A upper packing, replace if necessary, or check the return flow of internal and external circulation and replace the corresponding valve.
Product pressure B drops and A is increasing in spray mode when gun is closed or open.	Internal leakage on B-side in the pump, at the circulation valve or overpressure protection.	Check if this is the case during upwards or downwards stroke. When this is just the case at upwards stroke, then replace the piston packing or piston valve B. If this is just the case at downwards stroke, then replace or clean the suction valve B. If this is the case at both strokes, check leakage B upper packing, replace if necessary, or check the return flow of internal and external circulation and replace the corresponding valve.
Product pressure pulsation when switching the 2K pump between A and B is not consistent.	Irregular switching of the non-return valves of the pumps.	Check non-return valves, replace if necessary.
	Long product routes with external mixer.	Install throttle valve and/or adjust throttle valve's adjustment screw (see Chapter 5.10.3).
Product pressure B increases in spray mode.	With external mixer with throttle valve: Travel adjustment set too low or valve blocked by product.	Increase the travel adjustment. If valve is sticking: Disassemble and clean. Replace the piston seal, if necessary.
With external mixer with throttle valve: Leakage	Product escaping from leakage hole of throttle valve.	Replace the valve needle seals to the material.
	Air emission from leakage hole.	→ The throttle valve must not be operated with compressed air.
	Air emission at valve cover.	

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 STAFF

Repair work must be carried out carefully and by qualified and trained personnel. They should be informed of specific hazards during their training. The repairs must be carried out in accordance with the corresponding service manual.

The following hazards may arise during repair work:

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

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

10.2 MOUNTING MATERIALS

In Chapter 13 the order numbers for device spare parts can be found, as well as for wearing parts such as seals. → Use torques, greases and glues in accordance with Chapter 13.

Mounting materials

Order No.	Quantity	Designation	Smaller tanks
9992590	1 pc ± 50 ml	Loctite® 222	
9992511	1 pc ± 50 ml	Loctite® 243	
9992528	1 pc ± 150 g	Loctite® 270	
9992831	1 pc ± 50 ml	Loctite® 542	
9999042	1 pc ± 50 ml	Loctite® 638	
9998808	1 pc ± 18 kg !	Mobilux® EP 2 grease	400 g tube ± Order No. 2355418
9992616	1 pc ± 1 kg can	Molykote® DX grease	50 g tube ± Order No. 2355419
9992609	1 pc ± 100 g	Anti-seize paste	
9992816	1 pc ± 70 g	Miranit contact adhesive	
Z102.00	1 pc ± 1000 ml	Tecni oil 1000 ml	125 cc ± order no. Z101.00
9992698	1 pc ± 200 g can	Vaseline white PHHV II	

Brand notice

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

11 DISPOSAL

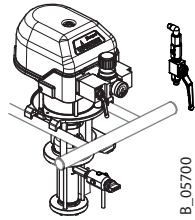
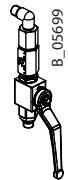
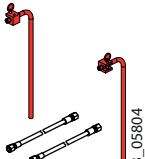
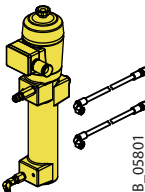
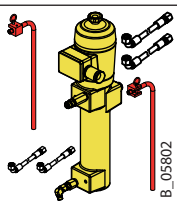
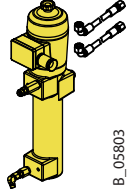
When the equipment must be scrapped, please differentiate the disposal of the waste materials. The following materials have been used:

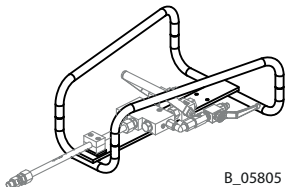
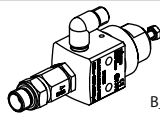
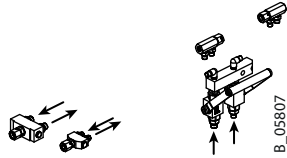
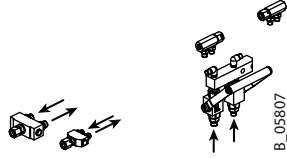
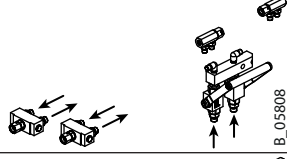
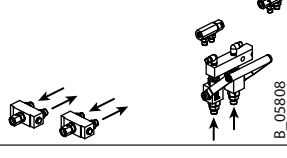
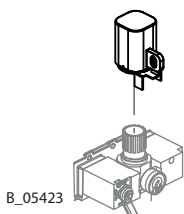
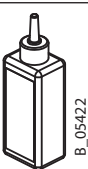
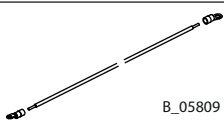
Steel	Aluminum	Plastics	Carbide
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Consumable products

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

12 ACCESSORIES

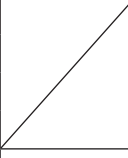
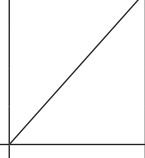
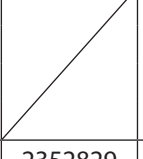
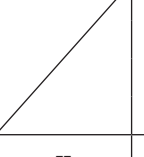
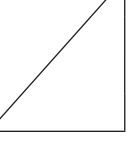
Order No.	Description	Remarks	
2352831	Set of 2K PC flushing pumps	Including Leopard 35-70 piston pump. For details, see Chapter 13.8.	
2359293	Attachment kit for external flushing pump	For connecting to an external flushing pump. For details, see Chapter 13.8.	
2359323	Return flow set HP filter A and B	Return hoses and tubes of the ball valves A + B in the tanks A + B. For details, see Chapter 13.10.	
2359317	2K heater set A/B	Heaters for A or B component and set of hoses for assembly downstream of high-pressure filter/return line. Do not use together with 2356998. Suitable for external mixer with circulation. Attention: If there is no external circulation, the A component may not be heated during circulation. For details, see Chapter 13.9.1.	
2356998	2K PC heater set A	Heater for A component including heat up during circulation. For details, see Chapter 13.9.2.	
2352832	2K PC heater set B	Heater for B component, if 2356998 is installed. The product is heated during circulation. For details, see Chapter 13.9.2.	

Order No.	Description	Remarks	
2353092	External mixer 2K PC	Frame and fittings for conversion: Red handle, mixing block, and mixing tube are converted from trolley into external mixer. For details, see Chapters 5.10.1 and 13.11.	 B_05805
2365045	Throttle valve	Option for external mixer if short-term mixing errors are occurring. For details, see Chapters 5.10.3 and 13.11.1.	 B_05806
2366258	Circulation A1/2 B1/4 2K PC	External circulation (option for external mixer) Connection A: 1/2", B: 1/4". For details, see Chapters 5.10.4 and 13.11.2.	 B_05807
2362987	Circulation A3/8 B1/4 2K PC	External circulation (option for external mixer) Connection A: 3/8", B: 1/4". For details, see Chapters 5.10.4 and 13.11.2.	 B_05807
2365243	Circulation A3/8 B3/8 2K PC	External circulation (option for external mixer) Connection A: 3/8", B: 3/8". For details, see Chapters 5.10.4 and 13.11.3.	 B_05808
2366916	Circulation A1/2 B3/8 2K PC	External circulation (option for external mixer) Connection A: 1/2", B: 3/8". For details, see Chapters 5.10.4 and 13.11.3.	 B_05808
2334958	Regulator lock	 B_05423	
9992504	Separating agent 250 ml; 250 cc	 B_05422	
236219	Grounding cable 3 m; 9.8 ft	 B_05809	
on request	Feed pump		
on request	Product tank heated / with agitator		

12.1 CONVERSION TO OTHER MIXING RATIOS

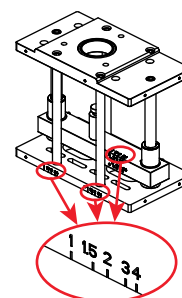
The PROTEC 2K system can be subsequently converted to a different mixing ratio. For this, depending on the conversion, one or more of the following sets are required:

Order No.	Conversion set
2352830	Fluid section A 150 cm ³ for mixing ratio 4:1, 3:1, 2:1
2352829	Fluid section A 110 cm ³ for mixing ratio 1.5:1*, 1:1
2352825	Fluid section B 38 cm ³ for mixing ratio 4:1
2352826	Fluid section B 50 cm ³ for mixing ratio 3:1
2352827	Fluid section B 75 cm ³ for mixing ratio 2:1, 1.5:1*
2353639	Fluid section B 110 cm ³ PE/T for mixing ratio 1:1, B-side
2358419	B-side of tank set for mixing ratio 1:1 including suction hose
2358420	B-side tank set for mixing ratio 4:1, 3:1, 2:1, 1.5:1* including suction hose
2363859	Position bracket

Overview of the required conversion sets		Conversion				
		from 4:1	from 3:1	from 2:1	from 1.5:1	from 1:1
		Order No.	Order No.	Order No.	Order No.	Order No.
to 4:1	Fluid section A		--	--	2352830	2352830
	Fluid section B		2352825	2352825	2352825	2352825
	Tank B		--	--	--	2358420
	Position bracket		--	--	--	2363859
to 3:1	Fluid section A	--		--	2352830	2352830
	Fluid section B	2352826		2352826	2352826	2352826
	Tank B	--		--	--	2358420
	Position bracket	--		--	--	2363859
to 2:1	Fluid section A	--	--		2352830	2352830
	Fluid section B	2352827	2352827		--	2352827
	Tank B	--	--		--	2358420
	Position bracket	--	--		--	2363859
to 1.5:1 *	Fluid section A	2352829	2352829	2352829		--
	Fluid section B	2352827	2352827	--		2352827
	Tank B	--	--	--		2358420
	Position bracket	--	--	--		2363859
to 1:1	Fluid section A	2352829	2352829	2352829	--	
	Fluid section B	2353639	2353639	2353639	2353639	
	Tank B	2358419	2358419	2358419	2358419	
	Position bracket	--	--	--	--	

* Conversion to 1.5:1

The conversion to the mixing ratio 1.5:1 is only possible if the marking "1.5" is present at the movement mechanism (see Chapter 13.7.2).



13 SPARE PARTS

- Observe "Repair" chapter: Repair personnel and assembly aids.
- The service manuals are available separately. see Chapter 1.3.

	 DANGER
Incorrect maintenance/repair! Danger to life and equipment damage. → Only a WAGNER service center or a suitably trained person may carry out repairs and replace parts. → Only repair and replace parts that are listed in the "Spare parts" chapter and that are assigned to the unit. → Before all work on the device and in the event of work interruptions: - Relieve pressure from spray guns and devices. - Secure spray guns against actuation. - Switch off the energy/compressed air supply. - Disconnect the control unit from the mains. → Observe the operating and service manual for all work.	

13.1 HOW CAN SPARE PARTS BE ORDERED?

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

Order number, designation and quantity

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

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

- Address for the invoice
- Address for delivery
- Name of the person to be contacted in the event of any queries
- Type of delivery (normal mail, express delivery, air freight, courier, etc.)

Identification in spare parts lists.

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

- ◆ Wearing parts

Note: These parts are not covered by warranty terms.

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

13.2 OVERVIEW

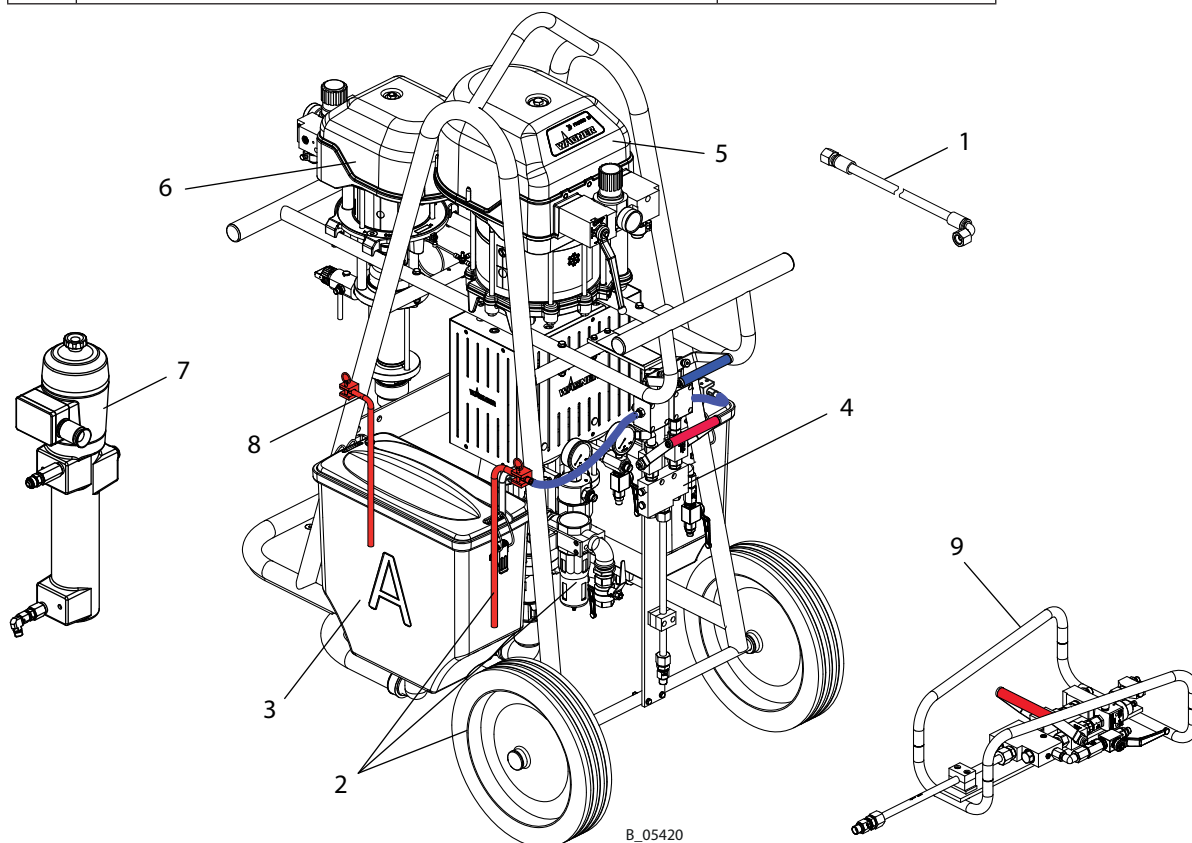
13.2.1 BASIC UNITS

Pos	System component	Order No.	System									
			4:1		3:1		2:1		1.5:1		1:1	
			PROTEC 2K75-150/38		PROTEC 2K75-150/38 with flushing pump		PROTEC 2K70-150/50		PROTEC 2K70-150/50 with flushing pump		PROTEC 2K64-150/75	
			2350376		2352858		2350375		2352863		2350374	
			2352866		2362778		2362780		2350373		2352869	
			PROTEC 2K64-150/75 with flushing pump		PROTEC 2K77-110/75		PROTEC 2K77-110/75 with flushing pump		PROTEC 2K65-110/110		PROTEC 2K65-110/110 with flushing pump	
			4:1		3:1		2:1		1.5:1		1:1	
1	Trolley, air motor, 2K mechanism, mixing	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fluid section A												
2	Fluid section, A 150 cm ³ PE/TG	2352830	✓	✓	✓	✓	✓	✓				
3	Fluid section A 1:1 110 cm ³ PE/T	2352829							✓	✓	✓	✓
Fluid section B												
4	Fluid section B 4:1 38 cm ³ PE/T	2352825	✓	✓								
5	Fluid section B 3:1 50 cm ³ PE/T	2352826			✓	✓						
6	Fluid section B 2:1 75 cm ³ PE/T	2352827					✓	✓	✓	✓		
7	Fluid section B 1:1 110 cm ³ PE/T	2353639									✓	✓
Tank A												
8	Tank A	2358417	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tank B												
9	Tank B 4:1, 3:1, 2:1, 1.5:1	2358420	✓	✓	✓	✓	✓	✓	✓	✓		
10	Tank B 1:1	2358419									✓	✓
Set of flushing pumps												
11	Set of flushing pumps with Leopard 35-70	2352831		✓		✓		✓		✓		✓

13.2.2 SYSTEM OVERVIEW

Components and their spare parts

Pos	Component	Spare parts lists
1	Hoses	Chapter 13.2.3
2	Trolley with grounding, return line, and air inlet	Chapter 13.3
3	Product tank A	Chapter 13.4
	Product tank B (1:1)	
	Product tank B (4:1, 3:1, 2:1, 1.5:1)	Chapter 13.5
4	Mixing	Chapter 13.6
5	2K pump	Chapter 13.7
	- Air motor with pressure regulator unit	Chapter 13.7.1
	- Movement mechanism	Chapter 13.7.2
	- Fluid sections 110–150 cm ³	Chapter 13.7.3
	- Fluid sections 38–75 cm ³	Chapter 13.7.4
	- 2K PC relief combination	Chapter 13.7.5
	- High-pressure filter with pressure gauge	Chapter 13.7.6
6	Flushing pump (option)	Chapter 13.8
7	Heater (option)	Chapter 13.9
8	Return flow set HP filter A and B (option)	Chapter 13.10
9	External mixer	Chapter 13.11



13.2.3 HOSES

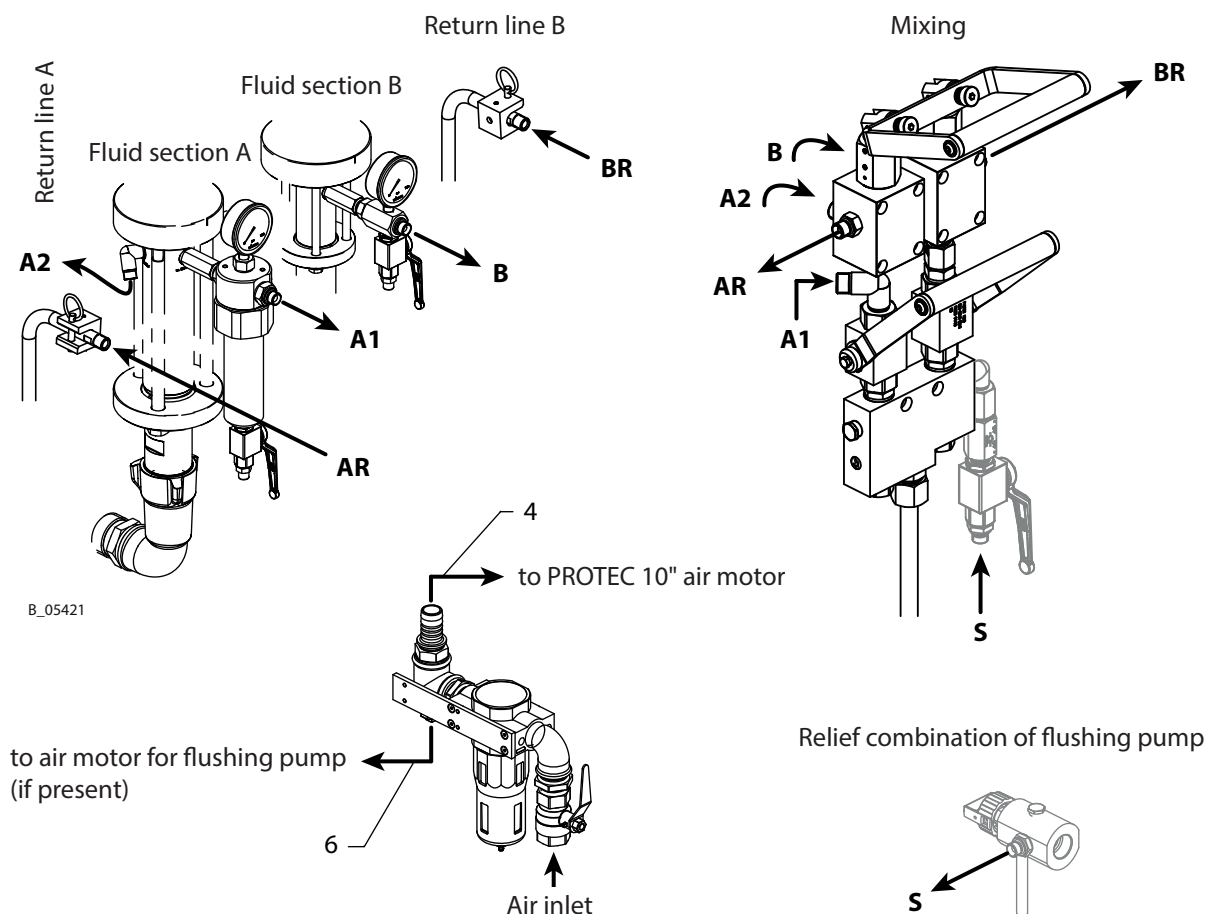
Pos	K	Stk	Order No.	Designation	Core coating	From	To
1 *	◆	2	2334023	HPP hose DN10-PN530 PA W-G 0.53 m	PA	A1 B	A1 B
	◆ ●	2	2334457	HPP hose, DN10-PN530 FEP W-G 0.53 m	FEP	A1 B	A1 B
2	◆	1	2334063	HPP hose DN10-PN530 PA W-G 0.73 m	PA	A2	A2
	◆ ●	1	2332865	HPP hose, DN10-PN530 FEP W-G 0.73 m	FEP	A2	A2
3	◆	2	2353854	HP hose, DN6-PN325 FEP G-G 0.805m	FEP	AR BR	AR BR
4		1.5 m	2323474	LP hose DN25-PN10-EPDM, per meter			

With flushing pump (option)

5	◆	1	2334039	HPP hose DN6-PN530 PA W-G 1.52 m	PA	S	S
6		2 m	2333099	LP hose DN12-PN10-EPDM, per meter			

◆ = Wearing parts

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

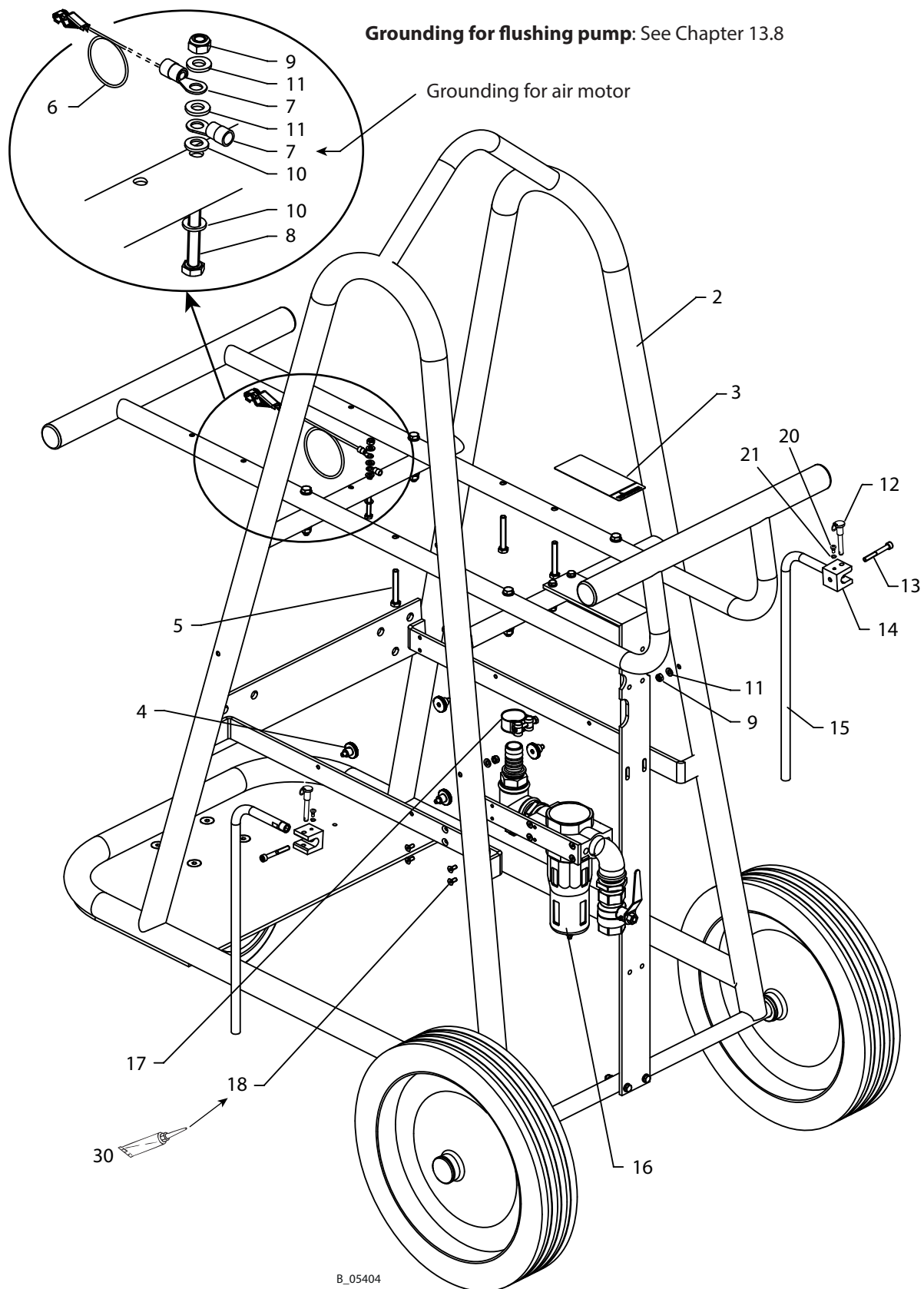
* **Heater:** A1–A1 and B–B for systems with heater: see Chapter 13.9.**External mixer:** See Chapter 13.11.

13.3 TROLLEY WITH GROUNDING, RETURN LINE, AND AIR INLET

Spare parts list for trolley with grounding, return line, and air inlet

Pos	K	Stk	Order No.	Designation
2		1	2348231	Mechanism trolley 2K For details, see Chapter 13.3.1
3		1	2352685	Operating sign, PROTEC 2K
4		4	2354470	Knurled screw, M6
5		4	9900130	Hexagon screw without shaft
6		1	236219	Grounding cable, complete 3 m
7		2	9950604	Cable lug
8		1	9907045	Hexagon screw without shaft
9		3	9910204	Self-locking hexagon nut, M6, with clamp
10		2	3155401	Contact washer
11		4	9920103	Washer, A6.4, DIN 125
12		2	2353386	Locking pin
13		2	9900316	Hexagon socket cap screw, M6x50
14		2	2353389	Tube mounting piece
15		2	2353343	Return tube G1/4", 90°
16		1	--	Water separator, complete For details, see Chapter 13.3.2
17		1	2336526	Heavy duty clamp 32-35 mm
18		4	9900518	Hexagon socket countersunk head screw
20		2	9903301	Recessed head raised fillister head screw, H form
21		2	9921511	Spring washer
30		1	9992511	Loctite® 243

◆ = Wearing parts

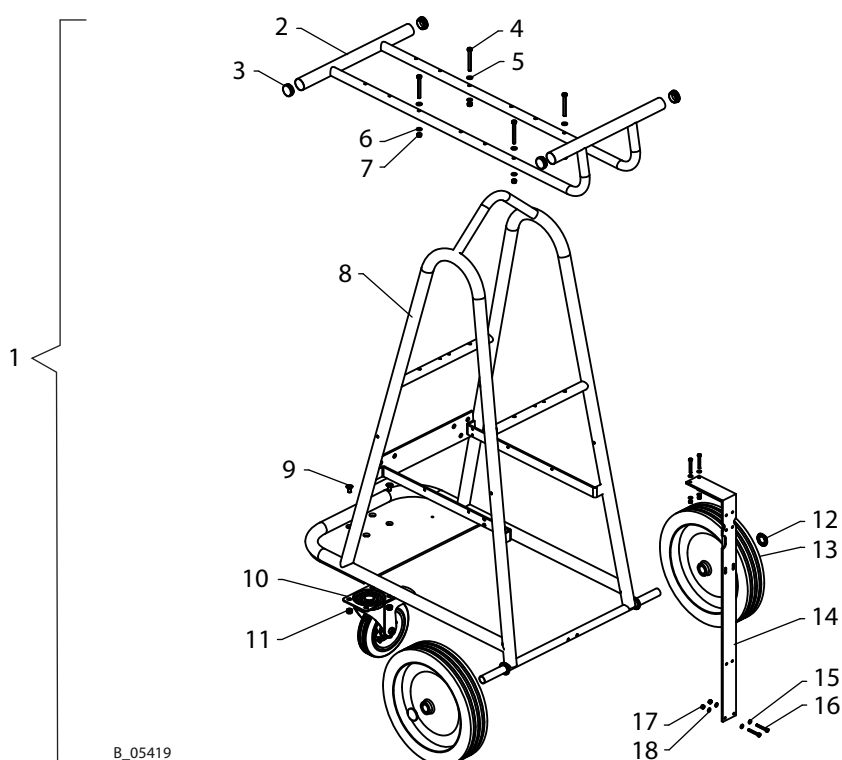


13.3.1 2K MECHANISM TROLLEY

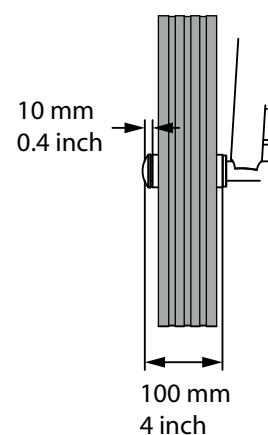
Spare parts list for 2K mechanism trolley

Pos	K	Stk	Order No.	Designation
1		1	2348231	Mechanism trolley 2K
2		1	--	Mounting bracket
3		4	2338235	Plug
4		4	9900246	Hexagon screw
5		4	9920102	Washer, A8.4
6		4	3155404	Contact washer, M8
7		4	9910208	Self-locking hexagon nut, M8, with clamp
8		1	--	Basic frame
9		4	9907183	Hexagon socket countersunk head screw
10	◆	1	2348063	Swivel castor with clamp
11		4	9913011	Self-locking hexagon nut
12		2	9998895	Retaining ring with cap
13	◆	2	9994922	Wheel, complete
14		1	--	Mixer mounting bracket
15		4	9920103	Washer, A6.4, DIN 125
16		4	9900126	Hexagon screw without shaft
17		4	9910204	Self-locking hexagon nut, M6, with clamp
18		4	3155401	Contact washer

◆ = Wearing parts



Wheel assembly

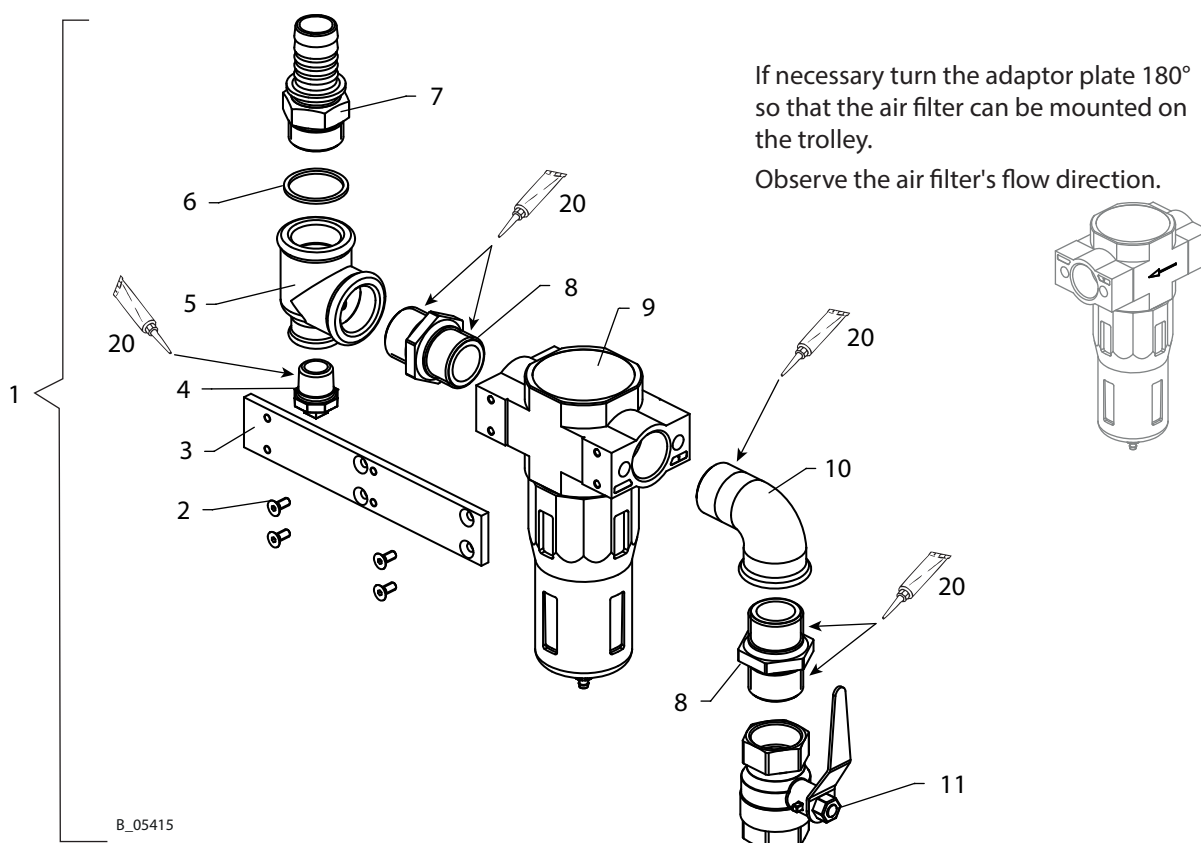


13.3.2 AIR INLET WITH WATER SEPARATOR

Spare parts list for air inlet with water separator

Pos	K	Stk	Order No.	Designation
1		1	--	Water separator, complete
2		4	9900518	Hexagon socket countersunk head screw
3		1	2350854	Extension
4*		1	3303069	Plug with rim
5		1	9998653	T-piece, reduced
6		1	9974135	Sealing ring 1"
7		1	9985671	Hose fitting-G1"- NW25
8		2	9998147	Double nipple GF 280
9	◆	1	2330030	Filter LF-1-D-Maxi
10		1	9985613	Elbow 90° GF-92
11	◆	1	9991512	Ball valve, 2-way, LP 20 bar
20		1	9992831	Loctite® 542

◆ = Wearing parts

* **Pos. 4:** With flushing pump: Remove plug and fit flushing pump's air connection.

13.4 PRODUCT TANK A AND PRODUCT TANK B (1:1)

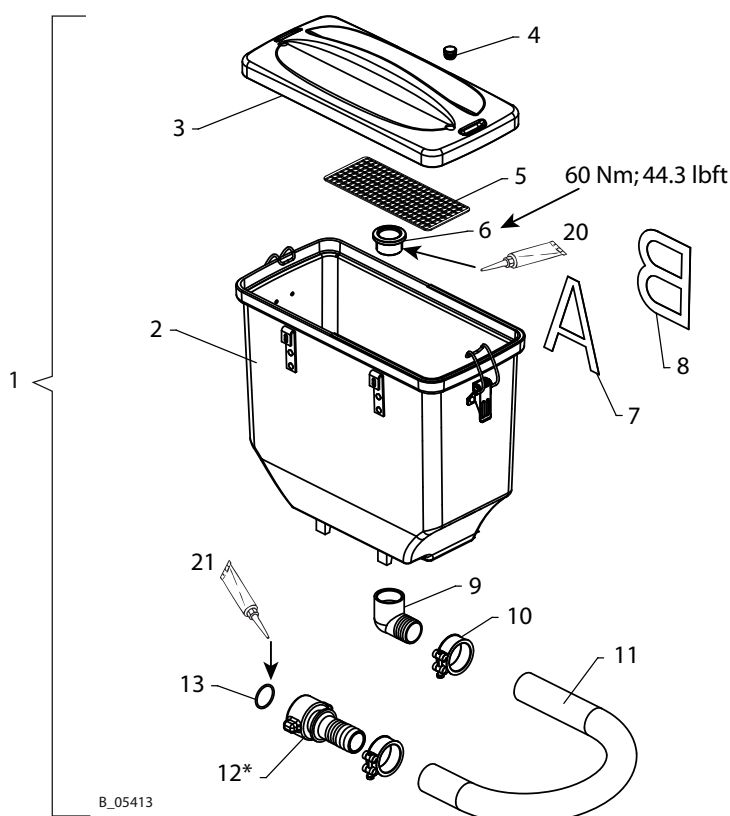
Spare parts list for product tanks A and B (1:1)

Spare parts list for product tanks A and B (1:1)				Tank A	Tank B (1:1)
Pos	K	Stk	Designation	Order No.	Order No.
1		1	Tank, complete	2358417	2358419
2	◆	1	Tank, riveted	2358421	2358422
3	◆	1	Cover	2357791	
4		1	Lamella tamper D15	2355617	
5	◆	1	Stone catcher	2350858	
6		1	Seal fitting 1 1/4"	2350177	
7	◆	1	Sticker A	2352049	2352098
8	◆	1	Sticker B		
9		1	Fitting EF-FH-G1-1/4"-DN40-SST	2330357	
10		2	Heavy duty clamp 48-51 mm	2329591	
11	◆	0.8 m	LP hose DN38-PN10-EPDM	2329134	
12*		1	Cone coupling ID38	2336488	
13	◆	1	O-ring	367525	
20		1	Loctite® 542	9992831	
21		1	Vaseline white PHHV II	9992698	

◆ = Wearing parts

*** Pos. 12:**

- Order along with O-ring (pos. 13).
- Remove the supplied O-ring and insert O-ring (pos. 13).



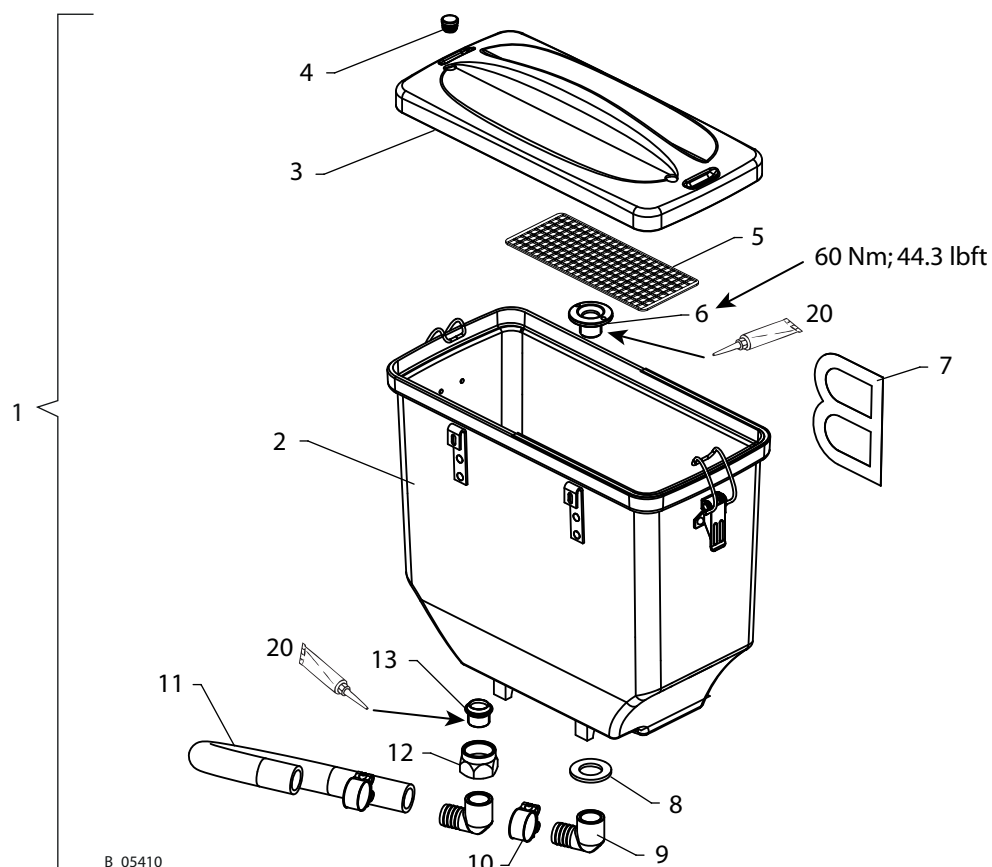
13.5 PRODUCT TANK B (4:1, 3:1, 2:1, 1.5:1)

Spare parts list for product tank B (4:1, 3:1, 2:1, 1.5:1)

**Mixing ratio 4:1 / 3:1 /
2:1 / 1.5:1**

Pos	K	Stk	Designation	Order No.
1		1	Tank B, complete	2358420
2	◆	1	Tank riveted B, including pos. 6, 8, 9 (1 pc)	2358422
3	◆	1	Cover	2357791
4		1	Lamella tamper D15	2355617
5	◆	1	Stone catcher	2350858
6		1	Seal fitting 3/4"	2349932
7	◆	1	Sticker B (2K mechanism)	2352098
8		1	Washer	2349933
9		2	Fitting-EF-FH-G3/4"-DN27-SST	2323953
10		2	Heavy duty clamp 32-35 mm	2336526
11	◆	0.45 m	LP hose DN25-PN10-EPDM, per meter	2323474
12		1	Union nut	253426
13		1	Intake nipple G3/4"	2322704
20		1	Loctite® 542	9992831

◆ = Wearing parts

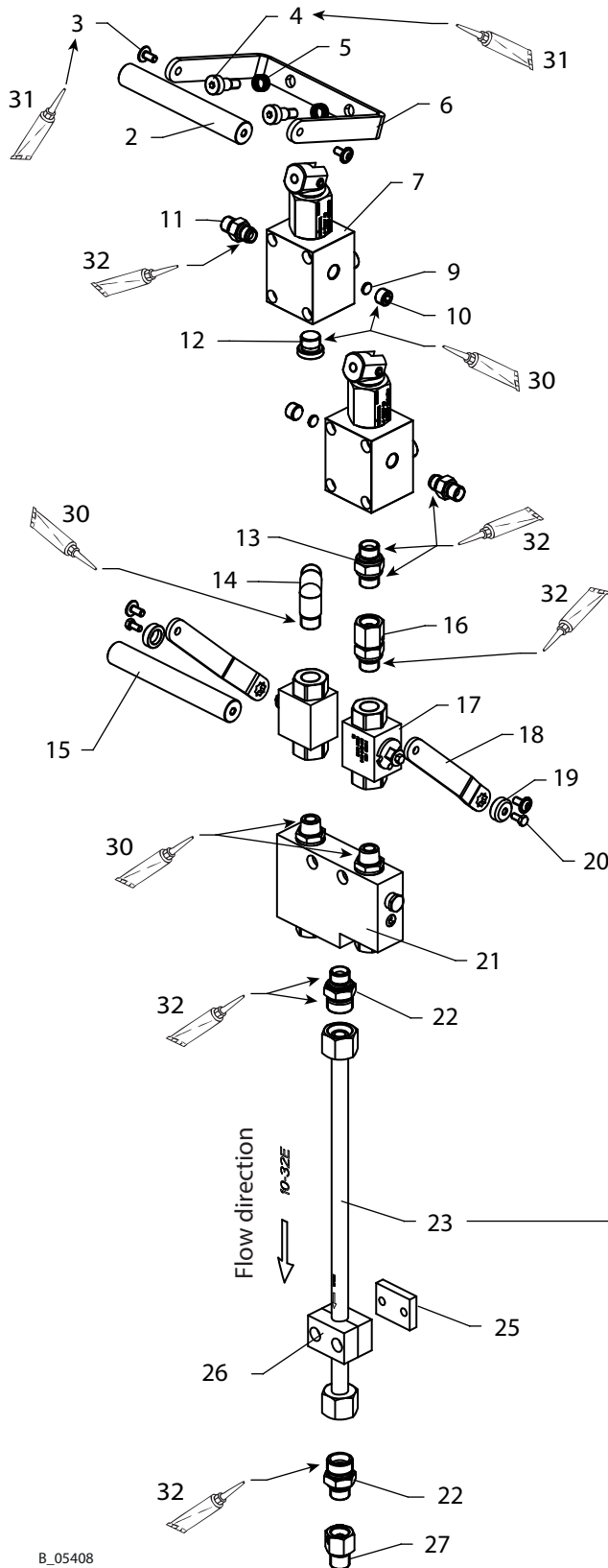


13.6 MIXING

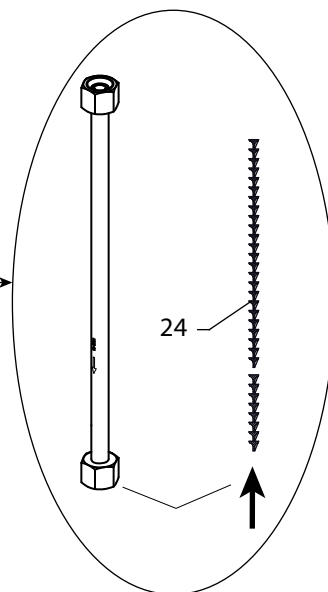
Spare parts list for mixing

Pos	K	Stk	Order No.	Designation
1		1	--	Mixing, complete
2		1	2350342	Handle, blue
3		4	2325554	Fillister head screw, M6x12
4		2	2352612	Locating screw
5		2	9999500	Helical spring, air
6		1	2349800	Switching bracket, complete
7	◆	2	2357790	Circulation, complete
9		2	384323	Plug
10		2	104376	Screw plug
11		2	2331174	Fitting, DF-MM-G1/4-G1/4-530 bar-SSt
12		1	9907127	Fitting-PF-M-G3/8-530bar-SSt
13		1	2330775	Fitting, DF-MM-G3/8-G3/8-530 bar-SSt
14		1	3204619	Fitting, EF-MM-G3/8-R3/8-530bar-SSt
15		1	2349830	Handle, red
16		1	2331371	Fitting, SF-FM-G3/8-G3/8-530 bar-SSt
17	◆	2	2350087	Ball valve PN 530 G3/8 DN10
18		2	2349776	Side holder, 45 degree
19		2	2349832	Spring washer
20		2	9907206	Hexagon screw without shaft
21		1	2357789	Mixing block, complete (for details see Chapter 13.6.1)
22		2	2332966	Fitting, DF-MM-M22x1.5-G3/8-530 bar-SSt
23		1	384098	Mixing tube, complete 10-32E ST/KS (including pos. 24)
24	◆	1.33	9999446	Mixing element
25		1	2352556	Spacer plate
26		1	9998683	Hose clamp
27		1	2332620	Fitting RF-FM-G3/8-3/8NPSM-530 bar-SSt
30		1	9992831	Loctite® 542
31		1	9992511	Lock screw Loctite® 243
32		1	9992616	Molykote® DX grease

◆ = Wearing parts

**Remove the mixing elements:**

The mixing elements are discharged with an iron stick in the lower part of the mixing tube through the socket in direction of the arrow (see figure) against the direction of flow.

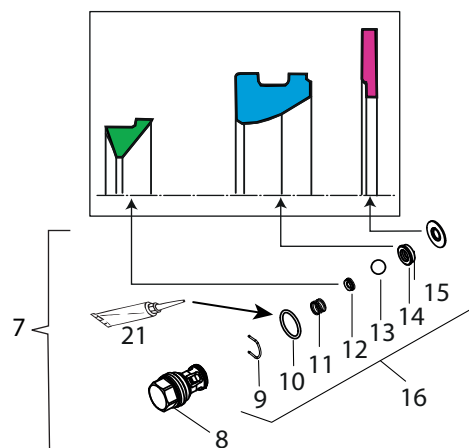
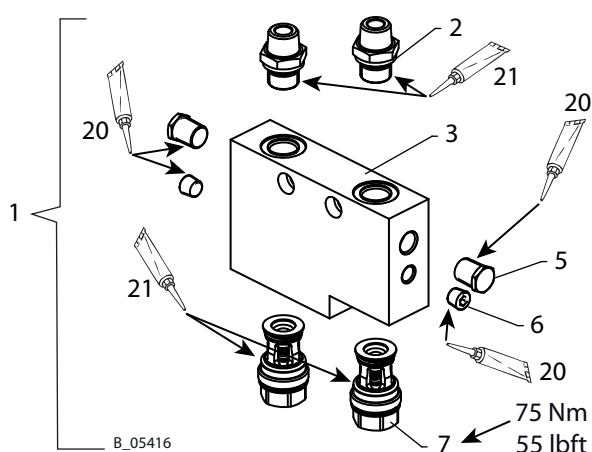


13.6.1 MIXING BLOCK

Spare parts list for mixing block

Pos	K	Stk	Order No.	Designation
1		1	2357789	Mixing block, complete
2		2	3676419	Fitting DF-MM-R3/8"-G3/8"-PN530-SSSt
3		1	2349779	Mixing block
5		2	2323718	Fitting-PF-M-R1/4-530 bar-SSSt
6		2	2324032	Screw plug
7	◆	2	2357787	Outlet valve, complete (for details see Chapter 13.6.1.1)
20		1	9992831	Loctite® 542, 50 ml
21		1	9992616	Molykote® DX grease

◆ = Wearing parts

**13.6.1.1 OUTLET VALVE**

Spare parts list for outlet valve

Pos	K	Stk	Order No.	Designation
7	◆	2	2357787	Outlet valve, complete
8		2	341325	Valve guide
9	★	2	341328	Clasp
10	◆ ★	2	9971470	O-ring
11	★	2	341326	Pressure spring
12	★	2	253405	Spring support ring
13	◆ ★	2	9941501	Ball 11 HM
14	◆ ★	2	2306166	Outlet valve seat
15	◆ ★	2	2306167	Sealing ring
16	◆	1	2308760	Outlet valve service set, complete (spare parts for 2 valves)
21		1	9992616	Molykote® DX grease

◆ = Wearing parts

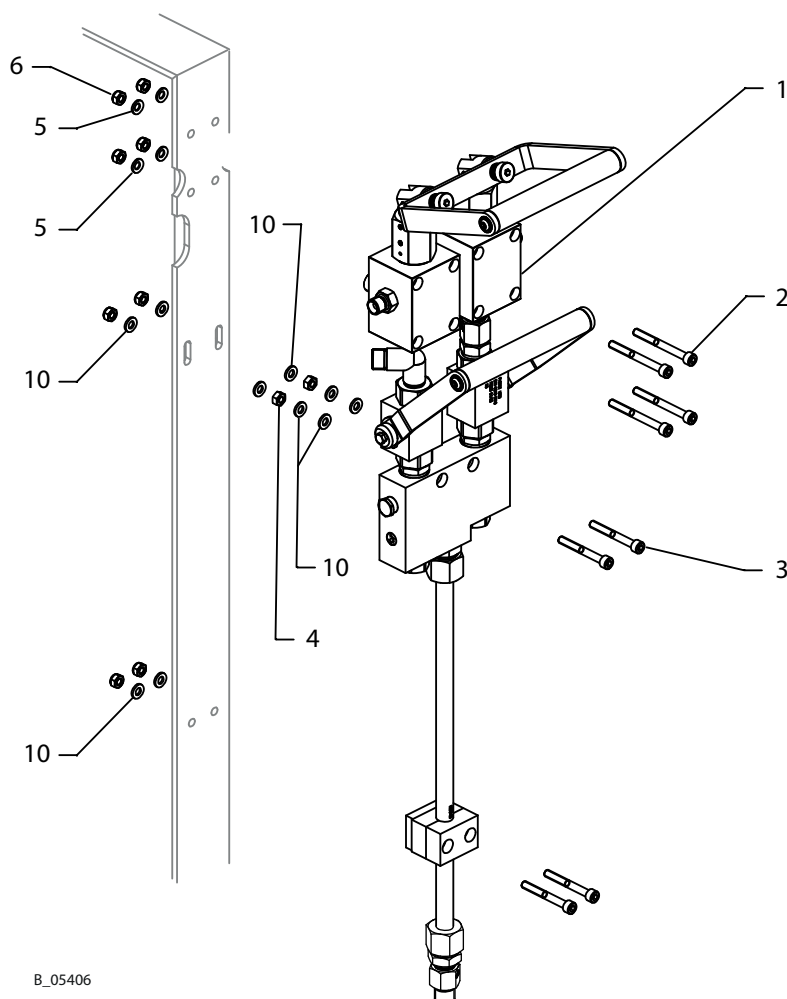
★ = Included in service set 2308760

13.6.2 MOUNT ON TROLLEY

Spare parts list for mixing

Pos	K	Stk	Order No.	Designation
1		1	--	Mixing, complete For details, see Chapter 13.6.
2		4	2345254	Hexagon socket cylinder head screw
3		4	9900316	Hexagon socket cap screw, M6x50
4		2	9910102	Hexagon nut, M6
5		4	3155401	Contact washer
6		8	9910204	Self-locking hexagon nut, M6, with clamp
10		10	9920103	Washer, A6.4, DIN 125

◆ = Wearing parts



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13.7 2K PUMP

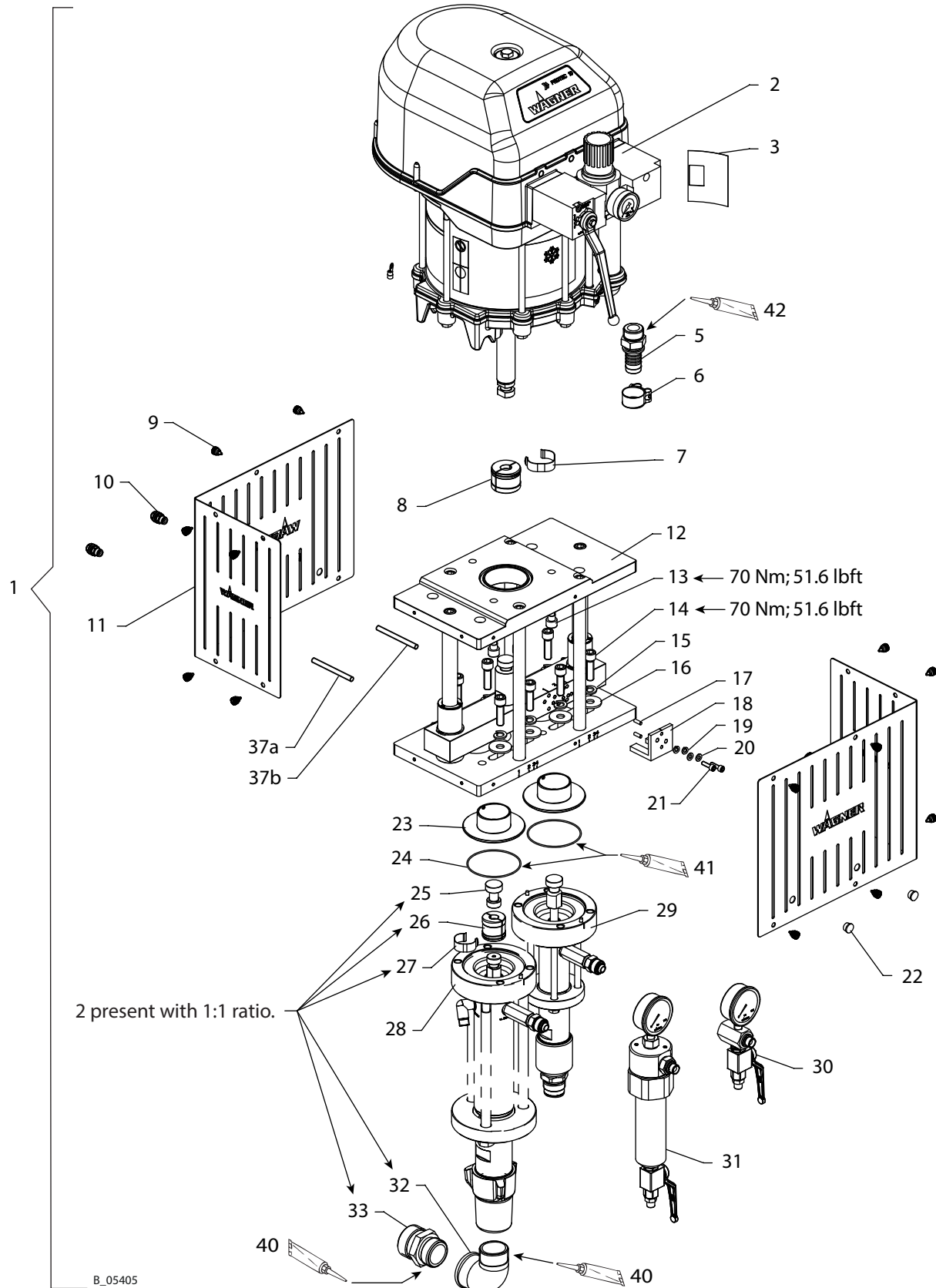
Spare parts list for 2K pump

Pos	K	Stk	Order No.	Designation
1			--	2K pump
2		1	2361277	Air motor 10". For details, see Chapter 13.7.1
3		1	--	Type plate, PROTEC 2K
5		1	9985671	Hose fitting-G1"- NW25
6		1	2336526	Heavy duty clamp 32-35 mm
7		1	370530	Spring 33
8	◆	1	2353598	Coupling 28/28 special
9		16	2353872	Captive screw, M5
10		2	9998614	Straight hermetic plug connection
11		2	2349765	Protection plate
12		1	--	Movement mechanism. For details, see Chapter 13.7.2
13		3	9900376	Hexagon socket cylinder head screw
14		8	2350928	Hexagon socket cylinder head screw
15		8	9921514	Spring washer
16		8	9925034	Washer
17		2	9930851	Parallel pin
18	◆	1	2351441	Position bracket
19		2	9921502	Lock washer, A6.0
20		2	9920103	Washer, A6.4, DIN 125
21		2	9900312	Hexagon socket cap screw, M6x20
22		2	3059509	Sealing plug, GPN300
23		2	2351806	Separating fluid tank
24	◆ ★	2	9974146	O-ring
25	◆	1*	2348247	Bolt D23
26	◆	1*	2353382	Coupling 23/23 special
27	◆	1*	368530	Spring 23
28		1	--	Fluid section A. For details, see Chapter 13.7.3
29		1	--	Fluid section B. For details, see Chapters 13.7.3 or 13.7.4
30		1	--	2KPC relief combination. For details, see Chapter 13.7.5
31		1	2358553	HP filter, PROTEC 2K. For details, see Chapter 13.7.6
32		1*	2329019	Fitting-EF-FM-G1 1/2-G1 1/2-PN25-TG
33		1*	2336489	Fitting DF-MM-G1½"-Rd55x1/6-PN25-CS
37a	0.08 m	9982079		Hose, black PEN 6/4
37b	0.085 m			
40		1	9999042	Loctite® 638, 50 ml
41		1	9998808	Mobilux® EP 2 grease
42		1	9992831	Loctite® 542

* 2 present with 1:1 ratio.

◆ = Wearing parts

★ = Included in the service set for fluid section (more parts, see Chapter 13.7.3 and/or 13.7.4).



13.7.1 PROTEC AIR MOTOR 10"

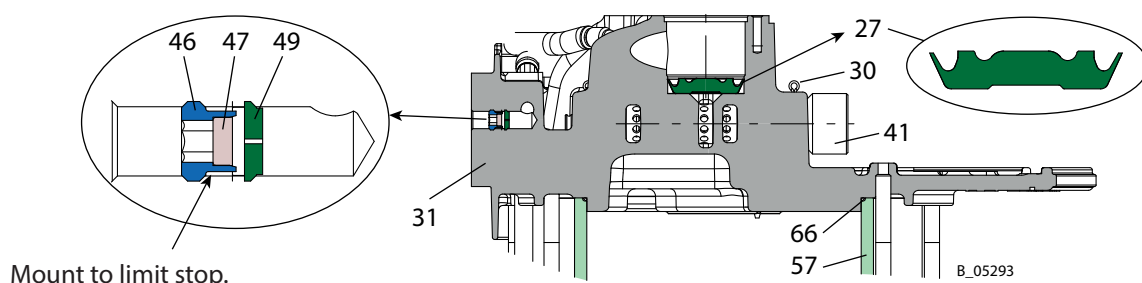
PROTEC 10" air motor spare parts list

Pos	K	Stk	Designation	Order No.
1		1	Air motor 10", complete (with pos. 2, 3, 4)	2361277
2a		1	Hexagon screw without shaft	9900122
2	●	1	Hexagon screw without shaft	9900150
3	●	1	Shoulder ring	369324
4	●	1	Lifting eye nut	369325
5		1	Washer	9925034
6		1	WAGNER PROTEC 10 label	2353725
7		1	Hood 9	369311
8	◆	2	Velcro fastener adhesive part	9999151
9	◆	2	Velcro fastener coating part	9999152
10	◆	1	Sound deadening pad 9	369319
11		1	Shoulder screw 9	369318
12		7	Screw SFS Plastite 45	9907125
13		2	Washer 6.4	9925031

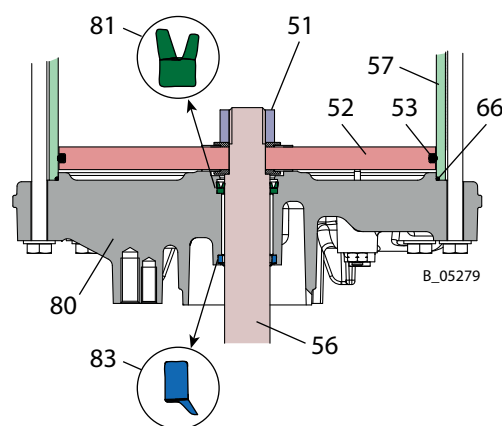
◆ = Wearing part

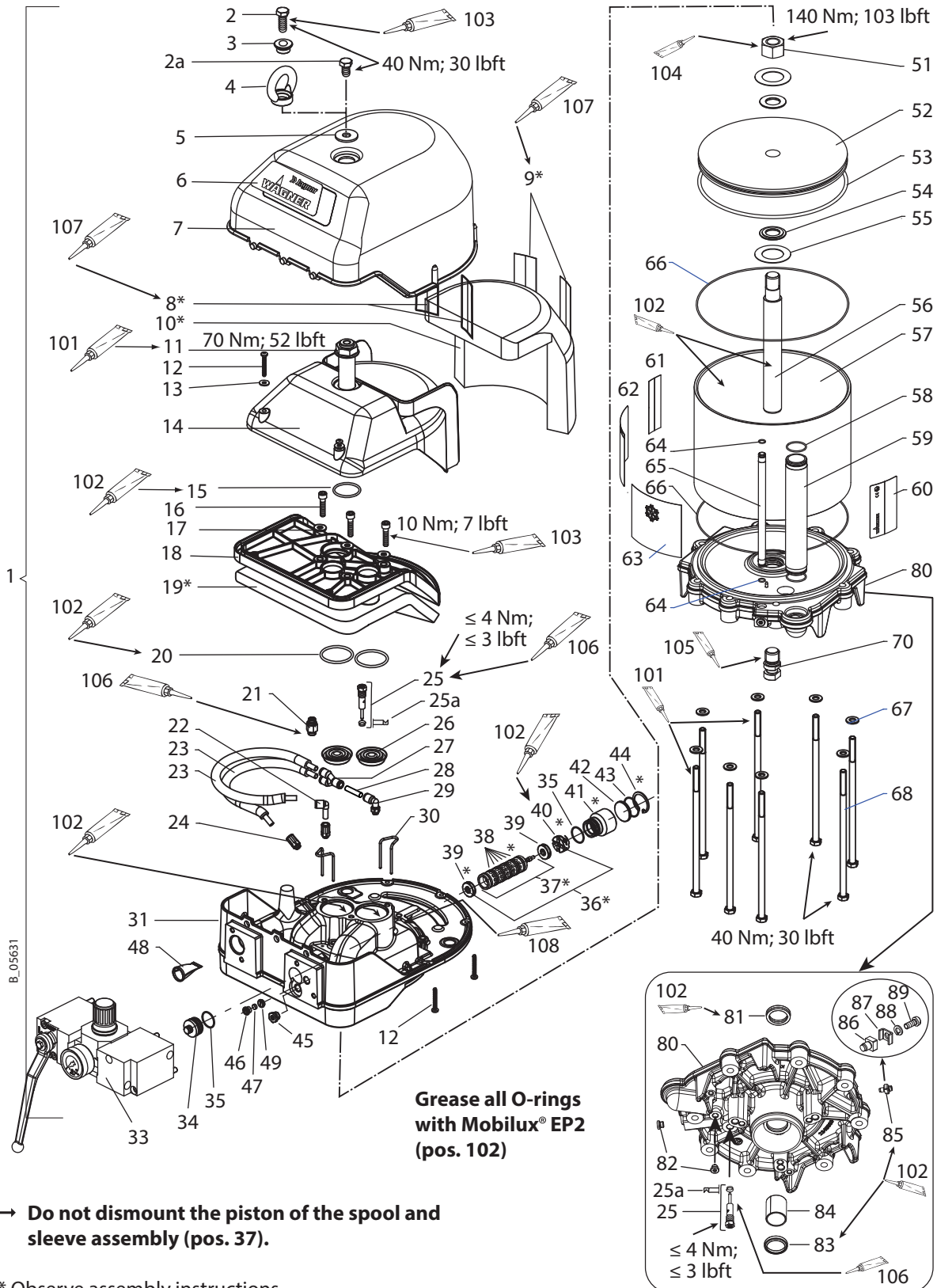
★ = Included in service set

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



Pos	Assembly instructions
8	Stick adhesive part to inside of hood. "Miranit" adhesive (pos. 107).
9	Stick velvet label to fleece side of the deadening pad. "Miranit" adhesive (pos. 107).
10	Insert the deadening pad into the hood (tight-fitting). Fleece side outwards.
19	Stick deadening pad with fleece side outwards holohedral to the connecting part. "Miranit" adhesive (pos. 107).
36-44	Before assembling apply a little Tecni oil (pos. 108) to the housing bore of pos. 31. Do not dismount the piston of the spool and sleeve assembly (pos. 37).





PROTEC 10" air motor spare parts list

Pos	K	Stk	Designation	Order No.
14		1	Silencer 9	369310
15	◆ ★	1	O-ring	9974165
16		3	Socket cap screw; hexagon socket, M8X35	9900314
17		3	Washer 8.4	9925029
18		1	Connecting part 9	369309
19	◆	1	Sound deadening pad 9/12"	369330
20	◆ ★	2	O-ring	9974132
21		1	Safety valve	2353894
22		1	Angular plug connection	9992718
23		2	Air hose back	369026
24		2	Straight screw-in fittings	9998993
25	◆	2	Pilot valve	369290
25a	◆	2	Rod seal	9974217
26	◆ ★	2	Outlet seal 9	369312
27		1	Y-plug connection	3159464
28		0.5 m	Hose 8x1 L=42mm	9982078
29		1	Male stud elbow, 8-1/8	9992757
30		2	Cotter pin	2355809
31		1	Control-flange 10	2345960
33		1	Pressure regulator unit 10": see Chapter 13.7.1.1	--
34		1	Plug 10	2354547
35	◆ ★	2	O-ring	2362554
36	◆	1	Spool-sleeve combination assembly, ISO3	369907
37	◆	1	Spool & sleeve assembly ISO3	9943131
38	◆	6	O-ring	9974143
39	◆	2	Damper ISO3	369329
40	◆	1	Detent element, complete ISO 3	369027
41		1	Lock space 10	2354548
42		1	Cover	2354549
43		1	O-ring	9971375
44		1	Securing ring	9999360
45		1	Threaded plug, G1/4"	9998274
46		1	Filter holder	367324
47	◆ ★	1	Control air filter	367314
48	◆ ★	1	Filter compressed air 9	369313
49		1	Throttle	367325
51		1	Hexagon nut	9913051
52		1	Piston 10	2347028
53	◆ ★	1	O-ring	2347183
54		2	Pistonwasher 12	370303
55		2	Damping washer 12	370304
56	◆	1	Piston rod 10	2348760

◆ = Wearing part

★ = Included in service set

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

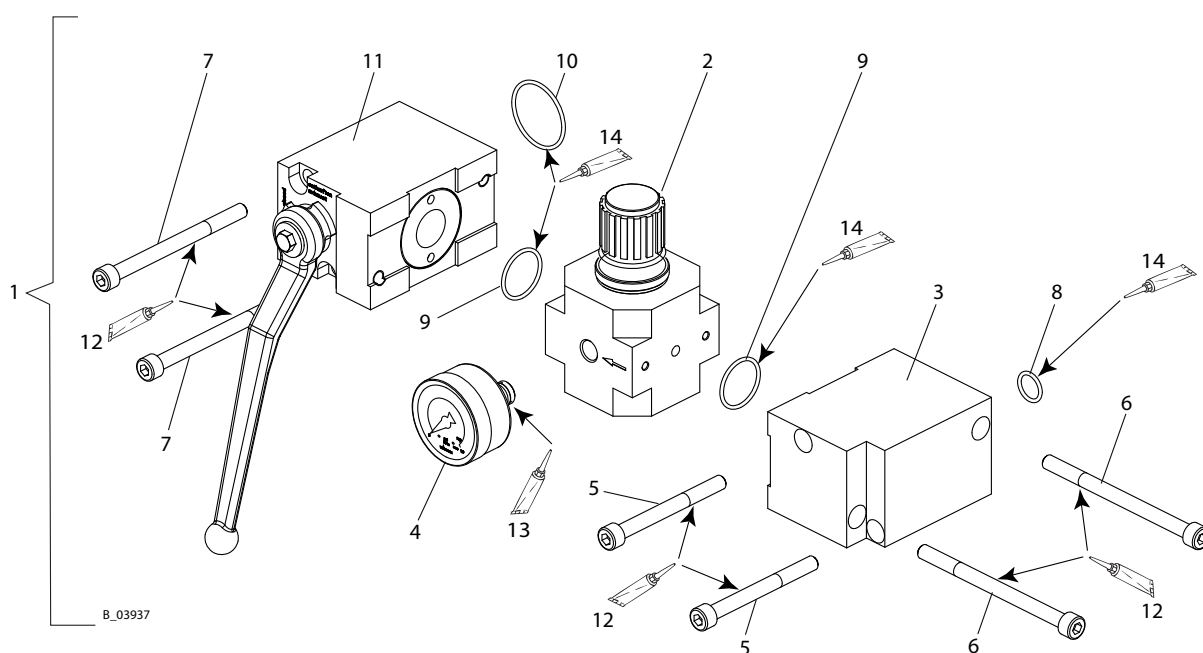
PROTEC 10" air motor spare parts list

Pos	K	Stk	Designation	Order No.
57		1	Tube 10	2347029
58	◆ ★	2	O-ring	9971004
59		1	Compressed air tube 10	2347257
60		1	Type plate PP3000	--
61		1	Warning label	2332077
62		1	Fluid warning label	2332082
63		1	IceBreaker label	2330382
64	◆ ★	2	O-ring	9974089
65		1	Control air pipe 150	367405
66	◆ ★	2	O-ring	2347178
67		8	Washer	9920106
68		8	Hexagon screws	9907137
70		1	Connection fluid section	2348761
80		1	Flange 10	2345964
81	◆ ★	1	Rod seal	2347218
82		2	Threaded plug, G1/8"	9998675
83	◆ ★	1	Scraper ring	2347211
84	◆	1	Permaglide bushing	2347187
85		1	Grounding, complete	367258
86		1	Base	--
87		1	Clamping bracket	9952667
88		1	Spring washer	9921505
89		1	Socket cap screw with slit	9900701
101		1	Molykote® DX grease	9992616
102		1	Mobilux® EP 2 grease	9998808
103		1	Loctite® 222	9992590
104		1	Lock screw Loctite® 243	9992511
105		1	Loctite® 270	9992528
106		1	Loctite® 542	9992831
107		1	Miranit contact adhesive	9992816
108		1	Tecni oil 1000 ml	Z102.00
		1	Service set air motor, 10"	2353088

◆ = Wearing part

★ = Included in service set

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

13.7.1.1 AIR MOTOR REGULATOR FOR PROTEC 10"

Spare parts list for air motor regulator for PROTEC 10"

Pos	K	Stk	Designation	Order No.
1		1	Pressure regulator unit, complete	--
2	◆	1	Pressure regulator valve 9–10"	2309974
3		1	Distribution piece	2346229
4	◆	1	Pressure gauge 0-10 bar (d50)	9998725
5		2	Hexagon socket cylinder head screw	9900360
6		2	Hexagon socket cylinder head screw	9907087
7		2	Hexagon socket cylinder head screw	9900356
8	◆	1	O-ring	9974166
9	◆	2	O-ring	3105540
10	◆	1	O-ring	9971405
11	◆	1	Edge ball valve 9–10"	2310637
12		1	Molykote® DX grease	9992616
13		1	Loctite® 542, 50 ml; 50cc	9992831
14		1	Mobilux® EP 2 grease	9998808

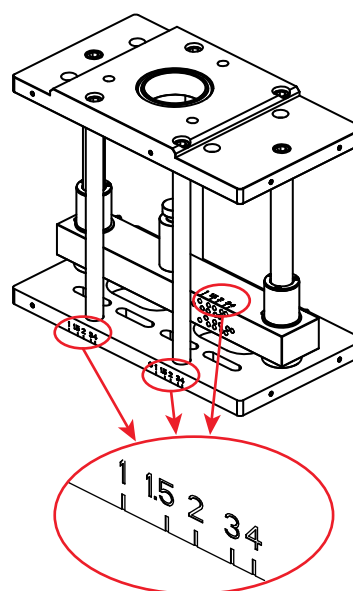
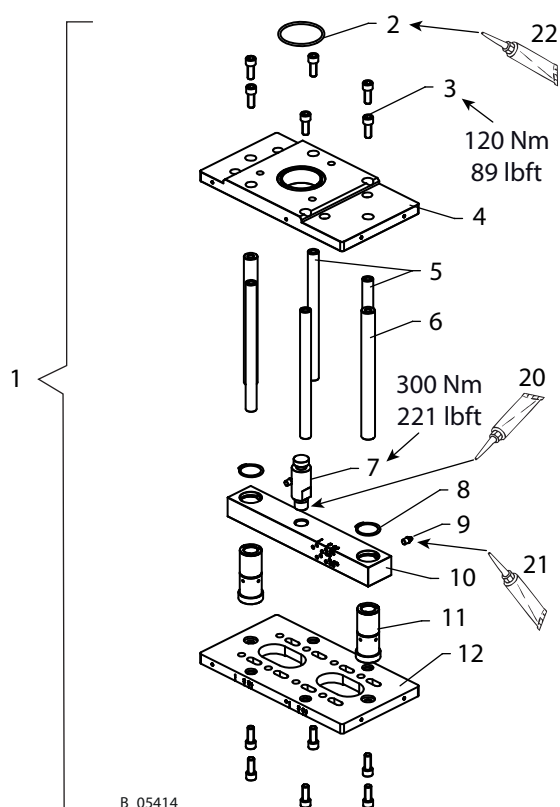
◆ = Wearing part

13.7.2 MOVEMENT MECHANISM

Spare parts list for movement mechanism

Pos	K	Stk	Order No.	Designation
1		1	--	Movement mechanism
2	◆	1	2352569	O-ring
3		12	9907075	Hexagon socket cylinder head screw
4		1	2349530	Air motor plate
5		4	2349535	Spacer shaft
6	◆	2	2357784	Guide shaft
7	◆	1	2349763	Air motor bolt
8		2	9922535	Securing ring
9		2	2350855	Lubricating fitting R1/8"
10	◆	1	2349762	support
11	◆	2	2357786	Bearing, complete
12		1	2349532	Fluid section plate
20		1	9992528	Loctite® 270, 50 ml
21		1	9992831	Loctite® 542, 50 ml
22		1	9998808	Mobilux® EP 2 grease

◆ = Wearing parts



Markings for fluid section installation depending to mixing ratio.

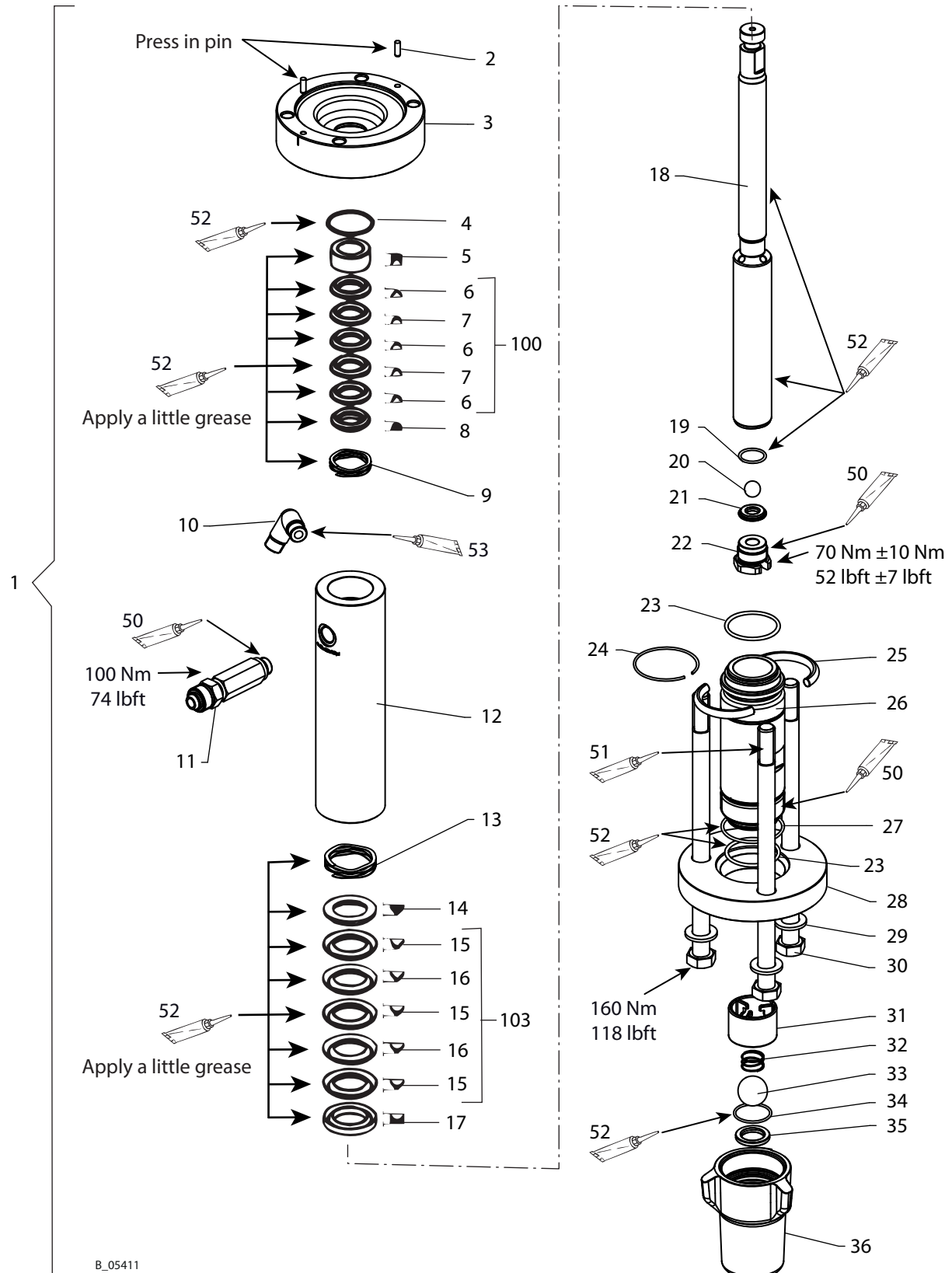
The markings 1.5 (for mixing ratio 1.5:1) was introduced at a later date.

13.7.3 FLUID SECTIONS 110–150 cm³Spare parts list for fluid section 110–150 cm³

Spare parts list for fluid section 110–150 cm ³				A component		B component
				150 cm ³ PE/TG	110 cm ³ PE/T	110 cm ³ PE/T
Pos	K	Stk	Designation	Order No.	Order No.	Order No.
1		1	Fluid section	2352830	2352829	2353639
2		2	Parallel pin	9930851		
3		1	Connecting flange 150	2348248		
4	◆ ★	1	O-ring	9974092		
5		1	Support ring (small)	368516	368428	
100	◆	1	Packing PE/TG, complete (small)	367991		
	◆	1	Packing PE/T, complete (small)	368297		
6	◆ ★	3	Sealing collar PE (small)	367523	368427	
7	◆ ★	2	Sealing collar TG (small)	367522		
	◆ ★	2	Sealing collar T (small)	368436		
8		1	Pressure ring (small)	367519	368425	
9	◆ ★	1	Wave spring (small)	9998670		
10		1	Fitting, EF-MM-G3/8-R3/8-530 bar-SSt	3204619		
11		1	Fitting SF-MM-G3/8"-M24x1.5-PN530-SSt	2329922		
12		1	Tube 2K	2348246	2354594	
		1	Tube 110			
13	◆ ★	1	Wave spring (large)	9998671		
14		1	Pressure ring (large)	368519	368432	
103	◆	1	Packing PE/TG, complete (large)	368991		
	◆	1	Packing PE/T, complete (large)	368296		
15	◆ ★	3	Sealing collar PE (large)	368523	368431	
16	◆ ★	2	Sealing collar TG (large)	368522		
	◆ ★	2	Sealing collar T (large)	368438		
17		1	Support ring (large)	368518	368430	
18	◆	1	Piston	368555	368433	
19	◆ ★	1	O-ring	368528	367528	
20	◆ ★	1	Ball (small)	9941512	9941518	
21	◆	1	Valve seat outlet TC	368510	367510	
22		1	Valve screw	368506	367506	
23	◆ ★	2	O-ring	368525		
24		1	Retaining ring 70/150	368513		
25		2	Snap ring half 70/150	368512		
26		1	Cylinder	368553	368435	
27	◆ ★	1	O-ring	9974107		
28		1	Snap ring flange 150	368561		
29		3	Washer	9925011		
30		3	Hexagon screws	9907142		
31	◆ ★	1	Ball guide D28 spring load	2352729		
32	◆ ★	1	Pressure spring	9999229		
33	◆ ★	1	Ball (large)	9943082		

◆ = Wearing parts

★ = Included in the service set (more parts, see Chapter 13.7).



Spare parts list for fluid section 110–150 cm³

				A component		B component
				150 cm ³ PE/TG	110 cm ³ PE/T	110 cm ³ PE/T
Pos	K	Stk	Designation	Order No.	Order No.	Order No.
34	◆ ★	1	O-ring		368527	
35	◆	1	Valve seat inlet 70/150 TC		368509	
36		1	Inlet housing 150-PC		2338688	
50		1	Anti-seize paste tube OKS 240		9992609	
51		1	Molykote® DX grease		9992616	
52		1	Mobilux® EP 2 grease		9998808	
53		1	Loctite® 542		9992831	
		1	Service set PE/TG	2356635		
		1	Service set PE/T			
						2356636

◆ = Wearing parts

★ = Included in the service set (more parts, see Chapter 13.7).

13.7.4 FLUID SECTIONS 38–75 cm³Spare parts list for fluid sections 38–75 cm³

				B component		
				4:1	3:1	2:1
				38 cm³ PE/T	50 cm³ PE/T	75 cm³ PE/T
Pos	K	Stk	Designation	Order No.	Order No.	Order No.
1		1	Fluid section	2352825	2352826	2352827
2		2	Parallel pin	9930851		
3		1	Connecting flange B, 2K-mech	2349616		
4	◆ ★	1	O-ring	9974094		
5		1	Support ring (large)	2349731	2349716	2349691
100	◆	1	Packing PE/T, complete (large)	2357669	2357671	2357682
6	◆ ★	3	Sealing collar PE (large)	2349722	2349703	2349621
7	◆ ★	2	Sealing collar T (large)	2349728	2349709	2349685
8		1	Pressure ring (large)	2349724	2349712	2349688
9	◆ ★	1	Wave spring (large)	2349787		9998669
10		1	Washer	2349696		2349695
11		1	Coupling bolt	2349698		2349617

◆ = Wearing parts

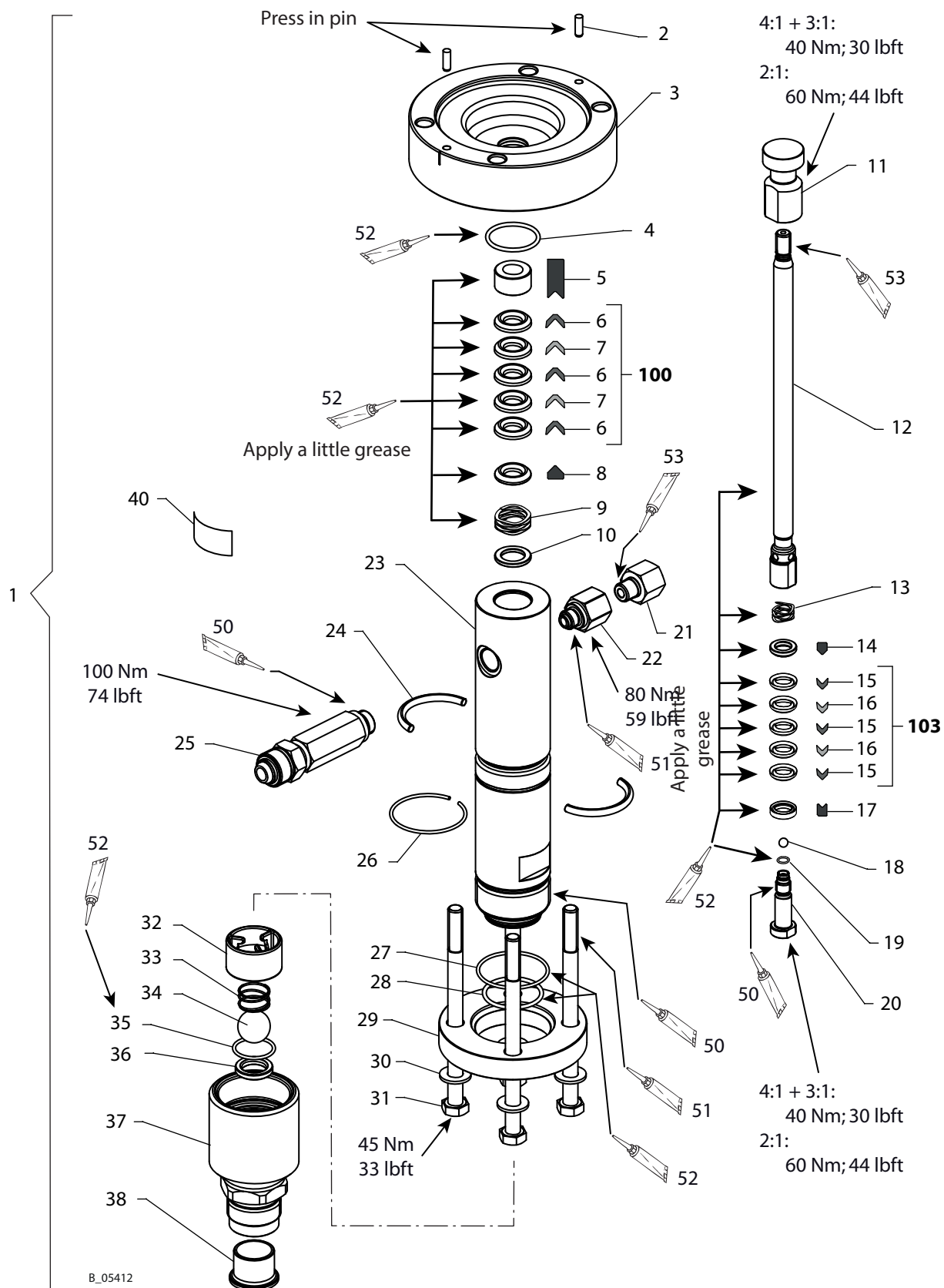
★ = Included in the service set (more parts, see Chapter 13.7).

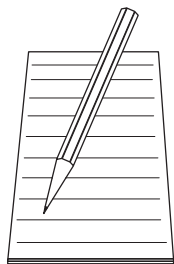
Spare parts list for fluid sections 38–75 cm³

				B component		
				4:1	3:1	2:1
				38 cm ³ PE/T	50 cm ³ PE/T	75 cm ³ PE/T
Pos	K	Stk	Designation	Order No.	Order No.	Order No.
12	◆	1	Piston	2353724	2353723	2353721
13	◆ ★	1	Wave spring (small)	2349788		2349787
14		1	Pressure ring (small)	2349723	2349711	2349687
103	◆	1	Packing PE/T, complete (small)	2357668	2357672	2357684
15	◆ ★	3	Sealing collar PE (small)	2349721	2349702	2349620
16	◆ ★	2	Sealing collar T (small)	2349727	2349704	2349622
17		1	Support ring (small)	2349730	2349715	2349690
18	◆ ★	1	Ball (small)	9941504		9941544
19	◆ ★	1	O-ring	2349699		2349619
20		1	Valve screw	2353605		2353632
21		1	Reverse section	2353328		
22		1	Burst disk, 800 bar	2350027		
23		1	Pipe	2349732	2349717	2349692
24		2	Snap ring half 40	367512		
25		1	Fitting SF-MM-G3/8-M24x1.5-530 bar-SSt	2329922		
26		1	Retaining ring 40	367513		
27	◆ ★	1	O-ring	9974106		
28	◆ ★	1	O-ring	367525		
29		1	Snap ring flange	2349689		
30		4	Washer	9920106		
31		4	Hexagon screws	9900225		
32	◆ ★	1	Ball guide D22 spring load	2352745		
33	◆ ★	1	Pressure spring	9999229		
34	◆ ★	1	Ball (large)	9941513		
35	◆ ★	1	O-ring	367527		
36	◆	1	Valve seat inlet 40 TC	367509		
37		1	Recessed housing B, 2K-mech	2349618		
38		1	Sealing sleeve	2329898		
40		1	Label PE+T, white	9999340		
50		1	Anti-seize paste tube OKS 240	9992609		
51		1	Molykote® DX grease	9992616		
52		1	Mobilux® EP 2 grease	9998808		
53		1	Loctite® 542	9992831		
		1	Service set PE/T	2353097	2353098	2353099

◆ = Wearing parts

★ = Included in the service set (more parts, see Chapter 13.7).



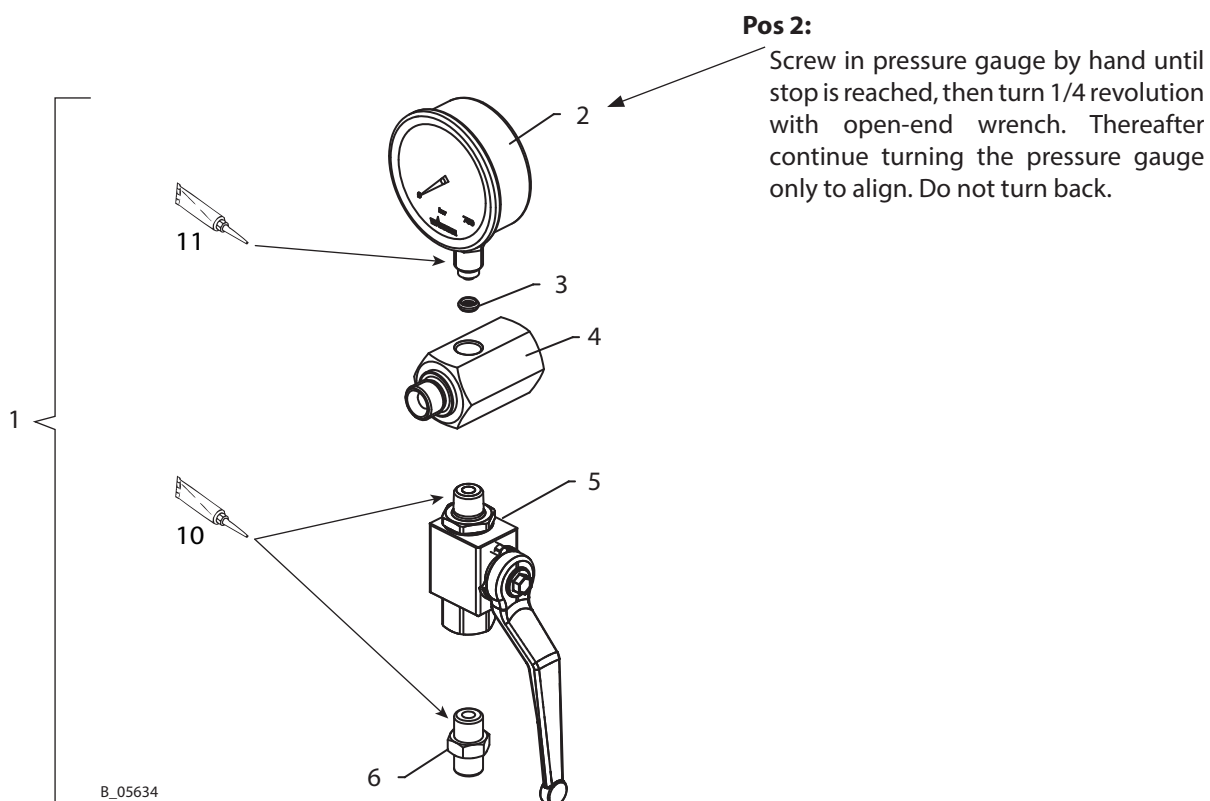


13.7.5 2K PC RELIEF COMBINATION

Spare parts list for 2K PC relief combination

Pos	K	Stk	Order No.	Designation
1		1	--	Relief combination 2K PC
2	◆	1	2350040	Pressure gauge 0-750 bar
3	◆	1	9970153	Pressure gauge seal 1/4"
4		1	2361702	Exhaust distributor
5	◆	1	M501.00	Ball valve, 500 bar
6		1	M614.62	Fitting-DF-MM-G1/4"-G1/4"-PN350
10		1	9992831	Loctite 542
11		1	9992616	Molykote DX grease

◆ = Wearing parts



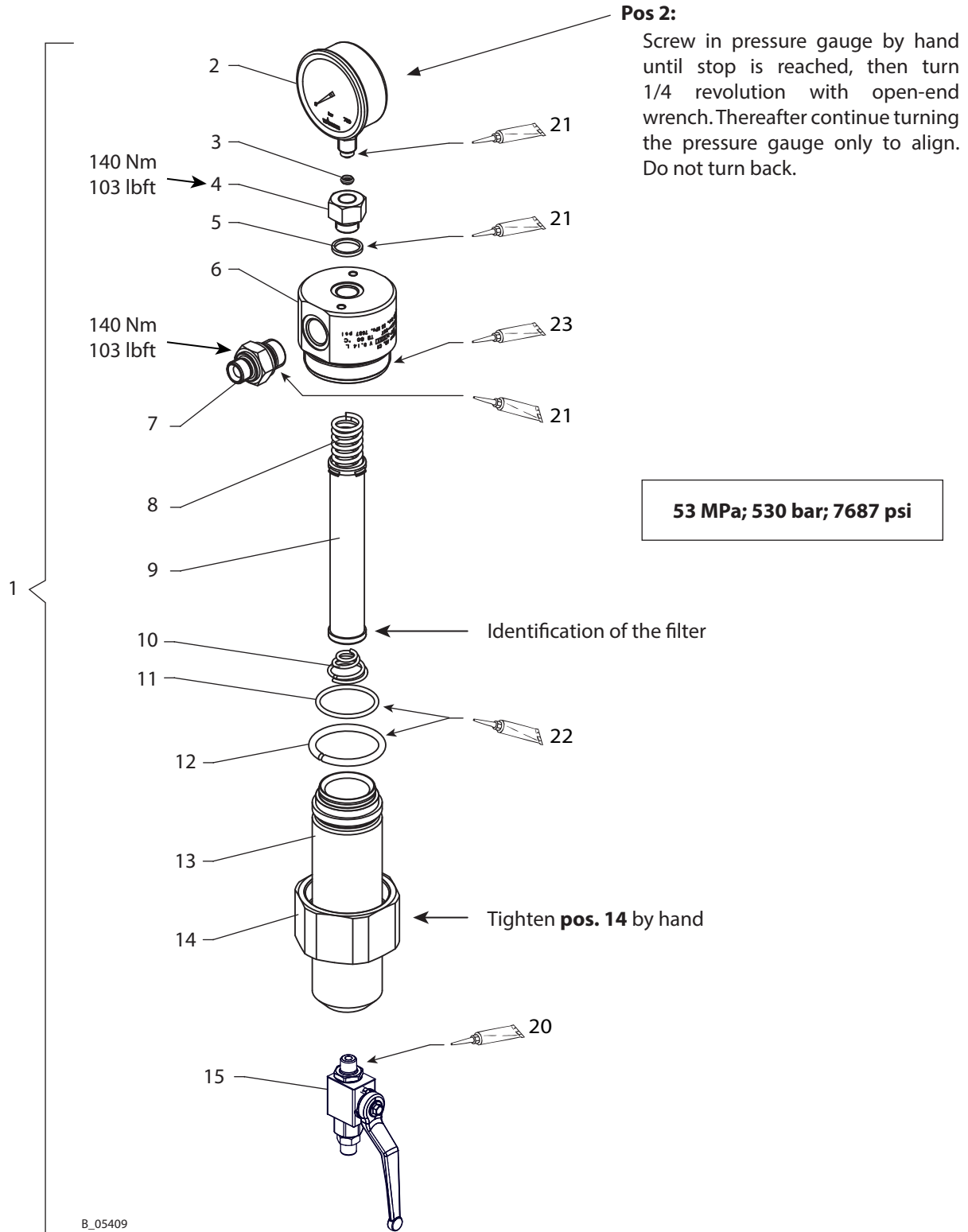
13.7.6 2K HIGH-PRESSURE FILTER, 530 BAR WITH PRESSURE GAUGE

Spare parts list for 2K high-pressure filter, 530 bar with pressure gauge

Ball valve version in:				Stainless steel
Pos	K	Stk	Designation	Order No.
1		1	HP filter, PROTEC 2K	2358553
2	◆	1	Pressure gauge 0-750 bar	2350040
3	◆	1	Pressure gauge seal 1/4"	9970153
4		1	Coupling sleeve	2302411
5	◆	1	Sealing ring	9925024
6		1	Distribution housing for ball valve	2324670
7		1	Fitting, DF-MM-G1/2-G3/8-530 bar-SSt	2330780
8		1	Filter connection	9894245
9		1	Filter cartridge *	
	◆		* Filter sieve, 20 meshes per inch (rough)	291564
	◆ ●		* Filter sieve, 50 meshes per inch (rough)	3514069
	◆ ●		* Filter sieve, 100 meshes per inch (medium), mesh width 0.16 mm	3514068
	◆ ●		* Filter sieve, 200 meshes per inch (fine)	295721
10	◆	1	Cone spring	3514058
11	◆	1	O-ring	9955863
12		1	Pressure ring d45	2325562
13		1	Filter housing	2324542
14		1	Union nut	2324543
15	◆	1	Ball valve R1/4"-G1/4"-PN350-CS	2334472
20		1	Loctite® 542 50 ml; 50 cc	9992831
21		1	Molykote® DX grease	9992616
22		1	Mobilux® EP2 grease	9998808
23		1	Anti-seize paste tube	9992609

◆ = Wearing parts

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

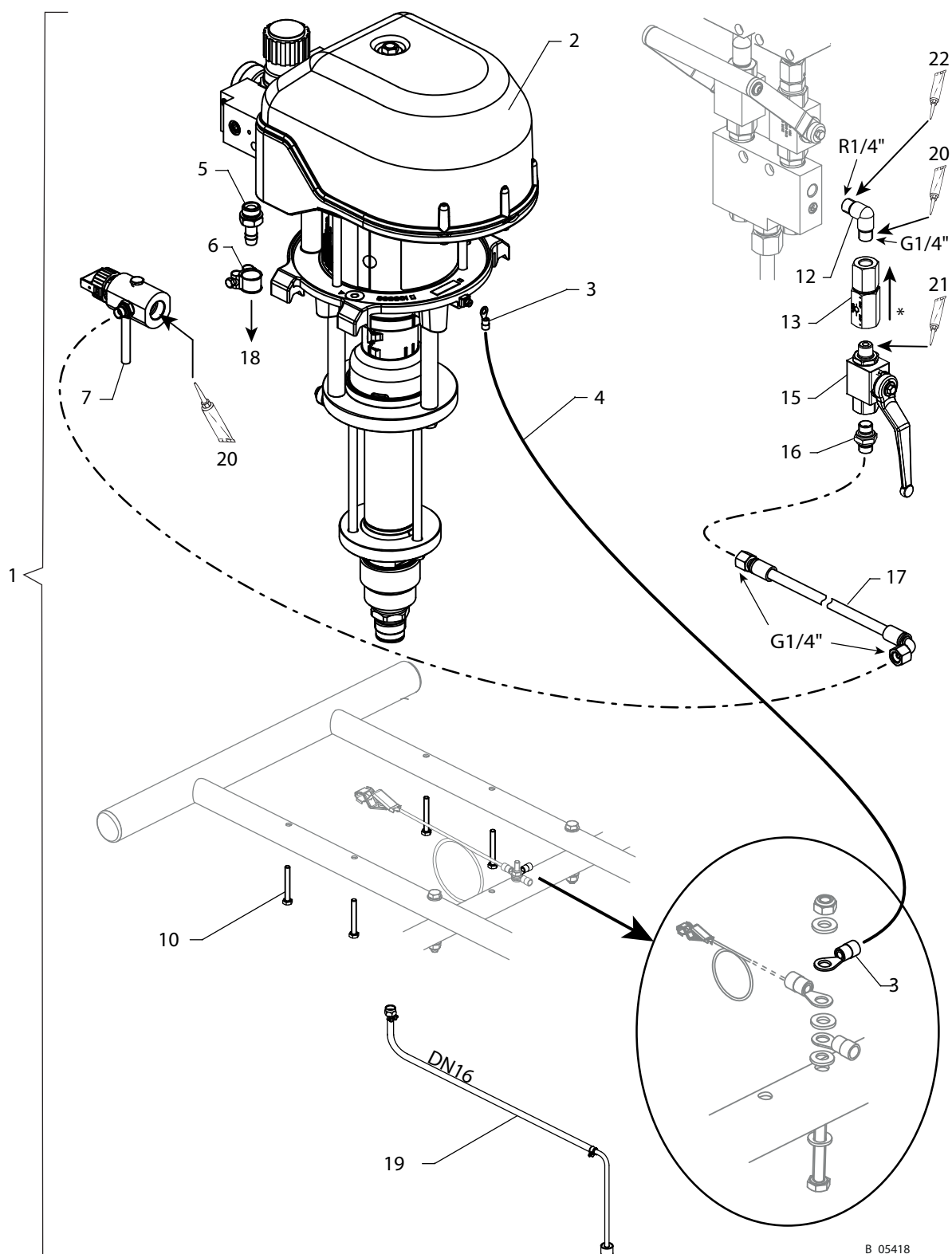


13.8 FLUSHING PUMP / FLUSHING PUMP CONNECTION (OPTION)

Spare parts list for flushing pump / flushing pump connection

			Set of flushing pumps	Attachment kit for external flushing pump
Pos	K	Designation	Stk	Order No.
1		Set of flushing pumps 35-70, 2K PC	1	2352831
--		Attachment kit for external flushing pump	1	2359293
2		Piston pump SP Leopard 35-70, PE/TG For details and accessories, see flushing pump's operating manual	1	2329479
3		Cable lug	2	9950604
4		Ground wire	0.2 m	9951211
5		Hose fitting	2	9985619
6		Heavy duty clamp 20-22 mm	2	2333097
7		Relief combination, complete For details, see flushing pump's operating manual	1	2329023
10		Hexagon screw without shaft	4	9900126
12		Fitting, EF-MM-G1/4-R1/4-250 bar-SSt	1	2328186
13	◆	Non-return valve G1/4-G1/4-530 bar	1	2362038
15	◆	Ball valve, 500 bar	1	M501.00
16		Fitting, DF-MM-G1/4-G1/4-530 bar-SSt	1	3204611
17	◆	HPP hose DN6-PN530 PA W-G 1.52 m	1	2334039
18		LP hose DN12-PN10-EPDM, per meter	1.3 m	2333099
19	◆	Suction hose DN16-SSt, complete	1	2324110
20		Molykote® DX grease	1	9992616
21		Loctite® 542	1	9992831
22		Loctite® 270	1	9992528

◆ = Wearing parts



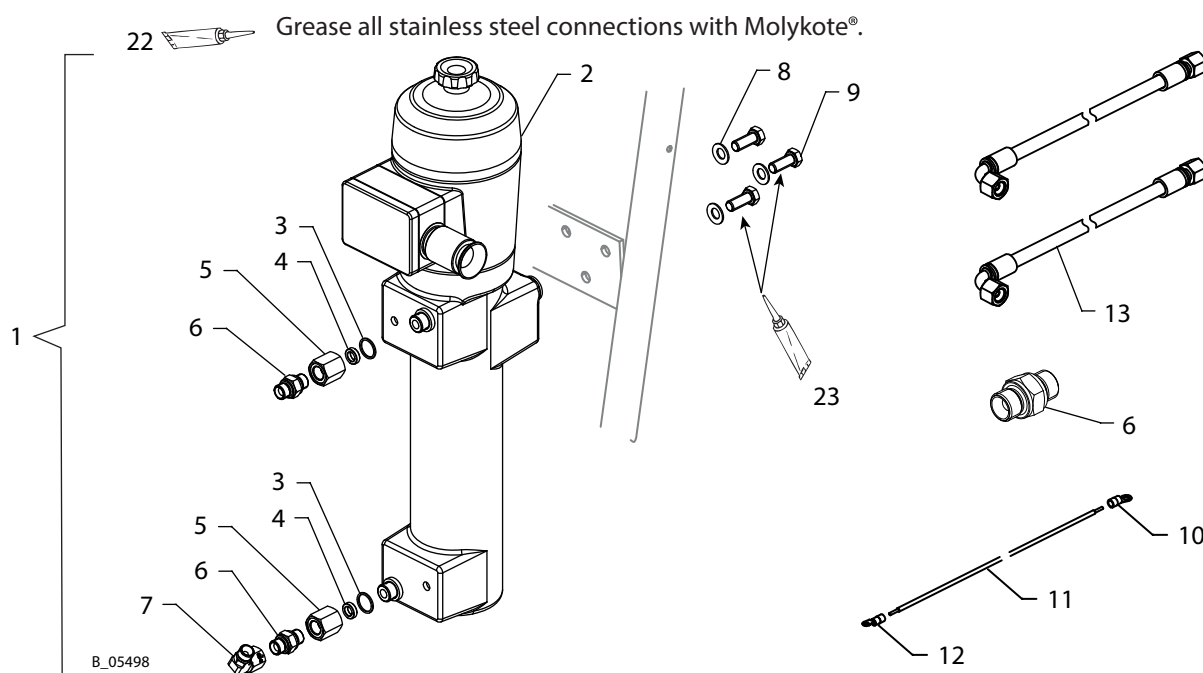
* Flow direction

13.9 HEATER (OPTION)

13.9.1 HEATER WITHOUT RETURN LINE

Suitable for external mixer with circulation.

- A-side: If there is no external circulation, the A component may not heat up during circulation.
- B-side: the product is heated during circulation.



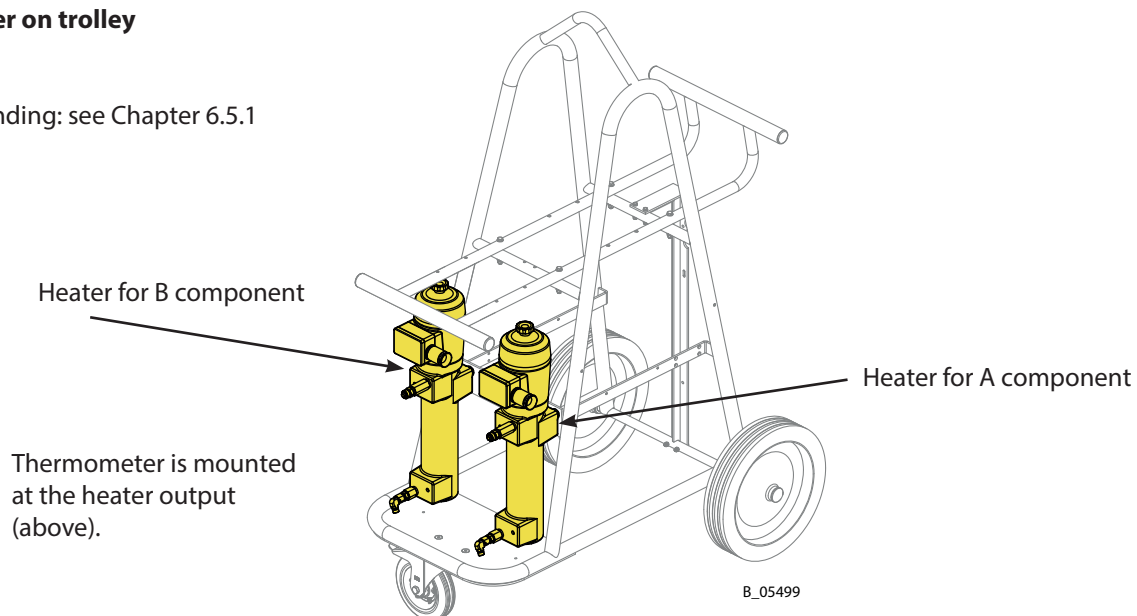
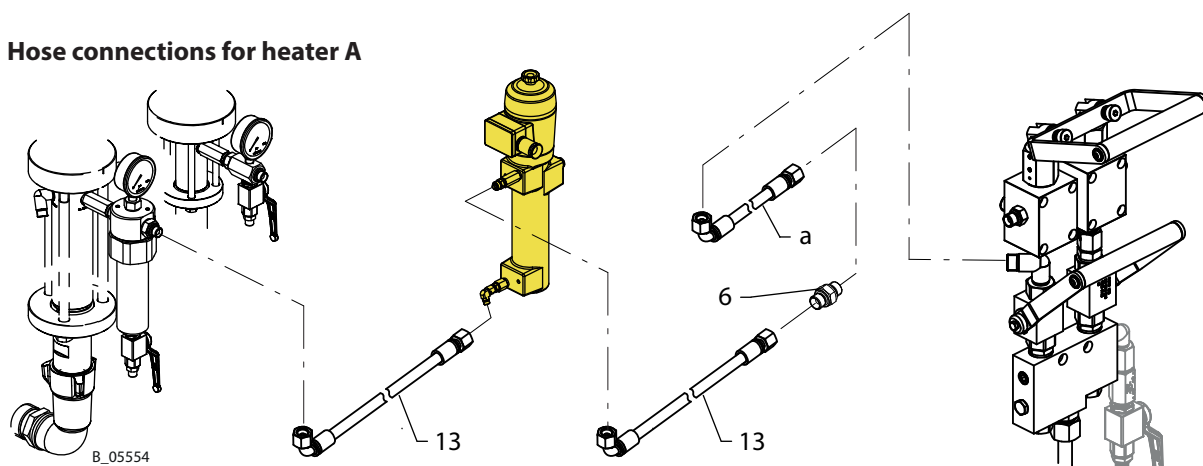
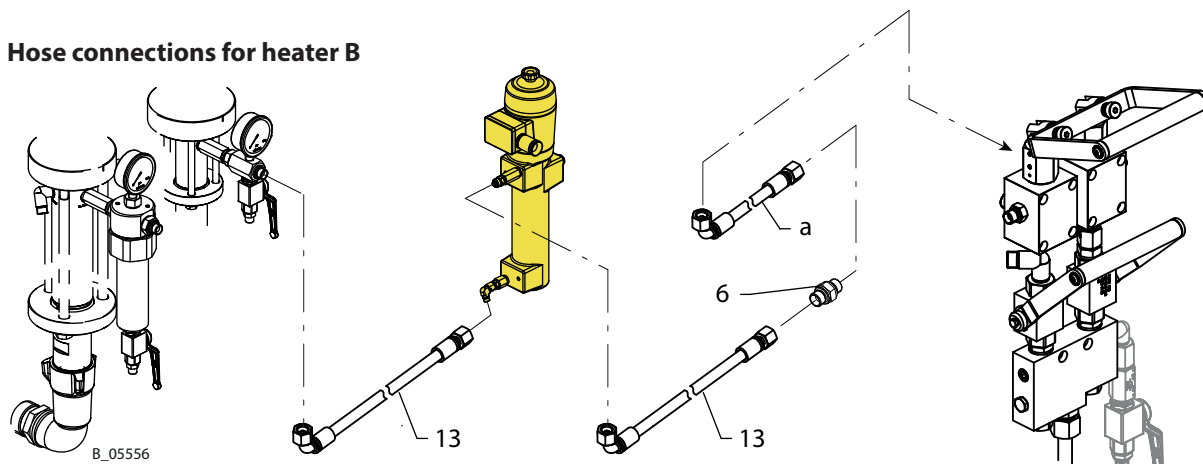
Spare parts list "2K heater set A/B"

Pos	K	Stk	Order No.	Designation
1		1	2359317	2K heater set A/B
2		1	65021	Heater A 32 Ex, 1-circuit
3	◆	2	9970110	Sealing ring
4	◆	2	2339756	Filling part
5		2	2333393	Fitting-RF-FF-M20x1.5-G3/8-530 bar-SSt
6		3	2330775	Fitting, DF-MM-G3/8-G3/8-530 bar-SSt
7		1	2331309	Fitting-EF-FM-G3/8-G3/8-530 bar-SSt
8		3	3306773	Contact washer
9		3	9900150	Hexagon screw without shaft
10		1	9950604	Cable lug M6
11		3 m	9951211	Ground wire
12		1	9950608	Cable lug M4
13	◆	2	2335692	HPP hose, DN10-PN530 FEP W-G 1.235 m
22		1	9992616	Molykote® DX grease
23		1	9998808	Mobilux® EP 2 grease

◆ = Wearing parts

Heater on trolley

Grounding: see Chapter 6.5.1

**Hose connections for heater A****Hose connections for heater B**

13.9.2 HEATER WITH RETURN LINE

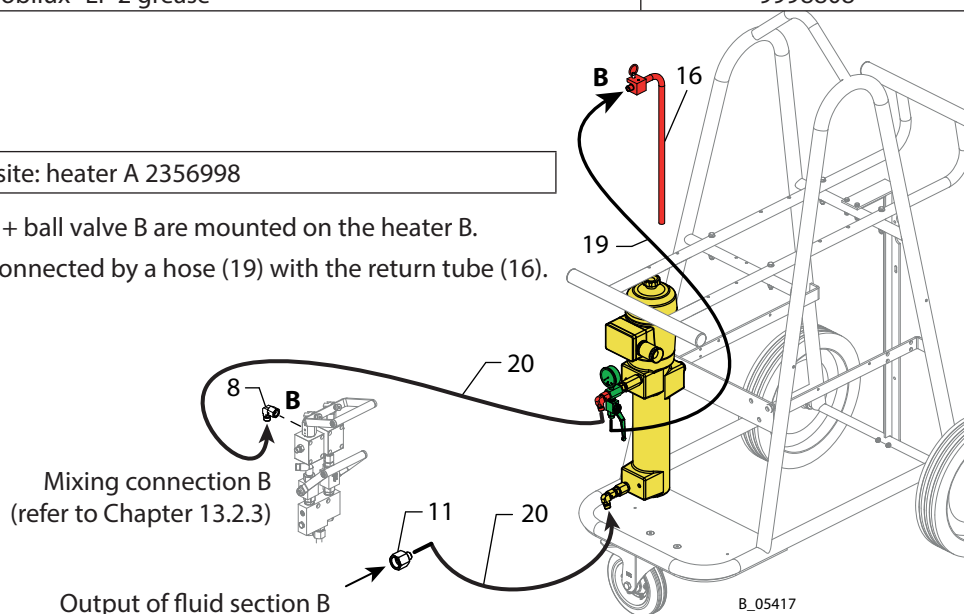
Heater spare parts list

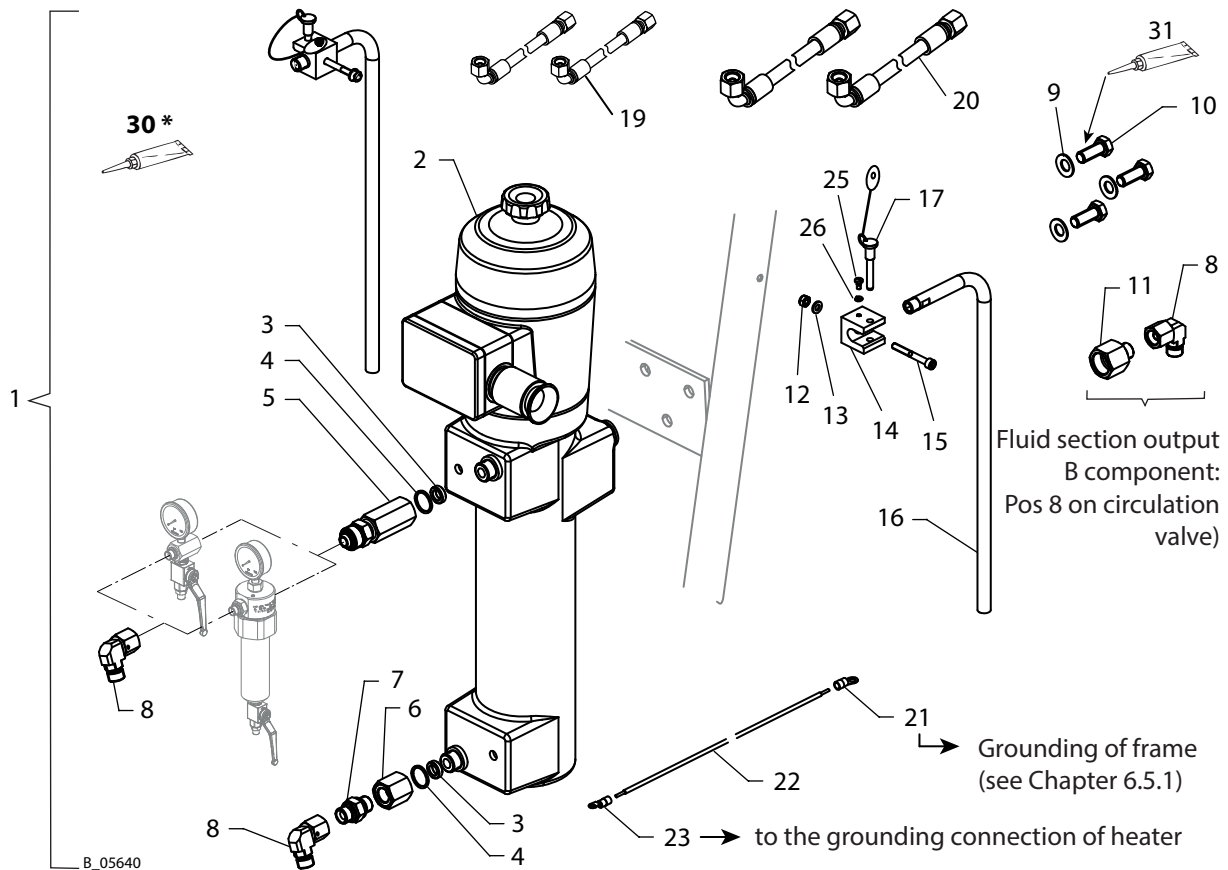
				Heater A	Heater B
Pos	K	Stk	Designation	Order No.	Order No.
1		1	2K PC heater set	2356998	2352832
2		1	Heater Ex A 32, 1-circuit (for details and spare parts, see the operating manual, continuous-flow heater, Order No. 65860.)	65021	
3	◆	2	Filling part	2339756	
4	◆	2	Sealing ring	9970110	
5		1	Fitting SF-FM-M20-M24-PN530-SSt	2339609	
6		1	Fitting-RF-FF-M20x1.5-G3/8-530 bar-SSt	2333393	
7		1	Fitting, DF-MM-G3/8-G3/8-530 bar-SSt	2330775	
8		3	Fitting-EF-FM-G3/8-G3/8-530 bar-SSt	2331309	
9		3	Contact washer	3306773	
10		3	Hexagon screw without shaft	9900150	
11		1	Fitting-RF-FM-M24x1.5-G3/8-530 bar-SSt	2339606	
12		2	Self-locking hexagon nut, M6, clamp	9910204	
13		2	Washer, A6.4, DIN 125	9920103	
14		2	Tube mounting piece	2353389	
15		2	Hexagon socket cap screw, M6x50	9900316	
16		2	Return tube G1/4", 90°	2353343	
17		2	Locking pin	2353386	
19	◆	2	HP hose DN6-PN325 FEP W-G 0.87 m	2334065	
20	◆	2	HPP hose, DN10-PN530 FEP W-G 1.035 m	2334057	
21		1	Cable lug M6	9950604	
22		3 m	Ground wire	9951211	
23		1	Cable lug M4	9950608	
25		2	Recessed head raised fillister head screw, H form	9903301	
26		2	Spring washer	9921511	
30		1	Molykote® DX grease	9992616	
31		1	Mobilux® EP 2 grease	9998808	

◆ = Wearing parts

Heater B – Prerequisite: heater A 2356998

- Relief combination + ball valve B are mounted on the heater B.
- The ball valve B is connected by a hose (19) with the return tube (16).

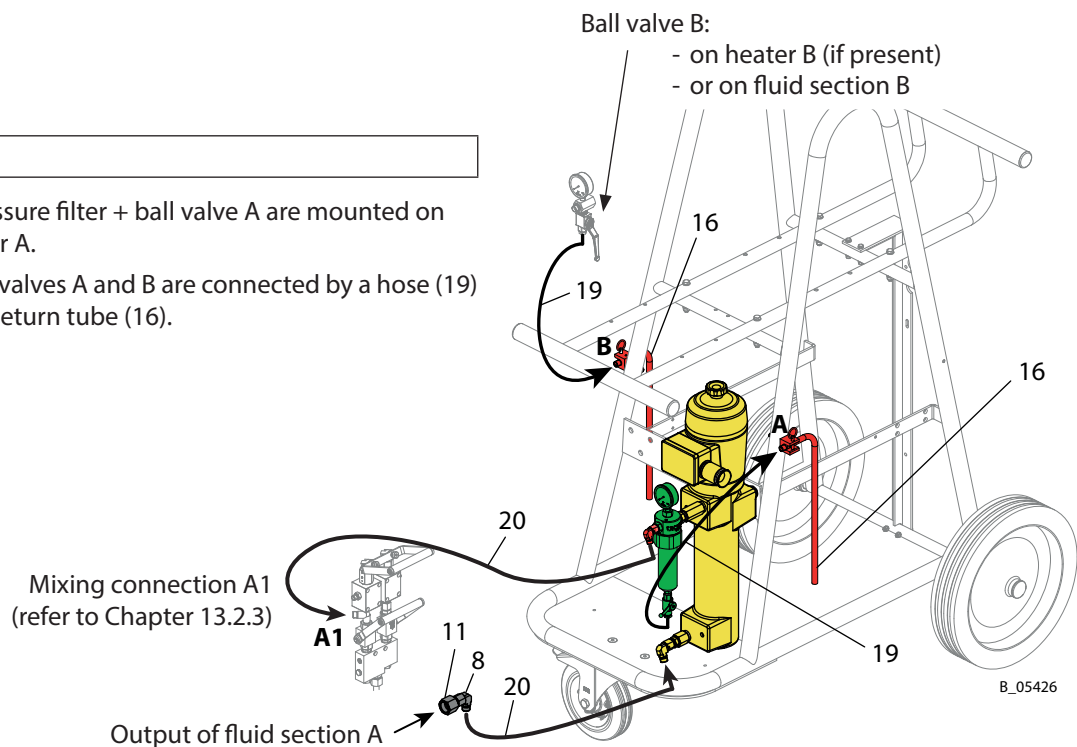


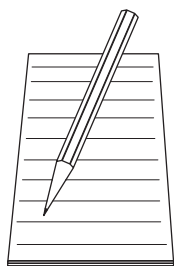


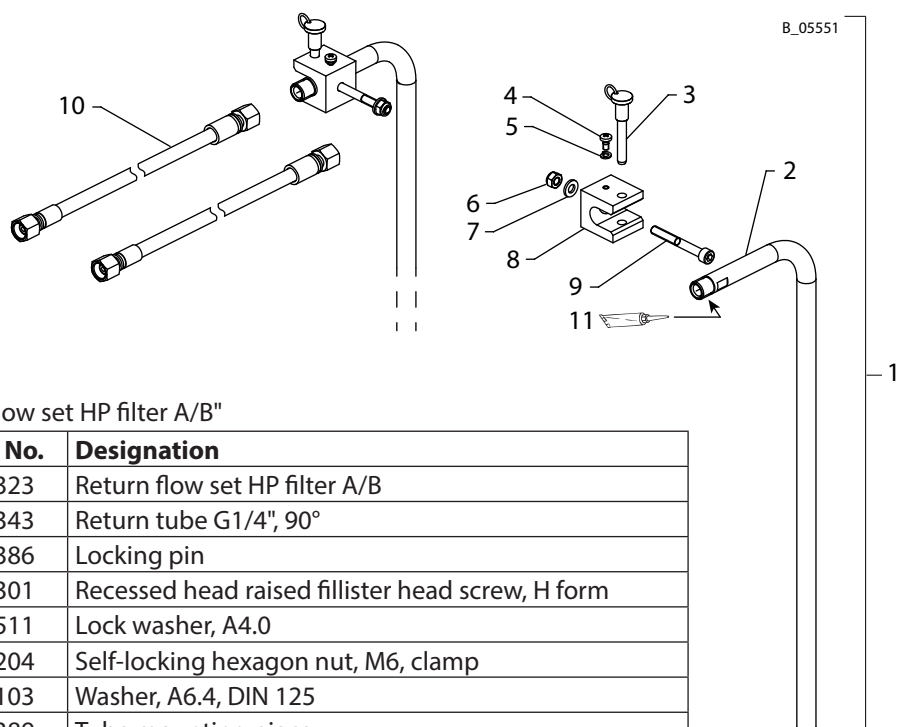
* Grease all stainless steel connections with Molykote®.

Heater A

- High-pressure filter + ball valve A are mounted on the heater A.
- Both ball valves A and B are connected by a hose (19) with the return tube (16).



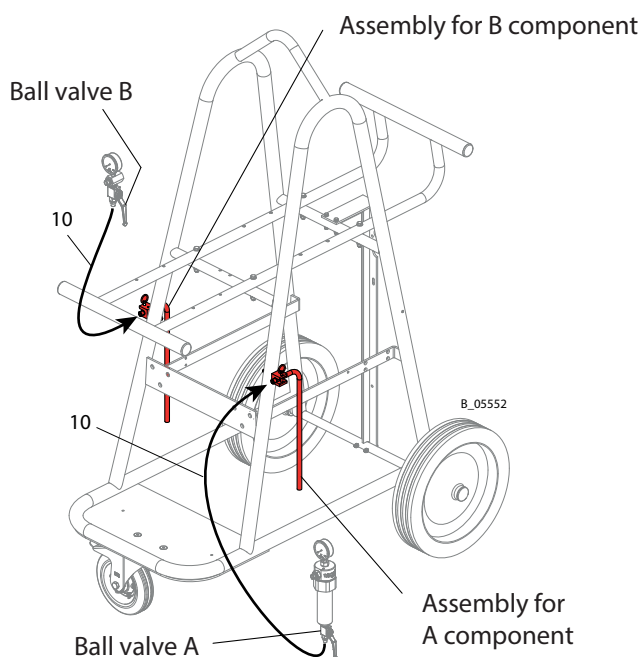


13.10 RETURN FLOW SET HP FILTER A AND B (OPTION)

Spare parts list for "return flow set HP filter A/B"

Pos	K	Stk	Order No.	Designation
1		1	2359323	Return flow set HP filter A/B
2	◆	2	2353343	Return tube G1/4", 90°
3		2	2353386	Locking pin
4		2	9903301	Recessed head raised fillister head screw, H form
5		2	9921511	Lock washer, A4.0
6		2	9910204	Self-locking hexagon nut, M6, clamp
7		2	9920103	Washer, A6.4, DIN 125
8		2	2353389	Tube mounting piece
9		2	9900316	Hexagon socket cap screw, M6x50
10	◆	2	2353854	HP hose, DN6-PN325 FEP G-G 0.805 m
11		1	9992616	Molykote® DX grease

◆ = Wearing parts



13.11 EXTERNAL MIXER

Spare parts list for "External mixer 2K PC"

Pos	K	Stk	Order No.	Designation
1		1	2353092	External mixer 2K PC
4		1	2365814	Frame for external mixer Protec 2K
5		1	2360983	Spacer plate for mixing tube mount
6		1	2360974	Spacer plate mixing block
7		4	9900316	Hexagon socket cylinder head screw
8		4	9920103	Washer
9		4	9921502	Spring washer
10		4	9910102	Hexagon nut
11		1	2341999	Fitting-RF-FM-G1/4-G1/4-530 bar-SSt
12		2	2330775	Fitting, DF-MM-G3/8-G3/8-530 bar-SSt
13		2	2325826	Fitting, DF-MM-G3/8-G1/4-530 bar-SSt
14		1	2330780	Fitting, DF-MM-G1/2-G3/8-530 bar-SSt
15		1	2330778	Fitting, DF-MM-G1/2-G1/2-530 bar-SSt
20		1	9992831	Loctite® 542
21		1	9992616	Molykote® DX grease

◆ = Wearing parts

Chapter 13.11.1: Throttle valve

Chapter 13.11.2: External circulation for A1/2"–B1/4"

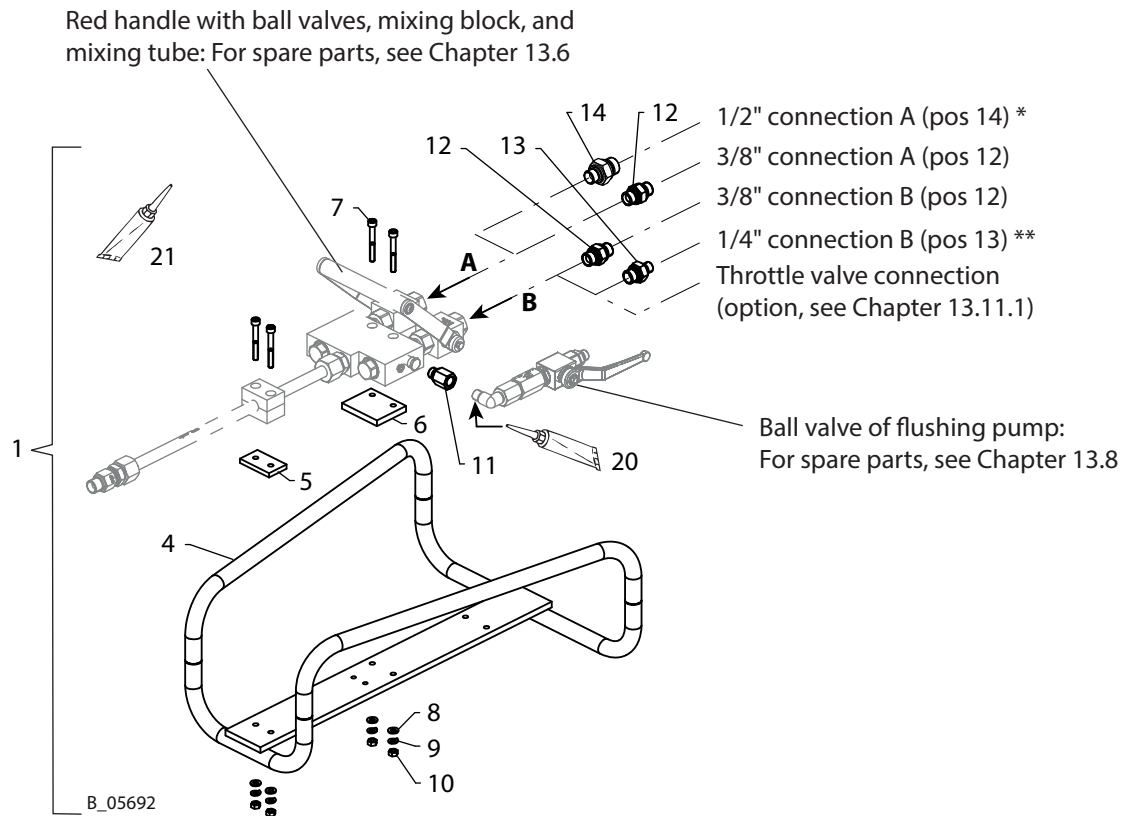
Chapter 13.11.2: External circulation for A3/8"–B1/4"

Chapter 13.11.3: External circulation A3/8"–B3/8"

Hose combinations and suitable mixing ratios (for explanation, see Chapter 5.10.2)

Hose A		Hose B		Volume ratio *	Mixing ratio
Inside - Ø	Connection	Inside - Ø	Connection	Hose A : hose B	A : B
DN13	1/2"	DN6	1/4"	4 : 1	4 : 1 3 : 1
DN10	3/8"	DN6	1/4"	2.25 : 1	3 : 1 2 : 1
DN13	1/2"	DN10	3/8"	1.78 : 1	2 : 1 1.5 : 1
DN10	3/8"	DN10	3/8"	1 : 1	1.5 : 1 1 : 1

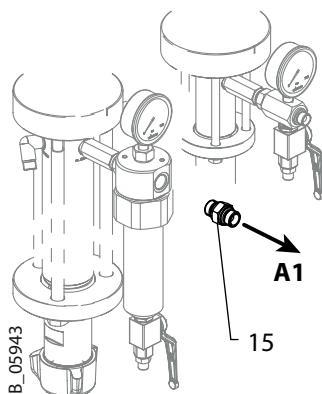
* with effective inner diameters of 6.4 mm (DN6), 9.6 mm (DN10), and 12.8 mm (DN13)



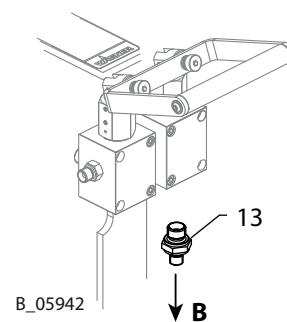
Pos. Lubricate all stainless steel fittings with Molykote®, except those who explicitly request something different (e.g., Loctite®).

21:

*** 1/2" connection A** (for DN13 hose):
Replace existing 3/8" output on A high-pressure filter with 1/2" output (pos 15).



**** 1/4" connection B** (for DN6 hose):
Replace existing 3/8" output on B circulation valve with 1/4" output (pos 13).

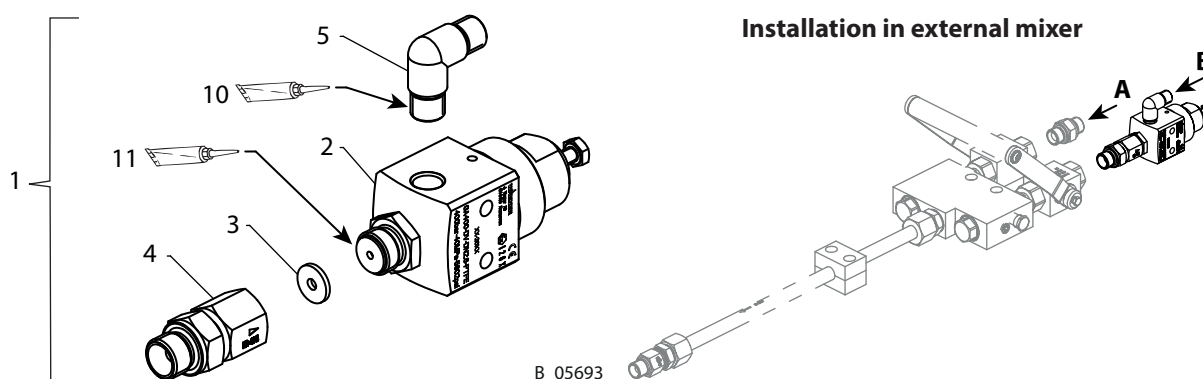


13.11.1 THROTTLE VALVE SET (OPTION)

Spare parts list for "Throttle valve set"

Pos	K	Stk	Order No.	Designation
1		1	2365045	Throttle valve set
2		1	--	Throttle valve DN2.6-PTFE-SSt For details, see Chapter 13.11.1.1
3	◆	1	350489	Seal
4		1	2344096	Fitting, SF-FM-11/16UN-G3/8-530 bar-SSt
5		1	2328186	Fitting, EF-MM-G1/4-R1/4-530 bar-SSt
10		1	9992831	Loctite® 542
11		1	9992616	Molykote® DX grease

◆ = Wearing parts



The throttle valve must not be operated with compressed air.

13.11.1.1 THROTTLE VALVE

Spare parts list for "Throttle valve"

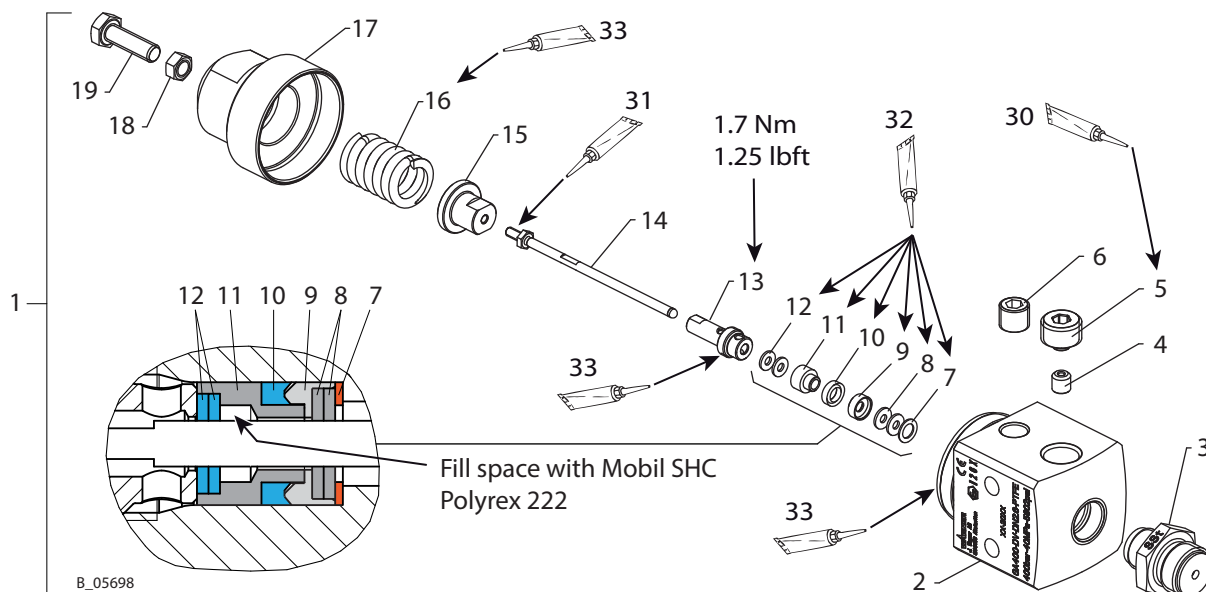
Pos	K	Stk	Order No.	Designation
1		1	--	For throttle valve DN2.6-PTFE-SSt set, see Chapter 13.11.1
2		1	**	Valve housing GA-2.6 mm
3	◆ ★	1	2343005	Spacer DN2.6-SSt complete
4		1	350418	Plug
5		1	350488	Screw plug
6		1	9985741	Screw plug
7	◆ ★	1	2342203	Stop ring
8	◆ ★	2	2342204	Sealing ring at front
9	◆ ★	1	2342205	Support ring

◆ = Wearing part

★ = Included in service set.

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

** = The valve housing can only be ordered from the WAGNER Service Department.



Assistance with assembly: See supplement 2344448 for service set 2343817.

Spare parts list for "Throttle valve"

Pos	K	Stk	Order No.	Designation
10	◆★	1	2342206	Sealing collar
11	◆★	1	2342207	Sealing sleeve
12	◆★	2	2342208	Sealing ring at rear
13	◆★	1	350485	Sealing screw
14	◆★	1	2343834	Valve rod, complete
15		1	2361021	Throttle valve piston
16		1	350482	Spiral spring
17		1	2360985	Throttle valve clamping nut
18		1	9913058	Hexagon nut
19		1	9907250	Hexagon screw without shaft
30		1	9992831	Loctite® 542
31		1	9992511	Loctite® 243
32		1	2342273	Mobil SHC Polyrex® 222 grease
33		1	9998808	Mobilux® EP 2 grease
40	●	1	2343817	Service set GA DN2.6-PTFE-SSt
41	●	1	2342336	Sealing set PV / DV / GA-DN2.6-PTFE (10 in a pack for pos 8, 10, 12)

◆ = Wearing part

★ = Included in service set.

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

** = The valve housing can only be ordered from the WAGNER Service Department.

The throttle valve must not be operated with compressed air.

13.11.2 EXTERNAL CIRCULATION A1/2"-B1/4" AND A3/8"-B1/4"

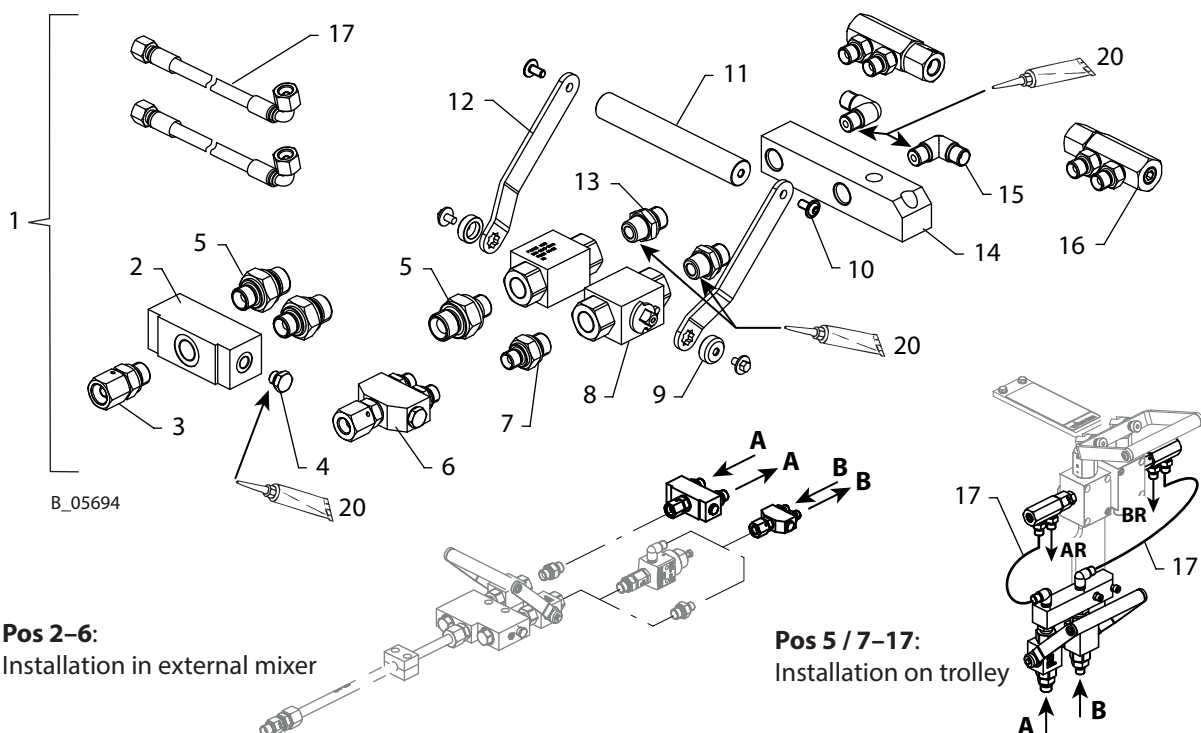
Spare parts list for external circulation A1/2"-B1/4" and A3/8"-B1/4"

Pos	K	Stk	Designation	A1/2"-B1/4" Order No.	A3/8"-B1/4" Order No.
1		1	Circulation set A3/8 B1/4 2K PC	2366258	2362987
2		1	Solvent distributor	2333284	
3		1	Fitting, SF-FM-G3/8-G3/8-530 bar-SSt	2331371	
4		1	Plug 1/8"	2304311	
5		3	Fitting, DF-MM-G1/2-G3/8-530 bar-SSt	2330780	
			Fitting, DF-MM-G3/8-G3/8-530 bar-SSt		2330775
6		1	Distributor G1/4", complete	2363005	
7		1	Fitting, DF-MM-G3/8-G1/4-530 bar-SSt	2325826	
8	◆	2	Ball valve PN 500 G3/8 DN10	2350087	
9		2	Spring washer	2349832	
10		2	Fillister head screw with flange	2325554	
11		1	Handle, red	2349830	
12		2	Side holder, 45 degree	2349776	
13		2	Fitting DF-MM-R3/8"-G3/8"-PN530-SSt	3676419	
14		1	Mounting for circulation	2365239	
15		2	Fitting, EF-MM-G1/4-R1/4-530 bar-SSt	2328186	
16		2	Circulation connection G1/4" complete	2339554	
17		2	HP hose DN6-PN325 FEP W-G 0.52m	2333779	
20		1	Loctite® 542	9992831	
21		1	Molykote® DX grease	9992616	

◆ = Wearing parts

Pos. Lubricate all stainless steel fittings with Molykote®, except those who explicitly request something different (e.g., Loctite®).

21:

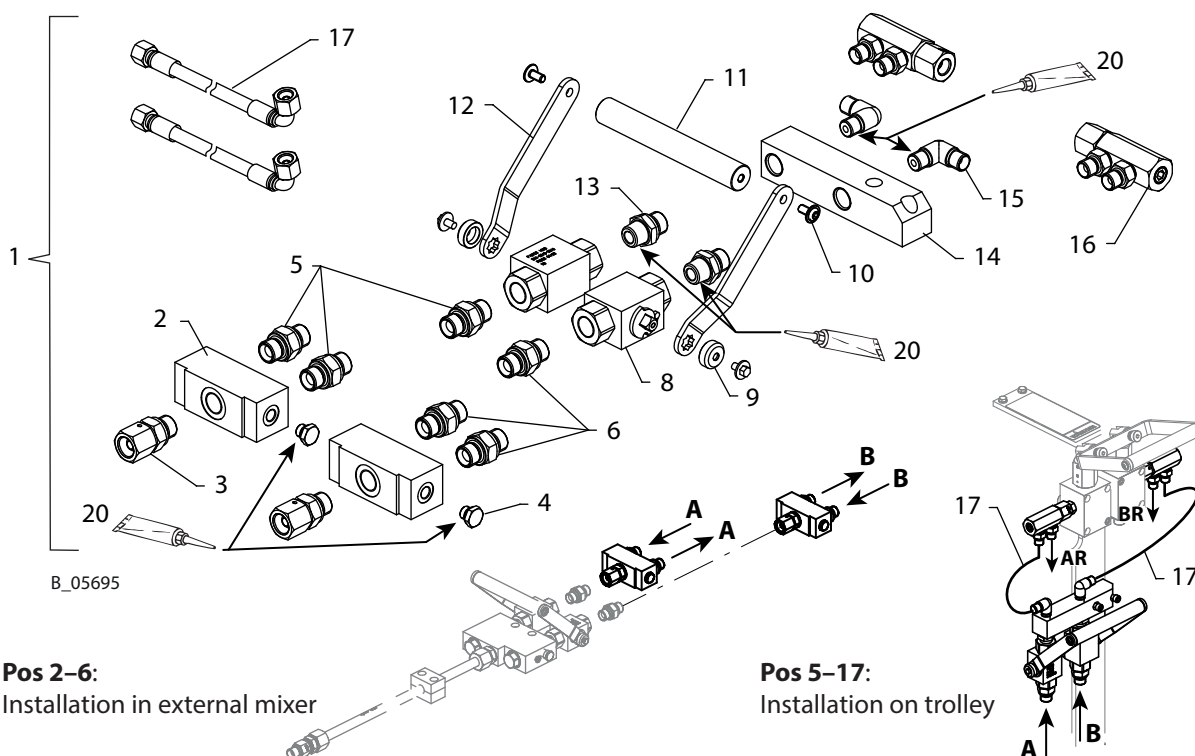


13.11.3 EXTERNAL CIRCULATION A3/8"-B3/8" AND A1/2"-B3/8"

Spare parts list for external circulation A3/8"-B3/8" and A1/2"-B3/8"

Pos	K	Stk	Designation	A3/8"-B3/8" Order No.	A1/2"-B3/8" Order No.
1		1	Circulation set A3/8 B3/8 2K PC	2365243	2366916
2		2	Solvent distributor	2333284	
3		2	Fitting, SF-FM-G3/8-G3/8-530 bar-SSt	2331371	
4		2	Plug 1/8"	2304311	
5		3	Fitting, DF-MM-G3/8-G3/8-530 bar-SSt	2330775	2330780
			Fitting, DF-MM-G1/2-G3/8-530 bar-SSt		
6		3	Fitting, DF-MM-G3/8-G3/8-530 bar-SSt	2330775	
8	◆	2	Ball valve PN 500 G3/8 DN10	2350087	
9		2	Spring washer	2349832	
10		2	Fillister head screw with flange	2325554	
11		1	Handle, red	2349830	
12		2	Side holder, 45 degree	2349776	
13		2	Fitting DF-MM-R3/8"-G3/8"-PN530-SSt	3676419	
14		1	Mounting for circulation	2365239	
15		2	Fitting, EF-MM-G1/4-R1/4-530 bar-SSt	2328186	
16		2	Circulation connection G1/4" cpl.	2339554	
17		2	HP hose DN6-PN325 FEP W-G 0.52 m	2333779	
20		1	Loctite® 542	9992831	
21		1	Molykote® DX grease	9992616	

◆ = Wearing parts

Pos. 21: Lubricate all stainless steel fittings with Molykote®, except those who explicitly request something different (e.g., Loctite®).

14 WARRANTY AND CONFORMITY DECLARATIONS

14.1 IMPORTANT NOTES REGARDING PRODUCT LIABILITY

As a result of an EC regulation effective from January 1, 1990, the manufacturer shall only be liable for his product if all parts originate from him or are approved by him, and if the devices are properly mounted, operated and maintained.

The manufacturer will not be held liable or will only be held partially liable if third-party accessories or spare parts have been used.

With genuine WAGNER accessories and spare parts, you have the guarantee that all safety regulations are complied with.

14.2 WARRANTY CLAIM

Full warranty is provided for this device:

We will at our discretion repair or replace free of charge all parts which within 36 months in single-shift, 18 months in double-shift or 9 months in triple-shift operation from date of receipt by the purchaser are found to be wholly or substantially unusable due to causes prior to the sale, in particular faulty design, defective materials or poor workmanship.

The type of warranty provided is such that the device or individual components of the device are either replaced or repaired as we see fit. The resulting costs, in particular shipping charges, road tolls, labour and material costs will be borne by us except where these costs are increased due to the subsequent shipment of the device to a location other than the address of the purchaser.

We do not provide warranty for damage that has been caused or contributed to for the following reasons:

Unsuitable or improper use, faulty assembly or commissioning by the purchaser or a third party, normal wear, negligent handling, defective maintenance, unsuitable coating products, substitute products and the influence of chemical, electrochemical or electrical agents, except when the damage is attributable to us.

Abrasive coating products such as red lead, emulsions, glazes, liquid abrasives, zinc dust paints and so forth reduce the service life of valves, packings, spray guns, nozzles, cylinders, pistons etc. Signs of wear traced back to these products are not covered by this warranty. Components that have not been manufactured by WAGNER are subject to the original warranty of the manufacturer.

Replacement of a component does not extend the period of warranty of the device.

The device should be inspected immediately upon receipt. To avoid losing the warranty, we or the supplier company are to be informed in writing about obvious faults within 14 days upon receipt of the device.

We reserve the right to have the warranty compliance met by a contracting company.

The services provided by this warranty are dependent on evidence being provided in the form of an invoice or delivery note. If the examination discovers that no warranty claim exists, the costs of repairs are charged to the purchaser.

It is clearly stipulated that this warranty claim does not represent any constraint on statutory regulations or regulations agreed to contractually in our general terms and conditions.

J. Wagner AG

14.3 CE DECLARATION OF CONFORMITY

In keeping with Directive 94/9/EC, we declare that the design of the 2K systems and their spray packs:

PROTEC 2K75-150/38	PROTEC 2K70-150/50	PROTEC 2K64-150/75	PROTEC 2K65-110/110
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complies with the following guidelines:

2006/42/EC	94/9/EC
2011/65/EU	2002/96/EC

When additional electrical equipment is present → also:

2004/108/EC

Applied standards, in particular:

DIN EN ISO 12100: 2010	DIN EN 14462: 2005+A1:2009
DIN EN 809: 1998+A1:2009 + AC:2010	DIN EN 12621: 2006 +A1: 2010
DIN EN ISO 4413: 2010	DIN EN 1127-1: 2011
DIN EN ISO 4414: 2010	DIN EN 13463-1: 2009
DIN EN ISO 13732-1: 2008	DIN EN 13463-5: 2011
DIN EN ISO 13857: 2008	DIN EN ISO/IEC 80079-34: 2011

When additional electrical equipment is present → also:

DIN EN 60079-14: 2014
DIN EN 61000-6-1: 2007
DIN EN 61000-6-2: 2005 +B: 2006
DIN EN 61000-6-3: 2007 +A1: 2011 +B1: 2012
DIN EN 61000-6-4: 2007 +A1: 2011
DIN EN 60204-1: 2006

Applied national technical standards and specifications, in particular:

DGUV regulation 100-500	TRBS 2153
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Identification:

CE  II 2 G c IIB T3/T4 Gb X

T3: Without dry running protection.

T4: With dry running protection.

EC Certificate of Conformity

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

Order number: 2352828

14.4 NOTES ON NATIONAL REGULATIONS AND GUIDELINES

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

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

WAGNER



Order No. 2352824
Edition 02/2016

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