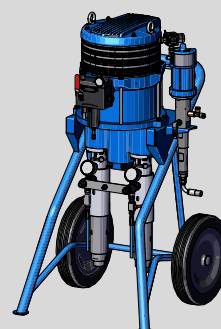
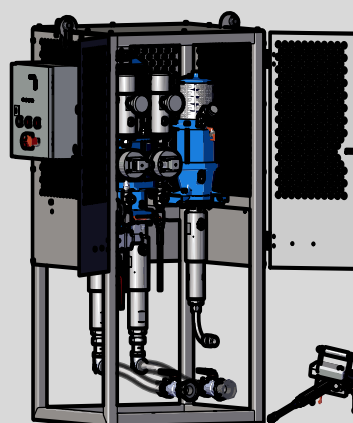
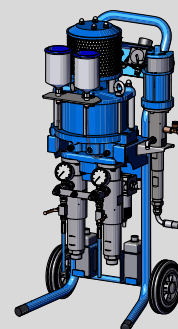
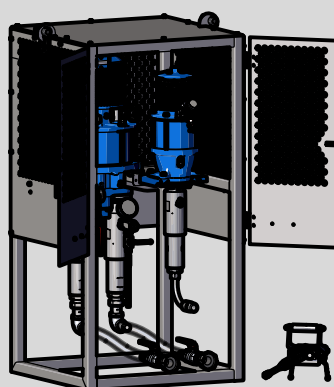


## Operation Manual

# INJECT 2K 230/333 RS

2K



Type:

230

333

Serial No.:



## EC declaration of conformity

in accordance with Annex II, No. 1 A of Machine Directive 2006/42/EC,  
as amended by 2009/127/EC

The company

**WIWA Wilhelm Wagner GmbH & Co. KG**

**35633 Lahnau**

**Gewerbestraße 1–3**

**Germany**

hereby declares that the machine  
type  
with serial no.

**INJECT 2K 230/333 RS**

conforms with the provisions of the above directives.

Responsible for documentation: **WIWA**, +49 (0)6441 609-0

Lahnau, April 1, 2025

Place, Date

A handwritten signature in black ink, appearing to read "Peter Turczak".

Dipl.-Ing. (FH) Peter Turczak  
Managing Director

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# 1 Foreword

Dear valued customer,

We are delighted that you have chosen one of our machines.

This operation manual is directed at the operating and maintenance personnel. It contains all information required in order to work with this machine.



The owner must ensure that the operating and maintenance personnel always have access to a copy of the operation manual in a language that they understand.

In addition to the operation manual, further information is also essential for the safe operation of the machine. Read and observe the directives and accident prevention regulations valid in your country.

In Germany, these are:

- DGV rule 100-500, chap. 2.29 "Processing coating materials",
- DGV rule 100-500, chap. 2.36 "Working with fluid jets",

both from the professional association for gas, district heating and water management.

We recommend enclosing all relevant directives and accident prevention regulations with the operation manual.

Furthermore, always observe the safety data sheets, manufacturer's instructions and processing guidelines for coating or conveyance materials.

If questions should arise, we would be happy to assist you.  
We wish you excellent working results with your machine

WIWA Wilhelm Wagner GmbH & Co. KG

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WIWA Wilhelm Wagner GmbH & Co. KG  
Gewerbestraße 1–3 • 35633 Lahnau • Germany  
Phone: +49 (0)6441 609-0 • Fax: +49 (0)6441 609-2450  
Email: [info@wiwa.de](mailto:info@wiwa.de) • Website: [www.wiwa.de](http://www.wiwa.de)

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## 2 Safety

This machine has been designed and manufactured taking into consideration all safety aspects. It conforms to the current state of the art and the applicable accident prevention regulations. The machine left the factory in faultless condition and guarantees a high level of technical safety. However, improper operation and misuse will pose a risk to:

- the life and limb of the operator or third parties,
- the machine and other property of the owner,
- the efficient function of the machine.

It is fundamentally prohibited to implement any method of work that has a negative influence on the safety of the operating personnel and the machine. All persons involved in the installation, commissioning, operation, care, repair and maintenance of the machine must have read and understood the operation manual beforehand – in particular the “Safety” chapter.

### **Your safety depends on it!**

We recommend that the machine owner have this confirmed in writing.

### 2.1 Explanation of symbols

Safety notes warn of potential accident risks and describe the measures required for accident prevention. In the **WIWA** operation manuals, safety notes are highlighted and labeled as follows:

#### **DANGER**

Signals a risk of accidents that are very likely to result in serious injuries and even death, if the safety note is not observed!

#### **WARNING**

Signals a risk of accidents that may result in serious injuries and even death, if the safety note is not observed!

#### **CAUTION**

Signals a risk of accidents that may result in injuries, if the safety note is not observed!



Signals important information for proper handling of the machine. A failure to observe this may result in damage to the machine or its environment.

Various pictograms are used in the safety notes for accident risks that may result in injury, depending on the hazard source.

Examples:



General risk of accident



Risk of explosion due to explosive atmosphere



Risk of explosion due to explosive substances



Risk of accident due to electricity or electrostatic charge



Warning of crushing



Warning of corrosive substances



Risk of injuries due to rotating machine parts



Risk of burning due to hot surfaces



Risk of freezing due to cold surfaces

The first line of the safety instructions indicates the personal protective equipment that must be worn. This is also highlighted and labeled as follows:



#### **Wear protective clothing**

Signals an instruction to wear the prescribed protective clothing, in order to prevent skin injuries due to the processing material or gases.



#### **Use eye protection**

Signals an instruction to wear protective goggles, in order to prevent eye injuries due to material spray, gases, vapors or dust.



#### **Use ear defenders**

Signals an instruction to wear ear defenders, in order to prevent damage to hearing caused by noise.



#### **Use respiratory protection**

Signals an instruction to use respiratory protection, in order to prevent damage to the respiratory tract caused by gases, vapors or dust.

**Wear protective gloves**

Signals an instruction to wear protective gloves in order to prevent injuries due to aggressive chemicals, burns when processing heated materials, or freezing due to contact with very cold surfaces.

**Wear safety shoes**

Signals an instruction to wear safety shoes, in order to prevent foot injuries due to falling, toppling or rolling objects, as well as slipping on slippery floors.



Signals references to directives, work instructions and operation manuals that contain very important information and must be observed.



Indicates a special note on explosion protection.



Indicates a special note on grounding.

## 2.2 Safety notes

**WARNING**

Always remember that this machine operates at high pressures and can cause life-threatening injuries if handled incorrectly!

Do not leave the machine unattended during operation. You must be able to intervene immediately in an emergency.

Do not insert tools or other objects into the ventilation openings of motors or pumps and make sure that no dirt gets inside, otherwise injuries and damage to the machine may occur.



Always observe and follow all information in this operation manual and in the separate operation manuals for the individual machine parts and optional accessories.

## 2.2.1 Working pressure



### WARNING

Parts that are not designed for the maximum permissible working pressure may rupture and cause serious injuries.

- It is essential to observe the prescribed maximum working pressures for all parts. With varying working pressures, the lowest value always applies as the maximum working pressure for the complete machine.
- Material hoses and hose assemblies must comply with the maximum operating pressure including the required safety factor.
- Material hoses may not exhibit leakage, kinks, signs of wear or bulges.
- Hose assemblies must be tight.

## 2.2.2 Risks due to the injection jet



### WARNING

The material exits the mixing unit under very high pressure. The injection jet can cause serious injuries through its cutting action, or by penetrating the skin or eyes.

- Never aim the mixing unit at yourself, other persons or animals!
- Never hold your fingers or hand in front of the mixing unit!
- Never reach into the material jet!



### WARNING

An unintended ejection of material from the mixing unit can cause personal injury and property damage.

- Close all levers on the mixing unit during each work interruption!
- Check the functionality of all levers on the mixing unit before each commissioning!

### 2.2.3 Risks due to electrostatic charge



#### WARNING

The high flow velocities in the airless or AirCombi spray process can result in an electrostatic charge. Static discharges can result in fire and explosions.

- Ensure that the machine is correctly grounded!
- Also ground the object that is to be coated.
- Never spray solvents or materials containing solvents into narrow-mouthed cans or drums with a bung opening!
- Only use electrically conductive material hoses. All original material hoses from **WIWA** are conductive and designed for our devices.
- Only use electrically conductive accessories/accessory parts.



#### WARNING

Dirty machines can become electrostatically charged. Static discharges can result in fire and explosions.

- Keep the machine clean.
- Always perform cleaning work outside of EX zones.

### 2.2.4 Risks due to hot or cold surfaces



#### CAUTION

When using material heaters, the machine surfaces may become hot. A risk of burns exists.

- When processing heated materials always wear protective gloves with forearm protection.



#### CAUTION

Air motors can become very cold during operation. Local frostbite can occur due to contact with very cold surfaces.

- Prior to all work on the machine, heat air motors up to a temperature above 10°C.
- Wear suitable protective gloves!

### 2.2.5 Explosion protection

The following short designations are used in the instructions of **WIWA**:


- Ex protection: Explosion protection
- Ex area: potentially explosive or non-explosion protected area



- Non-Ex area: non-explosive or explosion protected area
- Ex zone: Explosion protection zone according to ATEX Directive
- ATEX knowledge: Knowledge of explosion protection according to ATEX Directive



Machines and accessories that are not explosion-protected may not be used in operating facilities that fall under the explosion protection ordinance!

Explosion-protected machines can be identified by the corresponding  mark on the type plate and/or the ATEX-declaration of conformity provided.

When using the machine in Ex zones, the specialist personnel must have knowledge of ATEX.

Explosion-protected machines meet the requirements of the ATEX Directive for the device group, device category and temperature class cited on the type plate or in the declaration of conformity.

The owner is responsible for designating the zoning in accordance with ATEX Directive, Appendix II, No. 2.1–2.3 in accordance with the stipulations of the responsible regulatory body. The owner is required to check and ensure that all technical data and labeling comply with the applicable stipulations according to ATEX.

For applications where a failure of the device could lead to dangers to personnel, the owner is required to implement appropriate safety measures.

Please note that some parts have their own type plate with separate labeling according to ATEX. In this case, the lowest explosion protection of all labels displayed applies to the entire machine.

If agitators, heaters or other electrically operated accessories are attached, the explosion protection must be checked. Plugs for heaters, agitators, etc. that do not have explosion protection may only be plugged in outside of areas that fall under the explosion protection ordinance, also if the accessory itself is explosion protected.

## 2.2.6 Health risks



### CAUTION

Depending on the materials being processed, solvent vapors may arise, which could cause damage to health and property.

- Make sure the workplace is sufficiently ventilated and aired.
- Always observe the safety data sheets and processing instructions of the material manufacturer.



When handling paint, solvents, oils, greases, and other chemical substances, observe the safety and portioning instructions of the manufacturer and the generally applicable regulations.



Only use suitable skin protection, skin cleansing and skincare products for cleansing the skin.

In systems that are closed or under pressure, dangerous chemical reactions may arise, if parts produced from aluminum or galvanized parts come into contact with 1,1,1 - trichloroethane, methylene chloride or other solvents that contain halogenated chlorinated hydrocarbons (CFCs). If you wish to process materials that contain the aforementioned substances, we recommend that you contact the material manufacturer to clarify their suitability for use.

A range of machines in rust and acid-resistant designs is available for these types of materials.

### 2.2.7 Risks when processing isocyanates

Isocyanates (Iso) are catalysts that are used for two-component foams and coatings. Isocyanates react to moisture (e.g. moisture in the air) and form small, hard, abrasive crystals that release into the material. A film forms on the surface and the material begins to gel, whereby the viscosity is increased. The severity of the film formation as well as the speed of crystallization are dependent on the mixing ratio, the moisture and the temperature.

If the partially hardened material is worked with, the performance of the machine decreases. The durability of all parts that come into contact with the material is shortened.

In order to prevent isocyanate from reacting with moisture:

- Never store isocyanate in open containers.
- Always use a sealed container with a silica gel filter in the ventilation opening.
- Use moisture-resistant material hoses.
- Do not use water or solvents which could contain moisture for cleaning or test purposes.
- Do not use recovered solvents.
- Always keep the solvent container closed when not in use.
- Lubricate threaded connections during assembly.

## 2.3 Safety features



#### WARNING

If one of the safety features is missing or is not fully functional, the operating safety of the machine is not guaranteed!

- Put the machine out of operation immediately if you detect safety feature defects or any other faults on the machine.
- Only put the machine back into operation once the faults have been fully rectified.

The machine is equipped with the following safety features:

- Master switch (only for model with Inject Guard),
- Emergency stop palm button (only for model with Inject Guard),
- Compressed air shut-off valves,
- Safety valves,
- Ground cable,
- Protective grating.

Check the safety features on the machine:

- Prior to commissioning,
- Always prior to starting work,
- After all set-up work,
- After all cleaning, maintenance, and repair work.

**Checklist on the pressureless machine:**

- ☐ Function of the master switch OK?
- ☐ Function of the emergency stop palm button OK?
- ☐ Mobility of the compressed air shut-off valves OK?
- ☐ Seal on the safety valves OK?
- ☐ Safety valves free of external damage?
- ☐ Ground cable free of damage?
- ☐ Connections of the ground cable to the machine and to the conductor OK?
- ☐ Protective grating installed and free of damage?

**Checklist on the pressurized machine:**

- ☐ Function of the safety valve OK? (For function test, see section 8.5 on page 76.)



When checking additional safety features, observe the operation manuals for the optional accessories.

### 2.3.1 Master switch

Only for model with Inject Guard:  
The machine can be completely switched off with the master switch on the control cabinet. In switch position "0", the power supply is interrupted.



#### CAUTION

Even when the machine is switched off, individual parts can remain under pressure! Therefore, it is always necessary to fully relieve the pressure prior to any maintenance and repair work.

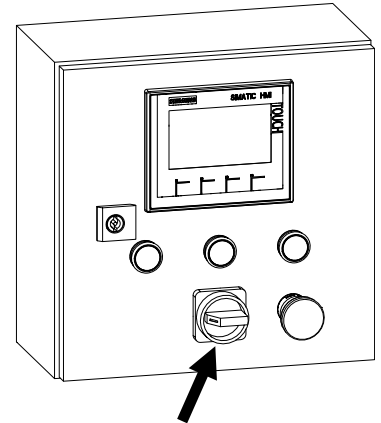


Fig. 1: Master switch

### 2.3.2 Emergency stop button

Only for model with Inject Guard:  
With the emergency stop button on the control cabinet, the machine can be switched off as quickly as possible in an emergency. By pressing this button, the power supply is interrupted and the pneumatic shut-off valve on the maintenance unit is closed.

The emergency stop button locks in the pressed position. To unlock it, turn it clockwise.

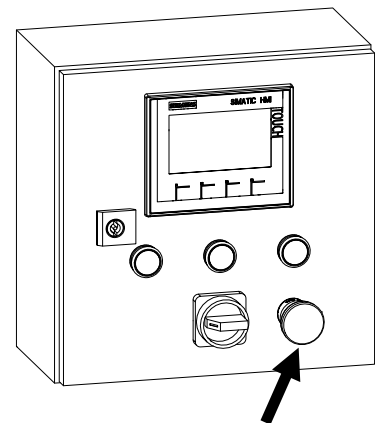


Fig. 2: Emergency stop button on the control cabinet

### 2.3.3 Safety valves

Safety valves are located on the machine:

- on the air motor of the proportioning pump,
- on the air motor of the flush pump (optional, behind the covering of the muffler).

The safety valves prevent the maximum permissible air inlet pressure from being exceeded.

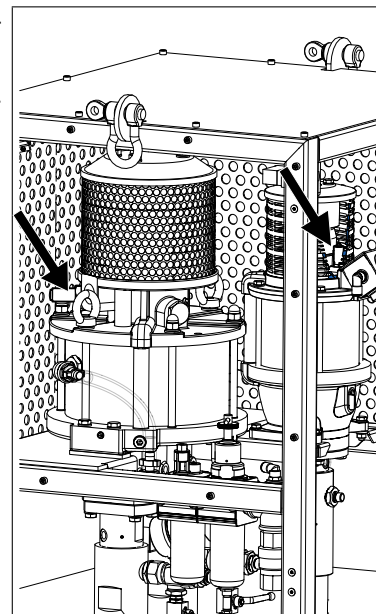
If the air inlet pressure for the machine components monitored by the safety valve exceeds the limit value setting, the safety valve installed at this location discharges. (Functionality test see section 8.5.1 on page 76.)



#### WARNING

If the maximum permissible air inlet pressure is exceeded, parts may rupture. The consequences may be personal injuries and property damage.

- ▶ Operate the machine only with functional safety valves!



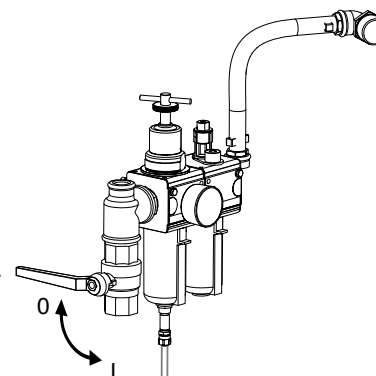
**Fig. 3:** Safety valves on proportioning pump and flush pump (example)

### 2.3.4 Compressed air shut-off valves

The compressed air shut-off valves are used to interrupt the compressed air supply to the individual machine components, e. g. to the proportioning pumps.

The functional principle of all compressed air shut-off valves installed on the machine is the same:

- ▶ Open ⇒ Position ball valve in the flow direction
- ▶ Close ⇒ Position ball valve transverse to the flow direction



**Fig. 4:** Compressed air shut-off valve on the maintenance unit (example)



After shutting off the air, the machine remains under pressure. It is therefore necessary to fully relieve the pressure prior to any maintenance and repair work!

### 2.3.5 Ground cable

The ground cable serves to prevent electrostatic charging of the machine.

The ground cable is already connected to the machine at the time of delivery (e. g. to the high pressure filter, the frame, the grounding rail, or the like).

If the ground cable is lost or defective, replace it immediately (art. no. 0659675)!

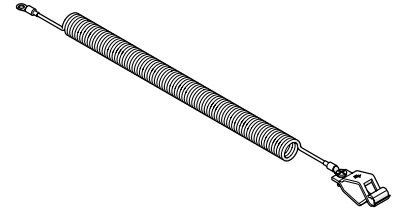


Fig. 5: Ground cable



The grounding points on this machine are labeled with the symbol shown on the left.

### 2.3.6 Protective grating

The protective grating covers movable parts of the machine and protects against crushing of hands which can result when reaching in.

Never operate the machine without the protective grating!

Always close the doors during operation.



#### WARNING

The protective grating may only be removed for repair and maintenance purposes.

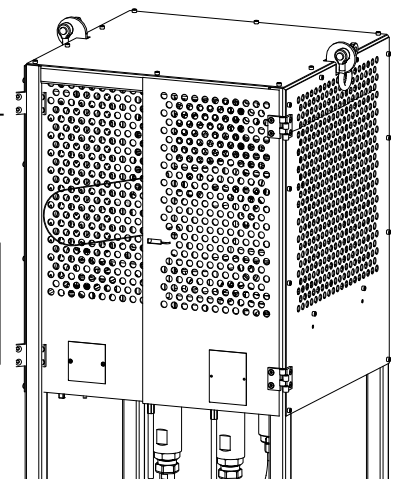


Fig. 6: Protective grating

## 2.4 Operating and maintenance personnel

### 2.4.1 Obligations of the owner

The owner:

- is responsible for training the operating and maintenance personnel,
- must instruct the operating and maintenance personnel on correct handling of the machine, and on wearing the correct work clothing and protective equipment,
- must make work aids, such as e. g. lifting gear for transporting the machine or container, available to the operating and maintenance personnel,

- must make the user manual accessible to the operating and maintenance personnel and must ensure that it remains constantly available,
- must ensure that the operating and maintenance personnel have read and understood the user manual.

Only then are they permitted to put the machine into operation.

## 2.4.2 Personnel qualifications

Differentiation is made between two groups of personnel, depending on their qualifications:

- **Instructed operators** have received verified instruction from the machine owner regarding the tasks entrusted to him and the possible risks if the correct procedure is not followed.
- **Trained personnel** have received instruction provided by the machine manufacturer and are capable of carrying out maintenance and repair work on the machine, independently recognizing possible dangers and avoiding risks.

## 2.4.3 Authorized operator

Activity	Qualification
Set-up and operation	Instructed operator
Cleaning	Instructed operator
Maintenance	Trained personnel
Repair	Trained personnel



Children, young persons under the age of 16 and untrained personnel may not operate this machine.

## 2.4.4 Personal protective equipment



### Wear protective clothing

Always wear the protective clothing stipulated for your working environment (e.g. anti-static protective clothing in potentially explosive areas) and also observe the recommendations in the safety data sheet of the material manufacturer.



### Use Eye Protection

Wear protective goggles in order to prevent eye injuries due to material spray, gases, vapors or dust.

**Use Ear Defenders**

Suitable noise protection equipment must be made available to the operating personnel. The machine owner is responsible for compliance with the accident prevention regulation "Noise" (BGV B3). It is therefore necessary to pay particular attention to the conditions at the installation site – for example, noise pollution can increase if the machine is installed in or on hollow bodies.

**Use respiratory protection**

Although the airless and AirCombi spray processes minimize the paint mist with the right pressure adjustment and correct work method, we recommend that you use a respiratory protection mask.

**Wear Protective Gloves**

Wear anti-static, chemical-resistant protective gloves with forearm protection to prevent injuries due to aggressive chemicals, burns when processing heated materials, or freezing due to contact with very cold surfaces.

**Wear Safety Shoes**

Wear anti-static safety shoes, in order to prevent foot injuries due to falling, toppling or rolling objects, as well as slipping on slippery floors.

## 2.5 Warranty and liability

Except when otherwise stipulated,

- our General Terms and Conditions (GTC) apply for deliveries within Germany,
- our Orgalime SI 14 apply for deliveries to all other countries.

### 2.5.1 Spare parts

- When repairing and maintaining the machine, original spare parts from **WIWA** must be used.
- If spare parts are used that have not been produced or supplied by **WIWA**, the warranty is void and all liability shall be excluded.

### 2.5.2 Accessories

- If you use original **WIWA** accessories, their suitability for use in our machines is guaranteed.
- If you use third-party accessories, these must be suitable for the machine – in particular with respect to the working pressure, the current connection data, the connection variables, and use in Ex-zones, if applicable. **WIWA** will not be liable for any damage or injuries due to these parts.



- It is essential to observe the safety provisions applicable to the accessories. You can find these safety provisions in the separate operation manuals for the accessories.

## 2.6 How to respond in an emergency

### 2.6.1 Shutting down the machine and relieving the pressure

In an emergency, bring the machine to an immediate standstill and relieve the pressure.

1. Close the compressed air shut-off valve.
2. Actuate the lever on the mixing unit again briefly so that no material pressure is present.



#### CAUTION

Despite pressure relief, a residual pressure can remain in the machine.

- Exercise particular caution when proceeding further.



This process is not suitable for decommissioning. The machine is not flushed.

- For controlled decommissioning, please observe section 7.7 on page 69.
- After remedying the emergency situation, the machine must be flushed (see section 7.3 on page 66). Observe the pot life of the materials used.

### 2.6.2 Leakage



#### WARNING

In case of leakage, material may escape under very high pressure and cause serious physical injuries and property damage.

- Stop the machine immediately and relieve the pressure.
- Tighten threaded connections and replace defective parts (must be performed by trained personnel).
- Do not seal leakage at connections and on high pressure hoses with the hand or by wrapping.
- Do not patch material / high pressure hoses!
- Check hoses and threaded connections for leak-tightness before starting the machine up again.

### 2.6.3 Injuries

In case of injuries caused by processing material or cleaning agents, always have the safety data sheet ready to show to the doctor (supplier or manufacturer address, their telephone number, material designation and material number).

### 3 Description

The **INJECT 2K 230/333 RS** has been designed according to your specific requirements (material to be processed, mixing ratio, output, etc.).

The proportioning pump conveys both components, correctly metered, to the mixing unit, in which the two components are combined. The precise metering of the two components is ensured by the fixed mixing ratio. Because the mixing of the two components only takes place in the mixing unit, only a very small quantity of cleaning agent is required.

The unit is optionally equipped with a flush pump and/or mixing unit.

The flush pump facilitates the immediate flushing of all parts that have come into contact with the mixed material.

An external mixing unit is available with different coupling pieces for the packer connection.

The following combinable designs are available depending on customer requirements:

- with/without Inject Guard attachment kit
- with stand frame
- on cart
- with/without flush pump
- with/without protective grating (mining)

The technical data for your machine can be found in section 10 on page 88 or on the type plate.

#### 3.1 Intended use

The **INJECT 2K 230/333 RS** is intended for use in building renovation or mining to, among other things, seal cracks and apply moisture barriers. Only injection resins, water-based acrylate gels and silicate injectors can be processed with it.




Intended use also includes:

- observing the technical documentation and
- complying with the operating, maintenance and servicing guidelines.

## 3.2 Erroneous use

Any use other than that stipulated in the technical documentation is deemed to be erroneous use and will void the warranty.

Erroneous use applies in particular if

- impermissible materials are processed,
- unauthorized modifications or changes are implemented,
- the safety features are removed, modified or bypassed,
- spare parts are installed that were not manufactured or delivered by **WIWA** (see section 2.5.1 on page 14),
- accessories are used that are not suitable for the machine (see section 2.5.2 on page 14),
- machines without  identification are used in potentially explosive atmospheres,
- the machine is operated outside of the operating limits according to the type plate.

### 3.3 Contruction

#### 3.3.1 Design with stand frame and without Inject Guard

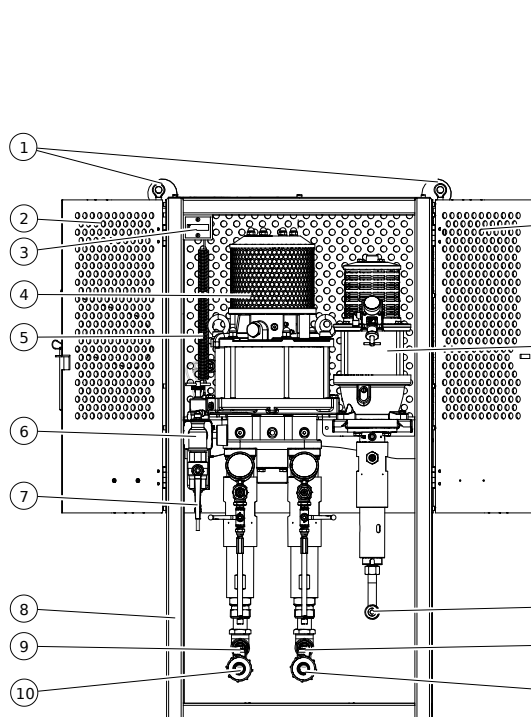


Fig. 7: Inject 230 design without control cabinet

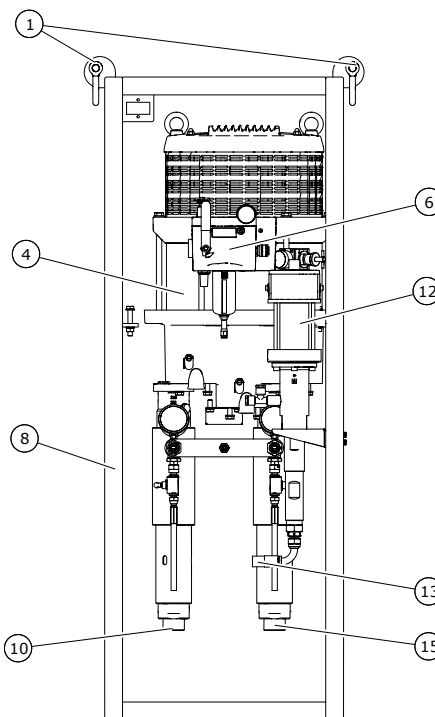
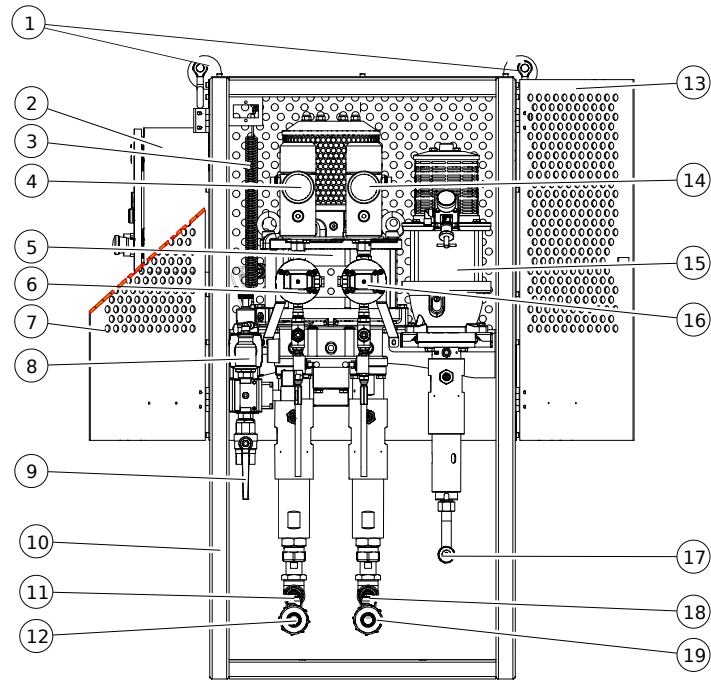


Fig. 8: Inject 333 design without control cabinet

No.	Designation
1	Shackle
2	Door, left
3	Stroke counter
4	Proportioning pump
5	Ground cable
6	Maintenance unit
7	Compressed air connection with compressed air shut-off valve
8	Frame
9	Shut-off valve on component B material supply
10	Connection for component B material supply
11	Door, right
12	Flush pump
13	Connection for flushing agent supply
14	Shut-off valve on component A material supply
15	Connection for component A material supply

### 3.3.2 Design with stand frame and with Inject Guard



**Fig. 9:** Inject 230 design with control cabinet

No.	Designation
1	Shackle
2	Control cabinet
3	Ground cable
4	High pressure filter for component B
5	Proportioning pump
6	Flow rate measuring cell for component B
7	Door, left
8	Maintenance unit
9	Compressed air connection with compressed air shut-off valve
10	Frame
11	Shut-off valve on component B material supply
12	Connection for component B material supply
13	Door, right
14	High pressure filter for component A
15	Flush pump
16	Flow rate measuring cell for component A
17	Connection for flushing agent supply
18	Shut-off valve on component A material supply
19	Connection for component A material supply

### 3.3.3 Design with cart

#### Inject 2K 230 with flush pump on cart

No.	Description
1	Material outlet with bursting disk safety device
2	Proportioning pump
3	Release agent container
4	Cart
5	Regulator cluster
6	Flush pump (optional)
7	Water separator
8	Fog oiler
9	Material collecting vessel for bursting disk safety device

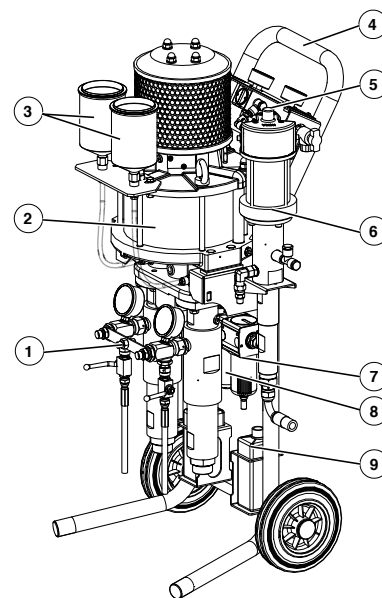


Fig. 10: Inject 230

#### Inject 2K 333 with flush pump on cart

No.	Description
1	Proportioning pump
2	Flush pump
3	Material outlet
4	Cart
5	Maintenance unit

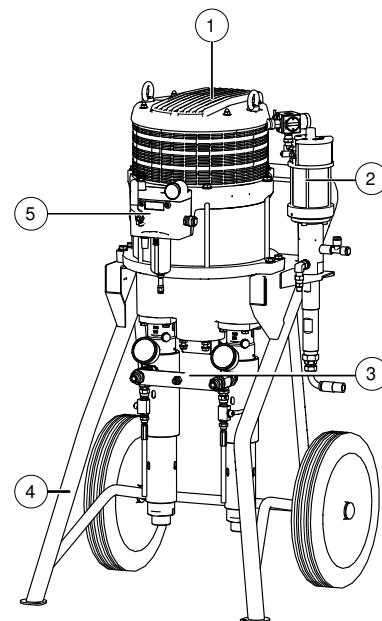
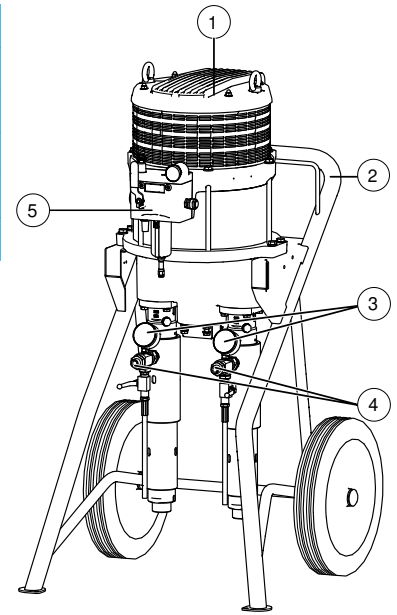


Fig. 11: Inject 333 with flush pump

**Inject 2K 333 without flush pump on cart**

No.	Description
1	Proportioning pump
2	Cart
3	Pressure gauge
4	Material outlet
5	Maintenance unit

**Fig. 12:** Inject 333

### 3.4 Inject Guard

Using the Inject Guard, the following values can be documented for each bore hole:

- ▶ the flow rate,
- ▶ the injection pressure and
- ▶ the injection temperature.

The attachment kit includes:

- ▶ a control cabinet with touch display,
- ▶ flow rate measuring cells with high pressure filter for components A and B and
- ▶ equipping the mixing unit with pressure sensors and temperature sensors and an LED signal light.

All values are recorded and logged with a data logger.

The data can be called up directly on the control cabinet display or externally using a cell phone or tablet (neither are included in the scope of delivery).






Observe and follow the separate operation manual for the data logger.



### 3.4.1 Control cabinet

The control cabinet features the following control elements:

No.	Designation / function	Symbol
1	Control module with touch screen (see section 4 on page 31)	
2	not used	
3	Switch the machine to "Stop" and acknowledge error messages	
4	Emergency stop mushroom button	
5	Master switch	
6	Push button to switch on the machine	

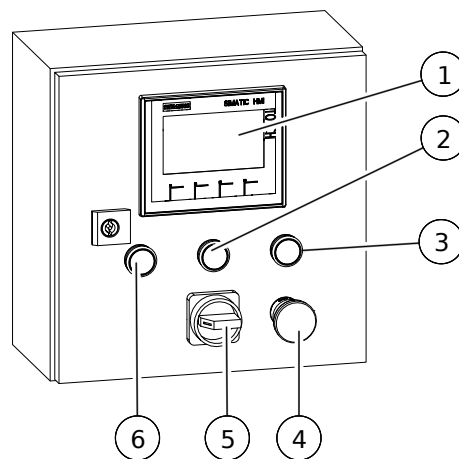


Fig. 13: Control cabinet

## 3.5 Compressed air supply

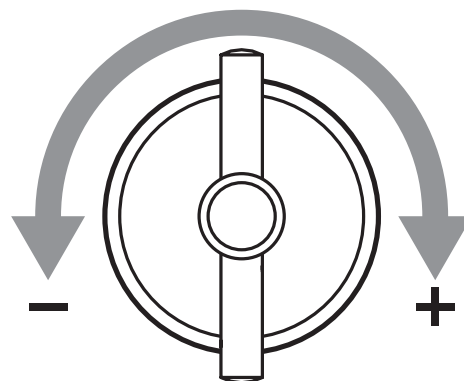
The connection of the compressed air line provided by the owner occurs at the maintenance unit or regulator cluster.

The compressed air supply for the entire machine is opened or interrupted with the compressed air shut-off valve.

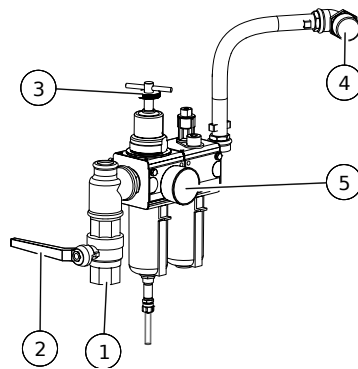
The compressed air supply for the proportioning pumps is controlled with a compressed air regulator. The existing pressure can be read on the pressure gauges.

The functional principle of all compressed air regulators installed on the machine is the same:

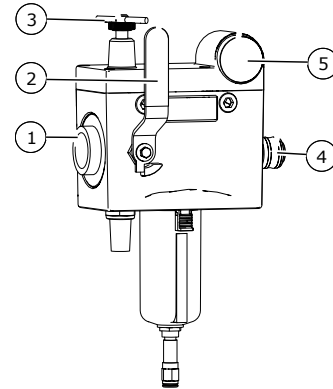
- To increase the pressure, ⌚ turn clockwise,
- To decrease the pressure, ⌚ turn counter-clockwise.



### Model with maintenance unit



**Fig. 14:** Maintenance unit on Inject 230 with stand frame

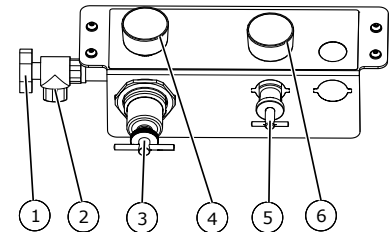


**Fig. 15:** Maintenance unit on Inject 333 with stand frame or cart

No.	Designation
1	Compressed air connection for the compressed air supply provided by the owner
2	Compressed air shut-off valve
3	Compressed air regulator for proportioning pump
4	Compressed air connection for proportioning pump
5	Pressure display for proportioning pump

### Model with regulator cluster

No.	Description
1	Compressed air shut-off valve
2	Compressed air connection for the compressed air supply provided by the owner
3	Compressed air display for proportioning pump
4	Compressed air regulator for proportioning pump
5	Compressed air display for flush pump
6	Compressed air regulator for flush pump



**Fig. 16:** Regulator cluster on Inject 230 on cart

## 3.6 Proportioning pump

The proportioning pump conveys both components of the processing material separately to the mixing unit during spraying mode and circulation mode.

The air motor generally drives three fluid pumps — two for component A and one for component B. The mixing ratio is determined by the ratio of the pump sizes.

For a mixing ratio of 1:1, two equally sized fluid pumps are used, one for each of the components A and B.



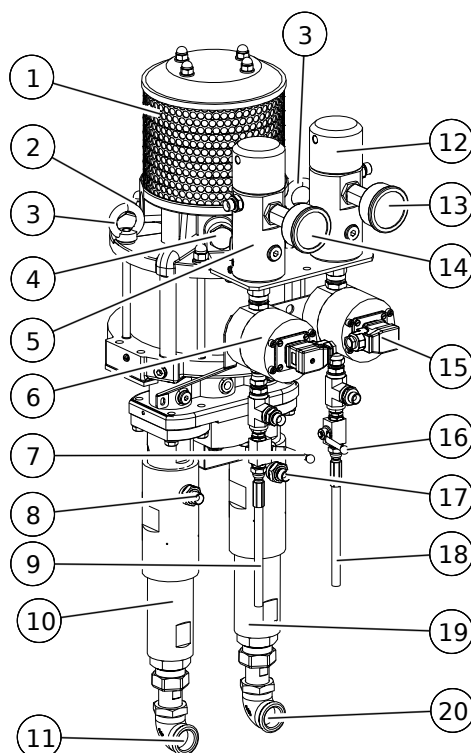
#### CAUTION

If only two fluid pumps are connected, the center connection is secured with a sheet metal cover. This may not be removed, otherwise there is a risk of injury from moving parts!

Depending on the material requirements, the mixing ratio can be adjusted by exchanging the fluid pumps. All that is needed for this are the right tools and the corresponding fluid pumps. Depending on the pump combination, mixing ratios of 1:1 to 10:1 are possible.



Changing the mixing ratio changes the pressure ratio and therefore also the maximum permissible air inlet pressure. In this case, the safety valve for the proportioning pump must be replaced after consultation with **WIWA**.



**Fig. 17:** Proportioning pump for the model with control cabinet

No.	Description
1	Muffler
2	Safety valve
3	Crane eyes
4	Compressed air connection
5*	High pressure filter for component B

No.	Description
6*	Flow rate measuring cells for component B
7	Relief valve for component B
8	Material outlet for component B
9	Relief hose for component B
10	Fluid pump for component B
11	Material inlet for component B
12*	High pressure filter for component A
13**	Material pressure display for component A
14**	Material pressure display for component B
15*	Flow rate measuring cells for component A
16	Relief valve for component A
17	Material outlet for component A
18	Relief hose for component A
19	Fluid pump for component A
20	Material inlet for component A

\*) only for the model with control cabinet

\*\*) only for the model without control cabinet directly on the material outlet



The eyebolts are designed for lifting the proportioning pump for maintenance and repair purposes. The complete machine must not be lifted at the eyebolts!

### 3.7 Material supply

The material is fed to the proportioning pumps using suction hoses.

The suction hoses are connected to the material inlet of the fluid pumps. Depending on the design, the material flow can be released or interrupted with a ball valve.

For suction from the material drum, the owner must install a suction tube on the suction hose.

No.	Description
1	Connection to material inlet of the fluid pump
2	Suction hose
3	Ball valve (optional)
4	Connection to material container

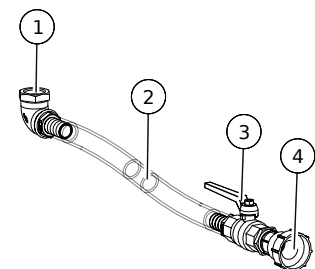


Fig. 18: Suction hose

### 3.8 Flush pump

With the help of the flush pump, all parts of the machine that have come into contact with the mixed material are flushed within the pot life specified by the manufacturer. The flush pump operates in flushing mode to transport the flushing agent from the flushing agent container to the mixing unit.

Customer-specific flush pumps with the size 27.33 or 72.32 can be used

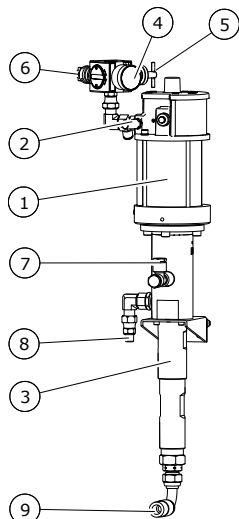


Fig. 19: Flush pump with the size 27.33

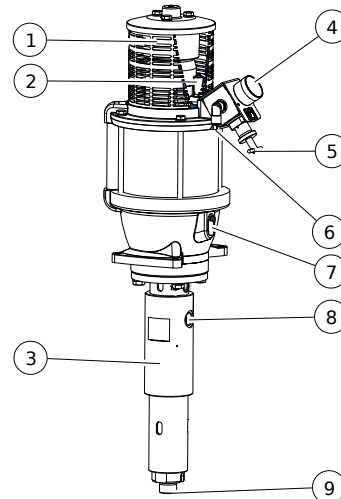


Fig. 20: Flush pump with the size 72.32

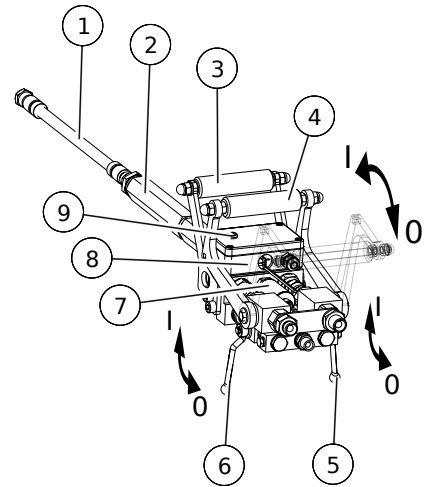
No.	Designation
1	Air motor
2	Safety valve
3	Fluid pump
4*	Pressure gauge for monitoring the air inlet pressure
5*	Compressed air regulator
6*	Compressed air connection
7	Filler opening for release agent
8	Material outlet
9	Material inlet

\*) For the model with cart, these parts are located on the regulator cluster, see section 3.5 on page 23.

### 3.9 Mixing unit

The two components of the processing material are combined in the mixing unit. The actual mixing takes place in the static mixer, which is mounted at the material outlet of the mixing unit. Additional accessories can be mounted to the static mixer by the owner, e.g. coupling pieces for the packer.

No.	Designation
1	Short material hose with connection for packer
2	Static mixer
3	Handle
4	INJECTION / STOP one-hand lever
5	FLUSHING B ball valve
6	FLUSHING A ball valve
7*	Pressure sensor
8*	Switch cabinet
9*	LED signal light



\*) only for model with Inject Guard

Fig. 21: Mixing unit

Using the one-hand lever and both ball valves, the operating modes “Injection”, “Stop”, “Flushing A” and “Flushing B” can be set as follows:

Lever	One-hand lever	Flushing A ball valve	Flushing B ball valve
Injection	I	0	0
Stop	0	0	0
Flushing A	0	I	0
Flushing B	0	0	I



Open and close the flushing valves multiple times in alternation during flushing to ensure that each side of the mixer block is flushed out separately. Finally, flush with both ball valves simultaneously.



You can extend the life span of the ball valves if the levers

- ▶ are not activated while the pressure is high and
- ▶ are always pushed to the end stops in the desired position.

#### Meaning of the signal light:

LED signal	Meaning
Off	Injection process completed. Monitoring mode must be activated, i.e. in the “Filling setup” menu window, the monitoring of the injection pressure or the output volume was selected and subsequently confirmed in the main menu. The one-hand lever can be set to “Stop”
Slow flashing	Error message, the unit switches off.
Fast flashing	The unit is in fill mode ⇒ <b>Filling setup</b> button was pressed. As soon as the set material quantity has been conveyed, the unit goes into monitoring mode.

## 3.10 Optional expansions and accessories

**WIWA** offers a comprehensive range of accessories for the optimum preparation and processing of processing materials. The accessories required are configured on a customer-specific basis for each machine. The following list contains just some of the most common accessories and expansions.

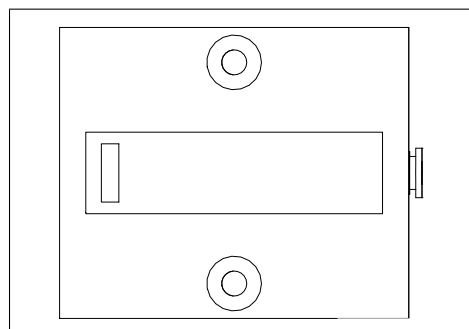
The detailed accessory catalog can be found at [www.wiwa.de](http://www.wiwa.de). For further information and order numbers, you can also contact an approved **WIWA** dealer or **WIWA** customer service.



Observe and follow the separate operation manuals for all accessories used.

### 3.10.1 Stroke counter

The stroke counter records the number of double strokes performed by the proportioning pump, from which conclusions can be drawn about the discharge volume.



**Fig. 22:** Stroke counter

The discharge volume can be calculated as follows:

$$\frac{\text{transport volume per double stroke} \times \text{number of double strokes}}{1000} = \text{discharge volume in liters}$$

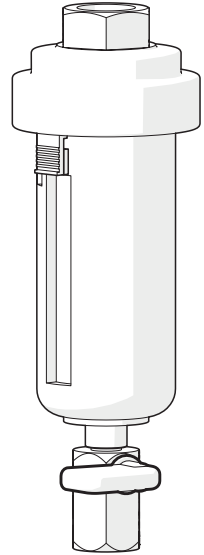
### 3.10.2 Silica gel filter

A silica gel filter is a moisture absorption filter. Silica gel filters are used if there is a need to protect materials sensitive to humidity from reacting with the moisture in the air.

A silica gel filter contains granules which are able to absorb high levels of moisture. Air, which flows into the material drum, must come through the silica gel filter, where it passes through the granules that absorb the moisture from the air.



Observe and adhere to the separate user manual for the silica gel filter.



**Fig. 23:** Silica gel filter



## 4 Control module for the Inject Guard

After switching on the machine, the touch screen for the control module initially displays the start screen. After a few seconds, it automatically switches to the overview. The overview is the basic display for the controls.



Fig. 24: Start screen

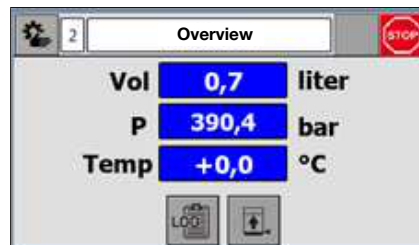


Fig. 25: Overview



Operate the touch screen only with your fingers or with a suitable stylus! Other objects (e. g. screwdriver) damage the touch screen.



Some functions of the control module are optionally and can be switched on or off. As a result, your display may differ from the (exemplary) illustrations in these instructions.

### 4.1 Access to the website

You can log into the control module of the unit with a cell phone or tablet via a W-Lan connection.

Here you will have access to:

- all operating data, such as packer, construction section, batch and user numbers,
- the shut-off parameters for pressure and volume,
- day and total counters as well as
- an overview of the actual values for the pressure and volume of both components
- all data is recorded with a data logger

In case of a fault, the background color of the screen switches to red.



It is only possible to enter and check certain parameters. Operation of the unit cannot take place from here.

## 4.2 Menu window

The header is structured the same in all menu windows for the controls.



Fig. 26: Header for the menu window

No.	Designation or description
1	Using the <b>Home</b> button, you can return to the basic display (overview) or the main menu from all menu windows for the controls.
2	Menu window number
3	Menu window name
4	The warning symbol appears if there is a fault (alarm).
5	Display of the operating mode

### 4.2.1 Fault display



If a fault (alarm) exists, a warning symbol highlighted in yellow is displayed in the header of all menu windows.

The error is referenced directly in an additional pop-up window.

If the unit is connected to a cell phone or tablet via W-Lan, the error message is indicated by a red light on the screen.

### 4.2.2 Display of the operating mode

The currently selected operating mode is displayed by the symbol on the far right in the title line. The following symbols can appear:



Filling



Injection



Control measurement or ratio check



Stop

### 4.2.3 Navigation

The individual menu windows can be selected via the corresponding buttons in the overview, main menu, or set-up menu. Furthermore, the following standard functions are available for navigation in the menu structure:



**Home:** return to the basic display (overview)



**Level up:** change to the next higher menu level



**Forward:** page forward on the same menu level



**Back:** page back on the same menu level



**Logout:** log out of the current menu and return to the main menu

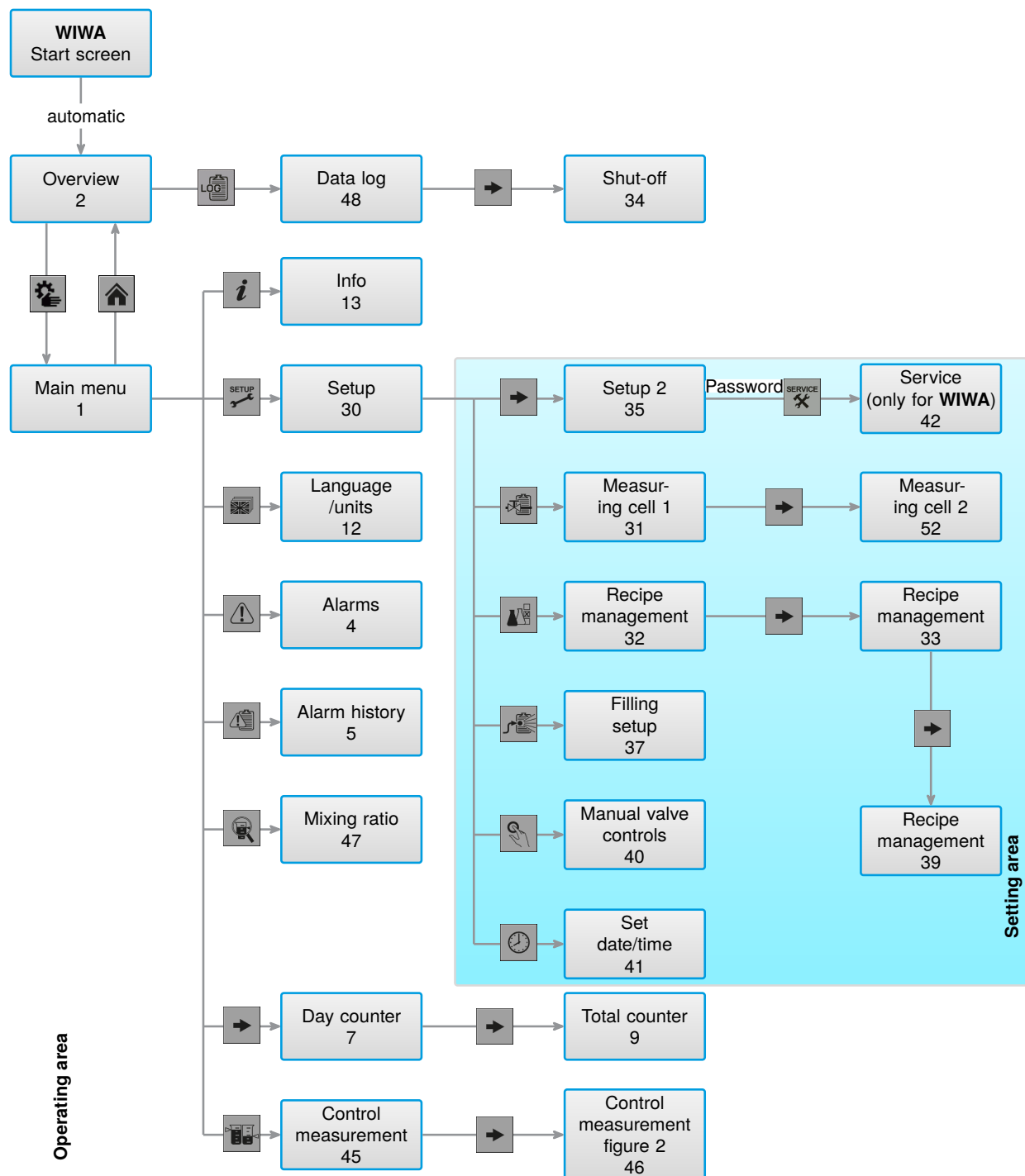


Meaning of the color marking:

- green ⇒ selection active,
- gray ⇒ selection not active.

#### 4.2.4 Menu structure

The controls are divided into two areas - the generally accessible operating area and the password-protected settings area.



## 4.3 Operating area

All operating functions can be performed with the buttons in the overview and in the main menu, as well as with the buttons on the control cabinet.

### 4.3.1 Overview

No.	Designation
1	Material quantity output
2	Existing material pressure
3	Material temperature
4	Call up "Filling setup"
5	Call up "Data log"
6	Call up "Main menu" ▶ active ⇒ display green, ▶ not active ⇒ display gray.

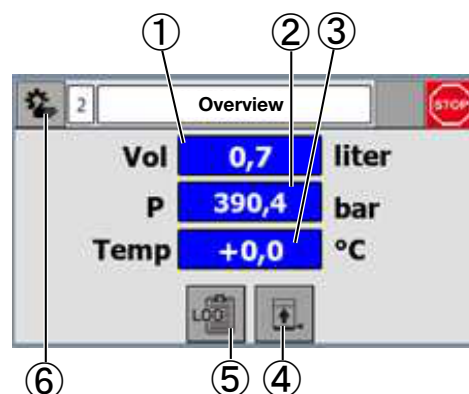


Fig. 27: Overview

### 4.3.2 Data log

A data logger is integrated in the Inject Guard, with which the operating data of the machine can be reported on a job-related and user-related basis.



To open the menu window for reporting the operating data, press the button displayed on the left in the overview (unit status).

If you would like to create a new report:

1. Enter the numbers for packer, construction section, batch and user.

2. Then press the **LOG** button.

During the reporting

- ▶ the **LOG** button is highlighted in green,
- ▶ input values cannot be changed and
- ▶ the recipe selection is deactivated in the overview.

3. In order to end the reporting, press the **LOG** button again.

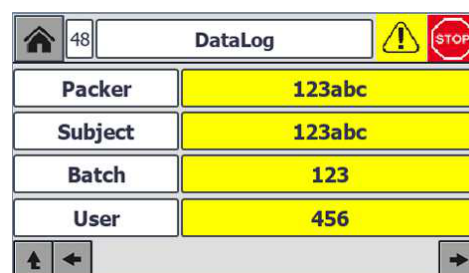


Fig. 28: Data log



The reports saved in the Inject Guard can be viewed, downloaded or printed via WLAN. Detailed information on this can be found in the separate installation and operating instructions for the **WIWA** data logger.

The arrow button will take you to the next menu window.

The operating limits for the pressure and the output volume per packer can be specified here. You must specify whether the pressure or the volume is to be monitored. Reaching the values is indicated by a red flashing light.

When logging in with a cell phone or tablet, the required password is displayed in the **PW Login** field for access.

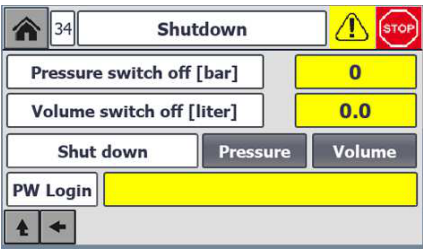


Fig. 29: Switch-off specifications

### 4.3.3 Main menu

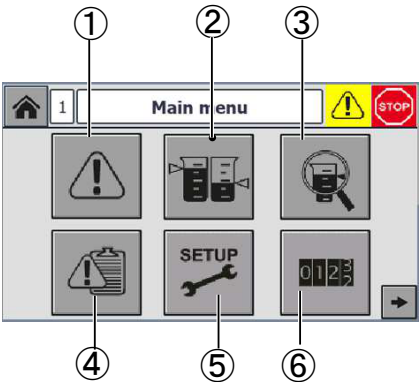


Fig. 30: Main menu, window 1

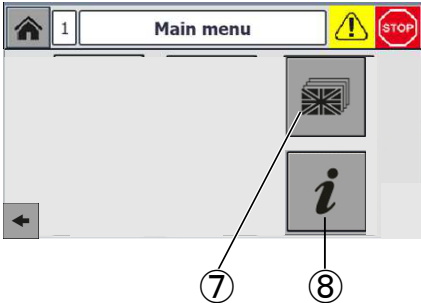


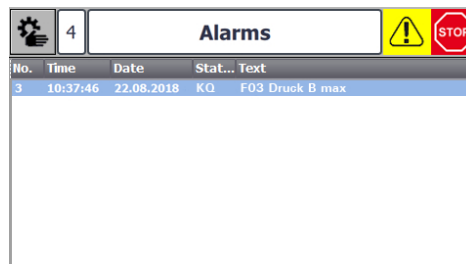
Fig. 31: Main menu, window 2

No.	Display/function	For details, see
1	Display current alarm (if present)	section 9.2 on page 86
2	Perform the control measurement	section 4.3.7 on page 38
3	Display information for mixing ratio and volume	section 4.3.8 on page 39
4	Display alarm history	section 4.3.5 on page 37
5	Switch to the setup/"settings area (only with password)	section 4.4 on page 40
6	Counter	section 4.3.7 on page 38
7	Language/units selection	section 4.3.9 on page 39
8	Information	section 4.3.10 on page 40

### 4.3.4 Alarms

If certain faults occur during operation, then a corresponding alarm will be displayed and stored in the alarm history (section 4.3.5 on page 37).

An overview of the alarms with explanations of the underlying causes can be found in chapter section 9.2 on page 86.



No.	Time	Date	Stat...	Text
3	10:37:46	22.08.2018	KO	F03 Druck B max

Fig. 32: Alarms

The red push button (**STOP / RESET**) on the control cabinet can be used to acknowledge alarms, thereby stopping them from being displayed.



An alarm that is left without being acknowledged can be accessed again by pressing the button displayed on the left in the main menu.

### 4.3.5 Alarm history

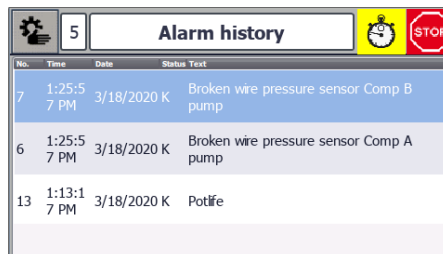
Using the alarm history, errors may be diagnosed and traced easier. The service technician can also later read which errors occurred when and at which frequency.



If you would like to display the alarm history, press the button displayed on the left in the main menu.

The alarm history saves up to 200 alarms including date and time. If the storage limit is reached, then the oldest alarm will be deleted from the alarm history as soon as a new one is added.

The rolling bar on the right edge of the menu window may be used to navigate within the alarm history.

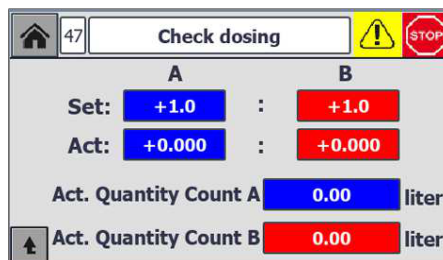


No.	Time	Date	Status	Text
7	1:25:57 PM	3/18/2020	K	Broken wire pressure sensor Comp B pump
6	1:25:57 PM	3/18/2020	K	Broken wire pressure sensor Comp A pump
13	1:13:17 PM	3/18/2020	K	Potlife

Fig. 33: Alarm history

### 4.3.6 Mixing ratio

Components A and B must be mixed at a specific ratio. The specified (target) values and actual values can be read in the menu window. Furthermore, the currently discharged volume of each component is displayed.



A		B	
Set:	+1.0	:	+1.0
Act:	+0.000	:	+0.000
Act. Quantity Count A	0.00		liter
Act. Quantity Count B	0.00		liter

Fig. 34: Mixing ratio

### 4.3.7 Control measurement

During a control measurement, a defined measured volume of component A and a volume of component B corresponding with the mixing ratio are transported separately. This can be filled into measuring cups via the mixing unit.

The control measurement is used

- to check the mixing ratio or
- to check the proportioning pumps and dosing valves for proper function.



To complete a control measurement, the machine must be filled with processing material and ventilated.

1. Ensure that

- a sufficient quantity of measuring cups are available,
- the compressed air regulator of the proportioning pumps is turned down completely,
- the return flow ball valves are closed and
- the compressed air shut-off valves at the proportioning pumps that are used to transport the material used in the current recipe are opened.



2. Regulate the air inlet pressure of the proportioning pumps to 3.0-3.5 bar.

3. In the main menu, press the button displayed on the left.

4. Press the button "A+B" in the component selection displayed after this.

5. Hold the relief hoses separately into the measuring cups provided.

6. Open the relief valves on the proportioning pump.

During the control measurement, the filled quantities are summarized in the display.

7. Close the relief valves on the proportioning pump again as soon as the filling process is ended.

8. Turn the air inlet pressure of the proportioning pumps back completely.

9. Wait several minutes so that the trapped air is able to escape from the material in the measuring cups (especially in case of highly viscose materials).

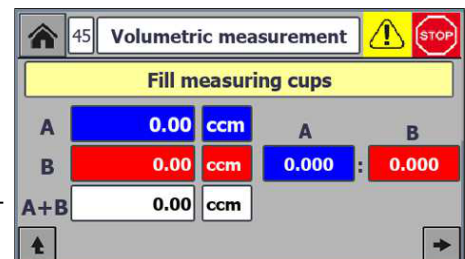


Fig. 35: Component selection



#### 10. Check

- ▶ whether the displayed volumes match the actual filling quantities,
- ▶ whether the filling quantities of both components match the mixing ratio specified in the recipe.

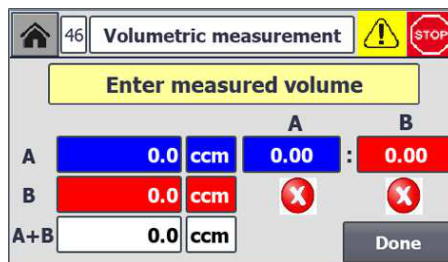


Fig. 36: Display during control measurement

If this is not the case, the proportioning pumps of the components used in the current recipe need to be calibrated (see section 4.4.2 on page 42).

### 4.3.8 Counter



To open the display of the counter, press the button displayed on the left in the main menu. The display is distributed over two menu windows, which can be switched between using the arrow buttons.

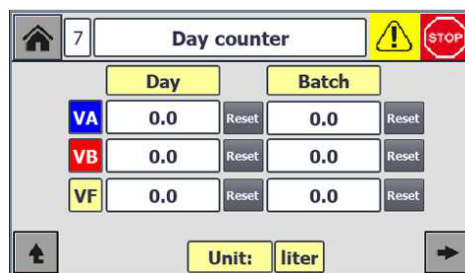


Fig. 37: Day counter

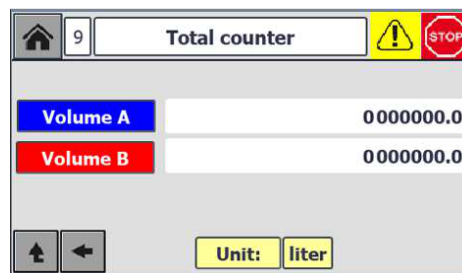


Fig. 38: Total counter

Counter	Displays
Day counter	Outputs since the last reset
Total counter	Total outputs since the first commissioning

The day counter can be reset to "0" with the reset buttons.

The arrow buttons can be used to page forwards and backwards between the menu windows for the day counter and total counter.

The volume unit set in the Inject Guard, in liters or US gallons, is displayed between these buttons.

### 4.3.9 Language and units



The menu language and the units for quantity, volume, pressure and temperature for the pressure and dosing control can be set in the language and unit selection. To open the selection, press the button displayed on the left in the main menu.

The menu languages available are listed in the language selection. You can scroll up or down in the list using the arrow keys. To select a language, press the corresponding list entry.



**Fig. 39:** Language and unit selection

The units available for quantity, volume, pressure and temperature are listed in the unit selection.

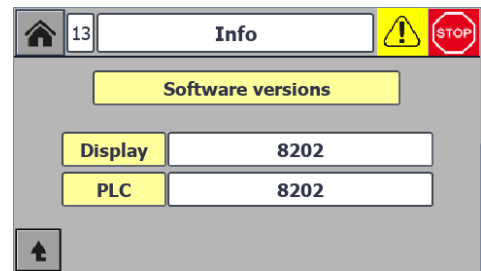
To select a unit, open the drop-down list by pressing on the arrow in the input field. Then press the corresponding list entry. The selected unit is accepted in the controls and is used in all displays.

### 4.3.10 Information



To open the information, press the button displayed on the left in the main menu.

This screen features the software version of the display and indicates the stored program controls (PLC).



**Fig. 40:** Information (example)

## 4.4 Setting area (set-up)

All important parameters for setting up the Inject Guard are entered in the setup area.



To open the setup menu, press the button displayed on the left in the main menu. The Inject Guard must be on **Stop** for this. As long as another operating mode is selected, this button is not visible.

This is followed by password entry. Please note that the setup area is password-protected and can only be accessed by authorized persons. The responsible persons have the password. If it is lost, please contact **WIWA**.

After entering the password and confirming with OK, the first selection window for the setup area will open. The arrow button can be used to switch to the second selection window for the setup area.

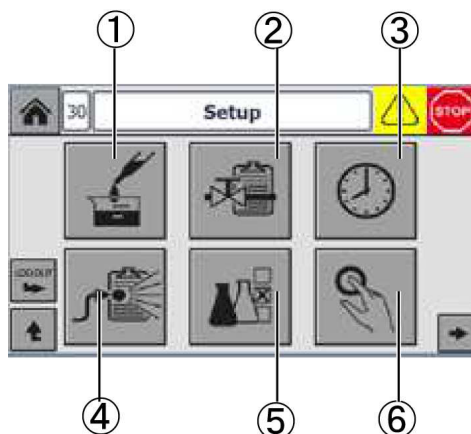


Fig. 41: Setup selection window

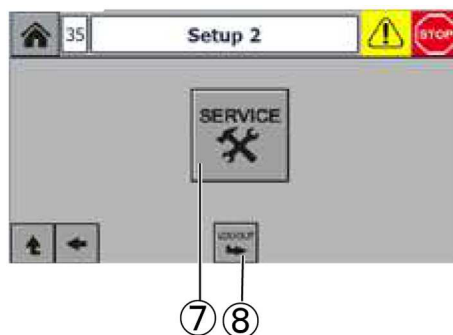


Fig. 42: Setup 2 selection window

No.	Function
1	Ratio check
2	Set up valve management
3	Date and time
4	Filling setup (hose volume)
5	Recipe management
6	Manual valve controls
7	Service level (only accessible by <b>WIWA</b> technicians)
8	Log out of the set-up menu and return to the main menu

#### 4.4.1 Input fields and on-screen keyboards










In contrast to the operating area, the menu windows of the set-up area also include input fields in addition to the display and selection fields.

Input fields are highlighted yellow with a few exceptions. If you would like to make an entry, press on the respective entry field. The on-screen keyboard for the text input is then shown.

Press the respective characters on the on-screen keyboard to enter values.



Fig. 43: On-screen keyboard

Button	Function
	Delete everything
	Exit, without entry
	Switch to the numeric display
	Switch to the letter display
	Help
	Page backwards
	Page forwards
	Confirm entry (enter)
	Deletes one position to the left

#### 4.4.2 Valve management



To open the menu window for the valve management, press the button displayed on the left in the settings menu.



A flow rate of 2 l/min is necessary for the control measurement.

Enter the impulses per liter: The number of impulses per liter (K factor) is used to calculate the transport quantity of the proportioning pump from the electrical impulses of the volume counter or measuring cell. This factor is determined by the output of the proportioning pump.

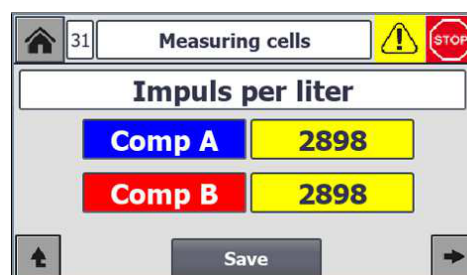
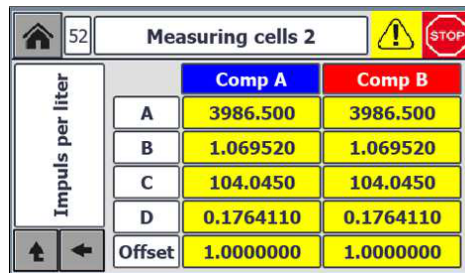


Fig. 44: Valve management

Because the output of a proportioning pump decreases with increasing wear during operation, the K factor must be recalibrated from time to time through the offset adjustment.

The designated values of the L factor (A - D) should not be changed.

Adjust the offset value if the filling quantity in the measuring cup does not match the specification in the controls.



		Comp A	Comp B
Impuls per liter	A	3986.500	3986.500
	B	1.069520	1.069520
	C	104.0450	104.0450
	D	0.1764110	0.1764110
	Offset	1.0000000	1.0000000

Fig. 45: K factor

- Filling quantity  $\geq$  display in the controls  $\Rightarrow$  offset less than 1.0000000,
- Filling quantity  $\leq$  display in the controls  $\Rightarrow$  offset greater than 1.0000000



Approach the correct result in minimal steps. Change the values in steps of 0.05 points.

Use the arrow key to go back to the menu window of measuring cell 1. Press the "Save" button to save your entries.

### 4.4.3 Manual valve controls



To open the menu window for the manual valve controls, press the button displayed on the left in the settings menu.

The individual valves for the functional check may be activated here by pressing the corresponding buttons. The button of the currently opened valve is highlighted green.

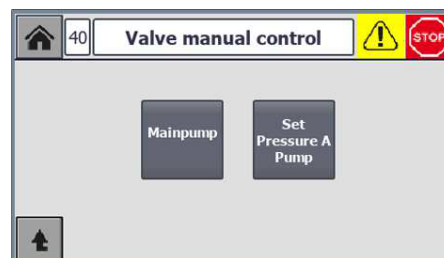
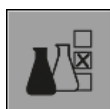


Fig. 46: Manual valve controls

Abbreviation	Which valve?
Air motor	Shut-off valve for the pressure and dosing control
Zero pressure sensor	Zero sensor: After the installation or replacement of a pressure sensor, a zero-point adjustment must be performed when the machine is relieved of pressure.

### 4.4.4 Recipe management



To open the first menu window for the recipe management, press the button displayed on the left in the set-up menu.

The following data is entered here:

- **Shut-off time:** Duration of exceeding the maximum permissible pressure, after which the Inject Guard is to output a corresponding alarm or switch off the unit.
- **Maximum pressure:** Maximum permissible pressure.



**Fig. 47:** Menu window 1 for the recipe management

The arrow button is used to get from the first menu window to the second in the recipe management.

The following data is entered here:

- **Target mix ratio:** Mixing ratio between the components A and B based on volume. If the mixing ratio is defined by weight, then the weight specifications must be converted to volume or the material manufacturer must be consulted.

Volume = Weight : Density

Weight = Volume × Density



**Fig. 48:** Menu window 2 for the recipe management

- **Tolerance rule:** Permitted deviation from target mixing ratio. The tolerance range is preset to ± 1 % at the factory. If the deviation is greater than the tolerance set here, the rule will intervene at this point to correct it.
- **Shut-off:** In case the deviation from the target mixing ratio is greater than the tolerance, an error limit and a period, which the error limit must exceed before the controls issue a corresponding alarm and the machine switches itself off automatically, are defined. The error limit (shut-off threshold) is set at the factory to ± 3 %, the error duration is set to 5 seconds. With these settings, the machine shuts off automatically if the mixing error is greater than ± 3 % and lasts longer than 5 seconds.

To reach the third menu window for the recipe management, press the arrow button again.

The following data is entered here for documentation purposes:

- Temperature, max.
- Temperature, min.



**Fig. 49:** Menu window 3 for the recipe management

#### 4.4.5 Filling setup



To open the first **Filling setup** menu window, press the button displayed on the left in the setup menu.

The following functions are available in this menu window:

- **Material hose volume:** Reduced volume of the material hose used. If the unit is **not flushed**, there is old material in the material hose. Only a small amount of material is required to press this out as it cannot contaminate the processing material. This saves material.

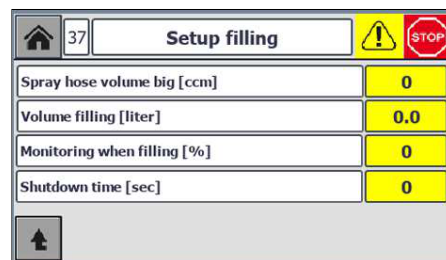


Fig. 50: Filling setup

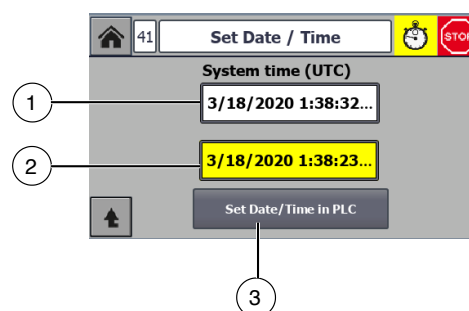
- **Filling volume:** Specification of the material quantity, which is to be output during an injection process, takes place here. During filling, the log is not active and the LED signal light flashes very quickly.
- **Tolerance for shut-off during filling:** The mixing tolerance at which, if exceeded, the unit should automatically shut off during filling.
- **Shut-off time in sec:** = Safety shut-off. If a material discharge is detected at the machine while the sensor on the mixing unit is not active, the unit shuts off automatically after the time specified here.

#### 4.4.6 Date and time



To open the menu window for entering the date and time, press the button displayed on the left in the settings menu.

No.	Description
1	UTC (Coordinated Universal Time)
2	Current time for the ex works pre-set time zone
3	Set date/time in PLC



To set the UTC, enter the current universal time in the input field under the displays and press the **Datum/Uhrzeit in SPS setzen** button to confirm.

Fig. 51: Setting the date and time

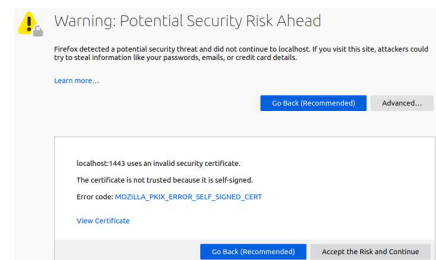
## 5 Data logger

The data logger records the operating data of injection units with electronic controls. Entering and checking the operating data is also possible. The data logger is connected to the controls of the unit via the Ethernet switch. The data recorded can be read out per WLAN.

### 5.1 Establishing the WLAN connection to the data logger

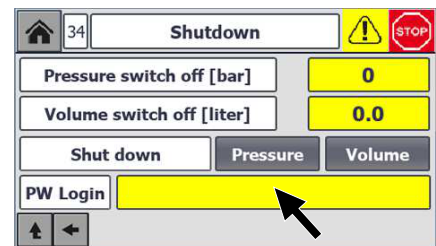
A WLAN-capable device (e.g. laptop, smartphone) is required to establish a connection to the data logger.

1. Select the WLAN network for the data logger.
2. Enter the WLAN password.
3. Open the internet browser and enter the following address line: `http://injection.com`
4. A notice may appear indicating that the connection is not secure. Confirm this information.



**Fig. 52:** Warning of possible security risk

5. On the control cabinet of the WIWA Inject 2K 230, a license key is shown on the display in the menu window for the data log on the 2nd page.
6. After opening the website, the appropriate password for the device is displayed.



**Fig. 53:** License key on the control cabinet

7. You will be asked on your mobile device to enter a password for activation. Transfer the license key shown on the display for the controls here, see point 1. Pay attention to exact notation when doing so.



**Fig. 54:** Input field on cell phone for the license key

Calling up, loading and deleting reports takes place through the report manager.





## 5.2 Establishing the Ethernet connection to the data logger

To establish a connection to the data logger via Ethernet, it must be connected to your computer or integrated into your network via the optional second Ethernet interface.

1. Enter the network address that was agreed with you into your browser.
2. The further procedure is the same as for WLAN.

## 5.3 Web usage

With your mobile device, you have the possibility to view and adjust all input values for the Inject Guard of the injection unit.

On all pages, you can go back to the main menu with  and .

### Overview

After logging in, an overview appears, in which various entries can be made and information can be obtained.

No.	Description
1	Packer number
2	Construction section number
3	Confirmation button for the above entries
4	Log button: lights up green when logging is taking place. Logging takes place automatically. The log button does not have to be pressed.
5	Display of the volume in liters, no entry
6	Display of the pressure, no entry
7	Display of the temperature, no entry
8	Button for redirecting to the settings page
9	Button for redirecting to the display of the data logger information

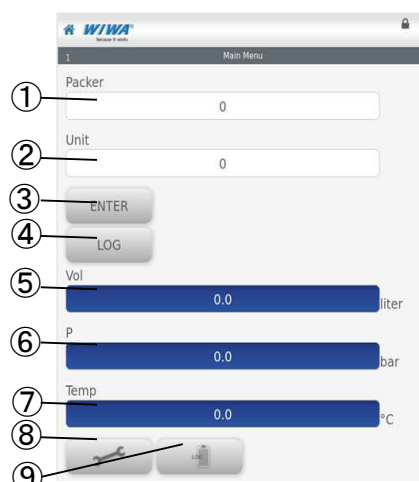


Fig. 55: Overview



After each entry or change in an input field, the operator must confirm the entry with the enter button (**Enter**). If several changes are to be made at once (e.g. packer and construction section), pressing the confirmation button once is sufficient.

## Settings

No.	Description
1	Press button to enter the setting for the pressure shut-off, button is green when active.
2	Press button to enter the setting for the volume shut-off, button is green when active.
3	Entry of the current operator name
4	Entry of the current batch number
5	Confirmation button for the above entries
6	Entry for pressure shut-off
7	Entry for volume shut-off
8	Confirmation button for the above entries
9	Button for redirecting to the counter page
10	Button for redirecting to the language settings page

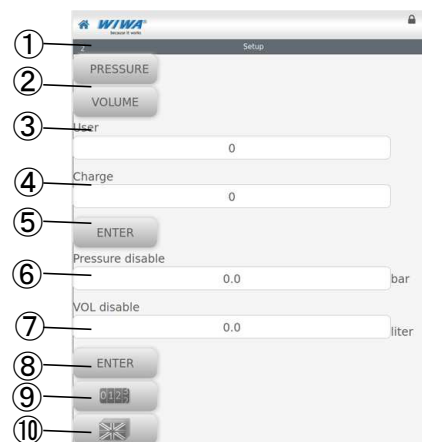


Fig. 56: Settings



After each entry or change in an input field, the user must confirm the entry with the enter button. If several changes are to be made at once (e.g. user and batch), pressing the confirmation button once is sufficient.

## Day + batch volume counter

The material quantity output is displayed here for each component.

No.	Description
1	Display of the volume in liters for the A and B component per day
2	Display of the volume in liters for the A and B component per batch
3	Display of the volume in liters for the A and B component in total (day + batch)
4	Button to reset the counter and display for the volume (according to the labeling day, batch).
5	Button for redirecting to the settings page



Fig. 57: Day + batch volume counter

## Languages

=> nicht vorhanden

No.	Description
1	Languages: German, English, or Russian selectable
2	Button for returning to the overview page



Fig. 58: Languages



With each language change, the website must be updated manually to make the setting effective!

## Error display

If an error message is shown on the display for the controls, the background of the website flashes red. To detect and correct the error, the operator must go directly to the unit. The error is stated precisely on the display for the controls.



Fig. 59: Error display

## 5.4 Report manager

During operation of the machine, reports are generated on the various processes. These can be called up in the report manager. The main menu is displayed as the start screen.

To open the report manager, click on the corresponding button in the main menu:

In the report manager, all available reports are displayed in the left column in the report area. If you click on the desired report, it will be marked in blue and all the detailed information about the report will be displayed in the right column under "Instance".

The following functions are available in the toolbar of the report manager:



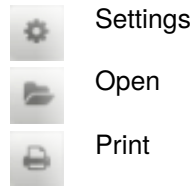
Upload file



Download file



Delete



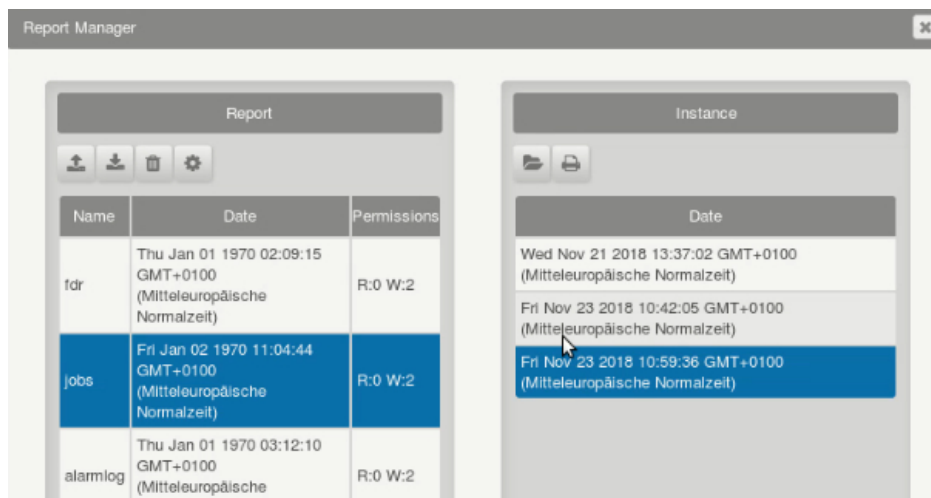
## 5.5 Calling up a report

1. In the report manager, select a folder in the report column.  
The following data can be called up:

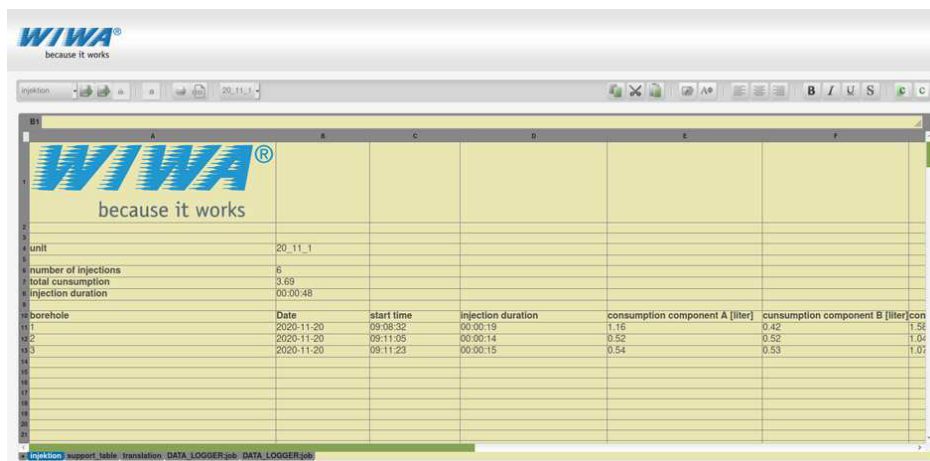
Report	Information
Daily report: Report sorted by year A line is created for each day that something was recorded	<ul style="list-style-type: none"> <li>➤ Consumption,</li> <li>➤ Number of injections,</li> <li>➤ Injection duration,</li> <li>➤ Construction sections,</li> <li>➤ Operator</li> </ul>
Error report	Display of the last 300 errors
Injection report: Report sorted by construction section, showing the data assigned to the construction section	<ul style="list-style-type: none"> <li>➤ Total number of injections,</li> <li>➤ Total consumption,</li> <li>➤ Total injection duration</li> </ul>
Injection report: Report sorted by construction section	<ul style="list-style-type: none"> <li>➤ Bore hole designation,</li> <li>➤ Start date,</li> <li>➤ Start time,</li> <li>➤ Injection duration,</li> <li>➤ Consumption,</li> <li>➤ End injection pressure,</li> <li>➤ Number of injections into this bore hole,</li> <li>➤ Batches,</li> <li>➤ Operator</li> </ul>

All reports for the selected folder are displayed in the "Instance" column.

2. Select the desired report and click "Open" .



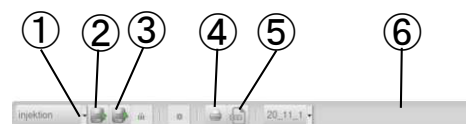
**Fig. 60:** Report manager: Open file  
A detailed report for the selected report is displayed:



	Date	start time	injection duration	consumption component A [liter]	consumption component B [liter]
11	2020-11-20	09:08:32	00:00:19	1.16	0.42
12	2020-11-20	09:11:05	00:00:14	0.52	0.52
13	2020-11-20	09:11:23	00:00:15	0.54	0.53

**Fig. 61:** Report  
The detailed reports are displayed in predefined tables or diagrams. You can switch, print or save the report or the instance.


No.	Description
1	Select the report
2	Confirm selection of the report
3	Save the current report
4	Print the current table
5	CSV export
6	Select the instance

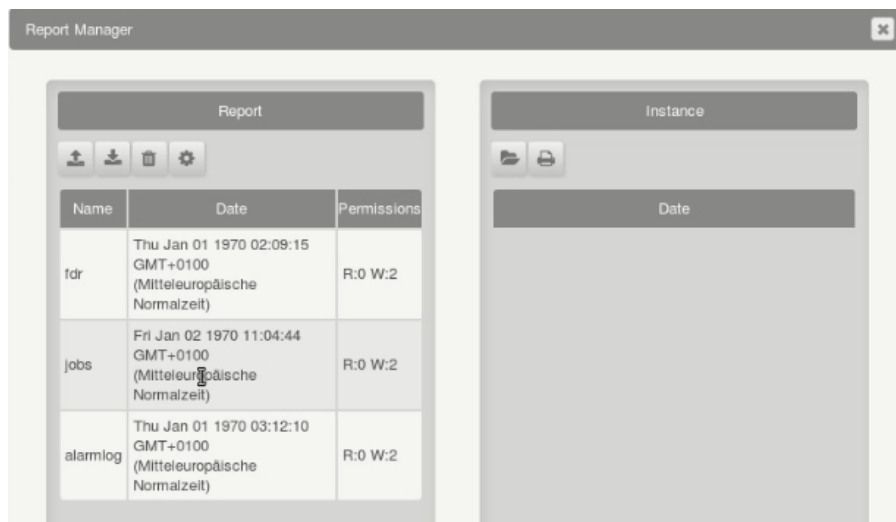


**Fig. 62:** Control panels for the report view

## 5.6 Loading a report

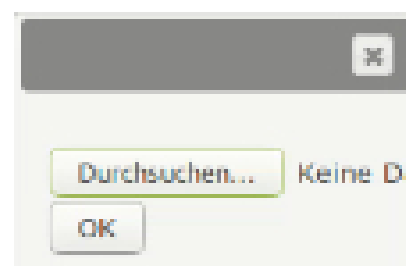
It is possible that reports from **WIWA** are being made available to you. These are called up via the report manager.

1. Click on “Upload file”  in the report manager.



**Fig. 63:** Report manager: Upload file

2. Click on “Browse” in the screen that is displayed.



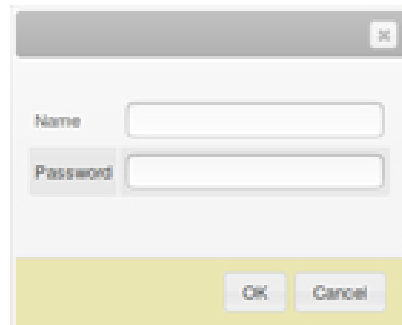
**Fig. 64:** Browse



**Fig. 65:** Selecting the configuration file

3. Select the desired configuration file and click “Open”.

4. A login window appears. Enter the login information and click "OK".  
The uploaded report is now displayed in the "Report" column.




A screenshot of a login window. It has a title bar with a close button. Below the title bar, there are two input fields: "Name" and "Password". At the bottom, there are two buttons: "OK" and "Cancel".

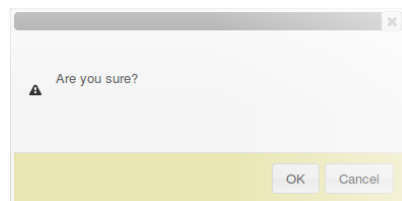
**Fig. 66:** Login window

For further procedure, see section 5.6 on page 52.

## 5.7 Deleting a report

Deleting reports takes place through the report manager.

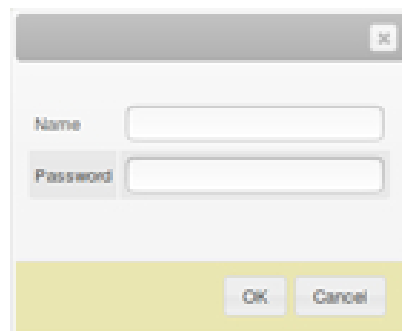
1. Select the desired report in the report manager and click "Delete" .
2. You will be asked whether you really want to delete the file. Confirm with "OK".



A screenshot of a confirmation dialog box. It has a title bar with a close button. Below the title bar, there is a warning icon and the text "Are you sure?". At the bottom, there are two buttons: "OK" and "Cancel".

**Fig. 67:** Are you sure?

3. A login window appears. Enter the login information and click "OK".  
The report is deleted.



A screenshot of a login window, identical to the one in Fig. 66. It has a title bar with a close button. Below the title bar, there are two input fields: "Name" and "Password". At the bottom, there are two buttons: "OK" and "Cancel".

**Fig. 68:** Login window

## 5.8 Updates and technical problems

In case of technical problems, contact **WIWA** service:  
Tel. +49 (6441) 609 0.

If updates become necessary, you will receive a new SD card or a USB stick which contains the new configurations, if required.

## 6 Transport, installation, and assembly



The machine left the factory in faultless condition, packaged correctly for transport. Check the machine at the time of receipt for any transport damage and for completeness.

### 6.1 Transport

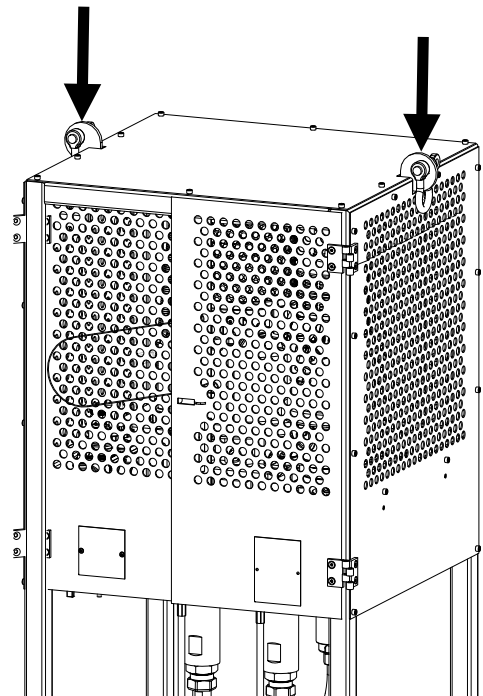
Observe the following information during unit transport:

- When loading the machine, ensure sufficient load-bearing capacity of the lifting gear and lifting accessories. The dimensions and weight of the machine can be found on the machine card and type plate.



The eyebolts on the air motor are only designed for the weight of the high pressure pump and are only used for the purpose of assembly/disassembly of the high pressure pump.

- Before each transport, lock the safety doors on the frame (if present) with the accompanying pin wrench.
- The unit may only be lifted at the intended attachment points for lifting accessories. In order to lift the complete unit, fasten the lifting accessories to both shackles.



**Fig. 69:** Example of attachment points for fastening transport cables to the stand frame

- Secure the unit properly to a pallet for lifting and loading. Attention: danger of tipping! Ensure the load is evenly distributed, in order to prevent the unit from tipping.
- When transporting with a forklift, drive the forks as far apart as possible to keep the tipping moment to a minimum.
- When using a forklift, ensure sufficient length of the lift truck forks. Each of the truck forks must be guided through the two forklift mounts located opposite each other on the frame.
- Do not transport any unsecured objects (e.g. material drum, tools) with the unit.



- Never stand under suspended loads or in the loading area.  
There is a risk of death here!
- Secure the load on the transport vehicle to prevent sliding and falling.

If the unit has previously been in operation, please observe the following:

- Disconnect the entire energy supply to the unit - even for short transport distances.
- Empty the unit prior to transport - residual liquids may still leak out of the unit during transport.
- Remove all loose parts (e. g. tools) from the unit.

## 6.2 Installation site

The machine is intended for installation outside of Ex-zones by default. Installation inside of Ex-zones is only possible with the explosion-protected version of the machine.

The machine can be installed inside or outside spray booths. However, in order to avoid contamination, an external installation is preferable.

### Ambient temperature:

- minimum: 0 °C or 32 °F
- maximum: 40 °C or 104 °F



### WARNING

If the machine is used outdoors during a storm, a life-endangering situation may arise for the operating personnel due to lightning!

- Never operate a machine outdoors during a storm!
- The owner must ensure that the machine is equipped with suitable lightning protection equipment.

### Safety measures at the installation site:

- Position the machine horizontally on a floor that is level, firm and free of vibrations. The machine may not be tilted or tipped.
- Fasten the machine to its installation site, in order to secure it against unintended movement.
- Make sure that all controls and safety features are easy to reach.
- Keep the working area clean, especially all walking and standing areas. Remove any spilled material and cleaning agents immediately.
- In order to prevent harm to health and damage to property, ensure sufficient venting of the workplace. It is necessary to guarantee at least five-times air exchange.
- Although there are no legal regulations for the low-mist injection process itself, dangerous solvent vapors and material particles must be extracted.

- Always observe and follow the safety data sheets and processing instructions of the material manufacturer.
- Protect all items neighboring the object against possible damage due to material spray.

## 6.3 Assembly



### WARNING

If untrained personnel carry out assembly work, they endanger themselves and others, and risk the operational safety of the machine.

- Electrical and electronic parts may only be installed by specialist personnel with electrical training; all other parts, e.g. the spraying hose and spray gun, may only be installed by personnel trained for this.



### WARNING

During assembly work, ignition sources may arise (e.g. due to mechanical sparks, electrostatic discharge, etc.).

- Carry out all assembly work outside of potentially explosive areas.

Before the assembly work, ensure that:

- ☐ all compressed air shut-off valves are closed,
- ☐ all compressed air regulators are completely turned down and
- ☐ all material shut-off valves are closed.

Prior to commissioning, correctly refit any parts or equipment removed for transport purposes, as required for the intended use.

For correct connection of the material lines and the suction hoses, the connections on the unit and on the material hoses are color coded:

- blue = component A
- red = component B
- yellow = flushing agent

Due to the connection sizes, mixing up the hose connections is not possible.



The assignment must be maintained for all future applications to avoid unwanted material reactions and damage to the unit.

### 6.3.1 Inserting the mixing element

When the unit is delivered, a mixing element is located in the mixing tube of the mixing unit. A new mixing element can be installed according to the instructions section 8.9.1 on page 82.

### 6.3.2 Installing the material hose and mixing unit

If the machine is delivered with **WIWA** material hoses and a **WIWA** mixing unit, observe and follow the information in this chapter.



#### WARNING

Parts that are not designed for the maximum permissible working pressure of the machine may rupture and cause serious injuries.

- ▶ Prior to installation, check the maximum permissible working pressure of the injection hose. The working pressure must be greater than or equal to the maximum working pressure cited on the type plate.



#### WARNING

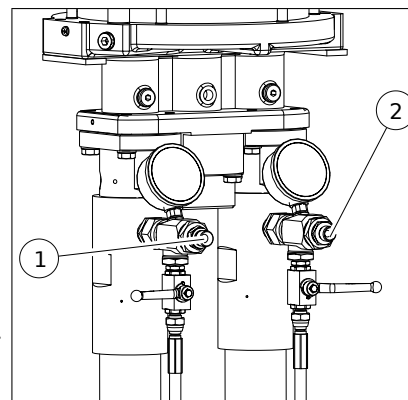
If the connections for the hoses are subjected to strain, these may be torn out. The material escaping under high pressure may cause injuries and damage to property.

- ▶ If tensile forces are anticipated on the hose connections (for example due to the positioning of the mixing unit), it is necessary to utilize strain relief!

1. Close the material hoses at the material outlet of the associated fluid pump.

No.	Description
1	Connection for the component B material hose
2	Connection for the component A material hose

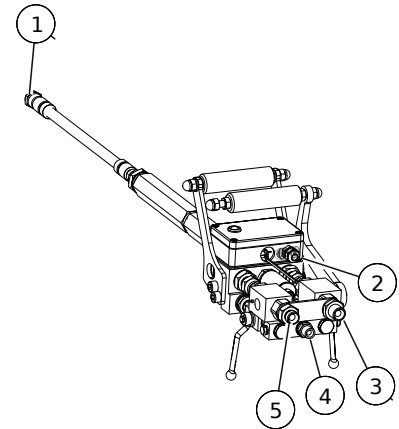
On the model with Inject Guard, the connections are located on the material outlet of the associated high pressure filter.



**Fig. 70:** Connections for the material hoses on the model without Inject Guard

2. Connect the material hoses to the mixing unit.

No.	Description
1	Connection for coupling piece and/or packer
2*	Connection for sensor cable
3	Connection for the component B material hose
4	Connection for flushing agent hose
5	Connection for the component A material hose



**Fig. 71:** Connection on the mixing unit

\*) only for model with Inject Guard

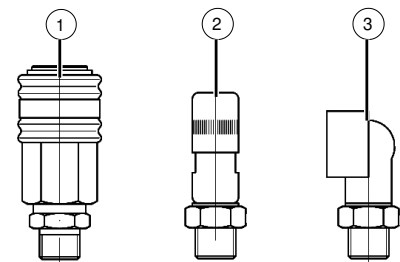
3. Install the coupling piece for the packer on the static mixer of the mixing unit.



The coupling piece and packer are not part of the scope of delivery of the machine. The selection of the coupling piece is dependent on the type of packer used.

The following coupling pieces are optionally available from **WIWA**:

No.	Coupling piece
1	Coupling G $\frac{1}{4}$ " I
2	Nozzle M10×1 IG
3	Slide coupling M10×1



**Fig. 72:** Coupling pieces for the packer

### 6.3.3 Connecting the flushing agent hose

Depending on the model, the **INJECT 2K 230/333 RS** is equipped with a flush pump.

1. Connect the flushing agent hose marked yellow to the material outlet of the flush pump (section 3.8 on page 27).
2. Connect the other hose end to the distributor of the mixing unit (section 6.3.2 on page 57).

### 6.3.4 Connecting the sensors and control air valves

For the model of the unit with Inject Guard, the mixing unit is equipped with sensors for pressure and volume monitoring.

The associated cable is already connected to the control cabinet.

Connect the cable plug connection to the mixing unit (see Fig. 71 on page 58).

### 6.3.5 Inserting the filter elements in the high pressure filter

Insert a filter element in the high pressure filter that is suitable for the processing material. Further information on this can be found in section 8.6 on page 77.

### 6.3.6 Filling the operating fluids

If the machine is delivered lying down, the operating fluids have been drained before transport. Fill

- Pneumatic oil in the fog oiler (see section 8.4.1 on page 74).
- Release agent in the proportioning pump and flush pump (see section 8.7 on page 79 and section 8.8 on page 80).

### 6.3.7 Grounding the machine



#### WARNING

The high flow velocities during operation can result in an electrostatic charge. Static discharges can result in fire and explosions.

- Ensure that the machine is properly grounded outside of Ex zones!
- Ensure correct grounding of the object to be coated.

### 6.3.8 Connecting the compressed air supply



#### CAUTION

Lines laid on walking surfaces are a tripping hazard capable of causing injuries to the operating personnel.

- Place the compressed air line so that a tripping hazard for the operating personnel cannot result.



To ensure the required quantity of air, the compressor output must comply with the air requirement of the machine, and the diameter of the air supply hoses must match the connections.



Operation with contaminated or moist compressed air leads to damage in the machine's pneumatic system.

► Use only dried, oil-free and dust-free compressed air, which corresponds to purity class [7:5:4] according to ISO 8573-1:2010!

1. Make sure that all compressed air shut-off valves are closed and all compressed air regulators are turned all the way down.
2. Connect the compressed air line to the compressed air connection on the maintenance unit.

### 6.3.9 Connecting the power supply

Connection to the power supply is only required for the model with Inject Guard.



#### **WARNING**

The connection to the power supply may only be established by specialist personnel with electrical training!

The power connection data for the machine can be found on the type plate on the side of the control cabinet.

1. Check that the factory electric power supply is enabled.
2. Make sure that the master switch on the control cabinet is on "Off".

## 7 Operation

Prerequisites:

- The machine must be correctly installed and fully assembled.
- Only put the machine into operation if you are equipped with the prescribed personal protective equipment. Details on this can be found in section 2.4.4 on page 13.
- The injection material must be available in sufficient quantity.

Multiple collecting vessels are also required for surplus material. These containers are not included in the scope of delivery.



Observe and follow the material and safety data sheets of the respective material manufacturer when processing and storing acrylate gels and silicate injectors.



### WARNING

If fluid pumps run dry, this can lead to fire or an explosion due to the resulting friction heat.

- During operation ensure that the drums never run empty. Never leave the machine running when unattended.
- However, if this were to happen, bring the respective pump to an immediate standstill and add material.

### 7.1 Putting the machine into operation

Checklist prior to commissioning:

- ☐ Are all safety features present and fully functional (see section 2.3 on page 8)?
- ☐ Is the machine grounded properly (see section 6.3.7 on page 59)?
- ☐ Check the release agent level in the proportioning pump and flushing agent pump. Refill if necessary (see section 8.7 on page 79 and section 8.8 on page 80).
- ☐ Is there a (not clogged) mixing element in the mixing unit, see section 6.3.1 on page 56?
- ☐ On the model with Inject Guard: Are both high pressure filters equipped with clean filter elements (see section 6.3.5 on page 59)?
- ☐ During commissioning, check that all machine parts are leak-tight and tighten the connections if necessary.

### Overview of the work steps during commissioning:

1. Start the unit (see section 7.1.1 on page 62)
2. Set the controls (section 7.1.2 on page 63)
3. Put the flush pump into operation (see section 7.1.3 on page 63)
4. Flush out the remains of the test substance (see section 7.1.4 on page 63)
5. Fill the machine with processing material (see section 7.1.5 on page 64)

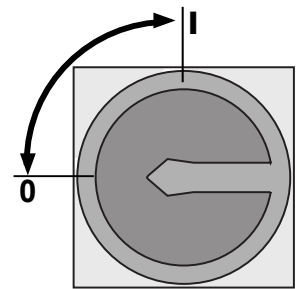
## 7.1.1 Starting the unit

1. On the maintenance unit, check that
  - ▶ the compressed air regulator is turned down completely and
  - ▶ the compressed air supply provided by the owner is connected.
2. Set the compressed air shut-off valve on the maintenance unit to "I".

### "Normal start" for model with Inject Guard:

3. Switch on the machine with the master switch on the control cabinet.
4. Press the **Start** button, see item 6 Fig. 13 on page 23.

After the controls are switched on, the touch screen will initially show the start screen (see Fig. 24 on page 31). After a few seconds, this automatically switches to the overview (see Fig. 25 on page 31). The overview is the basic display for the controls. Furthermore, when the machine is switched on, the shut-off valve for the control air on the maintenance unit is opened.



**Fig. 73:** Switch on the machine

### "Restart after a fault message or emergency" for model with Inject Guard:

When a fault message is triggered, the emergency stop mushroom button is pressed to switch off the unit immediately. The stop push button lights up red (see Fig. 13 on page 23) .

After the fault has been corrected, switch on the unit as follows:

1. Unlock the emergency stop mushroom button.
2. The master switch on the control cabinet is set to "I".  
An alarm message appears on the display (see section 9.2 on page 86).
3. Acknowledge the alarm message by pressing the flashing red stop push button. The flashing stops. The display switches to the menu window for the overview (see Fig. 25 on page 31).
4. You can continue your work.



### 7.1.2 Setting the controls

During initial commissioning, the parameters for the controls, such as e.g.:

- ▶ the valve management,
- ▶ the recipe management,
- ▶ the filling setup,
- ▶ the date and time etc.

must be set by trained personnel.



Detailed information on this can be found in section 4.4 on page 40.

### 7.1.3 Putting the flush pump into operation



The flush pump must always be ready for operation during work, so that all parts that have come into contact with the mixed material can be flushed at any time within the specified pot life!

1. Set the one-hand lever of the mixing unit to “Stop” and close the flushing ball valves.
2. Turn all compressed air regulators down completely.
3. Place the suction for the flush pump in the cleaning agent container.
4. Point the outlet opening on the static mixer into an empty container to be able to collect the escaping material mixture.
5. Open the compressed air shut-off valve.
6. Open the flushing valves on the mixing unit.
7. Set a low pressure on the compressed air regulator of the flush pump so that the pump starts slowly.
8. Adjust the running speed for the flush pump to approx. 15 double strokes per minute.

### 7.1.4 Flushing out the remains of the test substance

Following assembly, the machine was tested in the factory for faultless function with a test substance. During initial commissioning, it is therefore necessary to first completely clean the machine to flush out the remaining test substance (section 7.5 on page 67).



Use the flushing agent recommended by the manufacturer of your processing material.

### 7.1.5 Filling the machine with processing material and ventilating



Always pay attention to the correct component assignment.

The two components of the processing material may only come in contact with the intended machine parts:

blue = standard component (A)

red = hardener (B)

1. Close the material shut-off valves on the suction hoses
2. Install each material suction to a container containing the associated processing material.
3. Open the material shut-off valves on the suction hoses.
4. Hold the relief hose for each component in an empty material collection container.
5. Let the injection pumps start up slowly. Slowly adjust the air inlet pressure to approx. 1–2 bar for this.
6. For the model with Inject Guard:  
Set the switch-off time to 180 sec. in the “Filling setup” menu window, see section 4.4.5 on page 45.
7. Open the relief valve on each fluid pump.
8. As soon as the remaining cleaning agent is flushed out and clean material escapes from each component, close the relief valve on each fluid pump.  
For the model with Inject Guard:  
After the switch-off time has expired, the unit switches off automatically. If clean material still does not escape after this time, repeat the work steps from point 2.
9. Hold the mixing unit, directing the material ejection against the inner wall of the collecting vessel.
10. Set the one-hand lever of the mixing unit to “Injection”.
11. As soon as mixed material (component A and B) consistently escapes out of the mixing unit, the filling and ventilating process is completed. Set the one-hand lever of the mixing unit to “Stop”. The proportioning pumps stop.
12. In order to be able to check the material reactions and the correct injection quantity, fill a suitable test container (approx. 0.2 l) with the processing material. Repeat work steps 9 to 11 of this chapter for this.  
For the model with Inject Guard:  
During the filling process, the LED signal light on the mixing unit flashes very quickly. The light goes out when switching to monitoring mode.
13. Flush the mixer block immediately until clean cleaning agent escapes (see section 7.3 on page 66).

### 7.1.6 Performing the control measurement

For the model with Inject Guard, perform a control measurement at the end of commissioning to check the proportioning pump for proper function.

Complete all work steps according to section 4.3.7 on page 38.

## 7.2 Injection

### Prerequisites:

- The machine has been put into operation (see section 7.1 on page 61).
  - The required packer nipples are attached at the points to be injected.
1. Turn the compressed air regulator for the proportioning pump down completely.
  2. Set the one-hand lever of the mixing unit to "Stop".
  3. Connect the coupling piece on the material outlet of the mixing unit to the packer nipple.
  4. For the model with Inject Guard:
    - In order to have access on a cell phone or tablet, log on to the website via WLAN.
    - Enter all operating data on your mobile device or on the display of the control cabinet (see section 4.3.2 on page 35).
  5. Set the one-hand lever of the mixing unit to "Injection".
  6. Set a low air inlet pressure on the compressed air regulator for the proportioning pump.
  7. Start the injection with an as low of a pressure as possible so that the safety of operating personnel and masonry is not endangered.
  8. Slowly increase the pressure to the desired working pressure.
  9. Set the one-hand lever of the mixing unit to "Stop" after the injection process is completed.



- A prerequisite for the display of the LED signal light is the previously made selection in the data logger (see Fig. 29 on page 36). If no selection has been made, the sensor is not active.
- If the LED signal light is flashing slowly, a fault exists and the unit switches off.



Observe the fill level of the material drum during injection. Refilling the material in a timely manner prevents the pumps from suctioning air and thereby having to ventilate the unit.

10. Switch to the next packer within the pot life of the material used, and repeat work steps 3 to 7.  
For the model with Inject Guard, enter all operating data for the next bore hole on your mobile device or on the display of the control cabinet (see section 4.3.2 on page 35).
11. Flush the mixer block immediately after completing the last injection process until clean cleaning agent runs out.  
Always observe the pot life of the material used!

### 7.2.1 Checking the injection pressure

Check the function of the proportioning pumps by repeatedly opening and closing the one-hand lever of the injection lance.

Observe the material pressure display on the pressure gauges while doing so (see item 13 + 14 Fig. 17 on page 25):

- Both pressure gauges must always display the same values!
- If the one-hand lever is closed during injection, an equally high dynamic pressure is displayed on both material pressure gauges.
- The values must go back to the working pressure when the one-hand lever is opened again.  
If this is not the case, shut down the machine immediately and check it or contact **WIWA** customer service.

## 7.3 Flushing

Flushing is used to flush the mixed material out of the machine before it hardens during an interruption of the spraying operation.



Flush all parts that have come into contact with the mixed material within the pot life stipulated by the manufacturer.

1. Hold the mixing unit, directing the material ejection against the inner wall of the collecting vessel.
2. Set the one-hand lever of the mixing unit to "Stop". The injection pumps stop.
3. Open the flushing valves alternately on the mixing unit until clean flushing agent runs out.
4. Close the flushing valves on the mixing unit as soon as sufficient clean flushing agent has run out.



Open and close the flushing ball valves multiple times in alternation during flushing to ensure that each component is flushed out separately. Finally, flush with both ball valves simultaneously.

5. No material residues may adhere to the mixing element in the static mixer. Remove the mixing element according section 6.3.1 on page 56 to check it. If necessary, replace the mixing element with a new one.

## 7.4 Pressure relief

1. For the model with Inject Guard:  
Switch the master switch on the control cabinet to "0".
2. Make sure that the compressed air shut-off valve is closed and all compressed air regulators are turned all the way down.
3. Hold the mixing unit sideways against the inner wall of the collecting vessel.
4. Set the one-hand lever of the mixing unit to "Stop" and open the flushing valves to let the material pressure escape.



### WARNING

If parts of the machine are clogged (e.g. material hose, suction screen, etc.), it is not possible to fully relieve the pressure. During disassembly work, residual pressure may escape and cause serious injuries.

- ▶ Protect yourself against suddenly escaping material by covering threaded connections with a cloth while loosening them.
- ▶ Loosen threaded connections particularly cautiously and allow the pressure to escape slowly.
- ▶ Eliminate the blockages (see fault table in section 9 on page 85).

## 7.5 Cleaning the machine completely

A complete cleaning of the machine is necessary ...

- ▶ during the initial commissioning so that the processing material is not influenced by the test substance with which the machine was tested for fault-free functioning in the factory,
- ▶ during a change of the material,
- ▶ if the machine is to be deactivated for a longer period.

1. Complete all work steps according to section 7.3 on page 66.

The area from the material inlet to the mixing unit will be cleaned during the next work steps.



Both components must also be strictly separated during cleaning. Use a separate collecting vessel for each component in order to prevent material reactions and damage to the machine.

2. Close the material shut-off valves on the suction hoses and release the connection to the containers.
3. Install each material suction to a container containing the cleaning agent belonging to the material.
4. Open the material shut-off valves on the suction hoses.
5. Open the compressed air shut-off valve.

6. Hold the mixing unit, directing the material ejection against the inner wall of the collecting vessel.
7. Set the one-hand lever of the mixing unit to "Injection".
8. Set a low air inlet pressure on the compressed air regulator for the proportioning pump.
9. Set the one-hand lever of the mixing unit to "Stop" as soon as clean flushing agent runs out.
10. Hold the relief hoses in separate collecting vessels and secure the hoses against slipping out unintentionally.
11. Open the relief ball valves.
12. As soon as clean cleaning agent escapes from the relief hoses, turn the compressed air supply for the proportioning pumps down completely.
13. Close the compressed air shut-off valve.
14. Close the relief ball valves.
15. Relieve the pressure in the material lines by briefly opening and closing the one-hand lever on the mixer block.

The cleaning agent that is still in the machine remains in the machine until it is restarted, so that the machine parts do not stick together. During a longer standstill, fill the machine with a mold oil since the cleaning agent evaporates over time.

## 7.6 Material change



The machine has been specially configured for your application case. It is necessary to check compatibility of the materials used with other materials in each individual case. **WIWA** is happy to help determine the suitability of your machine for another material.

1. Clean the machine (see section 7.5 on page 67).
2. Relieve the pressure in the machine (see section 7.4 on page 67).
3. Only for model with Inject Guard:  
Check the filter element in the high pressure filter (see section 8.6.1 on page 77).
4. No material residues may adhere to the mixing element in the static mixer. Remove the mixing element to check it (see section 6.3.1 on page 56). If necessary, replace the mixing element with a new one.
5. After completing the work, injection may begin with a new material (see section 7.2 on page 65).

## 7.7 Decommissioning

Shut down the machine when there is a longer work interruption.  
For the exact time specification of how long the unmixed material can remain in the machine, please take the recommendations of the material manufacturer.

To do so, proceed as follows:

1. Clean the machine according to section 7.5 on page 67.
2. Relieve the pressure in the machine according to section 7.4 on page 67

### 7.7.1 Temporary decommissioning

In case of temporary decommissioning, flush the machine and relieve the pressure.

1. Flush the unit (see section 7.3 on page 66).
2. Relieve the pressure according to section 7.4 on page 67.

### 7.7.2 Long-term or permanent decommissioning

In case of long-term or permanent decommissioning, clean the machine completely, relieve the pressure, and disconnect the machine from the energy supply.

1. Clean the machine completely (section 7.5 on page 67).
2. Relieve the pressure in the machine (section 7.4 on page 67).
3. Shut off the compressed air supply to the compressor.
4. Discharge the compressed air line of the compressor to the compressed air connection of the machine.
5. Disconnect the compressed air line from the compressed air connection of the unit.
6. On the model with Inject Guard: Switch off the unit controls with the master switch (see item 5 in section 3.4.1 on page 23).

## 7.8 Storage

The location for storing the machine must be

- clean,
- dry,
- frost-free and
- protected against direct sunlight.

Storage temperature:

- minimum: 0 °C or 32 °F
- maximum: 40 °C or 104 °F

## 7.9 Disposal

Residues of processing material, flushing agents, oils, greases and other chemical substances must be collected according to the legal regulations for recycling or disposal. The official local waste water protection laws apply.

At the end of the machine's use it must be put out of use, disassembled and disposed of according to the legal regulations.

- ▶ Thoroughly clean the machine of material residues.
- ▶ Disassemble the machine and separate the materials – metals must be taken to a scrap metal depot, plastic parts can be disposed of with household waste.



## 8 Maintenance



Only perform maintenance on the machine if you are equipped with the prescribed personal protective equipment. Details on this can be found in section 2.4.4 on page 13.



### WARNING

If untrained personnel carry out maintenance and repair work, they endanger themselves and others, and risk the operational safety of the machine.

- Maintenance and repair work on electrical parts may only be performed by specialist personnel with electrical qualifications — all other maintenance and repair work may only be done by **WIWA** customer service or specially trained personnel.



### WARNING

During maintenance work, ignition sources may arise (e. g. due to mechanical sparks, electrostatic discharge, etc.).

- Carry out all maintenance work outside of potentially explosive areas.



Observe the maintenance information in the operation manual for the optional accessories.

Prior to maintenance and repair work:

1. Shut off the compressed air supply,
2. Disconnect the power supply (if present),
3. Relieve the pressure in the machine completely.



### WARNING

If parts of the machine are clogged (e.g. material hose, suction screen, etc.), it is not possible to fully relieve the pressure. During disassembly work, residual pressure may escape and cause serious injuries.

- Protect yourself against suddenly escaping material by covering threaded connections with a cloth while loosening them.
- Loosen threaded connections particularly cautiously and allow the pressure to escape slowly.
- Eliminate the blockages (see fault table in section 9 on page 85).

After completion of the maintenance and repair work:

- Check the function of all safety features and the faultless function of the machine.

## 8.1 Regular testing

The machine must be inspected and maintained regularly by a specialist:

- prior to first commissioning,
- after changes to / the servicing of parts of the installation that affect safety,
- after an interruption to operation lasting more than 6 months,
- although at least every 12 months.

In the case of machines that have been put out of use, the test can be delayed until the next time commissioning takes place.

The results of the tests must be recorded in writing and stored until the next test. The test certificate or a copy of this must be available at the machine's place of use.



Have repair work carried out exclusively by **WIWA** Service or trained specialist personnel (in/from authorized workshops if necessary).

## 8.2 Maintenance schedule



The information in the maintenance schedule constitutes recommendations only. The time frames may vary depending on the characteristics of the materials used, as well as external influences.

Time frame	Activity	for further reading
Prior to each commissioning	Check the release agent level	section 8.7 on page 79
	Check the lubricant level in the fog oiler	section 8.4.1 on page 74
	Check the mixing element in the static mixer for material residues and blockage	section 8.9 on page 81
	Check the mixer block for leak-tightness	section 8.9.2 on page 83
Once per week	Check and clean the water separator	section 8.4.3 on page 75
	Check and set the fog oiler	section 8.4.2 on page 75
	Visual inspection of the compressed air and material hoses	section 8.3 on page 73

Time frame	Activity	for further reading
Every 50 operating hours	Check the release agent in the fluid pumps for material residues	section 8.7.2 on page 80 and section 8.8.1 on page 80
Depending on the type and cleanliness of the material or after each material change	Check the mixing element in the static mixer for material residues and blockage	section 8.9 on page 81
	Check the mixer block for leak-tightness	section 8.9 on page 81
Every 3 years	Inspection of the compressed air and material hoses by a specialist and replacement if necessary	section 8.3 on page 73
Every 6 years at the latest (incl. storage duration of the hose lines)	Complete replacement of the compressed air and material hoses	section 8.3 on page 73

### 8.3 Checking the compressed air and material hoses

Check the compressed air and material hoses weekly for externally visible damage, such as kinks, cracks, signs of wear or bulges.



Improper use and impermissible stress are the most frequent causes of damage. Damaged hoses must be replaced immediately.

Hose lines are subject to a natural aging even with proper use and permissible stress. Their duration of use is thereby limited. Therefore, the compressed air and material hoses must be checked by a specialist every three years.



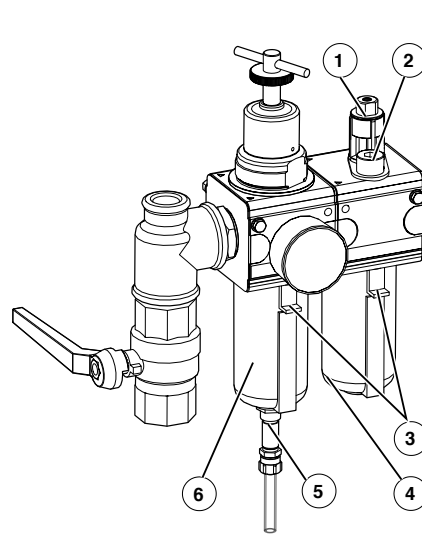
The duration of use of a hose line, including any possible storage duration, may not exceed six years. The manufacturing date of a hose line (month/year) is stamped on the ferrule.

### 8.4 Water separator and fog oiler

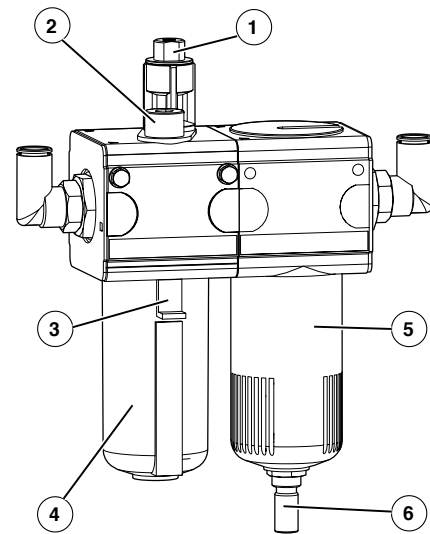
The compressed air must be treated for the functional safety and service life of the system. For this purpose, a water separator and/a fog oiler are integrated, which must be maintained regularly.

If the machines are equipped with a maintenance unit, the water separator and the fog oiler are integrated into it.

For the model with a regulator cluster, the water separator and the fog oiler are installed on the cart.



**Fig. 74:** Water separator and fog oiler for model with maintenance unit on Inject 230

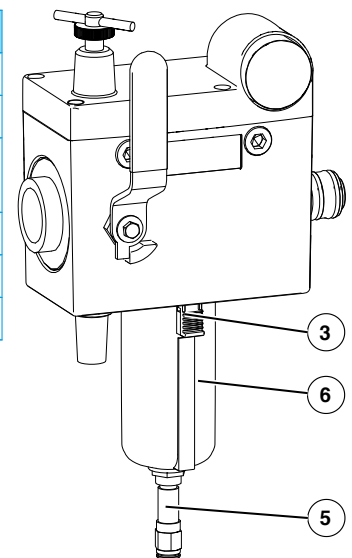


**Fig. 75:** Water separator and fog oiler for model with regulator cluster on Inject 230

No.	Designation
1	Fog oiler adjusting screw
2	Inspection glass
3*	Valve for opening the water separator or oil tank
4	Oil tank
5	Automatic drain valve
6**	Container for the water separator

\*) Only for the model with maintenance unit

\*\*) For the model with regulator cluster, turn the container to the left to release it or to the right to screw it on.



**Fig. 76:** Water separator for model with maintenance unit on Inject 333

### 8.4.1 Checking the lubricant level in the fog oiler



The machine may only be put into operation if sufficient pneumatic oil is present in the oil tank for the fog oiler. In case of high humidity levels, use anti-freeze agent for lubrication in place of pneumatic oil, or an optional de-icing system, in order to prevent icing of the air motor.

We recommend pneumatic oil (order number 0632579) or anti-freeze agent (order number 0631387) from **WIWA**.

Check the lubricant level on the depressurized machine daily as follows:

1. Pull down the locking slide on the oil tank and unscrew the oil tank counter-clockwise.
2. Check whether there is sufficient lubricant. The maximum fill level is identified by a groove on the inside of the oil tank, all the way around (approx. 2 cm under the top edge of the oil tank).
3. Refill the lubricant as required.
4. Check whether the o-ring is in the correct position - insert it correctly if necessary.
5. Screw the oil tank back on tightly.



Be aware of the o-ring that is used to seal the oil tank. It can slip during disassembly or even fall out.

#### 8.4.2 Checking and adjusting the fog oiler

1. Let the proportioning pump run slowly under load.
2. At the inspection glass for the fog oiler, check whether compressed air is fed with one drop of lubricant after 10 to 15 double strokes of the air motor in each case.
3. If this is not the case, set the proportioning rate with a screwdriver at the adjusting screw of the fog oiler.

#### 8.4.3 Checking and cleaning the water separator

The water separator filters moisture and particles of dirt ( > 5 µm) from the compressed air.

This prevents condensation water from penetrating the machine, as well as the static charging of the pneumatic hoses.

Any condensation water that collects is automatically drained through the drain valve.

1. Guide the drainage hose into an empty collecting vessel.
2. Check the container for dirt residues regularly and clean it if necessary (disassembly and assembly like the oil tank).



Use only water, soap, or a similar neutral product for cleaning the container.

## 8.5 Safety valve

### 8.5.1 Checking the safety valve



Only perform the function test with a filled pump!

Depending on the size of the pump used and the required working pressure, safety valves with a 1/4" or 1/2" connection are used.

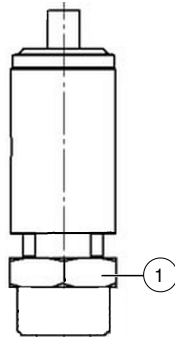


Fig. 77: 1/4" connection safety valve

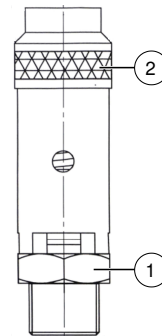


Fig. 78: 1/2" connection safety valve

No.	Description
1	Hexagon nut
2	Knurled nut

This is how to check the function of the safety valve:

#### Safety valves with a 1/4" connection:

1. Increase the air inlet pressure on the completely filled machine briefly to approx. 10 % over the maximum permissible pressure according to the type plate. The safety valve must discharge!

#### Safety valves with a 1/2" connection:



Only perform the test by hand. To prevent damage to the safety valve, do not use any tools to release the knurled nut.

1. Reduce the air inlet pressure on the completely filled machine to approx. 10 % below the maximum permissible pressure according to the type plate.
2. Open the safety valve for a few seconds by turning the knurled nut (Fig. 78 on page 76) counterclockwise. During this process, the closure of the safety valve opens, whereby the air must escape.
3. After this check, retighten the knurled nut clockwise.

## 8.5.2 Replacing the safety valve



Before replacing the safety valve, observe the following:

- the machine must be switched off and relieved of pressure,
- the data noted on the new valve must correspond to the data specified on the machine card. The calibration pressure specified on the safety valve may not be higher than the permissible working pressure of the machine,
- the new safety valve may not have any damage.

1. Attach an open end spanner to the spanner flat (Fig. 77 on page 76 and Fig. 78 on page 76) and unscrew the safety valve by turning counter-clockwise.
2. Check the connection point. It must be free of blockages and clean.
3. Insert a new safety valve and screw it tight clockwise with the open end spanner. The maximum torque is 30 Nm for a 1/4" connection and 40 Nm for a 1/2" connection.

## 8.6 High pressure filter

High pressure filters are used to filter impurities out of the processing material. Depending on the material, filter elements with different mesh sizes are used, which must be regularly cleaned.

### 8.6.1 Cleaning the filter element

The cleaning interval for the filter elements in the high pressure filters is dependent on the type and cleanliness of the material. Clean the filter elements at least once per week and after every material change.

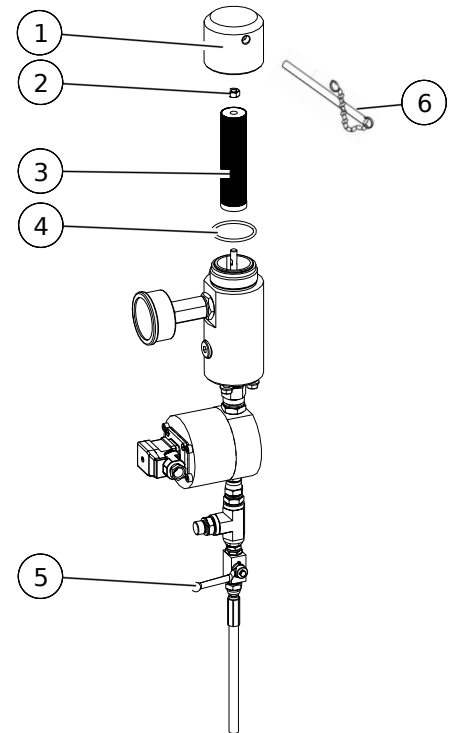


#### WARNING

If the machine's pressure is not relieved when a high pressure filter is opened, material can escape under very high pressure and cause serious injuries.

- Fully relieve the machine pressure before opening a high pressure filter!
- Blockages may result in residual pressures in the machine. Open the high pressure filter cautiously!

No.	Description
1	Cap
2	Nut
3	Filter element
4	O-ring
5	Relief valve
6	Pin wrench (key for locking the doors on the frame)



**Fig. 79:** Remove the filter element from the high pressure filter

1. Open the relief valve to ensure that the unit is absolutely pressureless.
2. Release the cap of the high pressure filter using the pin wrench and remove it.
3. Undo the nut and remove the filter element.
4. Clean the filter element with a suitable cleaning agent (water or solvent). If the filter element has damage, replace it with a new filter element.
5. Place the filter element onto the stud bolt again and tighten it with the nut.
6. Check the o-ring for damage and replace it if necessary. Put it back on the bottom part of the high pressure filter.
7. Screw the cap onto the high pressure filter and tighten it with the pin wrench.

### 8.6.2 Filter elements for the high pressure filter

Insert a filter element in the high pressure filter that is appropriate for the processing material and fits the spray nozzle. The mesh size should always be somewhat finer than the hole in the nozzle used.

Filter element	Nozzle size		WIWA order number
M 200 (white)		up to 0.23 mm/.009"	0659107-200
M 150 (red)	> 0.23 mm/.009"	up to 0.33 mm/.013"	0659107-150



Filter element	Nozzle size		WIWA order number
M 100 (black)	> 0.33 mm/.013"	up to 0.38 mm/.015"	0659107-100
M 70 (yellow)	> 0.38 mm/.015"	up to 0.66 mm/.026"	0659107-070
M 50 (orange)	> 0.66 mm/.026"		0659107-050
M 30 (blue)			0659107-030
M 20 (green)			0659107-020

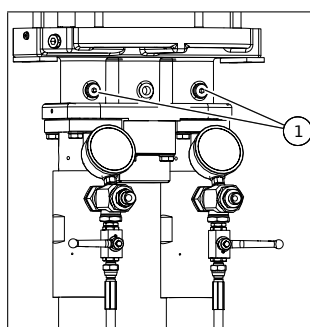


Do not use a filter element with coarse pigmented or fiber-filled materials. The suction screen installed as standard can remain in the screen housing or be replaced with a coarse-meshed screen. In the case of a material change, the filter element of the high pressure filter and the material screen of the suction system must be cleaned or replaced if necessary.

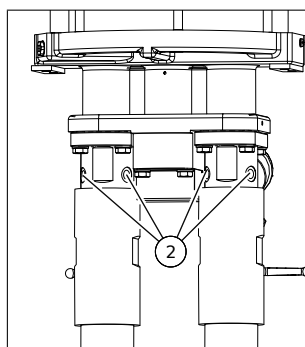
## 8.7 Maintaining the proportioning pump

To prevent damage to the proportioning pump due to material hardening, the release agent chambers of the fluid pumps are filled with release agent to soften the material.

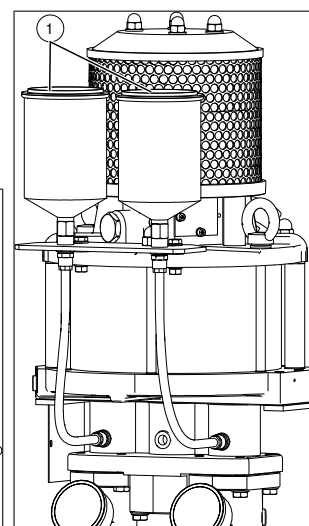
Depending on the characteristics of the material to be processed, signs of wear will appear on the fluid pump packing after a certain time in operation. The material may be pressed by the packing in this case, and may then harden. Packing wear can be discerned by discoloration of the release agent or by release agent leaking out at the overflow bend.



**Fig. 80:** Filling the release agent



**Fig. 81:** Draining the release agent



**Fig. 82:** Filling release agent on model with release agent container

No.	Description
1	Filling the release agent

2	Draining the release agent
---	----------------------------

### 8.7.1 Checking the release agent level in the proportioning pumps

Prior to each commissioning, check the release agent level in the proportioning pumps and top up with release agent if necessary (see section 8.7 on page 79). To check the release agent level, add fresh release agent through the filler openings. As soon as release agent leaks out of the filler openings, the release agent chambers have been filled to the maximum level.

### 8.7.2 Checking the release agent of the proportioning pumps for material residues

To check the release agent for material residues, drain off a small amount of release agent at the draining screws in sequence.

If material residues are discovered in the release agent, you must assume that the packing for the respective fluid pump is worn. In this case, have the pump packing replaced as quickly as possible.

After performing the check, add an appropriate quantity of fresh release agent through the filler openings.

## 8.8 Maintenance of the flush pump

### 8.8.1 Checking the release agent for material residues

If material residues are discovered in the release agent, you must assume that the packing for the respective fluid pump is worn. In this case, have the pump packing replaced as quickly as possible.

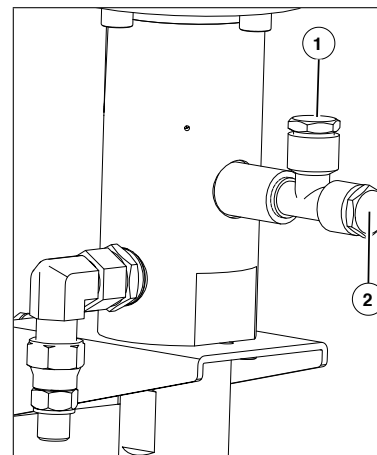
### 8.8.2 Filling the release agent and checking the fill level

The release agent cup for the pumps must be filled with release agent to keep the wear of the packings as low as possible.

Prior to every commissioning, check the release agent level if possible. Top off the release agent if necessary. We recommend using the release agent from **WIWA** (order no. 0163333).

### Flush pump, size 27.33

No.	Description
1	After performing the check, add a corresponding quantity of fresh release agent through the filler opening.
2	Drain a small amount of release agent via the draining screw.



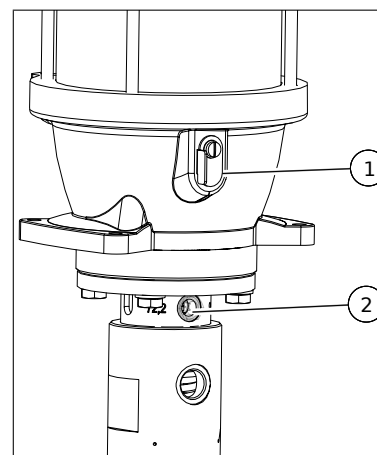
**Fig. 83:** Filling/draining release agent on Inject 333

### Flush pump, size 72.32

No.	Description
1	To fill the release agent, slide the cover for the filler opening to the side and press the release agent in by means of the dosing bottle.
2	The release agent should be at the center of the inspection glass for optimal filling.



A complete replacement of the release agent is only to be performed by **WIWA** customer service or personnel trained to do so when the fluid pump is dismantled.



**Fig. 84:** Filling/draining release agent on Inject 230

## 8.9 Mixing unit

To prevent hardening of the material in the machine, the machine must always run through a complete flushing process at the end of work. The mixing unit should be protected against spray mist.



### WARNING

If it is necessary to clean the mixing unit with flushing agent, it is absolutely necessary that the machine is free of voltage, since the measuring sensors in the standard version are not explosion-protected!

### 8.9.1 Replacing the mixing element

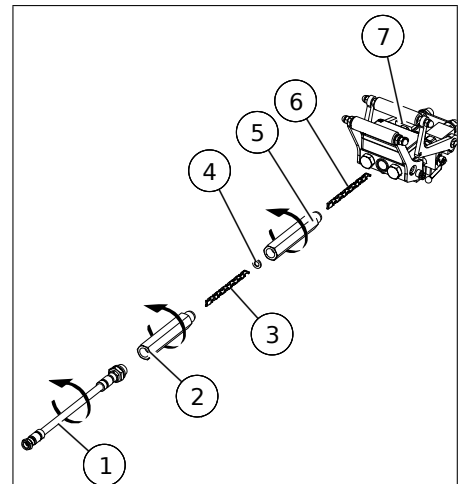
To avoid blockages in the mixing tube, it is necessary to clean the mixing element regularly. In case of severe contamination, we recommend replacing it with a new one.

An SW 19 and SW 27 open end spanner are required for the assembly work.

Observe the following work steps while doing so:

1. Release the material hose from the packer and unscrew it on the mixing tube.
2. Unscrew mixing tube 1 from mixing tube 2.
3. Remove mixing element 1.
4. Remove the gasket from mixing tube 2. It may even stick to mixing tube 1.
5. Unscrew mixing tube 2 from the mixer block.
6. Remove mixing element 2.
7. Clean all parts and replace damaged parts with new ones.
8. Install the static mixer in the reverse order. Seal all screw connections with Teflon tape.

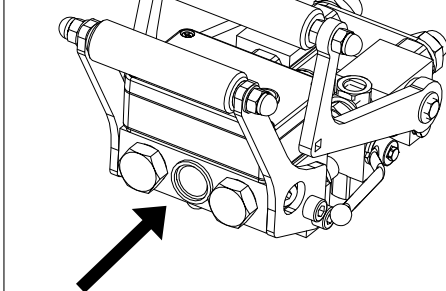
No.	Description
1	Material hose with packer connection
2	Mixing tube 1
3	Mixing element 1
4	Gasket
5	Mixing tube 2
6	Mixing element 2
7	Mixer block



**Fig. 85:** Replacing the mixing element

## 8.9.2 Checking the mixer block for leak-tightness

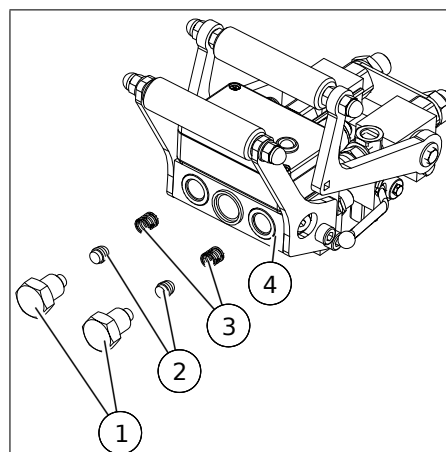
The mixer block of the mixing unit can be checked for leak-tightness as follows:

- Unscrew the static mixer from the mixer block.
  - Release all material hoses and the flushing agent hose on the mixer block.
  - Install the flushing agent hose to the connection point of the static mixer.
  - Hold the mixer block over a material collection container.
- 
- Fig. 86:** Connection of the flushing agent hose during the inspection
- Set a low pressure at the compressed air regulator for the proportioning pump. The cleaning agent should now escape at the material inlets of both components. If no other material discharge is visible, the mixer block is leak-tight.
  - If there are leaks, replace the wear parts or the mixer block.
  - Reassemble the mixing unit in the reverse order. Connect the material hoses according to section 6.3.2 on page 57.

## 8.9.3 Replacing the wear parts

Wear parts can lead to leaks on the mixing unit. Replace them if necessary.

No.	Description
1	screw
2	sealing bolt
3	spring
4	Gasket



**Fig. 87:** Wear parts on the mixing unit

## 8.10 Recommended operating fluids

Only use original operating fluids from **WIWA**:

Operating fluid	WIWA order number
Release agent, yellow, standard (0.5 l) <sup>1</sup>	0163333
Release agent, red, for isocyanate (0.5 l) <sup>1</sup>	0640651
Anti-freeze agent (0.5 l) <sup>2</sup>	0631387
Pneumatic oil (0.5 l) <sup>2</sup>	0632579

<sup>1</sup> Plasticizer for filling the release agent vessels of e. g. the proportioning pump, feed pump and flush pump as well as the dosing valves

<sup>2</sup> for the maintenance unit

The release agent and pneumatic oil are also available in larger containers on request.

## 9 Eliminating operational faults



Only eliminate operational faults if you are equipped with the prescribed personal protective equipment. Details on this can be found in section 2.4.4 on page 13.

### 9.1 Mechanical faults

fault	possible cause	remedy
During the downstroke of the proportioning pump, the hardener pump does not generate pressure. The standard component pressure increases.	The hardening pump bottom valve is defective.	<ul style="list-style-type: none"> <li>▶ Disassemble and clean the bottom valve.</li> <li>▶ Replace defective ball or valve plate.</li> </ul>
During the upstroke of the proportioning pump, the hardening pump does not generate pressure.	The hardener pump piston valve is leaking.	<ul style="list-style-type: none"> <li>▶ Disassemble and clean the piston valve.</li> <li>▶ Replace defective ball or valve plate.</li> </ul>
The hardener pump does not generate pressure during the upstroke and downstroke.	The hardener pump does not receive material.	Check the material guiding.
The standard component pump does not generate any pressure during the upstroke. The pressure on the hardener side is very high.	The piston valve does not work.	<ul style="list-style-type: none"> <li>▶ Check and clean the piston valve.</li> <li>▶ Replace defective ball or valve plate.</li> </ul>
No pressure is generated during the upstroke and downstroke with the standard component. The pressure of the hardener component is very high.	The base component pump receives no material.	Check material supply.
During injection, the pressure of the standard component constantly increases in comparison to the hardening component.	The packings for the hardening component pump are leaking.	Replace the packings for the hardener pump.
During injection, the pressure of the hardening component constantly increases in comparison to the standard component.	The packings for the standard component pump are leaking.	Replace the packings for the standard component pump.

fault	possible cause	remedy
During injection, insufficient pressure or material arrives at the mixing unit, although the pressure in the machine is high.	The material hose and/or mixing unit have become clogged.	Clean or replace the material hose and mixing unit.
During injection, the air motor of the proportioning pump runs jerkily. The injection pressure falls when the mixing unit is open.	The compressed air supply is insufficient.	Replace the compressor.
	The cross section of the compressed air supply line is too small.	Increase the cross section of the compressed air line.
	The air pressure in the supply network is too low.	Increase the air pressure in the network.
Compressed air is leaking at the guide axis on the air motor.	The seals of the air motor are worn.	Re-seal the air motor.
The air motor no longer operates, although the compressed air supply is established. There is no longer any material pressure present in the machine.	The air motor controller is defective.	Have the air motor repaired at the <b>WIWA</b> service workshop.
The machine will not start up.	The ball valve at the maintenance unit is closed.	Open the ball valve at the maintenance unit.
The machine no longer operates when the mixing unit is open, material pressure is present.	The pot life has not been observed. The material hose and mixing unit were not flushed in time. The material has hardened.	Clean or replace the parts hardened with the mixed material.
Hardener or paint leaks out of the protective grating of the proportioning pump.	The packings for the respective fluid pump are worn.	Replace the packings on the respective fluid pump.

## 9.2 Alarms

fault	possible cause	remedy
"Controller starting. Please wait!"	Controller is booting up.	Inputs are not possible while the controller is booting up.
"Overpressure"	Air inlet pressure too high.	Reduce air inlet pressure.
	Fluid pump of a component worn or defective. This causes the pressure in the other fluid pump to increase.	Have the defective fluid pump repaired or replaced.
"Temperature alarm ...max"	Temperature of one or both components too high.	Adjust temperature setting (see section 4.4.4 on page 43).



fault	possible cause	remedy
"Temperature alarm ...min"	Temperature of one or both components too low.	Adjust temperature setting (see section 4.4.4 on page 43).
"Main pressure monitoring"	No intake pressure present.	<ul style="list-style-type: none"> <li>▶ Check compressed air supply,</li> <li>▶ Switch on compressor,</li> <li>▶ Diameter of compressed air line too small.</li> </ul>
"Mixing fault component A:B with current mixture"	Parts of unit blocked or defective.	Check hoses, high pressure filter, etc., for blockages and remove them by flushing or by mechanical means, if necessary.
	Fluid pump of a component worn or defective.	Have the defective fluid pump repaired or replaced.
	Material used up	Fill up material, or replace drum or container with a full one
	Volume sensor dirty or defective	Check volume sensor, replace if necessary
"Pump running"	Preset switch-off time (section 4.4.5 on page 45) expired	<ul style="list-style-type: none"> <li>▶ Hoses defective,</li> <li>▶ One-hand lever not in correct position,</li> <li>▶ Pressure sensor and temperature sensor do not react</li> </ul>
"Pressure sensor wire break"	Cable break	Check cable for damage
	Cable not connected	Check cable connection
"Temperature sensor wire break"	Cable break	Check cable for damage
	Cable not connected	Check cable connection
Unit switches off, LED signal light flashes slowly	One-hand lever on the mixing unit not completely switched through, whereby the monitoring mode was not activated	Bring one-hand lever into correct position
	Cable not connected	Check cable connection

# 10 Technical Data

## 10.1 Machine card

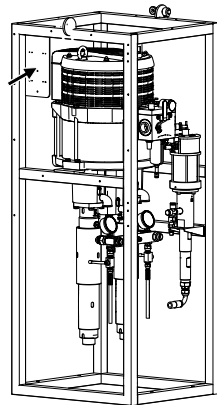
The machine card contains all important and safety-relevant data and information for the machine.

- precise designation and manufacturer's data
- technical data and limit values
- equipment and test confirmation
- procurement data
- machine identification (machine components and accessories supplied with article and spare parts numbers)
- a list of the supplied documentation.

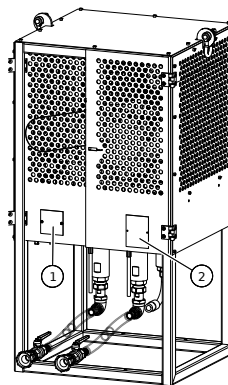
## 10.2 Type plates

The main type plate with the most important technical data for the machine is located on the frame.

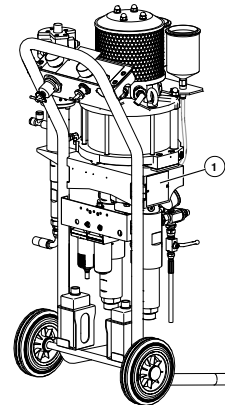
The technical data for the proportioning pump may change with replacement of the fluid pumps. A separate type plate therefore exists for the proportioning pump. For the model with stand frame, it is rail-mounted outside on the right door of the frame



**Fig. 88:** Type plates on the Inject 333 on stand frame



**Fig. 89:** Type plates on the Inject 230 on stand frame



**Fig. 90:** Type plate on the Inject 230 on cart

No.	Description
1	Main type plate
2	Type plate for the proportioning pump

Furthermore, some machine components have a separate type plate, e. g.:

- the air motor for the proportioning pump,

- the fluid pumps for component A and B,
- the flush pump.


These type plates contain the technical data and serial numbers for the respective components.



Please ensure that the data on the type plates matches the information on the machine card. If there are discrepancies, or the type plate is missing, please inform us immediately.

## 10.3 Main type plate

The following data can be found on the main type plate:

-  identification for explosion-protected machines
- Device type
- Max. speed of the agitators
- Max. material temperature in °C and °F
- Nominal voltage
- Weight in kg and lbs
- Short circuit current
- Nominal current
- Serial number
- QR code

The QR code contains a link which will direct you to the machine support on the **WIWA** website. You can find further information for your machine there, such as e.g. spare parts lists, repair instructions, etc.

The QR code can be scanned using your mobile device (e.g. smartphone, tablet). In order to decrypt the QR code, you will need a QR code reader which can be obtained on the Internet as an app free of charge.

## 10.4 Type plate for the proportioning pump

The following data can be found on the type plate for the proportioning pump:

- Output of the A component in cm<sup>3</sup> and fl.oz.
- Output of the B component in cm<sup>3</sup> and fl.oz.
- Pressure ratio
- Mixing ratio
- Total output per double stroke in cm<sup>3</sup> and fl.oz.
- Max. intake pressure in bar and psi
- Max. working pressure in bar and psi

## 10.5 Type plate for the flush pump

The following data can be found on the type plate for the flush pump:

- Device type
- Output per double stroke in cm<sup>3</sup> and fl.oz.
- Transmission ratio
- Max. air inlet pressure in bar and psi
- Max. working pressure in bar and psi
- Max. temperature
- Serial number and year of construction

## 10.6 Emission sound pressure level in the workplace

Air motor Ø		50/70/85	105/140	200/230	270	300/333
Sound pressure level L <sub>pA</sub> at 15 DS with 8 bar	[db(A)]	81	81	85	83	84.5
Sound power level L <sub>WA</sub>	[db(A)]	89	89	96	94	95.5

Your machine's air motor size is listed on the nameplate on the air motor.

## 10.7 QR code

The QR code is located on the cart and on the back of this operation manual and contains a link which will direct you to machine support for your device type on the **WIWA** website.

You can find further information for your device there, such as e.g. spare parts lists, repair instructions, etc.

- Scan the QR code using your mobile device (e.g. smartphone, tablet).

In order to decrypt the QR code, you will need a QR code reader. It can be obtained on the Internet as an App free of charge.

## 10.8 Hose volume

A hose volume is calculated using the following formula:

$$V = \frac{D_i^2 * \pi * L}{4}$$

V = hose volume

D<sub>i</sub> = inner diameter of the hose

L = hose length

The following table shows the volume of conventional hoses:

$D_i$	$L$	$V$		$D_i$	$L$	$V$
4 mm	5 m	63 ml		10 mm	5 m	393 ml
4 mm	7.5 m	94 ml		10 mm	7.5 m	589 ml
4 mm	10 m	126 ml		10 mm	10 m	785 ml
4 mm	12.5 m	157 ml		10 mm	12.5 m	982 ml
4 mm	15 m	188 ml		10 mm	15 m	1178 ml
4 mm	20 m	251 ml		10 mm	20 m	1571 ml
4 mm	25 m	314 ml		10 mm	25 m	1963 ml
4 mm	30 m	377 ml		10 mm	30 m	2356 ml
4 mm	40 m	503 ml		10 mm	40 m	3142 ml
4 mm	50 m	628 ml		10 mm	50 m	3927 ml
5 mm	5 m	98 ml		12 mm	5 m	565 ml
5 mm	7.5 m	147 ml		12 mm	7.5 m	848 ml
5 mm	10 m	196 ml		12 mm	10 m	1131 ml
5 mm	12.5 m	245 ml		12 mm	12.5 m	1414 ml
5 mm	15 m	295 ml		12 mm	15 m	1696 ml
5 mm	20 m	393 ml		12 mm	20 m	2262 ml
5 mm	25 m	491 ml		12 mm	25 m	2827 ml
5 mm	30 m	589 ml		12 mm	30 m	3393 ml
5 mm	40 m	785 ml		12 mm	40 m	4524 ml
5 mm	50 m	982 ml		12 mm	50 m	5655 ml
6 mm	5 m	141 ml		16 mm	5 m	1005 ml
6 mm	7.5 m	212 ml		16 mm	7.5 m	1508 ml
6 mm	10 m	283 ml		16 mm	10 m	2011 ml
6 mm	12.5 m	353 ml		16 mm	12.5 m	2513 ml
6 mm	15 m	424 ml		16 mm	15 m	3016 ml
6 mm	20 m	565 ml		16 mm	20 m	4021 ml
6 mm	25 m	707 ml		16 mm	25 m	5027 ml
6 mm	30 m	848 ml		16 mm	30 m	6032 ml
6 mm	40 m	1131 ml		16 mm	40 m	8042 ml
6 mm	50 m	1414 ml		16 mm	50 m	10053 ml
8 mm	5 m	251 ml		20 mm	5 m	1571 ml
8 mm	7.5 m	377 ml		20 mm	7.5 m	2356 ml
8 mm	10 m	503 ml		20 mm	10 m	3142 ml
8 mm	12.5 m	628 ml		20 mm	12.5 m	3927 ml
8 mm	15 m	754 ml		20 mm	15 m	4712 ml
8 mm	20 m	1005 ml		20 mm	20 m	6283 ml
8 mm	25 m	1257 ml		20 mm	25 m	7854 ml

$D_i$	$L$	$V$		$D_i$	$L$	$V$
8 mm	30 m	1508 ml		20 mm	30 m	9425 ml
8 mm	40 m	2011 ml		20 mm	40 m	12566 ml
8 mm	50 m	2513 ml		20 mm	50 m	15708 ml



#### Headquarter and production

**WIWA Wilhelm Wagner GmbH & Co. KG**

Gewerbestraße 1–3  
35633 Lahnau  
Germany  
Phone: +49 (0)6441 609-0  
Fax: +49 (0)6441 609-2450  
Email: [info@wiwa.de](mailto:info@wiwa.de)  
Website: [www.wiwa.de](http://www.wiwa.de)

#### WIWA subsidiary USA

**WIWA LLC – USA, Kanada, Lateinamerika**

107 N. Main St.  
P.O. Box 398, Alger, OH 45812  
USA  
Phone: +1-419-757-0141  
Fax: +1-419-549-5173  
Email: [sales@wiwa.com](mailto:sales@wiwa.com)  
Website: [www.wiwausa.com](http://www.wiwausa.com)

QR-Code