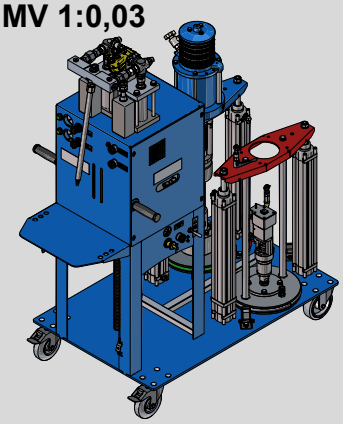
WIWA®
Your project deserves it.

Operation Manual

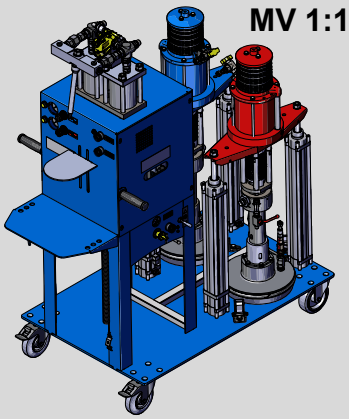
DOSYS M

2K

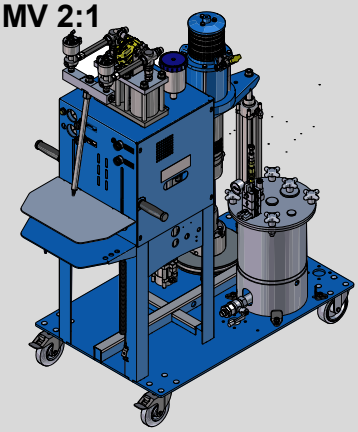
MV 1:0,03



MV 1:1



MV 2:1



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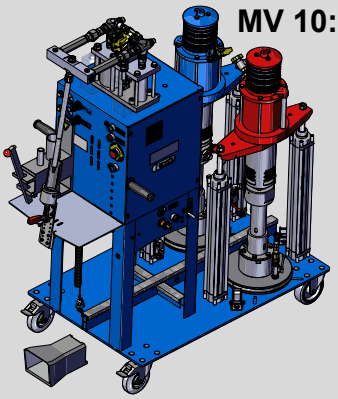

Type:

- ☐ MV 1:0.03
- ☐ MV 1:1
- ☐ MV 2:1
- ☐ MV 10:1

Serial No.:
XXXXXXXXXXXXXXX

CE Ex

2dom_BA_en_B0550055 ✓(2023/09/04)

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	**DOSYS M**
with serial no.	XXXXXXXXXXXXXXX

conforms with the provisions of the above directives.
Responsible for documentation: **WIWA**, +49 (0)6441 609-0

Lahnau, March 26, 2025

Place, Date

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

EU declaration of conformity

in accordance with ATEX Directives

The company	**WIWA Wilhelm Wagner GmbH & Co. KG** **35633 Lahnau** **Gewerbestraße 1–3** **Germany**
hereby declares that the machine type	**DOSYS M**
with serial no.	XXXXXXXXXXXXXXXX

conforms with the provisions of Directive 2014 / 34 / EU.
The listed machine is assigned to Group II, Category 2G.

Labeling: Ex II 2G Ex h IIB T4 Gb

Lahnau, March 26, 2025

Place, Date

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

Contents

1 Foreword

Dear valued customer,

We are delighted that you have opted for one of our units.

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

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 unit. Read and observe the directives and accident prevention regulations valid in your country.

In Germany, these are:

- DGUV 100-500, chap. 2.29 “Processing coating materials”,
- DGUV 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 unit

WIWA Wilhelm Wagner GmbH & Co. KG

2 Safety

This unit has been designed and manufactured with consideration to all safety aspects. It reflects current engineering practice and the valid accident prevention regulations. The unit has 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 unit and other property of the owner,
- the efficient function of the unit.

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

Your safety depends on it!

We recommend that the unit operator 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 working correctly with the unit. A failure to observe this may result in damage to the unit 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 about the risk of crushing


Warning of corrosive substances


Risk of injuries due to rotating unit 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 spray product 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 unit operates at high pressures and can cause life-threatening injuries if handled incorrectly!

Do not leave the unit 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 unit may occur.

Always observe and follow all information in this operation manual and in the separate operation manuals for the individual unit 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 unit.
- ➤ Material hoses and hose assemblies must comply with the maximum working 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 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.

2.2.3 Risks due to rams

WARNING

During the lifting movement of the rams, fingers, hands or other body parts may be crushed by moving parts.

- Do not reach between the follower plate/cover and material drum, traverse, and cylinder cover of the pneumatic cylinder or the clamping piece and cylinder cover of the pneumatic cylinder.

WARNING

During the lifting movement of the rams, loose items of clothing may come between the follower plate or follower cover and the material drum itself or be caught on other unit parts, and be pulled into the container or upwards.

- Wear tight-fitting clothing with low tear-resistance, tight sleeves and no projecting parts.

WARNING

During the lifting movement of the rams, moving parts may cause crushing and impact injuries.

- The machine may always only be operated by one person.
- No persons may remain inside the lifting area of the rams during the lifting movement!

WARNING

Unwanted activation of the rams may cause crushing and impact injuries.

- Rams may always only be operated by one person.
- Set the control lever of the rams to “Stop” during each work interruption.

WARNING

Objects placed on the rams may fall off during the lifting movement and cause injuries.

- Never place objects on the rams!
- Check the safe mounting of all attachments!

WARNING

If the attachments are lifted out of the material drum while the motor is running, ejected material or loose parts may cause serious injuries.

- Before each lifting movement, switch all attachments off and wait until these devices reach a standstill!

WARNING

Exceeding the permissible lifting weight can result in damage to the machine and cause subsequent personal injuries and property damage.

- The total weight of the attachments may not exceed the maximum permissible lifting weight of the ram! Precise information on the lifting weight can be found in section 8 on page 54.

2.2.4 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

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

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

Explosion-protected units 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 during which a failure of the unit 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 unit.

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.

2.2.5 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.

2.2.6 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 signs

The safety signs attached on the unit indicate possible hazard points and must be observed.

The symbolism on the safety signs corresponds to the labeling of the safety notes described in section 2.1 on page 2.

The safety signs may not be removed from the unit.

Damaged and illegible safety signs must be replaced immediately.

Also read and observe the safety notes in the operation manual!

2.4 Safety features

WARNING

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

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

The unit is equipped with the following safety features:

- Safety valves for plunger pumps,
- Emergency stop button on the control cabinet (optional),
- Compressed air shut-off valves for extrusion systems,
- Ground cable,
- Rupture discs on the proportioning pump (depending on the design),
- Protective cover on the proportioning pump.

Check the safety features on the unit:

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

Check list on the pressureless unit:

☐ Seal on the safety valves OK?

☐ Safety valves free of external damage?

☐ Function of the compressed air shut-off valves OK?

☐ Ground cable free of damage?

☐ Is the ground cable connected to the unit and OK at the circuit board?

☐ Protective cover present and closed?

Check list on the pressurized unit:

☐ Function of the safety valves OK? (For function test, see section 2.4.1 on page 10.)

☐ Function of the emergency stop button OK? (if present)

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

2.4.1 Safety valves

The safety valve in the air motor of each plunger pump prevents the maximum permissible air inlet pressure from being exceeded. If the air inlet pressure on one of the plunger pumps exceeds the set limit value, the safety valve installed at this location discharges.

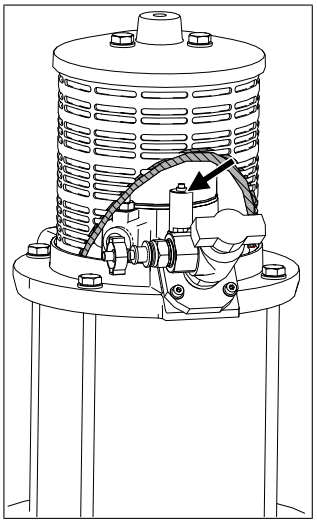

Fig. 1: Safety valve

WARNING

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

- Never operate the unit without safety valves or with defective safety valves!
- If it is necessary to replace a safety valve, please refer to the machine card for the order number.
- With new safety valves, please ensure that these are set to the maximum permissible air inlet pressure of the unit (see type plate or machine card) and sealed.

2.4.2 Emergency stop button

With the emergency stop button, the machine can be switched off as quickly as possible in an emergency. By pressing this button, the energy supply is interrupted and the pneumatic shut-off valve on the regulator cluster is closed.

The emergency stop button locks in the pressed position. Turn it clockwise in order to unlock it.

Fig. 2: Emergency stop button

2.4.3 Stop button

The compressed air supply and thus the filling process is interrupted with the Stop button on the control cabinet.

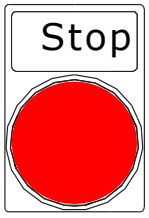

Fig. 3: Stop button

2.4.4 Compressed air shut-off valves

The compressed air shut-off valve on the maintenance unit interrupts the air supply to the entire machine.

Furthermore, the machine is equipped with additional compressed air shut-off valves, with which it is possible to interrupt the air supply to individual components, such as e. g. the flush pump.

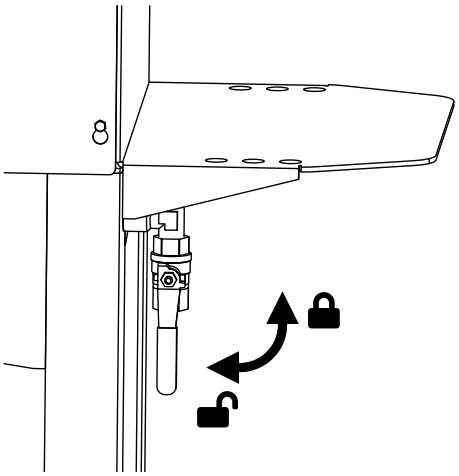

Fig. 4: Compressed air shut-off valve on the compressed air connection

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

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!

2.4.5 Rupture disc pressure protection

Only machines with a mixing ratio of 100:3 or 10:1 are equipped with a rupture disc pressure protection.

A rupture disc is installed in the screw connection on the rear side of the mixer block.

Rupture discs are pressure protection with a disposable membrane.

If the permissible material pressure is clearly exceeded, the membrane bursts and the material escapes into the connected collecting vessel.

In this case, the rupture disc must be replaced immediately. The order data for the rupture disc can be found on the machine card.

When installing a new rupture disc, make sure that the uncolored side is facing the material.

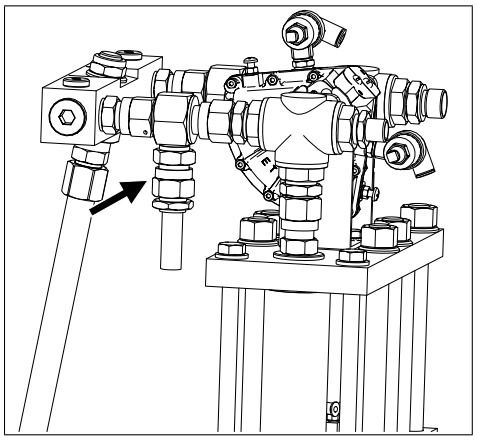

Fig. 5: Example for seat of the rupture disc

2.4.6 Protective cover

The protective cover covers movable parts of the proportioning pump. The bracket plate is fixed; the side plates can be removed for repair and maintenance purposes.

WARNING

Operation without the protective cover may result in crushing.

➤ Never put the unit into operation without the protective cover!

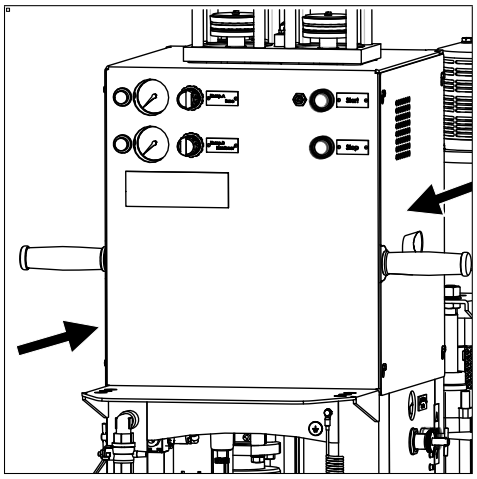

Fig. 6: Protective cover

2.4.7 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)!

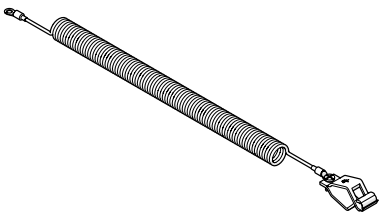

Fig. 7: Ground cable

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

2.5 Operating and maintenance personnel

2.5.1 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 unit, and on wearing the correct work clothing and protective equipment,
- must make work aids, such as lifting gear for transporting the unit 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 unit into operation.

2.5.2 Personnel qualifications

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

- **Instructed operator** has received verified instruction from the owner regarding the tasks entrusted to him and the possible risks in the event of incorrect conduct.
- **Trained personnel** are capable of carrying out maintenance and repair work on the unit, independently recognizing possible dangers and avoiding risks due to instruction provided by the manufacturer.

2.5.3 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 unit.

2.5.4 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.

2.6 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.

2.6.1 Spare parts

- When maintaining and repairing the unit, only original spare parts from **WIWA** may be used.
- If spare parts are used, that have not been produced or supplied by **WIWA**, all warranty claims and liability shall be excluded.

2.6.2 Accessories

- If you use original accessories from **WIWA** that are designed for the working pressure, their suitability for use in our units is guaranteed.
- If you use third-party accessories, these must be suitable for the unit - 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.

2.7 How to respond in an emergency

2.7.1 Shutting down the unit and relieving the pressure

In an emergency, you must bring the unit to a standstill immediately and relieve the pressure.

1. Press the stop button or emergency stop button on the control cabinet.
2. Close the compressed air shut-off valve on the compressed air regulation unit in order to interrupt the compressed air supply of the unit.
3. To relieve the pressure, open the venting ball valve on each extrusion unit.

CAUTION

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

- Exercise particular caution when proceeding further.

2.7.2 Failure of the power supply

In the event of a failure of the power supply, unintentional restarting must be prevented.

- Set the control lever of the rams to “Stop”.
- Close the compressed air shut-off valve at the air inlet.

2.7.3 Leakage

WARNING

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

- Immediately shut down the unit 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 unit up again.

2.7.4 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 **DOSYS M** is a dual component conveying and filling system with a fixed mixing ratio, which ensures accurate and consistent proportioning.

Mixed and ready-to-process material can be filled directly at the static mixer.

The technical data for your unit can be found on the machine card enclosed or on the type plate.

3.1 Intended use

The **DOSYS M** is intended for conveying and filling non-fluid materials, such as adhesives, grease, sealing compounds, mastic, etc.

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 2.6.1 on page 16),
- accessories are used that are not suitable for the unit (see section 2.6.2 on page 16),
- units without Ex identification are used in potentially explosive atmospheres,
- the unit is operated outside of the operating limits according to the type plate.

3.3 Contruction

3.3.1 Design with mixing ratio 1:1

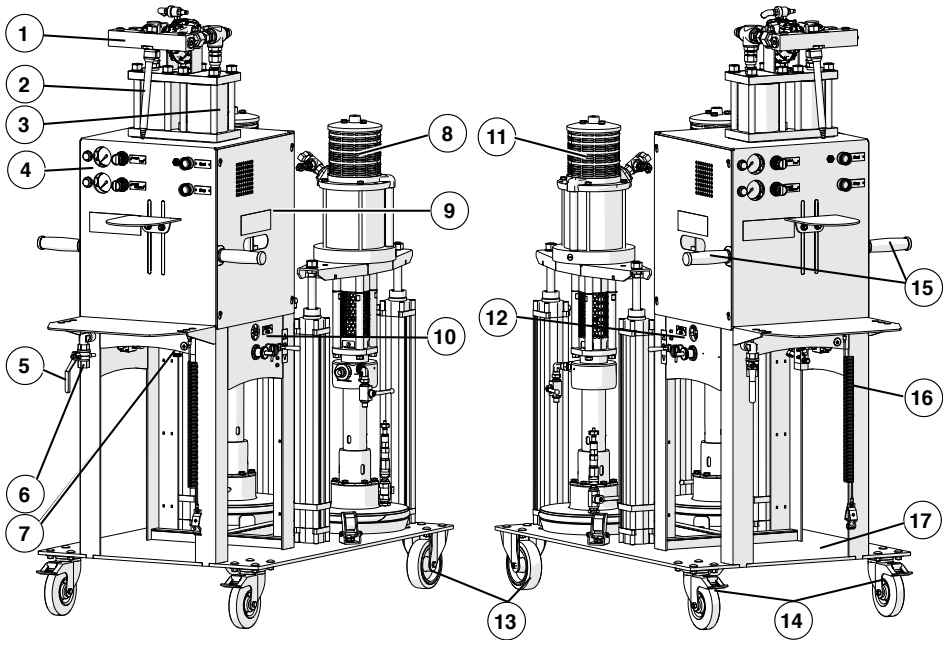

Fig. 8: Design of the unit with mixing ratio 1:1

No.	Description	see
1	Mixing unit	section 3.6 on page 27
2	Static mixer	section 3.6 on page 27
3	Proportioning unit	section 3.6 on page 27
4	Proportioning panel	section 3.4 on page 23
5	Compressed air shut-off valve	section 2.4.4 on page 12
6	Compressed air connection	section 4.3.2 on page 34
7	Filter regulator for the control air (preset to 6 bar at the factory)	
8	Extrusion unit for component B	section 3.5 on page 24
9	Protective cover	section 2.4.6 on page 13
10	Regulator cluster for the component B ram	section 3.5 on page 24
11	Extrusion unit for component A	section 3.5 on page 24
12	Regulator cluster for the component A ram	section 3.5 on page 24
13	Fixed castor	
14	Castor with locking brake	
15	Handles for pushing the unit	
16	Ground cable	section 2.4.7 on page 13
17	Frame	

3.3.2 Design with mixing ratio 1:0.03

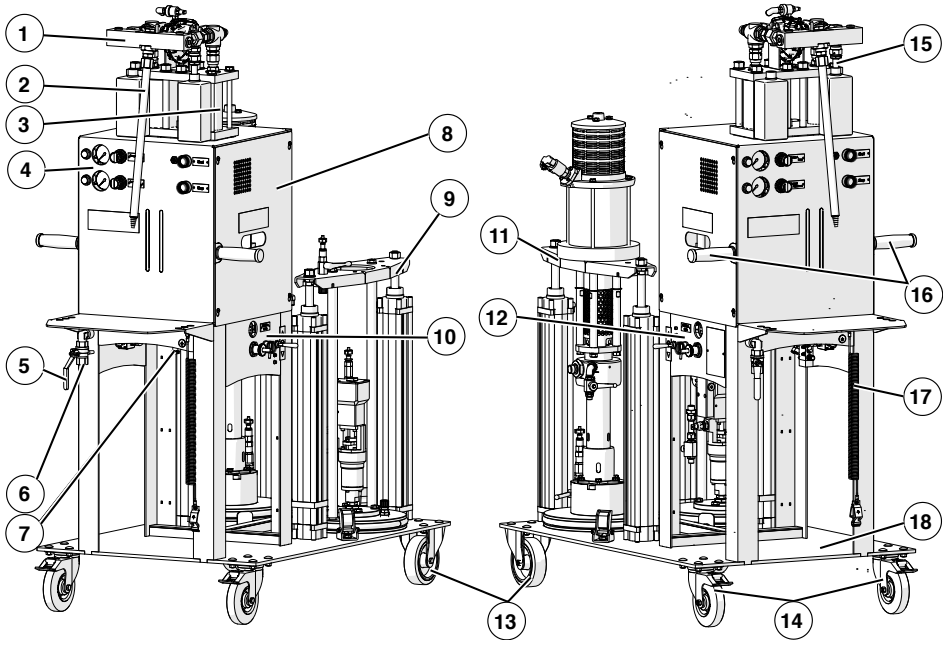

Fig. 9: Design of the unit with mixing ratio 1:0.03

No.	Description	see
1	Mixing unit	section 3.6 on page 27
2	Static mixer	section 3.6 on page 27
3	Proportioning unit	section 3.6 on page 27
4	Proportioning panel	section 3.4 on page 23
5	Compressed air shut-off valve	section 2.4.4 on page 12
6	Compressed air connection	section 4.3.2 on page 34
7	Filter regulator for the control air (preset to 6 bar at the factory)	
8	Protective cover	section 2.4.6 on page 13
9	Extrusion unit for component B	section 3.5 on page 24
10	Regulator cluster for the component B ram	section 3.5 on page 24
11	Extrusion unit for component A	section 3.5 on page 24
12	Regulator cluster for the component A ram	section 3.5 on page 24
13	Fixed castor	
14	Castor with locking brake	
15	Rupture disc device	section 2.4.5 on page 12
16	Handles for pushing the unit	
17	Ground cable	section 2.4.7 on page 13
18	Frame	

3.3.3 Design with mixing ratio 2:1

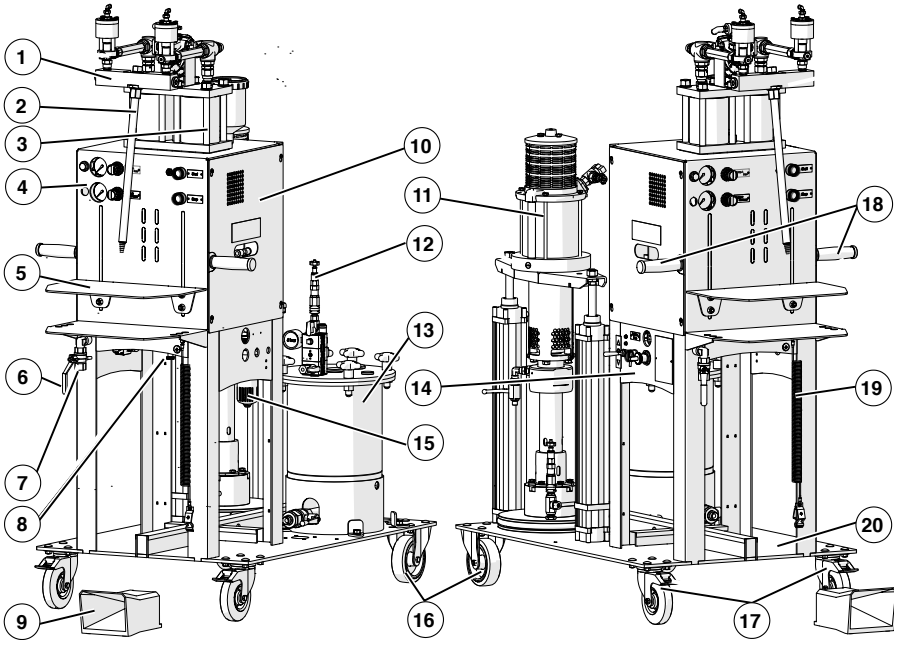

Fig. 10: Design of the unit with mixing ratio 2:1

No.	Description	see
1	Mixing unit	section 3.6 on page 27
2	Static mixer	section 3.6 on page 27
3	Proportioning unit	section 3.6 on page 27
4	Proportioning panel	section 3.4 on page 23
5	Console, adjustable	
6	Compressed air shut-off valve	section 2.4.4 on page 12
7	Compressed air connection	section 4.3.2 on page 34
8	Filter regulator for the control air (preset to 6 bar at the factory)	
9	Foot pedal, optional	section 3.7.3 on page 31
10	Protective cover	section 2.4.6 on page 13
11	Extrusion unit for component A	section 3.5 on page 24
12	Pressure vessel compressed air connection	section 3.5.2 on page 26
13	Pressure vessel for component B	section 3.5.2 on page 26
14	Regulator cluster for the component A ram	section 3.5 on page 24
15	Silica gel filter	section 6.7 on page 49
16	Fixed castor	
17	Castor with locking brake	
18	Handles for pushing the unit	
19	Ground cable	section 2.4.7 on page 13
20	Frame	

3.3.4 Design with mixing ratio 10:1

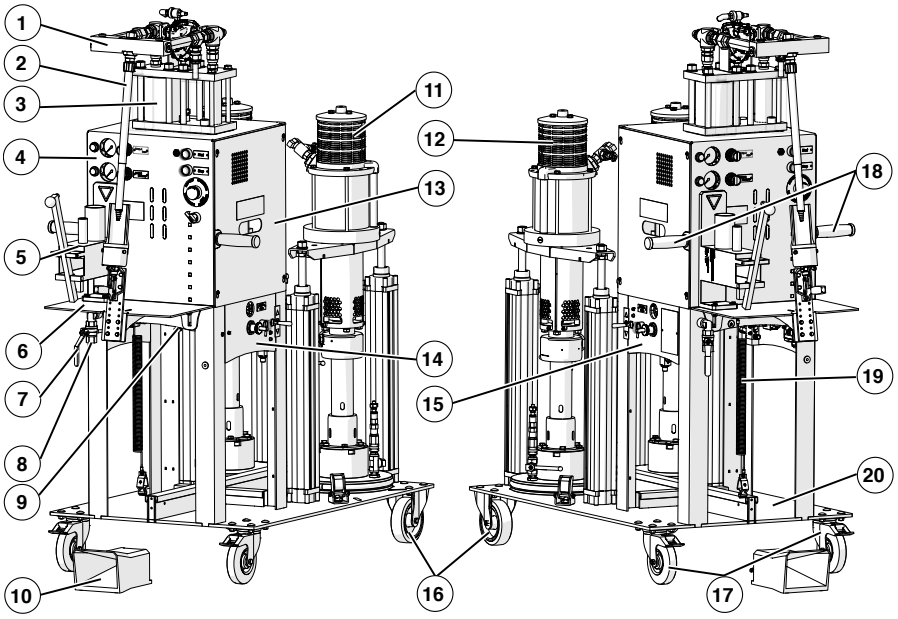

Fig. 11: Design of the unit with mixing ratio 10:1

No.	Description	see
1	Mixing unit	section 3.6 on page 27
2	Static mixer	section 3.6 on page 27
3	Proportioning unit	section 3.6 on page 27
4	Proportioning panel	section 3.4 on page 23
5	Cartridge filling device	section 3.7.2 on page 30
6	Console	section 3.7.1 on page 30
7	Compressed air shut-off valve	section 2.4.4 on page 12
8	Compressed air connection	section 4.3.2 on page 34
9	Filter regulator for the control air (preset to 6 bar at the factory)	
10	Foot pedal, optional	section 3.7.3 on page 31
11	Extrusion unit for component A	section 3.5 on page 24
12	Extrusion unit for component B	section 3.5 on page 24
13	Protective cover	section 2.4.6 on page 13
14	Regulator cluster for the component A ram	section 3.5 on page 24
15	Regulator cluster for the component B ram	section 3.5 on page 24
16	Fixed castor	
17	Castor with locking brake	
18	Handles for pushing the unit	
19	Ground cable	section 2.4.7 on page 13
20	Frame	

3.4 Operating panel

Most of the control elements and displays for the machine are located on the operating panel.

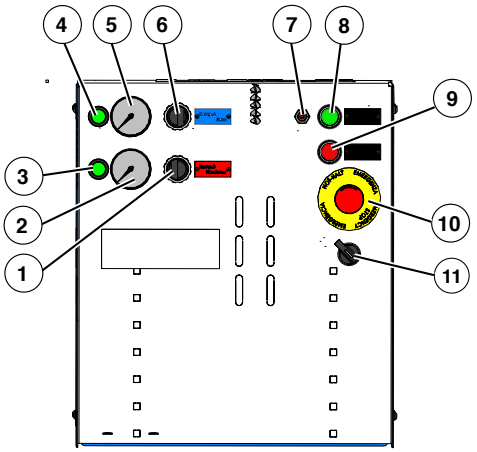

Fig. 12: Operating panel

No.	Description
1	Optical display for component B container empty message – If the minimum fill level has been reached in the container, a green pin is pressed out
2	Component B feed pump pressure display
3	Optical display for component A container empty message – If the minimum fill level has been reached in the container, a green pin is pressed out
4	Component A feed pump pressure display
5	Component B feed pump compressed air regulator – preset to 3 bar at the factory
6	Component A feed pump compressed air regulator – preset to 3 bar at the factory
7	Optical display for fill level in the proportioning cylinders – If both proportioning cylinders are completely filled and pressing out the material can be started, a red pin is pressed out
8	Start button for pressing out the material
9	Stop button
10	Emergency stop button
11	Selector switch for material removal on the operating panel or with foot pedal, optional

3.5 Extrusion units

Extrusion units are generally used for the material feed for components A and B. The sizes for this are customer-specific, depending on the properties of the processing materials and the required mixing ratio. Various equipment can be used to feed the material.

3.5.1 Ram with feed pump

These extrusion units consist primarily of the following modules:

- Ram,
- Feed pump (size depending on the mixing ratio),
- Follower plate (design depending on the feed pump used)

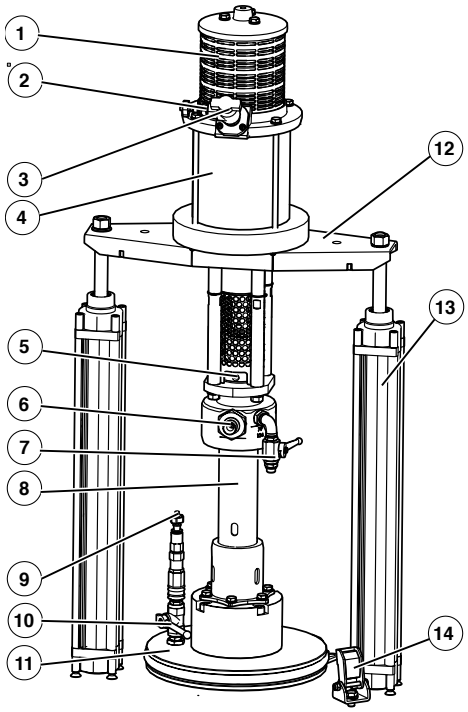

Fig. 13: Example design of the extrusion unit for component A

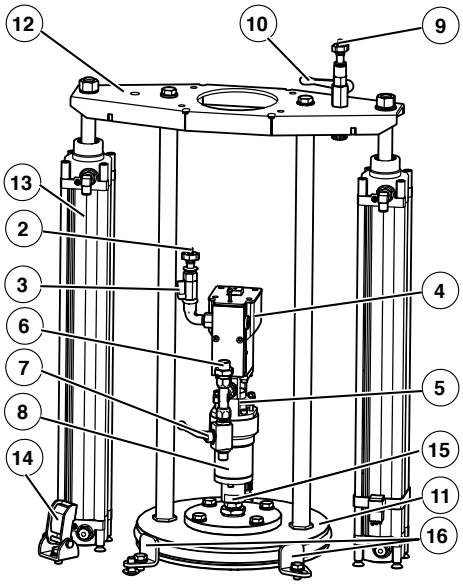

Fig. 14: Example design of the extrusion unit for component B with a mixing ratio 1:0.03

No.	Description
1	Muffler for the feed pump
2	Compressed air connection of the feed pump
3	Compressed air shut-off valve for the feed pump
4	Air motor for the feed pump
5	Adjusting cup for the feed pump
6	Material outlet for the proportioning unit

No.	Description
7	Venting ball valve of the feed pump
8	Fluid pump of the feed pump
9	Compressed air connection for the ventilation of the material drum
10	Shut-off valve for venting the material drum
11	Follower plate
12	Traverse of the ram
13	Pneumatic cylinder of the ram
14	Holder for lashing strap
15	Connection for container ventilation on the follower plate
16	Drum stop

The rams press the follower plates onto the material in the containers. This forcibly fills the feed pumps. The feed pumps further convey the material to the proportioning cylinders.

The lifting movements of the two rams and the venting of the feed pumps are each controlled via a regulator cluster, which is mounted next to the respective extrusion unit on the frame.

No.	Description
1	Control lever for the ram
2	Venting button for feed pump
3	Pressure display for ram
4	Compressed air regulator for ram

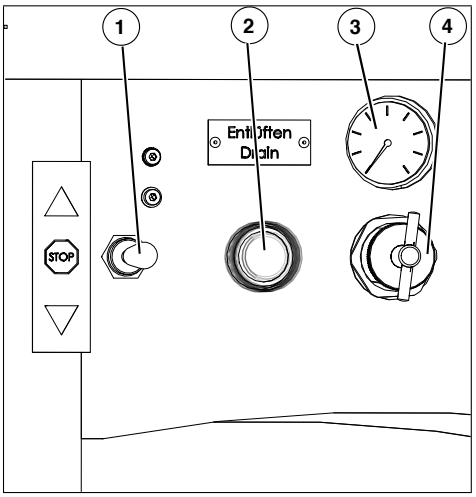

Fig. 15: Regulator cluster for the ram and venting of the feed pump

Using the control lever, the rams can be moved up or down and stopped in order to position or exchange a material drum. The adhesive label attached next to the control lever shows the position of the control lever.

The rams may only be operated up to a maximum pressure of 6 bar.

The fill level in each material drum is monitored with a sensor on the rear side of one of the two pneumatic cylinders.

As soon as the set minimum quantity has been reached, the sensor triggers a container empty message. A green pin is then pressed out in the optical display for the container empty message of the respective component on the operating panel.

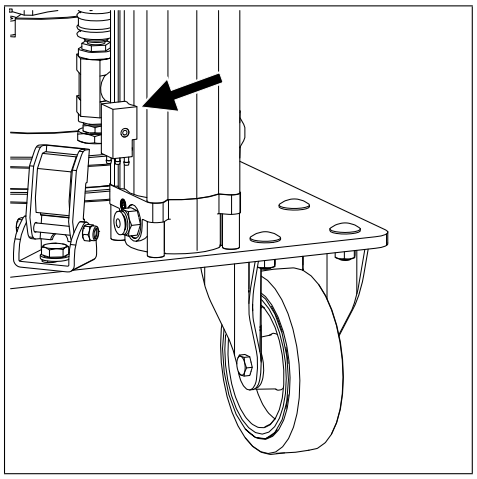

Fig. 16: Sensor for container empty message

Setting the sensor for container empty message:

The fill level at which the container empty message is to take place is material-specific and depends on how many solids are deposited on the container or can be processed. The minimum fill level, at which the container empty message is triggered, is determined through the vertical position of the sensor:

- the higher the sensor is mounted, the higher the fill level of the container and the earlier the container empty message is triggered.
- the lower the sensor is mounted, the lower the fill level of the container and the later the container empty message is triggered.

The setting for the minimum permitted fill level in the container can be set as follows:

1. Loosen the screw on the sensor.
2. Slide the sensor up or down to the desired position. The sensor position corresponds to the fill level in the container.
3. Lock the sensor in the new position by tightening the screws.

Do not lower the sensor for the container empty message completely, because air can enter the system when the material drum is empty and cause dosage errors.

3.5.2 Pressure vessel

For the processing of isocyanates, the use of a pressure vessel in combination with a silica gel filter is intended. Isocyanates are materials which react sensitively on contact with moisture. Silica gel filters can adsorb moisture to a high degree.

Pressure vessels are connected to the compressed air supply via a compressed air distributor and are controlled via a separate compressed air regulator on the operating panel.

To fill the container, the cover screw connection must be released. After the filling, the pressure vessel is closed again and pressurized. The processing material is pressed out of the pressure vessel into the proportioning cylinder for component B through the pressurization.

As soon as the set minimum fill level in the component A container is reached, the fill level in the pressure vessel has also dropped to a minimum. When replacing the material drum for component A, the pressure vessel with the processing material for component B must be filled.

The silica gel filter is located on the frame of the machine. Air which flows into the material drum must come through the silica gel filter, where it passes through a granulate, which absorbs the moisture from the air. The granulate must be dried regularly (section 6.7.2 on page 50).

Observe and follow the associated separate operation manual when using pressure vessels.

No.	Description
1	Compressed air connection
2	Pressure gauge for displaying the residual pressure after the pressure relief
3	Pressure discharge valve
4	Compressed air shut-off valve
5	Pressure vessel
6	Material outlet
7	Material shut-off valve
8	Safety valve
9	Cover screw connection
10	Container cover
11	Container base

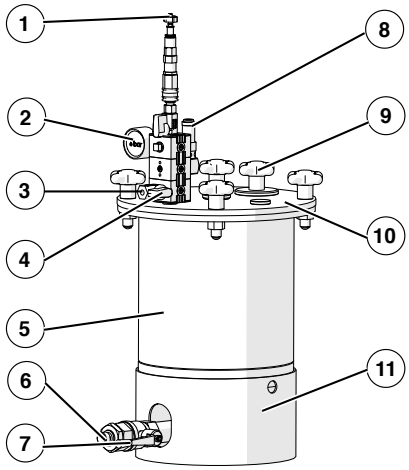

Fig. 17: Pressure vessel

3.6 Proportioning and mixing unit

Both components of the processing material are proportioned in the proportioning unit. The mixing ratio of component A to component B results from the ratio of the volume in the proportioning cylinder for component A to the volume in the proportioning cylinder for component B.

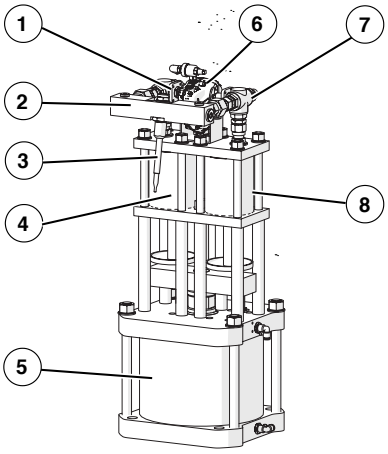

Fig. 18: Proportioning and mixing unit for model with mixing unit 1:1

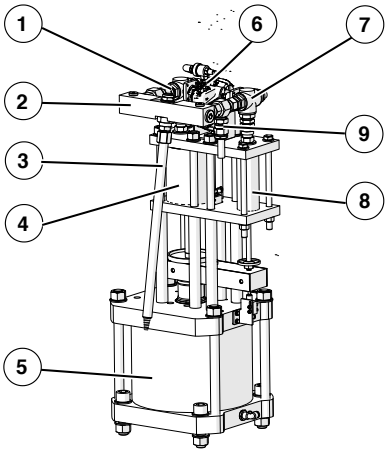

Fig. 19: Proportioning and mixing unit for model with mixing unit 1:1

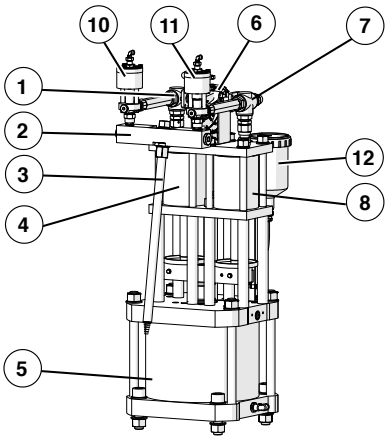

Fig. 20: Proportioning and mixing unit for model with mixing unit 2:1

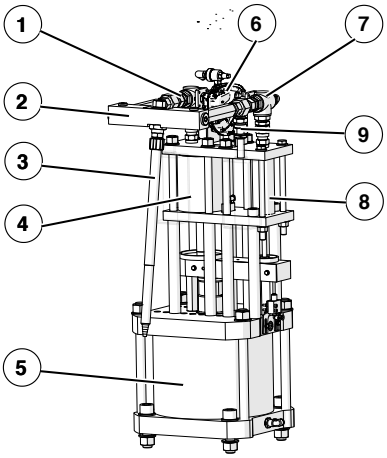

Fig. 21: Proportioning and mixing unit for model with mixing unit 10:1

No.	Designation
1	Component A 3-way ball valve
2	Mixer block
3	Static mixer with protective pipe
4	Component A proportioning cylinder
5	Pneumatic cylinder
6	Slewing drive
7	Component B 3-way ball valve
8	Component B proportioning cylinder
9	Rupture disc device
10	Component A automatic valve
11	Component B automatic valve
12	Component B release agent container

Functional principle of the filling process:

Both proportioning cylinders are empty in the starting position. The 3-way ball valves open and close the material inlets on the proportioning cylinders depending on the position of the slewing drive.

The extrusion units convey both components of the processing material separately into the proportioning cylinders until these are completely filled.

After pressing the start button on the operating panel, the slewing drive switches the 3-way ball valves. At the dosing valves, the material inlets are closed while the material outlets open.

The piston in the pneumatic cylinder moves up and presses the material out of the pressure cylinders into the mixing unit.

As soon as the pressure cylinders are empty, the slewing drive switches the 3-way ball valves back to the starting position. The material outlets are closed and the material inlets are opened. The material flowing into the pressure cylinders presses the piston in the pneumatic cylinder down.

The work cycle starts over again.

Both 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 mixer block.

The filling of the mixed material is controlled via the start button and stop button on the operating panel (see section 3.4 on page 23)

3.7 Optional expansions and accessories

The following list contains just some of the most common accessories and expansions.

The detailed accessory catalog can be found at www.wiwa.de. For further information and order numbers, you can also contact a **WIWA** dealer or **WIWA** customer service.

3.7.1 Console

A height adjustable console can optionally be installed on the operating panel. The position can be adjusted to the material drum used.

The height of the console is set as follows:

1. Loosen the nuts underneath the console. Make sure that they are not unscrewed completely.
2. Place a material collecting vessel under the material outlet of the mixing unit on the console.
3. Align the console horizontally to the desired height.
4. Tighten all nuts underneath the console again.

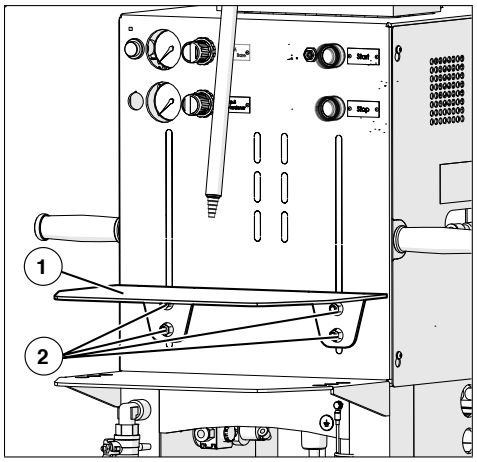

Fig. 22: Height adjustable console

3.7.2 Cartridge filling and cartridge cutter

The processing material can be filled directly into cartridges with this equipment. The maximum filling quantity is 310 ml.

The cartridge cutter (optional) can be used to cut the cartridge tips and the material outlet nozzles of the static mixer precisely.

The cartridge is placed in the holder for the filling process.

No.	Description
1	Lever for cartridge cutter
2	Guide for cutting the cartridge
3	Guide for cutting the material outlet nozzle of the static mixer
4	Cartridge holder
5	Cartridge locking device
6	Console (section 3.7.1 on page 30)

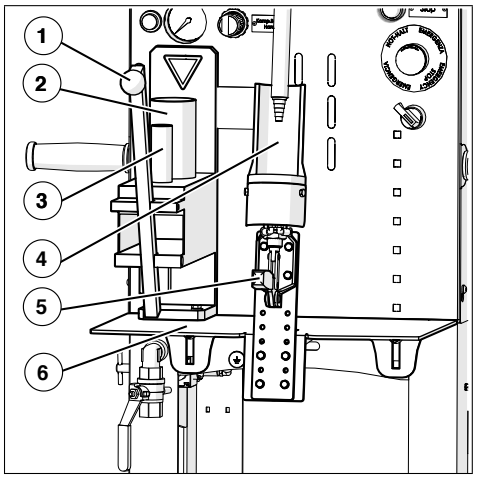

Fig. 23: Cartridge filling device

1. Insert the cartridge and the nozzle of the static mixer into the guide with the tip pointing down.
2. To cut, press down the lever of the cartridge cutter.
3. Screw the nozzle onto the material outlet of the static mixer.

4. Release the cartridge locking device.
5. Insert the cartridge into the cartridge holder with the opening pointing up.
6. Lock the cartridge with the cartridge locking device.

3.7.3 Foot pedal

The filling process can be controlled using a foot pedal.

1. Place a material collecting vessel under the material outlet of the mixing unit.
2. Press the Start button on the operating panel.
3. Press the foot pedal to fill the material.

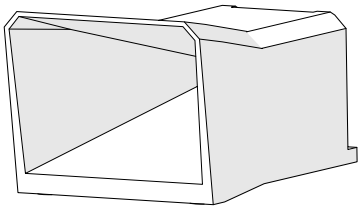

Fig. 24: Foot pedal

During the initial commissioning or after a material change, the proportioning and mixing unit must be filled with processing material and ventilated. Press the foot pedal repeatedly until both components escape at the mixing unit free of bubbles.

4 Transport, installation, and assembly

Only carry out the transport, installation, and assembly of the unit if you are equipped with the prescribed personal protective equipment. Details on this can be found in section 2.5.4 on page 15.

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

4.1 Transport

Observe the following information during unit transport:

- When loading the unit, ensure sufficient load-bearing capacity of the lifting gear and lifting accessories. The dimensions and weight of the unit can be found in the technical data and type plate.
- The unit may only be lifted at the intended attachment points for lifting accessories.
- 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.
- When transporting with a forklift, drive the forks as far apart as possible to keep the tipping moment to a minimum.
- Attention: danger of tipping! Ensure the load is evenly distributed, in order to prevent the unit from tipping.
- 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.

4.2 Installation site

The machine can be installed inside or outside spray booths. In order to avoid contamination, installation outside of the immediate spraying area is recommended.

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.

Ambient temperature:

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

Position the machine horizontally on a floor that is level, firm and free of vibrations. The machine may not be tilted or tipped. Make sure that all controls and safety features are easy to reach.

Safety measures at the installation site:

- ➤ Stability and sufficient free space for safe operation of the machine must be ensured.
- ➤ Fasten the machine to its installation site, in order to secure it against unintended movement. To do this, press the wheel brake down onto the frame by foot (see Fig. 25). Before each transport, release the wheel brake by pulling it up.

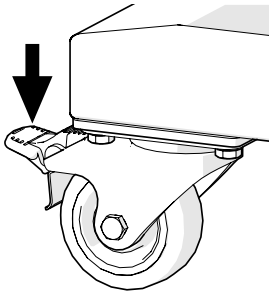

Fig. 25: Wheel brake

- ➤ 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. At least 5-times air exchange per hour must be guaranteed.
- ➤ Always observe and follow the safety data sheets and processing instructions of the material manufacturer.
- ➤ Even if legal regulations do not apply to the low-mist airless spray process, dangerous solvent vapors and paint particles must be extracted.
- ➤ Protect all items neighboring the spray object against possible damage due to paint mist.

4.3 Assembly

WARNING

If untrained personnel carry out assembly work, they endanger themselves and others, as well as risking the operational safety of the unit.

- 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.

- Prior to commissioning, correctly refit any parts or equipment removed for transport purposes, as required for the intended use.
- Carry out further assembly work and establish the connections in accordance with the descriptions below.

4.3.1 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.

4.3.2 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. Ensure that
   - ➤ all compressed air regulators are turned down completely and
   - ➤ all compressed air shut-off valves are closed.
2. Connect the compressed air line to the compressed air connection on the maintenance unit or on the compressed air regulator (depending on the design).

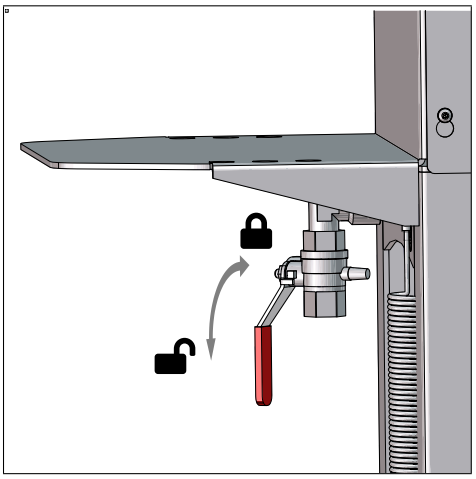

Fig. 26: Compressed air connection and compressed air shut-off valve

5 Operation

Only put the machine into operation if you are equipped with the prescribed personal protective equipment. Details on this can be found in section 2.5.4 on page 15.

- The unit must be correctly erected and fully assembled.
- The air inlet pressure can be found in the information on the type plate (section 8.2 on page 54).
- The processing material must be available in sufficient quantity.

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.

Observe and follow the material and safety data sheets of the respective material manufacturer when processing and storing processing materials.

5.1 Putting the unit into operation

- ☐ Are all safety features present and fully functional (see section 2.4 on page 9)?
- ☐ Check the release agent level depending on the model
  - ☐ in the adjusting cups of the feed pumps (see section 6.5 on page 46)
  - ☐ in the release agent container for component B (see section 6.5.2 on page 47)
- ☐ Check if the adjusting cup on each feed pump is properly tightened (see section 6.6.1 on page 48) and (see section 6.6.2 on page 49).
- ☐ During commissioning, check if all unit parts are leak-tight and tighten the connections if necessary.

Overview of the work steps during commissioning:

1. Start the unit
2. Fill and ventilate the extrusion units (section 5.1.2 on page 37)
3. Optional: Fill the pressure vessel for component B (section 5.1.3 on page 38)

4. Fill and ventilate the proportioning and mixing unit
5. Install the static mixer

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)

5.1.1 Starting the unit

1. Ensure that:
   - ☐ the compressed air regulators on the unit are completely turned down and
   - ☐ the control levers for both rams are on “Stop”.
2. Open the compressed air shut-off valve at the compressed air connection underneath the operating panel.

5.1.2 Filling and ventilating the extrusion units

Complete the following work steps for each component successively.

1. Set the control lever to ▲ on the regulator cluster for the ram.
2. Adjust the pressure to low on the compressed air regulator for the ram, so that the ram with the feed pump moves up slowly.
3. As soon as there is sufficient space under the follower plate for the material drum, set the ram control lever to **Stop**.
4. Loosen the screw connection on the drum stop and slide it back.
5. Place a full material drum under the follower plate.
6. Set the control lever to ▼ on the regulator cluster for the ram. The feed pump is now moved down. Make sure that the follower plate enters into the material drum centrically.
7. Set the control lever of the regulator cluster to **Stop** as soon as the follower plate is in the material drum.
8. Align the drum stop to the bottom of the container and screw it tight.
9. Fasten the material drum with two lashing straps. Pull the lashing straps through the lashing strap holder at the bottom of the frame.
10. Ventilate the material drum.
    - ➤ Depending on the design of the follower plate:
      - – Unscrew the venting toggle.

- Pull off the ventilation tube for the venting of the material drum on the follower plate.
- Open the shut-off valve for the venting of the material drum on the follower plate.

➤ Set the control lever of the ram back to ▼.

➤ As soon as material is visible at the connection for the venting of the material drum, the air has escaped from the material drum. Set the control lever of the regulator cluster to **Stop**.

➤ Close the shut-off valve for venting the material drum on the follower plate or screw the venting toggle back in.

➤ Wipe off any escaped material on the connection for the venting of the material drum, and connect the ventilation tube again using the quick coupling.

11. Ventilate the feed pumps.

➤ Set the control lever to ▼ on the regulator cluster for the ram.

➤ Open the venting ball valve on the feed pump.

➤ Open the compressed air shut-off valve on the feed pump.

➤ Press and hold the venting button for the feed pump on the regulator cluster for the ram until material escapes at the venting ball valve of the feed pump.

➤ Close the venting ball valve on the feed pump.

5.1.3 Filling the pressure vessels with processing material

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. Make sure the compressed air shut-off valve is connected to the pressure vessel.
2. Carefully open the shut-off valve of the pressure discharge valve on the pressure vessel.
3. Loosen all cover screw connections on the pressure vessel.
4. Remove the cover of the pressure vessel.
5. Fill the processing material for component B into the pressure vessel.
6. Place the cover back on the pressure vessel. Make sure the gasket is seated correctly while doing so.
7. Tighten all cover screw connections on the cover of the pressure vessel.
8. Close the shut-off valve of the pressure discharge valve on the pressure vessel.
9. Open the compressed air shut-off valve on the pressure vessel.

5.1.4 Filling and ventilating the proportioning and mixing unit

1. Place a material collecting vessel under the material outlet of the mixing unit (without static mixer).
2. Press the “Start” button on the operating panel. The proportioning cylinders of both components are now pressed out and filled again using the feed pumps. On the model with a foot pedal: Press the foot pedal.
3. Repeat the second work step until both components escape at the mixing unit free of bubbles.

5.1.5 Installing the static mixer

➤ Insert a disposable mixer suitable for the material into the support tube and then screw it tightly to the mixing unit.

The unit is now ready for operation. Filling can now be started.

5.2 Filling mixed material

Before pressing out the mixed material, the unit must have been filled with processing material and ventilated.

1. Place the container into which you wish to fill the mixed material on the storage tray under the static mixer. On the model with a cartridge filling device: Insert the empty cartridge (section 3.7.2 on page 30)
2. On model with a selector switch for the material removal: Set the selector switch to “operating panel” or “foot pedal”.
3. Press the “Start” button on the operating panel.
4. On the model with a foot pedal: Press the foot pedal.

The filling process starts. The process can be interrupted at any time with the Stop button on the control panel or by releasing the foot pedal.

5.3 Refilling the processing material

At the latest, when the minimum fill level in a material drum is reached, material must be added. You can tell which component needs to be refilled by the optical display for the container empty message on the operating panel. A green pin is pressed out in the display for the respective component.

Observe and follow the information in section 5.1.2 on page 37 and section 5.1.3 on page 38.

5.4 Flushing

Flushing the machine is necessary

- during 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,
- when material is changed,
- when work is interrupted and when decommissioning, in order to flush the processing material out of the machine before it hardens.

Observe the pot life of the materials used, in particular when using a multi-component material.

Use only the cleaning material recommended by the material manufacturer and appropriate for the material.

1. Proceed according to section 5.1.2 on page 37, replace the material container only with a container with cleaning agent.
2. Flush the machine until cleaning agent escapes.

5.5 Work interruption

Observe the pot life of the processing material.

For work interruptions longer than the pot life:

1. Press the **Stop** button or step off the foot pedal.
2. Disassemble the static mixer within the pot life.
3. Clean the material outlets on the mixer block with the cleaning agent recommended by the material manufacturer.

After a work interruption – whether intentional or unintentional, e.g. due to a compressed air failure – the unit completes the work cycle that has been started. If the pneumatic cylinder of the proportioning unit is in the upstroke when the unit is restarted, material escapes at the static mixer.

- Before restarting the unit, place a collecting vessel under the material outlet of the static mixer to prevent contamination.

5.6 Decommissioning

1. Close the compressed air shut-off valves
   - ➤ at the compressed air connection underneath the operating panel and
   - ➤ at the feed pumps,
   - ➤ optionally on the pressure vessel.
2. Disassemble the static mixer.

   The static mixer is only suitable for one-time use and must be properly disposed after the end of use.
3. Clean the material outlets on the mixer block with the cleaning agent recommended by the material manufacturer.
4. Close each of the material outlets on the mixer block with a plug.

5.7 Storage

The location for storing the unit 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

5.8 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 unit's use, it must be shut down, disassembled and disposed of according to the legal regulations.

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

6 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 2.5.4 on page 15.

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.

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

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 unit completely.

WARNING

If parts of the unit are blocked (e. g. spray nozzle, material filter for the spray gun, or mixing unit, material hose, high pressure filter, 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 7 on page 53).

After completion of the maintenance and repair work, check the function of all safety features and the faultless function of the unit.

6.1 Regular testing

The unit 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 a system that has been put out of use, testing may be delayed until the next commissioning.

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 unit's place of use.

Have repair work carried out exclusively by **WIWA** Service or specialist personnel in/from authorized workshops. When using the unit in EX-zones, the specialist personnel must have knowledge of ATEX.

6.2 Maintenance schedule

The information in the maintenance schedule constitutes recommendations only. The time periods may vary

- ➤ depending on the nature of the materials used,
- ➤ depending on external influences and
- ➤ the running speed of the feed pumps.

The exact interval period must be adapted to the respective operating conditions.

Time frame	Activity	for further reading
Prior to each commissioning	Check the safety features and control panels for functionality	section 2.4 on page 9
	Check the release agent levels	section 6.5 on page 46
	Adjust the packing	section 6.6.1 on page 48 and section 6.6.2 on page 49
After the first 3 working days and if necessary	Adjust the packing	section 6.6.1 on page 48 and section 6.6.2 on page 49
Once per week	Maintain the filter regulator	section 6.4 on page 46
	Adjust the packing	section 6.6.1 on page 48 and section 6.6.2 on page 49
	Visual inspection of the compressed air and material hoses	section 6.8 on page 51
After a 3-month standstill	Check safety valve for function	section 6.3.1 on page 44
Every 3 years	Inspection of the compressed air and material hoses by a specialist and replacement if necessary	section 6.8 on page 51
Every 6 years at the latest (incl. storage duration of the hose lines)	Complete replacement of the compressed air and material hoses	section 6.8 on page 51

6.3 Safety valve

6.3.1 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 ¼" or ½" connection are used.

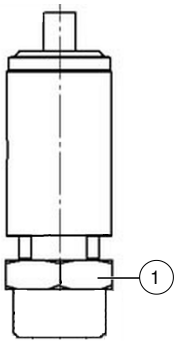

Fig. 27: ¼" connection safety valve

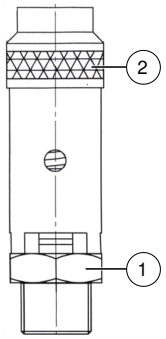

Fig. 28: ½" connection safety valve

No.	Description
1	Hexagon nut
2	Knurled nut

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

Safety valves with a ¼" 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 ½" 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. 28 on page 44) 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.

6.3.2 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. 27 on page 44 and Fig. 28 on page 44) 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 ¼" connection and 40 Nm for a ½" connection.

6.4 Maintaining the filter regulator

The filter regulator filters the moisture and particles of dirt from the compressed air. This prevents condensation water from penetrating the unit, as well as the static charging of the pneumatic hoses.

Any condensation that collects is drained through the drain valve.

The filter regulator is located underneath the protective cover.

- Turn the valve screw to open and close the valve.

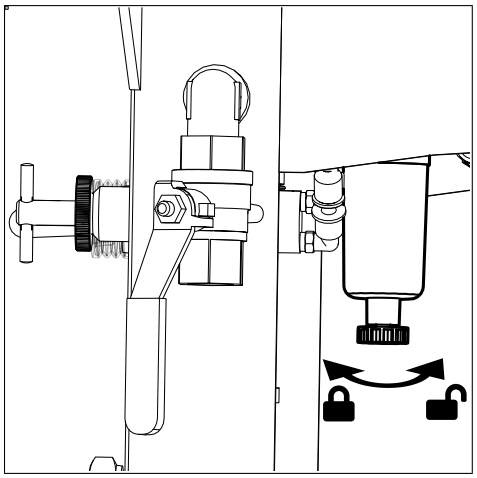

Fig. 29: Filter regulator for the control air

6.5 Checking the release agent levels

To prevent damage to the pumps and valves due to material hardening, the existing adjusting cups and release agent containers are filled with material softener.

The following are located on the unit depending on the design:

- Adjusting cups at the feed pumps,
- Adjusting cups at the automatic valves,
- Release agent container for component B for model with pressure vessel.

Prior to each commissioning, check the release agent level in the adjusting cup or in the release agent container and refill with release agent if necessary.

If impurities are apparent in the release agent, you must assume wear on the packing for the feed pumps or the groove ring on the piston in the proportioning cylinder for component B.

If this is case, replace the pump packing first (section 6.6 on page 48) or replace the pump packing or the groove ring (section 6.6.3 on page 49).

After performing the check, add a corresponding quantity of clean release agent through the filler opening. We recommend using the release agent from **WIWA** (order no. 0163333).

6.5.1 Checking the release agent level in the feed pumps

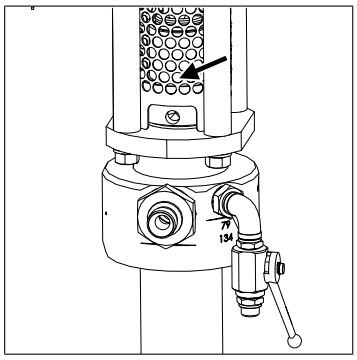

Fig. 30: Example of adjusting cup on the feed pump 134.26

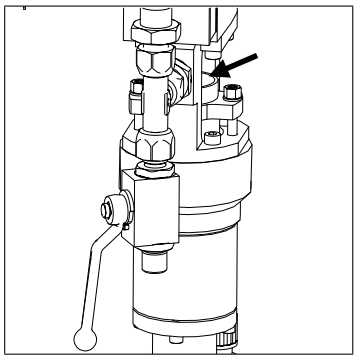

Fig. 31: Example of adjusting cup on the feed pump 37.04,5 with a mixing ratio 1:0.03

At maximum fill level, the adjusting cup is completely filled in each case.

6.5.2 Checking the release agent level in the release agent container

Only for model with pressure vessel (optional).

There must always be sufficient clean release agent in the release agent container to lubricate the piston of component B in the proportioning unit.

No.	Description
1	Release agent container
2	Screw connection
3	Screw
4	Protective plate

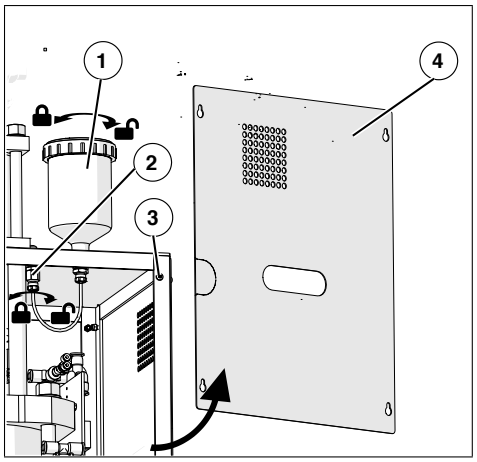

Fig. 32: Release agent container

If necessary, fill the release agent or replace it:

1. Release the four screws on the right protective cladding and remove the protective plate.
2. Hold a material collecting vessel under the hose connection on the pressure cylinder of component B.
3. Release the screw connection on the connection nipple to the proportioning cylinder and collect the release agent in the material collecting vessel.
4. If necessary, clean the release agent container.
5. Screw the hose back on the connection nipple.
6. Fill the release agent container halfway with new release agent.
7. Hook the protective cover back in and lock it with the four screws.

6.5.3 Checking the release agent level in the automatic valves

Only for model with pressure vessel (optional).

To protect the valve needle, there must always be release agent in the packing gland screw.

Refill the release agent if necessary.

Observe the separate operation manual for the automatic valves.

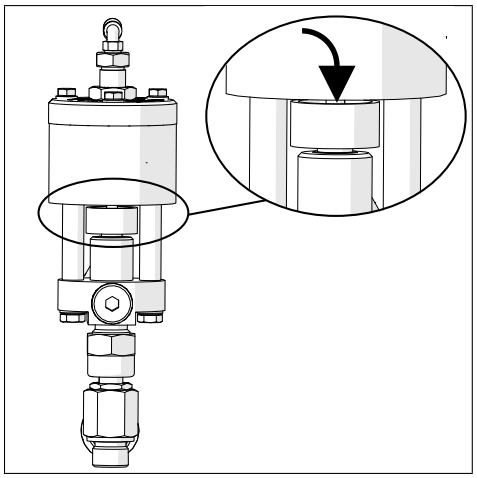

Fig. 33: Adjusting cup at automatic valve

6.6 Adjusting the packing

Carry out a pressure relief of the spray gun before adjusting the packing.

If material escapes between the pneumatic top part and the hydraulic bottom part on the spray gun, the packing must be adjusted.

1. Use an WAF 13 open end spanner to tighten the packing screw in a clockwise direction until a slight resistance is felt and then tighten an additional ¼ revolution.

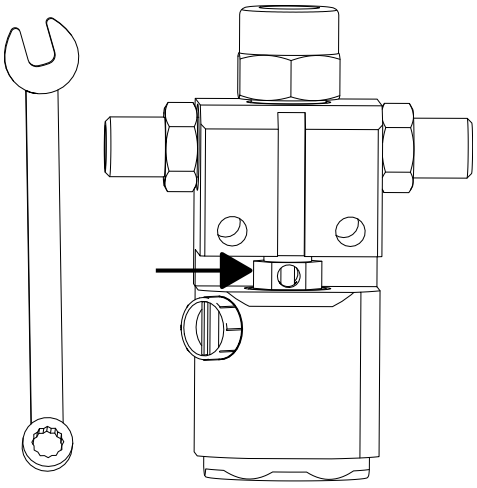

Fig. 34: Tightening the packing screw with the WAF 13 open end spanner

6.6.1 Adjusting the packing of the feed pump 134.34

1. Close the compressed air shut-off valve of the feed pump when the piston of the feed pump is in the downstroke.
2. To relieve the pressure, open the relief ball valve on the feed pump.

3. Insert the attached pin wrench into a free bore of the adjusting cup.
4. Turn the adjusting cup to the right until resistance can be felt. Then turn it another quarter turn.

6.6.2 Adjusting the packing of the feed pump 37.04,5

1. Close the compressed air shut-off valve of the feed pump when the piston of the feed pump is in the downstroke.
2. To relieve the pressure, open the relief ball valve on the feed pump.
3. Insert the attached pin wrench into a free bore of the adjusting cup.
4. Tighten the two screws on the adjusting cup evenly and alternately using an Allen key.

6.6.3 Replacing the packing

Have the top packing replaced by qualified personnel if:

- material escapes at the adjusting cup of component A,
- material escapes from the leakage holes of component B,
- the packing can no longer be adjusted,

6.7 Maintaining the silica gel filter

The granulate in the silica gel filter is orange in active condition. When the moisture absorption increases, the granulate changes color to white. A regeneration or drying or replacement of the granulate is then necessary. For this:

1. remove the silica gel filter,
2. dry the granulate or replace it and
3. reinstall the silica gel filter.

6.7.1 Removing the silica gel filter

Only for model with pressure vessel (optional).

If the granulate has changed color to white, it is saturated with moisture and must either be dried or replaced.

No.	Designation
1	Locking slide
2	Granulate container

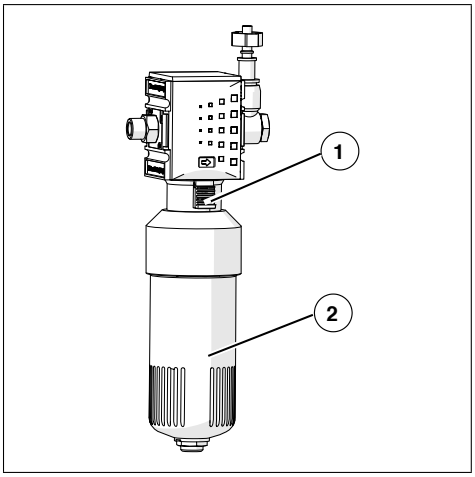

Fig. 35: Removing the silica gel filter

1. Put the machine out of operation and relieve the pressure.
2. Close the compressed air shut-off valve on the pressure vessel.
3. Press the locking slide downwards.
4. Unscrew the silica gel filter, together with the double nipple, from the drum or T-piece.
5. Unscrew the granulate container by turning it counterclockwise.

6.7.2 Drying or replacing the granulate

Whether you dry the granulate or would rather fill the container with new granulate does not matter for restoring the full drying capacity.

1. Remove the silica gel filter (see section 6.7.1 on page 50).
2. Shake the granulate into a collecting vessel.

Drying:

To dry it, the granulate is heated to approx. 130–160 °C – e. g. on a screen or baking sheet in the oven.

Only heat the granulate. Heating the entire filter can destroy the housing.

Do not dry in a microwave! The pellets can burst and make the granulate unusable.

The drying can take up to four hours depending on the degree of saturation. When the granulate is orange again, it is completely regenerated. Pour the granulate straight back into the container of the silica gel filter and close it.

Replacement:

For replacement, fill 65 g (0.14 lbs) of new granulate into the silica gel filter container.

Dispose of the used granulate in accordance with local regulations for amorphous silicon dioxide (silica gel).

6.7.3 Installing the silica gel filter

➤ Complete work steps 2-5 mentioned in section 6.7.1 on page 50 in reverse order.

Make sure the O-ring is seated correctly! No granulate may be stuck in the screw connection! When screwing in the double nipple use thread locker or Teflon tape.

6.7.4 Accessories for silica gel filter

Designation	WIWA order number
Drying pellets (65 g / 0.14 lbs)	0648622
Teflon tape	0000099

6.8 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.

6.9 Recommended operating fluids

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

Operating materials	WIWA order number
Release agent, yellow, standard (0.5 l)[1]	0163333
Release agent, red, for isocyanate (0.5 l)[1]	0640651
Locking agent (50 ml)[2]	0000015
Lubricant (acid-free grease, 0.4 kg)[2]	0000025
Lubricant for stainless steel[2]	0000233

[1] Plasticizer for filling the release agent vessels of e. g. the proportioning pump, feed pump and flush pump as well as the dosing valves
[2] Materials required during maintenance and repair work (see information in the spare parts lists)

The release agent is also available in larger containers upon request.

6.10 Special tool

Supplied as standard:

- Pin wrench, item no. 0414719
  Applications:
  - Adjusting the packing

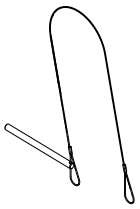

Fig. 36: Pin wrench

7 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 2.5.4 on page 15.

fault	possible cause	remedy
After starting the unit, no material is pressed out	Material drum empty	Add material
	Static mixer clogged	Press stop button, replace static mixer and clean material outlet on the mixer block
	Compressed air supply interrupted	Open the compressed air shut-off valves on the compressed air connection and on the feed pump
	Air inlet pressure of the rams and/or feed pumps too low	Increase the air inlet pressure of the rams and/or feed pumps
	Air motor for the feed pump defective	Repair or replace the air motor **Attention**: This work may only be carried out by trained personnel. Observe the respective spare part lists.
The material pressed out has air pockets	Unit not completely ventilated	Ventilate the unit completely
Material escapes at the adjusting cup of a feed pump	Top packing of the feed pump is leaking	Adjust or replace the top packing of the feed pump.
Ram does not carry out a lifting movement	No compressed air supply	Establish compressed air supply
	Compressed air regulator closed	Set pressure
	The ram control lever is set to “Stop”	Set the ram control lever to “▲” or “▼”
	Gaskets of the piston plate are worn	Replace the gasket **Note**: Moisten the pistons with acid-free grease before assembly
Material escapes at a follower plate	Gaskets of the follower plate are worn	Replace the gaskets on the follower plate
	Venting for the follower plate open	Close the venting for the follower plate

8 Technical data

You can find the technical data for your unit on the machine card enclosed, on the type plate or in the documentation for the individual components.

8.1 Machine card

The machine card contains all important and safety-relevant data and information regarding your unit:

- precise designation and manufacturer's data,
- technical data and limit values,
- equipment and test confirmation,
- machine identification (machine components and accessories supplied with spare part and serial number),
- a list of the supplied documentation.

8.2 Type plate

The type plate for the unit is located on the side of the protective cover. It contains the most important technical data:

- the output of the feed pumps for components A and B per double stroke in cm^3,
- the maximum permissible working pressure of the feed pumps in bar and psi,
- the maximum permissible air inlet pressure of the feed pumps in bar and psi,
- the mixing ratio,
- the maximum volume of the proportioning cylinder of feed pump A in cm^3,
- the maximum volume of the proportioning cylinder of feed pump B in cm^3,
- the maximum permissible working pressure of the proportioning unit in bar and psi,
- the maximum permissible air inlet pressure of the proportioning pumps in bar and psi,
- the maximum permissible air inlet pressure of the proportioning pumps in bar and psi,
- the serial number and the production year.

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

Furthermore, some unit components have a separate type plate, such as e.g. the feed pumps.

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

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