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# 1 Foreword

Valued Customer!

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

These operating instructions are directed at the operating and maintenance personnel. They contain all information required in order to handle this machine.



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

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

In Germany, these are:

- ZH 1/406 "Guidelines for liquid jet sprayers (spray devices)" from the Federation of Institutions for Statutory Accident Insurance and Prevention,
- BGR 500, chap. 2.29 "Processing Coating Materials",
- BGR 500, chap. 2.36 "Working with liquid jet sprayers", both from the professional association for gas, district heating and water management.

We recommend enclosing all relevant directives and accident prevention regulations with the operating instructions.

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

If questions should arise, we shall be happy to assist you.

We wish you excellent working results with your machine

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## 2 Safety

This machine has been designed and manufactured with consideration to all safety aspects. It reflects current engineering practice and the valid accident prevention regulations. The machine left the factory in faultless condition and guarantees a high level of technical safety. However, erroneous operation and misuse result in 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 all methods of work that have 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 operating instructions 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 information warns of potential accident risks and describes the measures required for accident prevention. In the operating instructions from **WIWA**, safety information is highlighted and labelled as follows:



#### DANGER

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



#### WARNING

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



#### CAUTION

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



Signals important information for correct work with the machine. A failure to observe this may result in damage to the machine or its environment.

A range of pictograms are used in the safety information 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



Risk of crushing due to moving 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 labelled as follows:



**Wear protective clothing**

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



**Use eye protection**

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



**Use hearing protection**

Signals an instruction to wear hearing protection, 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, vapours or dust.



**Wear protective gloves**

Signals an instruction to wear protective gloves with forearm protection, in order to prevent a risk of burns due to heated material.



**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 operating instructions that contain very important information and must be observed.

## 2.2 Safety information

Always remember that the machine operates in a high pressure process and can cause life-endangering injuries if handled incorrectly!



Always observe and follow all information in these operating instructions and in the separate operating instructions for the individual machine parts or the optionally available auxiliary devices.

### 2.2.1 Operating pressure



**WARNING**

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

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

### 2.2.2 Risks due to the spray jet



**WARNING**

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



- Never aim the spray gun at yourself, other persons or animals!
- Never hold the finger or hand in front of the spray gun!
- Never reach into the spray jet!



**WARNING**

An unintended ejection of material from the spray gun can cause personal injury and property damage.

- Lock the spray gun with all interruptions to work!
- Prior to each start-up, always check the spray gun lock!

### 2.2.3 Risks due to electrostatic charging



#### WARNING

The high flow speeds with the airless spray process can result in an electrostatic charge. Static charges can result in fire and explosions.

- Ensure that the machine is correctly earthed outside of EX zones!
- Also earth the object that is to be coated.
- Always use open containers!
- Never spray solvents or materials containing solvents into narrow-mouthed cans or barrels with a bung opening!
- Set the container down on an earthed surface.
- Use electrically conductive containers.
- Always ensure contact between the spray gun and the container wall.
- Only use electrically conductive material hoses.  
All original material hoses from **WIWA** are conductive and designed for our machines.



#### WARNING

If the machine becomes contaminated with material during operation, an electrostatic charge may be generated with the increasing coating thickness. Static charges can result in fire and explosions.

- Clean the machine of contaminants immediately.
- Perform the 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 become very cold during operation. Localised freezing can arise with contact.

- 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



### WARNING

Machines that are not explosion-protected must 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.

Explosion-protected machines fulfil the requirements of directive 94/9/EC 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 according to the stipulated guidelines of 94/9/EC, Annex II, No. 2.1-2.3 in accordance with the provisions of the responsible regulatory body. The owner is required to check and ensure that all technical data and labelling comply with the applicable stipulations according to ATEX.

Please note that some parts have their own type plate with separate labelling according to ATEX. In this case, the lowest explosion protection of all labels displayed applies to the entire machine. For applications, whereby a failure of the machine could lead to dangers to personnel, the owner is required to implement appropriate safety measures.

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.



### WARNING

Heating solvents can lead to an explosion. The consequences may be serious physical injuries and property damage.

- Observe the flashpoint and ignition temperature of solvents.
- Switch all Material fluid heaters off when carrying out the following work: Cleaning, pressure testing, decommissioning, maintenance and repair.

## 2.2.6 Health risks



### CAUTION

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

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



When handling paint, solvents, oils, greases and other chemical substances, observe the safety and metering 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 aluminium or galvanised 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 in order to clarify their suitability for use.

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

### 2.3 Information signs on the machine

The information signs displayed on the machine, like the safety card (see Fig. 1), indicate possible hazard points and must be observed.

They must not be removed from the machine.

Damaged and illegible information signs must be replaced immediately.

Also read and observe the safety information in the operating instructions!



Fig. 1: Safety card

### 2.4 Safety equipment



**WARNING**

If safety equipment 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 equipment 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 equipment:

- Safety valves
- Compressed air shut-off valves
- Ground cable

Check the safety equipment on the machine:

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

Checklist on the pressureless machine:

- ☑ Seal on the safety valve OK?
- ☑ Safety valve externally free of damage?
- ☑ Ground cable free of damage?
- ☑ Ground cable connections on unit and conductor in good condition?
- ☑ Compressed air shut-off valves movable?

Checklist on the pressurised machine:

- ☑ Function of the safety valve OK?



When checking further safety equipment observe the operating instructions for the optional accessories.

### 2.4.1 Safety valves

Safety valves are fitted to the **DUOMIX 270**:

- In the air motor of the proportioning pump (see Fig. 2)
- In the air motor of the flushing pump

The safety valves prevent the maximum permissible air intake pressure from being exceeded. If the air intake pressure for the machine components monitored by the safety valve exceeds the limit value setting, the safety valve installed here discharges.

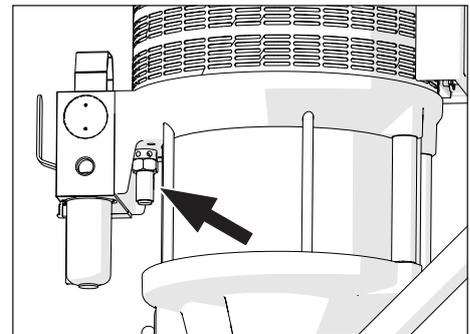


Fig. 2: Safety valve

Check the function of a safety valve this way:

Increase the air intake briefly to approx. 10% above the maximum permissible value according to the type plate. The safety valve must discharge.



**WARNING**

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

- Never operate the machine 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 intake pressure of the machine (see type plate or machine card) and sealed.



Changing the mixing ratio changes the pressure transmission and therefore also the maximum permissible air intake pressure.

In this case the existing safety valve must be replaced following agreement with **WIWA**.

### 2.4.2 Compressed air shut-off valve

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

The functional principle:

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



After the air has been shut off the equipment will be vented automatically. However, some pressure may remain in the material. Carry out a complete pressure release before starting any work on the equipment!

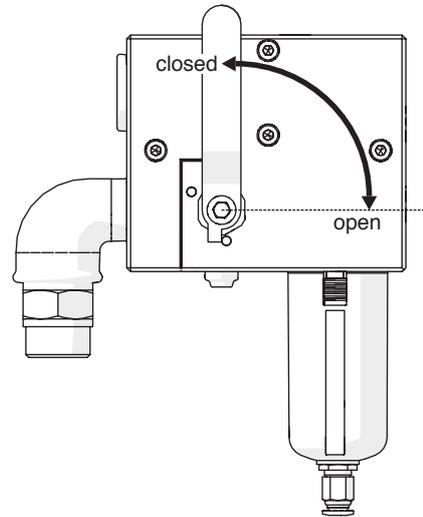


Fig. 3: Compressed air shut-off valve

### 2.4.3 Ground cables

In order to prevent an electrostatic charging, the machine must be grounded.

The ground cables for all components for which grounding is required are merged into the grounding terminal.

In order to ground the machine, connect the main ground cable first to clamp 1 of the grounding terminal and then to an electrically conductive object outside hazardous areas.

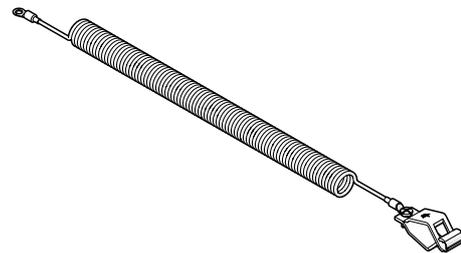


Fig. 4: Main ground cable

If an ground cable is lost or defective, it must be replaced immediately!

## 2.5 Operating and maintenance personnel

### 2.5.1 Obligations of the machine owner

The machine 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 lifting gear for transporting the machine or tank) available to the operating and maintenance personnel,
- must make the user manual accessible to the operating and maintenance personnel and must ensure that this 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.

### 2.5.2 Personnel qualifications

Differentiation is made between 2 groups of personnel, depending on their qualifications:

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

### 2.5.3 Authorised operator

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



Young persons under the age of 16 are not permitted to operate this machine.

### 2.5.4 Personal protective equipment



#### **Wear protective clothing**

Always wear the protective clothing stipulated for your working environment (e.g. antistatic protective clothing in potentially explosive areas) and also observe the recommendations in the safety datasheet of the material manufacturer.



#### **Use eye protection**

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



#### Use hearing protection

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 spray process minimises the material mist with the right pressure setting and correct method of work, we recommend that you wear a respirator.



#### Wear protective gloves

Wear antistatic, chemical resistant protective gloves with forearm protection, in order to prevent injuries due to aggressive chemicals, burns due to heated material as well as freezing due to very cold surfaces.



#### Wear safety shoes

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

## 2.6 Guarantee information



Observe our general terms and conditions of business (T&Cs) at [www.wiwa.de](http://www.wiwa.de).

### 2.6.1 Conversions and alterations

- Unauthorized conversions or alterations should not be undertaken on safety grounds.
- Protective equipment should not be dismantled, converted or bypassed.
- The machine must only be operated within the specified limiting values and parameters.

### 2.6.2 Spare parts

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

### 2.6.3 Accessories

- If you use original accessories from **WIWA** their suitability for use in our machines is guaranteed.
- If you use third-party accessories then these must be suitable for the machine – in particular with respect to the operating pressure, the current connection data, the connection sizes and where necessary the use in hazardous areas. **WIWA** shall not be liable for any damage or injuries arising 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 operating instructions for the accessories.

## 2.7 Behaviour in an emergency

### 2.7.1 Bring the machine to a standstill and relieve the pressure

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

1. Close the compressed air shut-off valve on the maintenance unit.
2. Set the levers at the mixing unit to "Circulation".
3. Trigger the spray gun, until the material pressure has been fully relieved.



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

- For controlled decommissioning please observe Chap. 5.7 on page 35.
- After remedying the emergency situation, the machine must be flushed (see Chap. 5.3 on page 33). Observe the pot life of the materials used.

### 2.7.2 Leaks



#### WARNING

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

- Bring the machine to an immediate standstill and relieve the pressure.
- Tighten threaded connections and replace defective parts (must be performed by trained personnel).
- Do not seal leaks at connections and on high pressure hoses with the hand or by wrapping.
- Do not patch material hoses!
- Check hoses and threaded connections for leak-tightness when starting the machine up again.

### 2.7.3 Injuries

In case of injuries caused by processing material or solvents, always have the manufacturer's datasheet ready to show the doctor (supplier or manufacturer address, their telephone number, material designation and material number).

## 3 Machine description

The **DUOMIX 270** has been designed according to your specific requirements (process material, mixing ratio, output, etc.).

The process material is fed directly to the proportioning pump or via feed systems. The proportioning pump transports 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, a very small quantity of cleaning fluid is required. The mixed material finally arrives at the spray gun via the spray hose.

In order to process materials with special characteristics it is possible to equip the machine with optional accessories (e.g. feed pumps, agitators, a range of heating systems, ram presses and many more besides).

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

### 3.1 Intended use

Using the **DUOMIX 270** it is possible to apply 2K coatings with a fixed mixing ratio to a surface. It is possible to process low to high viscosity 2K materials that are solvent-free or contain solvents, also with extremely short pot lives (e.g. 30 seconds).

If the machine bears an EX mark, it may be used in potentially explosive areas. Observe the mark on the type plate and on the machine card, as well as the information in Chap. 2.2.5 on page 11.



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 may result in personal injury or property damage.

Erroneous use applies in particular if

- impermissible materials are processed,
- unauthorised modifications or changes are implemented,
- safety equipment is modified, removed or bypassed,
- unsuitable spare or accessory parts are used (see chap. 2.6.2 and 2.6.3 on page 16),
- machines that are not marked as EX machines are used in potentially explosive areas,
- the machine is operated outside of the operating limits (see type plate).

### 3.3 Machine configuration

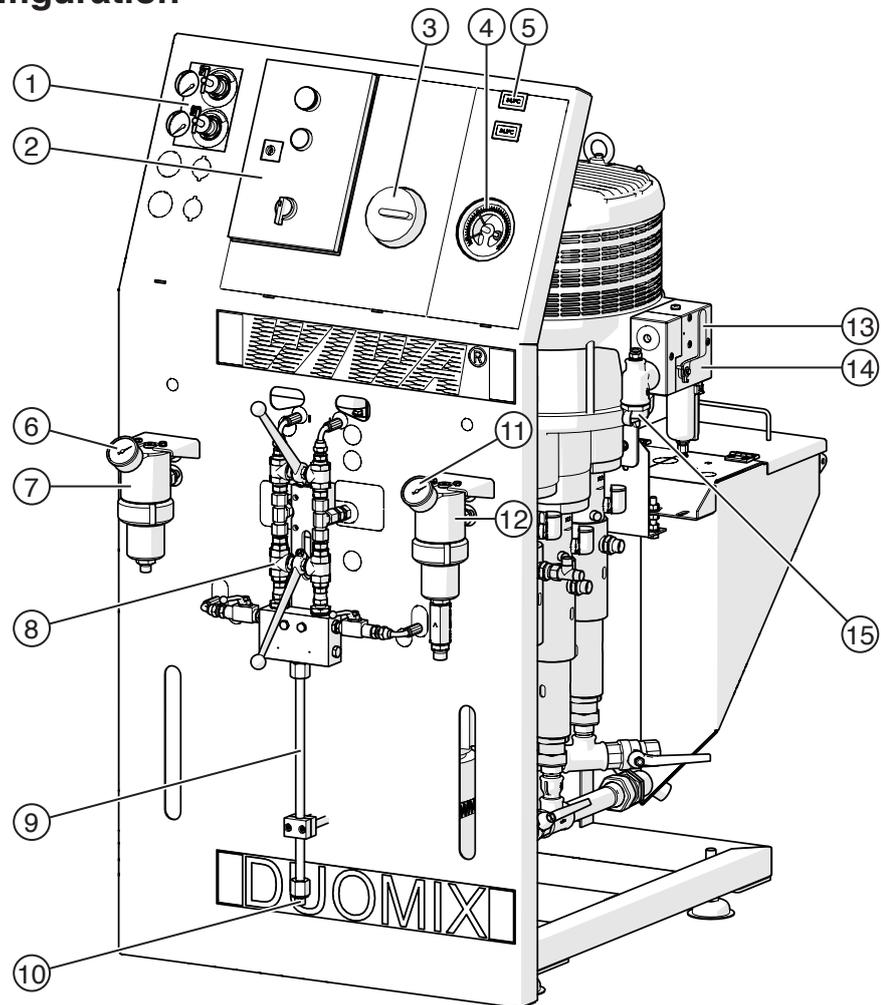


Fig. 5: Front view of the DUOMIX 270

No.	Designation
1	Compressed air regulation unit
2	Control cabinet for the pressure and metering monitoring
3	Main switch
4	Contact manometer for the pressure and metering monitoring
5	Temperature displays for the A and B component
6	Pressure gauge for the material pressure of the A-component
7	High pressure filter for the A component
8	Mixing unit
9	Static mixer
10	Connection for the spay hose
11	Pressure gauge for the material pressure of the B-component
12	High pressure filter for the B component
13	Compressed air shut-off valve
14	Maintenance unit
15	Compressed air connection

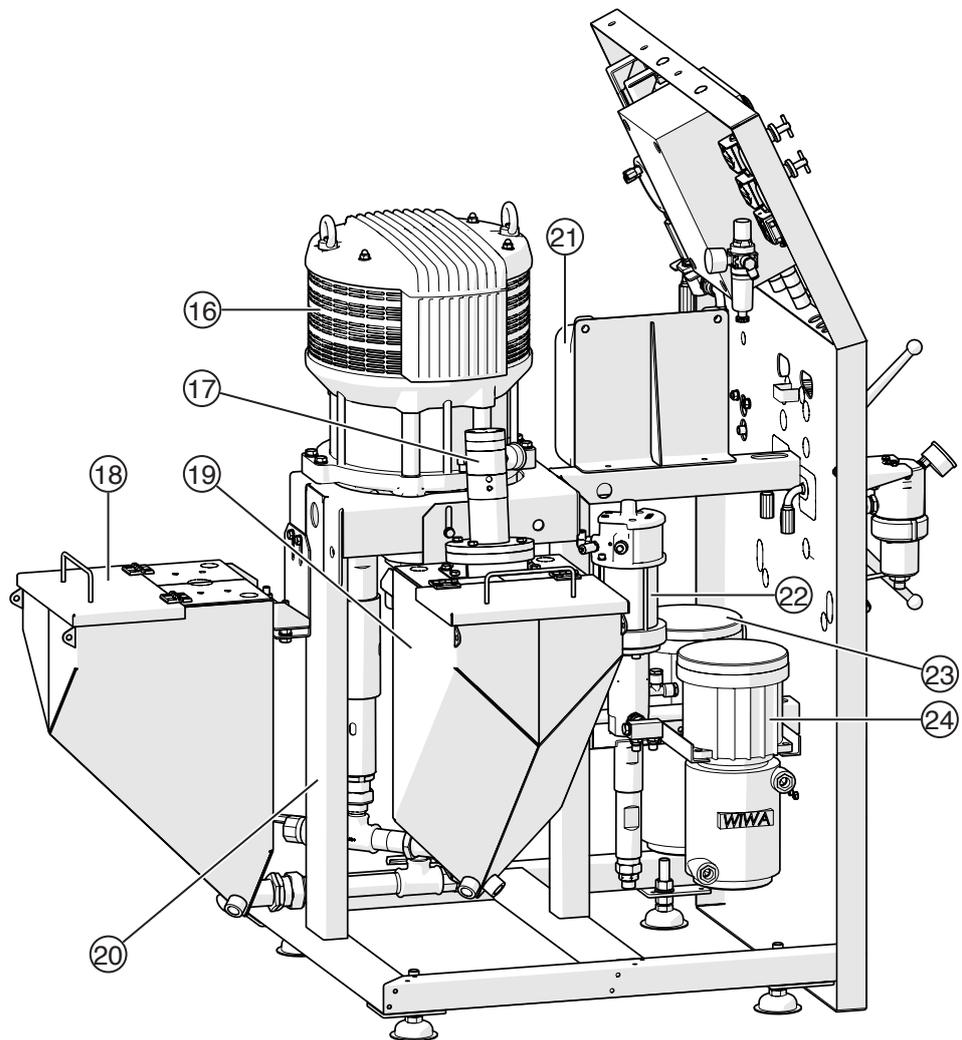


Fig. 6: Rear view of the DUOMIX 270

No.	Designation
16	Proportioning pump
17	Agitator
18	Feed tank for the B component
19	Feed tank for the A component
20	Frame
21	Control box for electrical connections of the fluid heaters
22	Flushing pump
23	Fluid heater for the B component
24	Fluid heater for the A component

### 3.4 Compressed air regulation unit

By default, the air regulators and pressure gauges for the air inlet pressure of the proportioning pump and the flushing pump are installed in the compressed air regulation unit (see Fig. 7). Depending on the configuration of the machine, further air regulators and pressure gauges can be added for optional extensions and accessories.

The compressed air regulators and pressure gauges in the compressed air control unit are marked by symbols:



Proportioning pump



Flushing pump

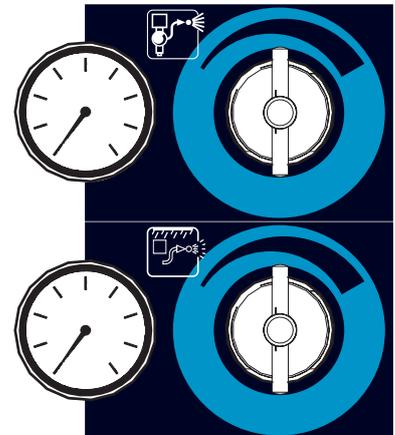
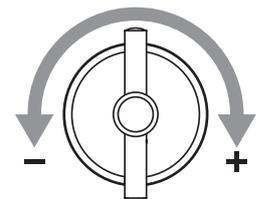


Fig. 7: Compressed air regulation unit

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

- In order to increase the pressure, turn them clockwise,
- in order to decrease the pressure, turn them anti-clockwise.



### 3.5 Pressure and metering monitoring

The 2 buttons and the selector switch on the control cabinet beside the compressed air regulation unit as well as the contact pressure gauge belong to the pressure and metering monitoring.

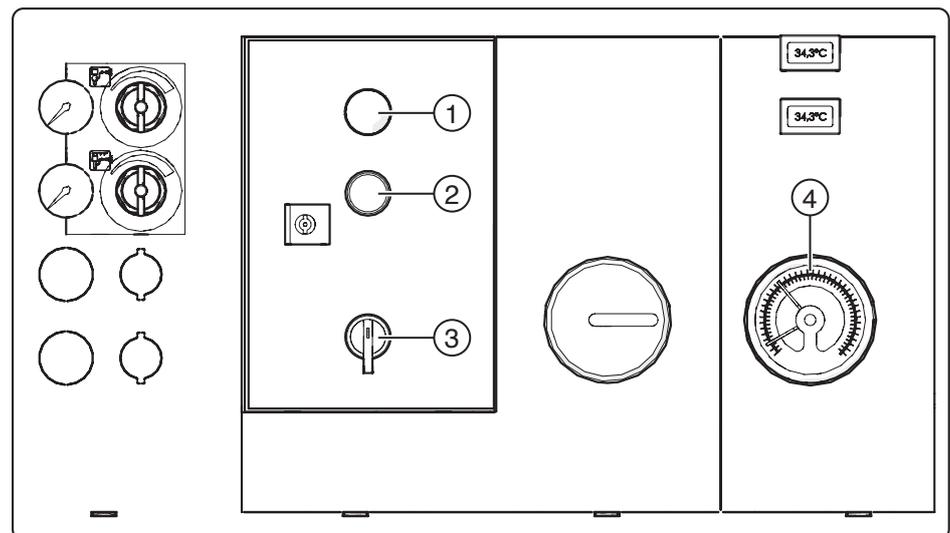


Fig. 8: Controls of the pressure and metering monitoring

No.	Designation and function
1	The “Stop” button is used to shutdown the machine manually.
2	The “Start” button is used to restart the system after a shutdown. Regulate the air inlet pressure of the metering pump completely back beforehand!

No.	Designation and function
3	With the selector switch “Manual/Automatic” you decide whether both operation limits should be monitored (= “Automatic”), or only the upper one (= “Manual”). For start-up, set the selector switch to “Manual”. For spray operation, set the selector switch to “Automatic”.
4	The contact pressure gauge monitors the pressure of the B-component (hardener) and switches the machine off when the operation limits are reached.

### 3.6 Temperature displays

The DUOMIX 270 is equipped with 2 thermometers which display the material temperatures of the A and the B component. The displays with Fahrenheit and Celsius scales are marked according to the component affiliation by symbols and colors.

The measurement is carried out by temperature sensors installed in the high-pressure filters.

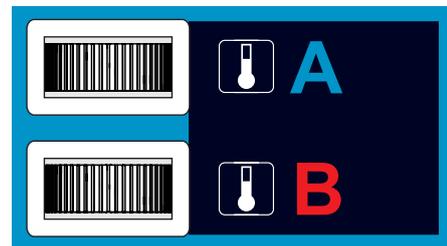


Fig. 9: Temperature displays

### 3.7 Proportioning pump

During spray operation or circulation operation, the proportioning pump delivers the two components of the processing material separately to the mixing unit.

No.	Designation
1	Muffler
2	Air motor
3	Intermediate body
4	Fluid pumps of the A component
5	Fluid pump of the B component
6	Fluid inlet of the A component
7	Fluid inlet of the B component

The air motor drives usually 3 fluid pumps – two for A component and one for B component. The mixing ratio results from the ratio of pump sizes.

Machines with mixing ratio 1:1 are equipped with two equal-sized fluid pumps – the middle pump (No. 5) is omitted.

Depending on the material requirements, the mixing ratio can be adjusted by exchanging the fluid pumps. All you need are the proper tools and the appropriate fluid pumps.

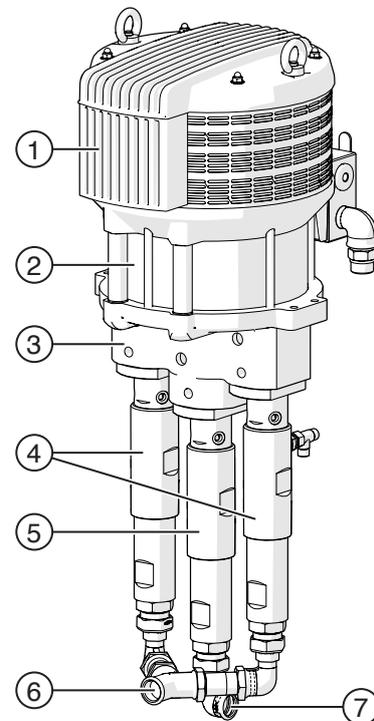


Fig. 10: Proportioning pump

### 3.8 Mixing unit

The two components of the process material are only combined once in the mixing unit. Actual mixing takes place in the static mixer, which is mounted at the material outlet of the mixing unit. From here the material travels via the spray hose to the spray gun.

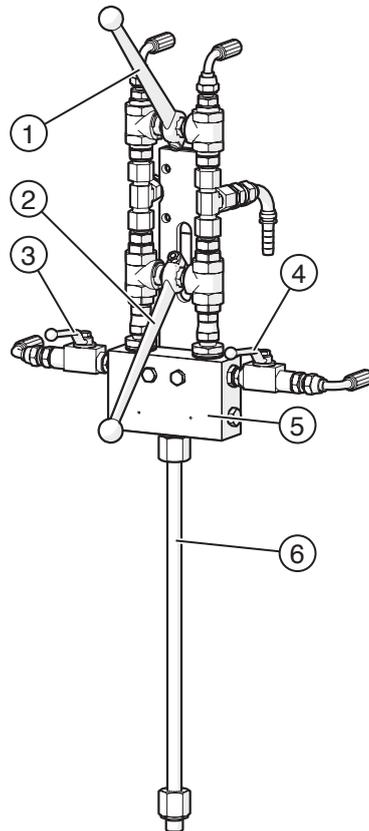


Fig. 11: Mixing unit

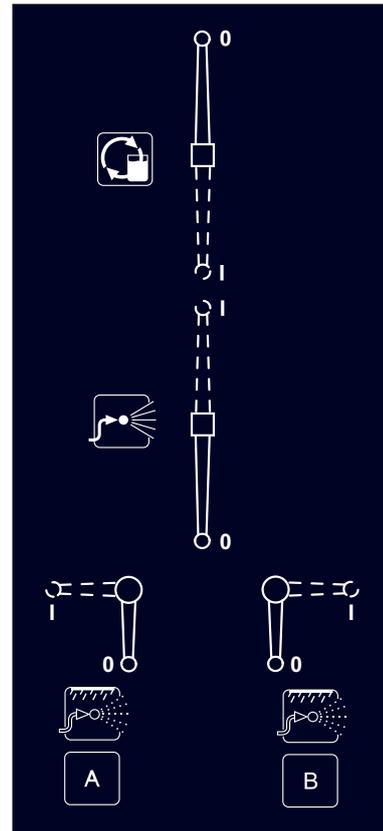


Fig. 12: Shift pattern

No.	Designation
1	Lever for opening and closing the return ball valves
2	Lever for opening and closing the fluid inlets to the mixing block
3	Lever for opening and closing the flush ball valve on the A component side
4	Lever for opening and closing the flush ball valve on the B component side
5	Mixing block
6	Static mixer

The sticker attached next to the mixing unit shows the shift pattern for setting the operating modes.

Operating mode			A	B
Circulation	I	0	0	0
Spraying	0	I	0	0
Flush A	0	0	I	0

Operating mode			A	B
Flush B	0	0	0	I
Flush A+B	0	0	I	I
Stop	0	0	0	0



Open and close the flushing levers multiple times in alternation during flushing, in order to ensure that each component is flushed through separately. Finally, flush with both levers in the flushing position.

### 3.9 Flushing pump

In flushing mode the flushing pump conveys the flushing agent from the flushing agent tank via the mixing unit to the spray gun. A manifold is mounted between the material outlet of the flushing pump and the mixing unit for distributing the flushing agent to the A-component and B-component sides.

No.	Designation
1	Muffler
2	Air motor
3	Fluid pump
4	Safety valve
5	Material outlet
6	Suction pipe

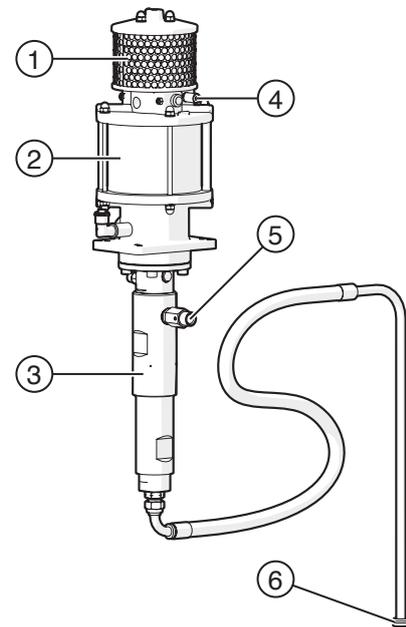


Fig. 13: Flushing pump

## 3.10 Optional expansions and accessories

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

You can find the detailed accessory catalogue 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.

### 3.10.1 Fluid heaters

In order to heat up the material one may use fluid heaters (see Fig. 14).

The fluid heaters have a separate switch box for the electrical connections.

The material flow heaters are switched on and off using the main switch on the control panel. The temperature regulators are directly located on the fluid heaters.



Observe and adhere to the separate operating instructions for the fluid heaters.

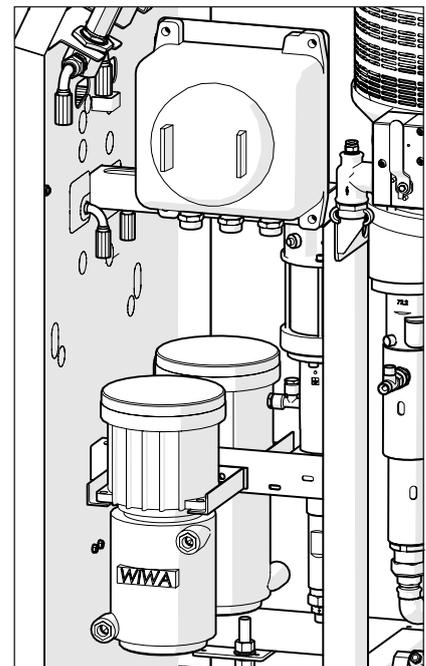


Fig. 14: Fluid heaters

### 3.10.2 Agitators

Pneumatic agitators are optionally used for preparation of the material (see Fig. 15).

The agitators are installed on a barrel lid or on the lid of a feed tank.

Pneumatic agitators are supplied with compressed air via the maintenance unit of the **DUOMIX 270**.

The speed of rotation is controlled with the adjusting screw on the air intake of the agitator.



Observe and adhere to the separate operating instructions for the agitators.

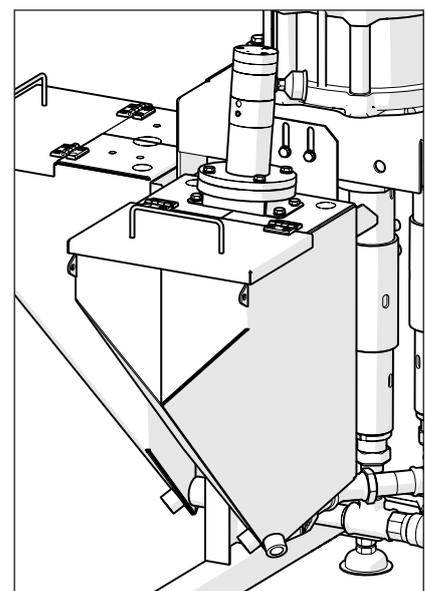


Fig. 15: Pneumatic Agitator

## 4 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.

### 4.1 Transport

In case of machine transport observe the following information:

- 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.
- The machine must be lifted exclusively at the intended attachment points for lifting accessories.
- When using a forklift truck ensure sufficient length of the truck forks. Each of the truck forks must be guided through the two stacker mounts located opposite each other on the frame.
- When transporting with a forklift truck drive the forks as far apart as possible, in order to keep the tipping moment to a minimum.
- Caution danger of tipping! Ensure even load distribution to secure the machine against tipping over.
- When lifting or loading the machine, do not transport other objects simultaneously (e.g. material tanks) with the machine.
- Never stand beneath 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 machine has previously been in operation, please observe the following:

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

### 4.2 Installation site

By default, the machine is intended for installation outside of hazardous areas. Only machines of explosion protected design may be installed inside EX-environments.

Ambient temperature	Minimum of		Maximum of	
	0 °C	32 °F	40 °C	104 °F

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



**WARNING**

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

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

By default, the **DUOMIX 270** is equipped with 4 adjustable machine feet (see Fig. 16). Alternatively the machine can be equipped with 4 swivel rollers (see Fig. 17).

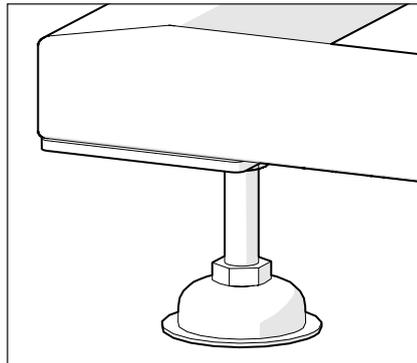


Fig. 16: Machine foot

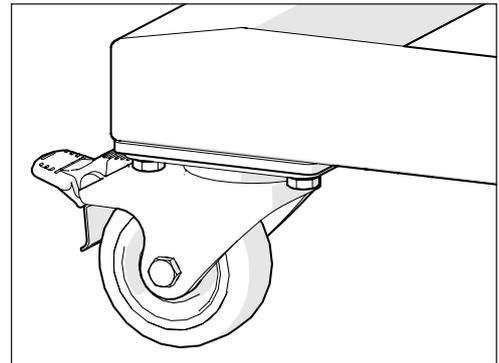


Fig. 17: Swivel roller



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

Safety measures at the installation site:

- For safe operation of the machine, stability and sufficient free space must be guaranteed.
- When equipped with swivel rollers: Lock the machine in its place of installation to prevent unwanted movements. To do this, engage the wheel brakes on the swivel rollers.
- Keep the working area clean, in particular all running and parking surfaces. Remove any spilled material and solvents immediately.
- In order to prevent harm to health and damage to property, ensure sufficient ventilation and airing of the workplace. It is necessary to guarantee at least 5-times air exchange.
- Always observe the processing instructions of the material manufacturer.
- Although no legal regulations apply to the low-mist airless spray process, dangerous solvent vapours and paint particles must be extracted.
- Protect all items neighbouring the spray object against possible damage due to material mist.

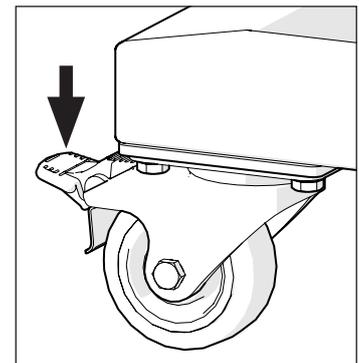


Fig. 18: Wheel brake

## 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 machine.

- ▶ Electrical and electronic parts must be installed exclusively by specialist personnel with an electrical qualification – all other parts, e.g. the spray hose or spray gun, must be installed exclusively by trained personnel.



### 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 start-up, correctly refit any parts or equipment items removed for transport purposes, as required for the intended use.

Prior to assembly work, sure that all compressed air shut-off valves are closed and that all air pressure regulators have been fully regulated back.

### 4.3.1 Connect the spray hose and spray gun



### WARNING

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

- ▶ Prior to installation check the maximum permissible operating pressure of the spray hose and the spray gun. The operating pressure must be greater than or equal to the maximum operating pressure cited on the type plate.

Connect the spray hose to the material outlet of the static mixer.



Connect the spray hose to the spray gun as described in the operating manual for the spray gun used.

### 4.3.2 Ground the machine



### WARNING

The high flow speeds with the airless spray process can result in an electrostatic charge. Static charges can result in fire and explosions.

- ▶ Ensure that the machine is grounded outside of EX zones!
- ▶ Also ground the object that is to be coated.

In order to ground the machine, connect the main ground cable first to clamp 1 of the grounding terminal and then to an electrically conductive object outside hazardous areas.

### 4.3.3 Insert filter inserts in the high pressure filter

Insert a filter insert in the high pressure filter that is appropriate for the process material. Further information on this can be found in Chap. 6.5.2 on page 41.

### 4.3.4 Connect compressed air supply



#### CAUTION

Auf Laufflächen verlegte Leitungen sind eine Stolper- und damit Verletzungsgefahr für das Bedienungspersonal.

- Verlegen Sie die Druckluftleitung so, dass keine Stolpergefahr für das Bedienungspersonal entsteht.



In order that the required quantity of air is guaranteed, the compressor output must comply with the air requirement of the machine and the diameter of the air supply hoses must match with the connections.



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

- Verwenden Sie nur getrocknete, öl- und staubfreie Luft!

1. Make sure that
  - the compressed air shut-off valve on the maintenance unit is closed,
  - all air pressure regulators have been fully regulated back.
2. Close the compressed air line to the compressed air connection of the machine.

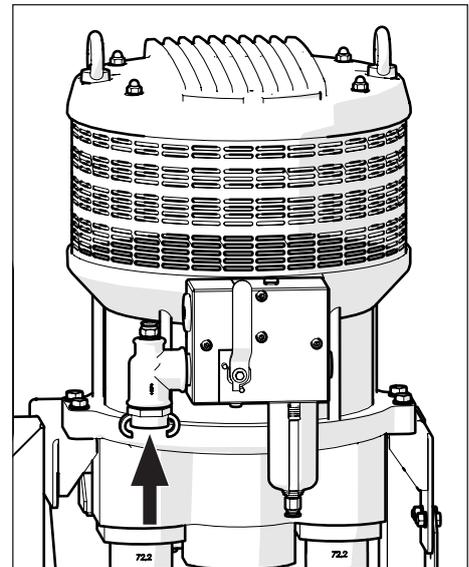


Fig. 19: Compressed air connection

## 5 Operation

Prerequisites:

- The machine must be correctly erected 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 Chap. 2.5.4 on page 15.
- The material to be applied must be available in sufficient quantities. Furthermore you need two appropriate containers for collecting excess material. These containers are not included in the scope of delivery.



When processing and storing spray material, observe the recommendations in the safety datasheet of the respective material manufacturers.



### WARNING

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

- During operation ensure that the tanks never run empty.
- If this should occur, bring the respective pump to an immediate standstill and trace the material.

### 5.1 Putting the machine into operation

Before starting work, check:

- Are all the safety features present and fully functional (see chapter 2.4 on page 12)?
- Is the machine properly grounded (see chapter 4.3.2 on page 28)?
- Is there enough release agent in the proportioning pump (see chapter 6.4.1 on page 40)?

During commissioning, check that the unit or its individual components are leak-proof by slowly building up pressure and tighten the connections if necessary.

Overview of the working steps during commissioning:

1. Start the machine
2. Put the flushing pump into operation
3. Clean the machine (only during initial commissioning)
4. Fill machine with processing material and vent

#### 5.1.1 Start the machine

1. Make sure that all air pressure regulators have been fully regulated back.
2. Open the compressed air shut-off valve on the maintenance unit.
3. Set the selector switch “Manual/Automatic” on the pressure and metering monitoring to “Manual” and press the start button.

### 5.1.2 Put the flushing pump into operation



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

1. Place the suction intake for the flushing pump in the flushing media tank.
2. Set the levers at the mixing unit to "Flush".
3. Set the flushing pump to a pressure of 3-6 bar at the compressed air regulator, depending on the length of the material hose.
4. Hold the spray gun into a collection container.
5. Unlock the spray gun and operate it, until clean flushing media runs out.



Open and close the flushing levers multiple times in alternation during flushing, in order to ensure that each component is flushed through separately. Finally, flush with both levers in the flushing position.

6. Close and lock the spray gun.

### 5.1.3 Clean the machine

Following assembly, the machine was tested in the factory for faultless function with a test medium. During first commissioning it is therefore necessary to fully clean the machine, in order to flush out the remaining test medium (see chapter 5.5 on page 34).

### 5.1.4 Fill machine with processing material and vent



Make sure that the components are assigned correctly. Both components must only come into contact with the system components intended for this purpose – standard components (A) = BLUE, hardener (B) = RED.

1. Fill components A and B into the feed tanks.
2. Guide the return flow hoses for components A and B into the corresponding feed tanks and secure them against accidental slipping out.
3. Set the speed of rotation for the agitator in the A component feed tank with the adjusting screw on the air intake of the agitator.
4. Set the levers at the mixing unit to "Circulation".
5. Regulate the air pressure regulator of the proportioning pump so that the proportioning pump runs slowly.
6. Switch on the material flow heaters using the main switch on the control panel.
7. Set the temperature regulators on the fluid heaters to the desired material temperature (0-80 °C).
8. Allow the material to circulate until the material flowing out of the return flow hoses is free of air bubbles and the required processing temperature has been reached. You can check the material temperatures using the two temperature displays on the control panel.

## 5.2 Coating

Before coating, the unit must be taken into service.

1. Set the levers at the mixing unit to „Spray“.
2. Regulate the air pressure regulator of the proportioning pump to a low air inlet pressure.
3. Keep spraying the flushing agent residues in the unit into a collecting vessel, until material to be processed starts flowing out.
4. Regulate the air pressure regulator of the proportioning pump to the optimal spraying pressure (see chapter 5.2.1).
5. Set the operation limits for the current work step on the contact pressure gauge of the pressure and metering monitoring (see chapter 5.2.2) and set the switch „Manual / Automatic“ to „Automatic“.
6. Check the pressure indication on the pressure gauges of the high pressure filters. These must show almost identical pressure values.

The unit is now ready for operation. You can start coating.

### 5.2.1 Adjusting spraying pressure

Observe the following information when setting the spray pressure:

- The optimum spray pressure has been attained when an even material application is obtained, with fading edge zones.
- Only operate the unit with the air pressure required, in order to attain good atomisation at the recommended spray distance of approx. 12"-16".
- An overly high spray pressure leads to increased material consumption and paint mist.
- If the spray pressure is too low then this leads to streaking and varying coating thicknesses.

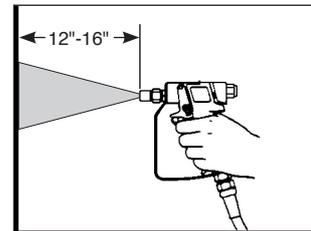


Fig. 20: Spraying distance



Observe the operating instructions for your spray gun. They contain further tips for the optimisation of the spray pattern.

### 5.2.2 Setting the pressure and metering monitoring

The black pointer on the manometer indicates the actual pressure. The two red pointers are used to set the operating limits for the actual working process after setting the optimum spray pressure as follows:

1. Slide the key provided into the contact manometer.
2. Using the guide needle, turn the bottom red drag indicator to a value approx. 290 psi below the minimum pressure, which is displayed with the spray gun open.
3. Using the guide needle, turn the top red drag indicator to a value approx. 290 psi above the maximum pressure, which is displayed with the spray gun closed.
4. Remove the key.

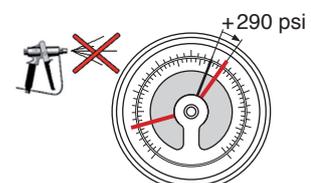
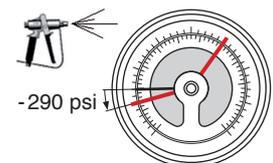


Fig. 21: Operating limits



After each change in the spray pressure it is necessary to reset the pressure and metering monitoring. If the pointer of the contact manometer does not move or only moves insufficiently, the system must not be put into operation due to the risk of erroneous mixing!

### 5.2.3 Tips for good coatings

- Hold the spray gun at a right angle (90°) to the surface to be coated. As soon as you hold the spray gun at a different angle, the coating will become uneven and patchy (see Fig. 22).
- Move the spray gun with the arm and not with the wrist.
- Move the spray gun prior to activating the trigger. In this way you will achieve a faultless, soft and smooth overlapping of the spray jet and avoid an excessively thick material application at the start of the coating process.
- Ensure an even speed and guide the spray gun parallel to the coating surface. Weaving with the spray gun leads to an uneven coating (see Fig. 23).
- Release the trigger before stopping the movement.
- Change the spray nozzle before this becomes worn.

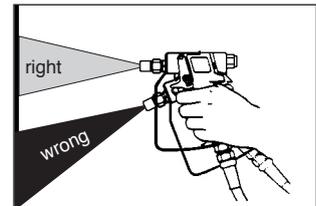


Fig. 22: Spray angle

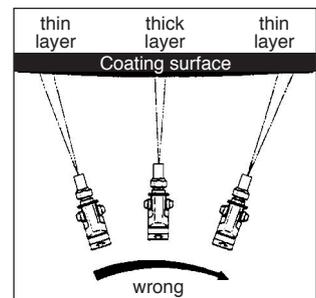


Fig. 23: Spray gun guidance



Worn nozzles lead to excessively high material consumption and adversely affect the quality of the coating.

## 5.3 Flushing

When interrupting work you should flush all components that had contact with the mixed material, within the potlife specified by the manufacturer.

1. Close and lock the spray gun.
2. Set the levers at the mixing unit to “Flush”.
3. Keep spraying the material mix in the unit into a collecting vessel, until clean flushing agent starts flowing out.



Open and close the flushing levers multiple times in alternation during flushing, in order to ensure that each component is flushed through separately. Finally, flush with both levers in the flushing position.

4. Close and lock the spray gun.

The section between mixing unit and spray gun has been cleaned. The material in the section between material inlet and mixing unit may remain in the unit, because no mixing will take place.

## 5.4 Pressure relief

1. Close the compressed air shut-off valve on the maintenance unit.
2. Set the levers at the mixing unit to "Circulation".
3. Trigger the spray gun, until the material pressure has been fully relieved.



### WARNING

If parts of the equipment (e.g. spray nozzle, material filter on the spray gun, material hose, high pressure filter, suction strainer, etc.) are clogged the pressure cannot be fully released. Residual pressure could be released during disassembly work and cause severe injuries.

- Cover the screw fitting with a rag during releasing to protect yourself against sudden release of material.
- Release the screw fittings very carefully and release the pressure slowly.
- Remove the obstructions (see fault table in Chapter 7 on page 43).

## 5.5 Complete cleaning

Cleaning the machine completely is necessary:

- At initial commissioning to ensure that the spraying material is not negatively affected by the test medium that was used at the factory to test correct functioning.
- When changing materials.
- If you want to decommission the machine for a longer period of time.



### WARNING

Explosive gases may be generated by the evaporation of flushing agent, which may ignite on hot heat sources.

- Before you start cleaning work you must switch off all fluid heaters and allow the machine to cool down. Quicker cooling can be achieved by circulating the material through the machine (max. 20 minutes).

1. Flush the machine as described in chapter 5.3, in order to clean the section between mixing unit and spray gun.

Perform the following work steps to clean the section between material inlet and mixing unit.



Both components must be strictly kept separated, also during cleaning. Use a separate solvent and collecting container for each component to avoid material reactions and thus possible damage to the machine.

2. Drain the material off the feed tanks through the drain valves, then fill in the flushing agent belonging to the material.
3. Guide the return flow hoses into separate collecting vessels and secure them against accidental slipping out.
4. Set the levers at the mixing unit to "Circulation".
5. Regulate the air pressure regulator of the proportioning pump so that the proportioning pump runs slowly.

6. Close the return flow as soon as clean flushing agent starts to run out of the return flow hoses.
7. Replace the contaminated flushing agent in the feed tanks with fresh flushing agent
8. Open the return flow again and allow the flushing agent to circulate through the machine for approx. 3 - 7 minutes, depending on the length of the material hoses.
9. Set the levers at the mixing unit to "Spray".
10. Trigger the spray gun, until clean flushing agent starts to run out.
11. Set the levers at the mixing unit again to "Circulation".
12. Regulate the compressed air pressure regulator for the proportioning pump fully back.
13. Close the compressed air shut-off valve on the maintenance unit.
14. Once both pressure gauges on the high pressure filters show 0 bar, close the return ball valves at the mixing unit.
15. Drain the flushing agent off the feed tanks through the drain valves.

The machine is now fully cleaned and pressure-relieved and thus prepared for a prolonged decommissioning.

## 5.6 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** shall be happy to assist you in determining the suitability of your machine for other materials.

## 5.7 Decommissioning

For a decommissioning, flush the unit, perform a pressure release and switch off the unit.

1. Set the levers at the mixing unit to "Circulation".
2. Switch off the material flow heaters using the main switch.
3. Regulate the speed of rotation for the agitator in the A component feed tank with the adjusting screw on the air intake of the agitator fully back.
4. Regulate the compressed air pressure regulator for the proportioning pump fully back.
5. Trigger the spray gun, until the material pressure has been fully relieved.
6. Flush the machine as described in chapter 5.3 on page 33.
7. Regulate the compressed air pressure regulator for the flushing pump fully back.
8. Close the compressed air shut-off valve on the maintenance unit.
9. Trigger the spray gun once again for a moment to relieve any flushing pressure residues, so that the entire unit has been relieved.

## 5.8 Storage

Store the machine at a location at which it is protected from dirt, damp, frost and heat.

Storage temperature	Minimum of		Maximum of	
	0 °C	32 °F	40 °C	104 °F

## 5.9 Disposal



It is necessary to collect residues of spray material, cleaning fluids, oil, greases and other chemical substances 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.

## 6 Maintenance



### WARNING

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

- Maintenance and repair work on electrical parts must be carried out by specialist personnel with an electrical qualification – all other maintenance and repair work must be carried out 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 operating instructions for the optional accessories.

Prior to maintenance and repair work:

1. Shut off the compressed air supply.
2. Disconnect the electrical power supply.
3. Depressurise the machine completely.



### WARNING

If parts of the machine are blocked (e.g. spray nozzle, material filter for the spray gun, material hose, high pressure filter, suction screen, etc.), it is not possible to fully relieve the pressure. During disassembly work, residual pressures may escape and cause serious injuries.

- Protect yourself against the sudden emergence of material by covering threaded connections with a cloth whilst loosening.
- Loosen threaded connections particularly cautiously and allow the pressure to escape slowly.
- Eliminate the blockages (see fault table in Chap. 7 on page 43).

After completing maintenance and repair work, check the function of all safety devices and the faultless function of the machine.

## 6.1 Regular testing

The machine must be tested 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.

## 6.2 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 start-up	Check release agent level at the proportioning pump	Chap. 6.4.1 on page 40
1-time weekly	Check and clean the water separator	Chap. 6.3.1 on page 39
	Visual inspection of the compressed air and material hoses	
every 50 operating hours	Check release agent for material residues	Chap. 6.4.2 on page 40
depending on the type and cleanliness of the material or with every material change	Clean the filter elements in the high pressure filters	Chap. 6.5.1 on page 41
every 3 years	Have the compressed air and material hoses checked by a specialist and replace if necessary	

## 6.3 Maintenance unit

The maintenance unit prevents condensation water and dirt particles from entering the equipment.

The maintenance unit is equipped with the following maintenance elements:

No.	Designation
1	Compressed air shut-off valve with automatic venting function / EMERGENCY STOP
2	Compressed air connection
3	Air outlet for automatic venting
4	Slide for opening the water separator
5	Container of water separator
6	Semi-automatic drain valve

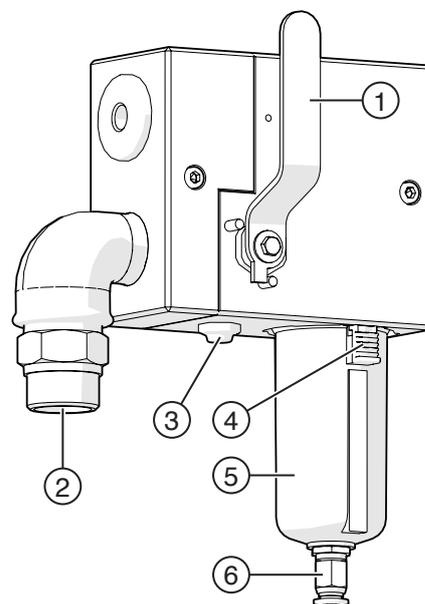


Fig. 24: Maintenance unit

### 6.3.1 Check and clean the water separator

The water separator separates moisture and particles of dirt (> 5 µm) from the compressed air. This prevents condensate from penetrating the machine, as well as the static charging of the pneumatic hoses.

The accumulated condensation water is drained off through the drain valve semi-automatically.

1. Hold the hose into an empty collecting vessel.

The drain valve opens as soon as the compressed air shut-off valve has been closed.

2. Push up the safety slide on the water separator and unscrew the the container of the water separator anticlockwise.



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

3. Check that the O-ring is correctly seated – insert it correctly if necessary.
4. Check the container for dirt residues regularly and clean it if necessary.



Only use water, soap or a similar neutral product for cleaning the container.

5. Firmly screw the container of the water separator onto the maintenance unit.

## 6.4 Proportioning pump

In order to avoid damaging the proportioning pump due to material hardening, the release agent chambers of the fluid pumps are filled with release agent as a material plasticiser. Depending on the characteristics of the process material, signs of wear will appear on the fluid pump packings after a certain time in operation. The fluid may be pressed by the packings in this case, and may then harden. Packing wear can be discerned by discolouration of the release agent.

The fluid pumps are equipped with the following maintenance elements:

No.	Description
1	To fill in release agent, open the lid of the fluid reservoir and inject release agent using the dosing bottle.
2	The release agent level in the fluid reservoir should be between the "MIN" and "MAX" marking.
3	Unscrew the drain screw to drain release agent.

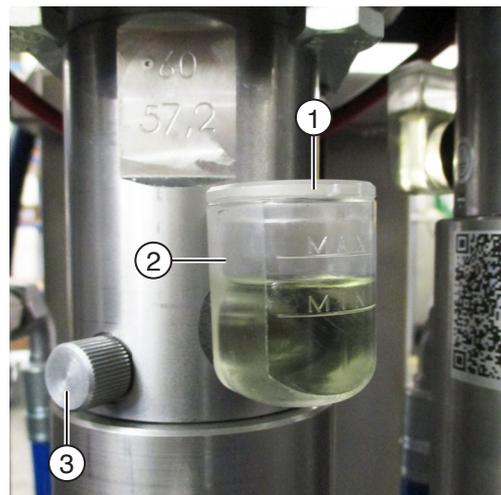


Fig. 25: Fluid reservoir and drain screw

### 6.4.1 Check the release agent level in the fluid pumps

Prior to every start-up, check the release agent level and top up if necessary.

### 6.4.2 Check the release agent in the fluid pumps for material residues

Check the release agent every 50 operating hours for material residues. If material residues are apparent in the release agent, you must assume that the packing for the respective material pump has become worn.

In this case, have the pump packing replaced as quickly as possible.

## 6.5 High pressure filters

### 6.5.1 Cleaning the filter elements

The cleaning interval for the filter elements in the high pressure filters depends on the type and cleanliness of the material. Clean the filter elements at least once a week and after each material change.



#### WARNING

If the equipment was not depressurised when opening the high pressure filter, material may escape under very high pressure and cause serious injuries.

➤ Depressurise the equipment fully before opening the high pressure filter!

No.	Designation
1	Threaded bolt
2	Filter element
3	Nut
4	Retaining nut
5	Cap

1. Use the enclosed hook spanner to release the box nut (4).
2. Remove the cap (3) of the high pressure filter (5).
3. Loosen the nut (3).
4. Remove the filter element (2).
5. Clean the filter element with solvent. If the filter element is damaged it should be replaced with a new filter element
6. Place the filter element back on the threaded bolt (1) and retighten the nut (3).
7. Screw the cap (5) with the box nut (4) onto the high pressure filter and tighten it with the hook spanner.

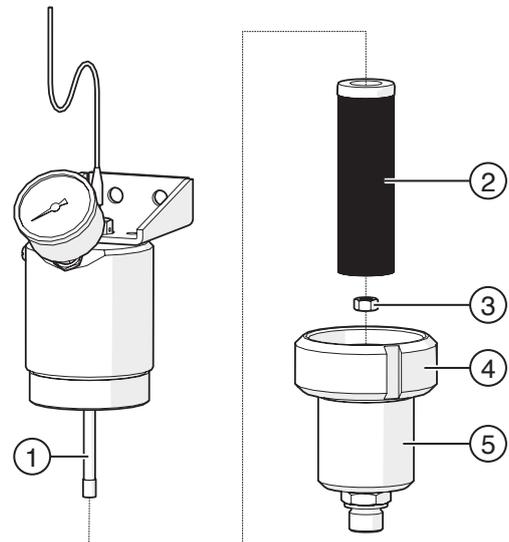


Fig. 26: High pressure filter

### 6.5.2 Filter elements for high pressure filters

Insert the filter elements suitable for the spraying material and the spraying nozzle into the high pressure filter. The mesh size should always be slightly finer than the bore of the nozzle used.

Filter element	Nozzle size		WIWA order no.
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
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

Filter element	Nozzle size	WIWA order no.
M 30 (blue)		0659107-030
M 20 (green)		0659107-020



Do not use a filter element when applying coarsely pigmented or fibre filled materials. The standard suction strainer should remain in the filter housing or be replaced by a wider mesh screen. In the case of a material change, you must clean or replace both the filter element in the high pressure filter and the material screen in the suction system if necessary.

## 6.6 Recommended operating materials

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

Operating materials	WIWA order number
Release agent (0,5 l) <sup>1</sup>	0163333
Release agent 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
Safety agent (50 ml) <sup>3</sup>	0000015
Lubricant (acid-free grease, 0,4 kg) <sup>3</sup>	0000025
Lubricant for stainless steel <sup>3</sup>	0000233

<sup>1</sup> Plasticiser for filling the release agent vessels of the proportioning pump and the feed pumps (if available)

<sup>2</sup> for maintenance unit

<sup>3</sup> Materials required for cleaning and repair work (see information in spare parts lists)

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

## 6.7 Special tools

A hook spanner for opening the high pressure filters is included with delivery.

Spanner size	Art.no.
80/90 mm	0613959
135/145 mm	0633579

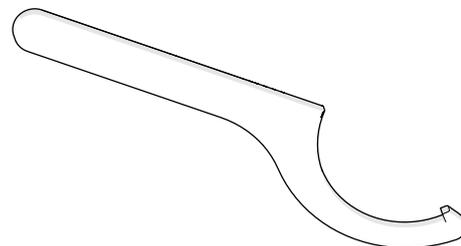


Fig. 27: Hook spanner

## 7 Troubleshooting

Fault	Possible cause(s)	Elimination
Pressure release not possible (compressed air shut-off valve closed)	Return hose or return ball valve clogged	Clean return hose and return ball valve, replace if required.
	High pressure filter clogged	Clean filter element, replace if required.
The proportioning pump does not start, despite operation of spray gun or opened return ball valve on mixing unit.	Compressed air shut-off valve closed	Open the compressed air shut-off valve.
	The air inlet pressure is too low	Increase the air inlet pressure.
	High pressure filter clogged	Clean filter element, replace if required.
	Spray gun clogged	Check nozzle and filter element, replace if required.
	Return hose or return ball valve clogged	Clean return hose and return ball valve, replace if required.
	Air motor defective	Repair air motor – if necessary call the <b>WIWA</b> customer service for assistance
The proportioning pump is running but no or too little material is being delivered	Suction strainer clogged	Clean strainer and replace if necessary
	Suction hose clogged	Clean hose and replace if necessary
	Ball of bottom valve does not lift off in the upward stroke (stuck)	Slightly knock the bottom valve from the side (hammer). If this does not help, unscrew the suction system and loosen the ball in the bottom valve from underneath
	Bottom valve does not close in the downwards stroke	Unscrew the bottom valve, thoroughly clean the ball and the seat.
The proportioning pump or the flushing pump does not stop when the spray gun is closed.	Packing or valve worn	Replace worn parts.
The proportioning pump is running but the required spraying pressure is not being reached.	The air inlet pressure is too low	Increase air inlet pressure on compressed air regulator. If this does not help, check air line for correct size and compressor output
	Spraying nozzle too big	Install a smaller spraying nozzle.
	Spraying nozzle worn	Replace spraying nozzle.
	Air motor iced (runs too slowly)	If possible reduce the air inlet pressure.
The proportioning pump runs irregularly (can be noticed by differences in up and down stroke speeds) and does not reach the required spraying pressure.	The viscosity of the spraying material is too high (suction losses)	Dilute the spraying material.
	Suction system leaking (fluctuations in spray jet)	Check seals and fittings in the suction system and replace if required.
	Bottom valve leaking (proportioning pump only stops in upward stroke when the spray gun is closed).	Unscrew bottom valve, clean and check ball and valve seat, replace ball or valve seat if required.
	Piston valve leaking (proportioning pump only stops in downward stroke when the spray gun is closed).	Clean and check ball and valve seat in the dual piston, replace ball or valve seat if required.
	Bottom or top packing worn	Replace the packing.

## 8 Technical data

You can find the technical data for your **DUOMIX 270** 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 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.

### 8.2 Type plates

The **DUOMIX 270** type plate is located on the frame. It contains a note of the device type and the serial number, as well as the machine's year of manufacture.

The technical data for the proportioning pump may change with an exchange of the material pumps. A separate type plate therefore exists for the proportioning pump, which is rail-mounted and easily exchangeable. This contains the following data:

- the output per double stroke of the material pumps for the base component (comp. A) and the hardener (comp. B),
- the pressure ratio,
- the mixing ratio,
- the total output of the proportioning pump per double stroke,
- the maximum permissible air intake pressure and operating pressure, and
- the year of manufacture.

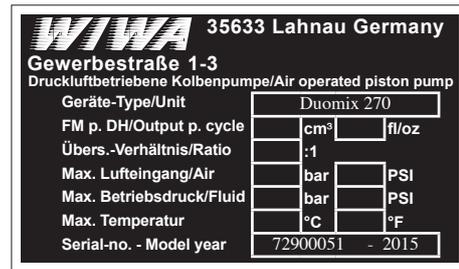


Fig. 28: Type plate for the **DUOMIX 270** (example)

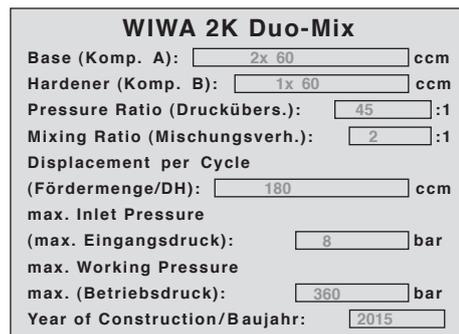


Fig. 29: Type plate for the proportioning pump (example)



Please ensure that the data on these two type plates matches with the information on the machine card. In case of irregularities or a missing type plate, please inform us immediately.

Furthermore, some machine components have a separate type plate, such as:

- the air motor for the proportioning pump
- the material pumps for the A and B component
- the flushing pump
- the control cabinet, etc.

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



because it works

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