Headquarter and Production
WIWA Wilhelm Wagner GmbH & Co. KG
Gewerbestraße 1 – 3 • 35633 Lahnau, Germany
Tel. +49-6441-609-0 • Fax +49-6441-609-50
E-mail: info@wiwa.de • Internet: www.wiwa.de

WIWA LP
107 N. Main St., Alger, OH, 45812, USA
Tel. +1-419-549-5180 • Fax +1419-549-5173
Tel.(Toll Free) +1-866-661-2139 •
E-mail: sales@wiwalp.com • Internet: www.wiwalp.com

WIWA Taicang Co., Ltd.
Add.: No. 87 East Suzhou Rd. • Taicang city •
Jiangsu province 215400 • P.R.China
Tel.: 86-512-5354-8858 • Fax.: 86-512-5354-8859
E-mail: info@wiwa-china.com

Operation Manual

WIWA DUOMIX 230

Serial-No.: … … … … … … … … …

CE

EC - Declaration of Conformity

EC-Declaration of Conformity

according to Appendix II, No. 1 A of the Machinery Directive 2006/42/EG

The company **WIWA Wilhelm Wagner GmbH & Co. KG**
Gewerbestr. 1-3
35633 Lahnau
Deutschland

herewith declares that the equipment types **DOUMIX 230**

are in conformance with the provisions of the above-mentioned directive.

In addition, the above-mentioned equipment is in conformance with the provisions of the directive:

- ATEX-Directive (94/9/EG)
  The listed equipment falls under Group II, Category 2G.
  Marking: Ex **II 2G cT4**

Documentary authority: *Heidrun Wagner-Turczak, Tel. 06441-609 0*

Lahnau, 01.01.2010
Place, Date

Heidrun Wagner-Turczak
Managing Director

1.1 Foreword

Operating personnel should always have access to this user manual!
The owner of the unit must ensure that the operator of the unit always has an operating manual at his/her disposal in a language he/she understands!

Dear Customer!
We are delighted about your decision to buy one of our units.
The user manual contains all information required to operate and handle your WIWA® DUOMIX. However, other information is also essential for safe operation:

Read and comply with the applicable guidelines for your country.
In Germany, these are the **"Richtlinien für Flüssigkeitsstrahler" (Guidelines for Liquid Jets)**, issued by: the Hauptverband der Gewerblichen Berufsgenossenschaften.

Moreover the **manufacturer's instructions and guidelines** for coating or feeder materials are to be respected at all times.

In principle you should refrain from any work method that could affect the safety of WIWA® products and operating personnel.

Much success and good work results with your
WIWA® DUOMIX wishes
WIWA® **Wilhelm Wagner GmbH & Co. KG.**

This operating manual only applies in conjunction with the machine card that was given to you with the user manual for your equipment. Please check that the type plate data is identical with the information on the machine card. Please notify us immediately if there are discrepancies, if the user manual has been incorrectly compiled or if the type plate is missing.

1.2 First read, then start

Please bear in mind that dual component systems work in extreme pressure mode and therefore generate extremely high pressures!

- Never hold your finger or hand in front of the spray gun and never reach into the jet spray.
- Never point the spray gun at yourself, other persons or other living beings!
- Always observe and follow the notes and regulations in the user manual!

Always take care before starting operation:
- Check the grounding (device and spraying object).
- Check all connections and fitments for leak tightness.
- Observe the maximum permissible pressure of the device and accessory parts.

Strictly observe the following before starting work on the system and during breaks:
- Switch off the system.
- Relieve spray gun and material hoses.
- Secure the spray gun.

Ensure safety!

The accident prevention instructions "Application of Coating Materials" (BGR 500, chapt. 2.25) and the guidelines for liquid jets ZH1/406 of the employer's liability insurance association must strictly be complied with. The safe condition of liquid jets must be inspected by an expert whenever required, but at least every 12 months. The results of this inspection must be recorded in writing.

Paint and solvent residues must be disposed of in compliance with legal regulations. This also applies for environmentally friendly water varnish systems.

In case of injuries you should immediately consult a physician or visit the nearest hospital.
If paint or solvent has penetrated the skin you must inform the physician about this spraying material and the solvent used.
For this purpose you should always have the product data sheet with the manufacturer's address and phone number at hand!

1.3 Table of Contents

2.1 Explanation of symbols

The notices and symbols used in this manual have the following meanings:

Note
Indicates an informative text passage.
You should pay particular attention when reading it.

NO SMOKING
Indicates a situation with risk of fire when working with combustible or explosive solid, fluid or gaseous substances.

WARNING
A potentially dangerous situation is indicated.
Non-observance can lead to death or very serious injury.

DANGER OF EXPLOSION
Indicates a situation with potential danger of explosion.
Strict compliance with these notes is mandatory.

VOLTAGE
A situation showing danger of explosion by electrostatic charge is indicated. Strict compliance with these notes is mandatory.

WEAR HEARING PROTECTION
You should strictly follow these notices to protect your health.

USE RESPIRATORY PROTECTION
You should strictly follow these notices to protect your health.

WEAR PROTECTIVE GLOVES
Protective gloves with lower arm protection should be worn to protect against burns. Strict compliance with these notes is mandatory.

HARMFUL TO HEALTH
Identifies hazardous substances. Strict compliance with these notes is mandatory.

FIRST AID
In case of injuries or accidents it is imperative to respect all the regulations indicated.

2.2 Warnings

Appropriate information signs and symbols on the machine refer to possible danger areas and must be respected at all costs.

Information signs and symbols must not be removed from the unit.
Damaged and illegible information signs and symbols must be replaced immediately.
The following signs can be found on the unit:

Figure 2.2.1

- Warning concerning the grounding of machines (Fig. 2.2.1) on the high pressure filter

According to the accident prevention instructions BGR 500, chapt. 2.29 the owner is obliged to ground this piece of equipment. Please follow our operating instructions!

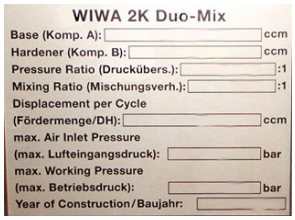


Figure 2.2.2

- Type plate (Fig. 2.2.2) on the control cabinet of the dual component system

Please check that the type plate data are identical with those on the machine card. In case of discrepancies or if the type plate is **missing** please **notify** us immediately.

- Other type plates, which are only valid for individual modules, can be found on the following modules:
  - Metering pump A + B
  - Flushing pump (optional)
  - Feed pumps A + B (optional)
  - Material flow heater (optional)

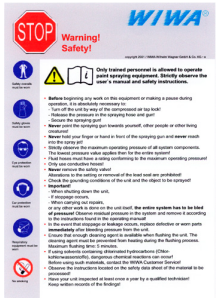


Figure 2.2.3

- Safety information (Fig. 2.2.3) This sign lists the most important safety information to be followed when handling or working with the unit.
  However, you should still read the information in the user manual!

2.3 Dangers arising from this machine

This unit has been designed and manufactured while taking into consideration all safety-related aspects. It corresponds to the current standard of technology and to applicable accident prevention regulations. The unit left the factory in perfect condition and guarantees a high level of technical reliability and safety.

Nevertheless, there are certain risks that can arise from incorrect operation or misuse:
- to life and limb of the operator or third party,
- to the machine and other material assets of the owner,
- to the efficient working capacity of the unit.

All persons concerned with the set-up, commissioning, operation, maintenance, repair and servicing of the unit must have read and understood the user manual beforehand, especially the chapter on Safety.
Your safety is at stake! We recommend to the owner of this unit to have this confirmed in writing

The following must be strictly observed at any time, in addition to the user manual:

Read and comply with the applicable guidelines for your country.
In Germany, these are the **"Richtlinien für Flüssigkeitsstrahler" [Guidelines for Liquid Jets]** (ZH1/406), issued by the Hauptverband der Gewerblichen Berufsgenossenschaften.
We recommend to include all guidelines and accident prevention regulations into the user manual.

The **manufacturer's instructions and processing guidelines** for coating or transfer materials are to be respected at all times.

In principle you should refrain from any work method that would affect the safety of WIWA® products and the operating personnel.

2.4 Using this machine

The WIWA® DUOMIX 230 is most suitable for the application of low, medium and also high viscosity paints and coating materials.

Your dual component system was designed to meet your special requirements (material to be applied, mixing ratio, transfer quantity, etc.).
Exact metering of both components is assured by the fixed mixing ratio. The mixing ratio can only be changed by exchanging the material pumps (hardener or standard component).

Use of the unit in explosion endangered areas

Marking: Ⓔx **II 2G px**

The unit fulfils the explosion protection requirements of the Directive 94/9/EC for explosion group, unit category and temperature class specified on the type plate.

The unit is suitable for being installed in explosion-protection zone I. The unit of group II must be assigned to unit category 2G due to the possible generation of explosion producing atmospheres resulting from gasses and paint mist.
The ignition temperature of the materials and solvents to be used must be higher than 200 °C.

When operating the unit, the specifications in this operating manual must be observed in all cases.
The specified inspection and maintenance intervals must be strictly complied with.
The data specified on the type plates must be strictly complied with and should never be exceeded. An overloading of the unit must be excluded.
The operator is responsible for determining the zone allocation according to the Directive of EC 94/9/EC, Appendix II, no. 2.1-2.3 when observing the measures of the responsible inspecting authority.
The operator is responsible for checking and ensuring that all technical data and markings according to ATEX correspond with the necessary requirements.
Make sure that several components have their own type plate with separate marking according to ATEX.
The respective lowest explosion protection of the marking attached applies for the entire unit.
Applications where the malfunction of the unit can lead to danger to personnel must be provided with respective safety measures by the operator.
Should problems can be noticed during operation, the unit must be stopped immediately and WIWA® should be contacted immediately.

Figure 2.4.1
Grounding screw on high pressure filter

It must be assured that the unit is sufficiently grounded separately or in connection with the equipment it is mounted on (max. resistance $10^6\,\Omega$), Fig. 2.4.1 grounding / equipotential bonding).

Any other use is deemed to not be in accordance with regulations. The manufacturer's approval must be obtained before WIWA® the unit is used for any other purpose or with other materials, i.e. not in accordance with the intended use, otherwise the warranty will become null and void.

Intended use also includes compliance with the technical documentation and adherence to the prescribed operating, servicing and maintenance guidelines.

2.5 Machine environment

Conversions and alterations

Unauthorized conversions or alterations should not be undertaken on safety grounds.
Protective equipment should not be dismantled, converted or bypassed.
Use of components which have not been manufactured or delivered by WIWA® renders any warranty null and void.
The unit should only be operated within the prescriptive limit values and machine parameters.

Dangers from accessories and spares

- If original accessories and spare parts of the company WIWA® are used, usability with our units is guaranteed. It is, however, mandatory to respect the safety regulations of the accessories and spare parts. These safety regulations are found in the corresponding accessory user manuals.
- If foreign accessories or spare parts are used, the company WIWA® cannot guarantee the safety of the entire system. Liability also becomes null and void for damage or injuries resulting from the use of such accessories and spare parts.

Emissions

- Depending on which materials are processed, solvent fumes may occur. For this purpose, always ensure for sufficient aeration and ventilation at the workplace for avoiding damage to your health and property. You should **always** follow the processing information issued by the material manufacturers.

- The sound pressure level of this unit is 85 db(A). However, operating personnel should still be provided with suitable noise protection equipment. The operator is responsible for adhering to the accident prevention instructions "Noise" (BGV B3). For this purpose, pay particular attention to the conditions of the installation location, e.g. will the noise exposure increase if the system is set up in or on hollow bodies.

2.6 Danger sources

Please remember that dual component systems work with extremely high pressures and may cause life threatening injuries if used inappropriately.

Please comply with the following instructions:

- Material hoses **must** withstand the maximum working pressure, whereby the safety factor must be provided by the unit.
  Material hoses must never be repaired!
- **Never** point the spray gun at yourself, other persons or other living beings!
- **Never** hold your finger or hand in front of the spray gun and **never** reach into the jet spray.
- **Never** try to seal leakages on connections and high pressure hoses by hand or by wrapping fabric around them. If leaks occur, **immediately** depressurize the entire system (spray gun, hose, high-pressure filter, pump, etc.). Defective parts must be replaced.
- Always wear protective gloves when working with heated materials! DANGER OF BURNING!

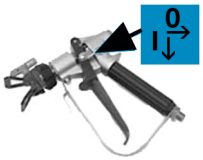


Figure 2.6.1

- Secure the spray gun with **each** work break, even if it is only very short, and check the lock (Fig. 2.6.1).
- Always depressurize the entire system **before** starting maintenance and cleaning work on device and spraying accessories. Both the compressed air shut-off valve (Fig. 2.6.2, Pos. 1) and the compressed air regulator (Fig. 2.6.2, Pos. 2) on the service unit must be closed.

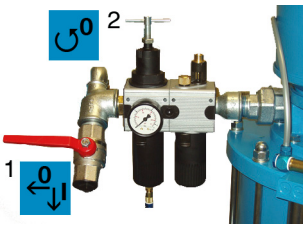


Figure 2.6.2

- **Never** spray solvent or solvent containing materials into cone-top cans or drums with bunghole! DANGER OF EXPLOSION!
- Always use an open container. When using metal containers avoid contact between spray gun and container wall, because of possible electrostatic charging.
  The high flow velocities associated with the Airless spraying method may cause static charging. Static discharges can cause fire and explosion.

The unit **must** therefore always be properly grounded (Fig. 2.6.3). The original WIWA® DUOMIX 230 is equipped with an ground cable as standard. Please order immediately (order-no.: 0474487) if lost or damaged.

- Never operate the unit outside in case of a thunderstorm

Figure 2.6.3

- Spraying equipment designed without explosion protection must not be used in workshops that come under the explosion protection ordinance. The dual component system is suitable for installation in zone 1 (DIN EN 1127-1).However, if agitators, heaters or other electrically accessories are additionally mounted, one must check the explosion protection. 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, even if the accessory equipment as such is explosion protected.

- Because of the generated electrostatic charging you should only use conductive material hoses. All original WIWA® material hoses are conductive and designed to work optimally with our units. The maximum permitted working pressures of the hoses **must** be higher than or equal the maximum operating pressure of the corresponding dual component system.
- In case of material congestion or agglomeration of material in the spraying system, residual pressures can still be present despite pressure discharge. Pay full attention to this when performing repair work!
  High pressure filter, material hoses and spray guns in particular must be disassembled with **greatest care** to avoid accidents caused by released residual pressures.
  We recommend to cover the screw fitting with a cloth when unscrewing the material hoses, to catch any escaping material sprays.
- Before working on the high pressure filter, e.g. when changing the filter, the system must be completely switched off and depressurized.
- Changing the mixing ratio may cause a change in pressure ratio and thus require the adaptation of the max. permissible air inlet pressure.
- In this case the existing safety valve **must** be replaced. On this occasion WIWA® will supply you with a new exchangeable type plate with the valid data for the dual component system.
  Consultation with WIWA **is highly** recommended.
  You should **never** operate the system without safety valve.
  If the safety valve needs to be replaced, you can find the corresponding order number on the machine card.
  When using new safety valves make sure that the valves have been set to the max. permissible air inlet pressure of the WIWA® DUOMIX as required for the mixing ratio (see type plate/machine card) and sealed with a lead seal.
- During operation keep checking the material feed to the unit, to prevent the development of friction heat caused by dry running of the material pumps.
  Please note:
  - no empty material drums while the material pumps are running
  - suction systems must not be clogged, kinked or defective
  - the unit must immediately switch off if no material is delivered
- In closed rooms or with pressurized systems, in which aluminium components or galvanized parts have contact with the solvent, hazardous chemical reactions may occur when using 1.1.1 trichloroethane (TCE), methylene chloride or other solvents containing chlorinated hydrocarbons (CFCs). If you wish to use the aforementioned solvents or varnishes and paints containing such solvents, we advise you to consult the WIWA® customer service or directly.
- We would like to point out that we have a series of dual component systems in rust and acid proof design available for such materials.
- The maximum operating pressure specified by us must generally be adhered to for all WIWA® parts (e.g. pump, heater, hoses, spray gun, safety valve).
  At varying operating pressures the lowest value is always valid as the maximum admissible operating pressure for the entire system. Example:

Pump	up to 420 bar
Material hose	up to 600 bar
Spray gun	up to 500 bar

  The maximum permissible operating pressure for the entire system is 420 bar.
- Smoking or handling open fire or possible sources of ignition is not permitted within the entire working area.
- Alway pay attention to and follow all notes in the user manuals for the optionally offered accessory equipment.

2.7 Operating personnel

Authorized operating personnel

Juveniles under the age of 16 have no permission to operate this equipment.
The owner of the machine must ensure that the user manual is made available to the user and make sure that the user has read and understood its contents. Only then the system may be taken into service. **We recommend to the owner of this unit to have this confirmed in writing**
The person operating this system is obliged to notify the owner of any changes to this unit which might affect its safety, as the owner is responsible for maintaining flawless function of this unit.
All responsibilities for the various types of operation with this system must be clearly defined and respected. There must be no uncertainties with regard to competences, as this might endanger user safety.

The owner must therefore ensure that only authorized persons work with the unit. He shall be responsible towards a third party within the operating area of this system.

Personal Protective Equipment

- We would like to point out that the valid guidelines and stipulations depending on the work environment (mining, closed rooms, etc) must be respected in any case.
- Always wear the protective clothing stipulated, as solvent fumes and spilled cleaning agents cannot be entirely avoided.

➤ The sound pressure level of this unit is 85 db(A). However, operating personnel should still be provided with suitable noise protection equipment.

➤ Spray painting personnel must always wear respiratory protection masks, even though the paint mist has been minimized in Airless spray painting applications with correct pressure setting and working mode.

➤ When applying heated material the surface of the unit may also heat up. Always wear safety gloves,

➤ Do not use solvents or other harmful substances to clean your skin. Use only appropriate skin protection, skin cleaning and skin care products.

2.8 Place of installation and transport

Installation location

The WIWA® DUOMIX can be installed inside and outside spray booths and -rooms. However, outdoor installation should be preferred in order to avoid contamination.

Safety measures at the installation location

➤ This system requires a solid base and sufficient free space for safe operation. The access to the safety features must be kept clear.
➤ Lock the unit at the place of use.
Version with carrier: Kick down all wheel brakes on the rack. This secures the device against unintended moving. Before transportation pull the immobilizer brakes up to release.
➤ Always keep the working area, especially all walkways and standing areas, clean and tidy. Remove any spilled material and/or solvent immediately.
➤ Always ensure adequate ventilation ate the work place to avoid damage to health and objects. Always observe the processing instructions issued by the material manufacturers.
➤ Even though there are no legal directives for low-mist Airless spraying methods, all hazardous solvent vapours and paint particles should be extracted.
➤ Protect a objects adjacent to the spraying object against possible damage caused by the paint mist.
➤ The owner must protect the entire system by undertaking appropriate lightning protection measures.
➤ **Strictly comply with the valid accident prevention instructions.**

Transport

➤ Disconnect the entire power supply for the machine, even for short transport distances.
➤ Empty the machine before transport.
➤ Caution when loading with hoisting gear.
Ensure sufficient load bearing capacity of lifting gear and lifting tackle when loading the machine.
You find the dimensions and weights of the device on the machine card.
➤ The device must only be lifted by the lifting and lashing points provided for this purpose.
Take care of free hanging ropes, if necessary use a yoke. The length of the transportation ropes must be at least 3 m. Fasten the lifting tackle properly on all lifting eyes (chapter 3, Pos. 1.4.1 or 1.4.2).
Caution! Danger of tipping over! Ensure even load distribution to secure the system against tipping over.
➤ Do not transport any other objects (e.g. material containers) while lifting or loading the device.
Remove all loose components (e.g. tools) from the unit.
Never stand under suspended loads or inside the loading area. This poses a danger to life!
➤ Secure the load on the transport vehicle against slipping and falling off.
➤ Parts or equipment that have been removed for transport purposes must be attached professionally and in accordance with the intended use before commissioning.

2.9 What to do in events of emergency

Leakages

In case of leakages the system must be shut down **immediately** and the complete system must be depressurized:

➤ Interrupt the complete compressed air supply of the system. Regulate the pressure regulator (chapter 3, Pos. 1.5.1) fully back and close the compressed air shut-off valve (chapter 3, Pos. 1.5.2).
➤ Open the spray gun and hold it into an open, empty container. Take care of contact with the container.
➤ Set the lever (chapter 3, Pos. 8.1.2 / 8.2.2) to position "STOP/FLUSH"
➤ Set the lever (chapter 3, Pos. 8.1.1 / 8.2.1) to position "Return flow open" for this purpose.
➤ Immediately replace the defective parts or inform the WIWA® customer service.

Injuries

- Immediately consult a physician if injured when handling fluid jets (because of their cutting effect).
- Inform the physician about the sprayed material (paint) and the solvent used (thinner). For this purpose, always keep the product safety data sheet (supplier or manufacturer address, their telephone number, material designation and the material number) ready for the physician.
- Always remember where you can call for help.
- Keep a list of the local emergency telephone numbers at hand.
- You should in any case make yourself familiar with First-Aid measures.

Fires

- Read and comply with the instructions for fire alarm and escape routes, which are displayed in your factory or at any work place.
- Keep a list of the local emergency telephone numbers at hand.
- Remember the location and operation of fire alarms, fire extinguishers.
- Ensure a sufficient amount of information signs for the avoidance of fire.
- Only use the extinguishing substances stipulated by the material manufacturer.

2.10 Safety features

All units are delivered with the following safety features:

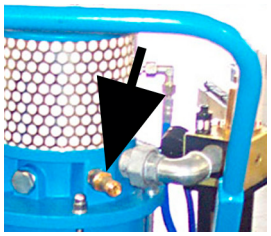


Figure 2.10.1

Safety valve (Fig. 2.10.1)
The safety valve makes sure that the max. permissible air inlet pressure is not exceeded. The safety valve will open and vent off air when the air inlet pressure exceeds the set limiting value.

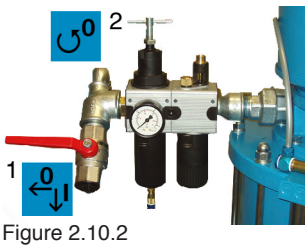


Figure 2.10.2

Compressed air shut-off (Fig. 2.10.2)
The compressed air shut-off valve (Pos. 1) enables immediate shutting down of the unit.
Before starting work on the system the complete system, including the feed pumps, must be shut down and depressurized.

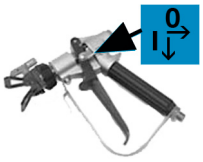


Figure 2.10.3

Spray gun lock (Fig. 2.10.3)
The spray gun must be locked for each break, even for short interruptions of work. Setting the safety lever to horizontal position locks the spray gun against accidental operation.

Figure 2.10.4

Ground cable (Fig. 2.10.4)
The dual component system must be connected to an electrically conductive object with the grounding cable, to prevent electrostatic charging.

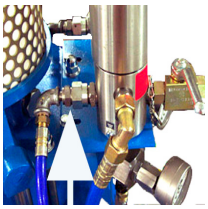


Figure 2.10.5

Burst discs (Fig. 2.10.5)
The burst discs prevent excessive exceeding of the permissible operating pressure.
They are located inn the screw fittings behind the high pressure filters.
If damaged, all burst discs must be replaced.
You can take the ordering data from the machine card.

Safety valve on the outlet manifold of the feed pumps
(no illustration, feed pumps optionally available)
This safety valve is factory set to a maximum operating pressure of 70 - 80 bar. This setting must not be changed.

All safety features must be checked!

- Before each start-up of the system!
- Before starting work on or with the system!
- After setup work!
- After cleaning and servicing work!
- After maintenance and repair work!

Check list to check the safety features on the depressurized unit.

- Check the lead seal on the safety valve for damage.
- Check the safety valve for external damage.
- Check the grounding cable for damage.
- Check the grounding cable connections on unit and conductor.
- Check the correct function of the compressed air shut-off valve.
- Check the function of the Airless spray gun locking lever.
- Check the burst discs for damage.

If any of the safety features is not fully functional or any other fault is found on the machine, the system must be shut down immediately. Operation of the machine must only be resumed after the correct functional state has been re-established.

2.11 Handling the device and auxiliary materials

Setup work, maintenance, servicing and repair work

- ➤ Before starting work you must interrupt the compressed air supply to the machine.
  - ➤ Make sure that the machine is free of residual pressure, in both the air and the material side.

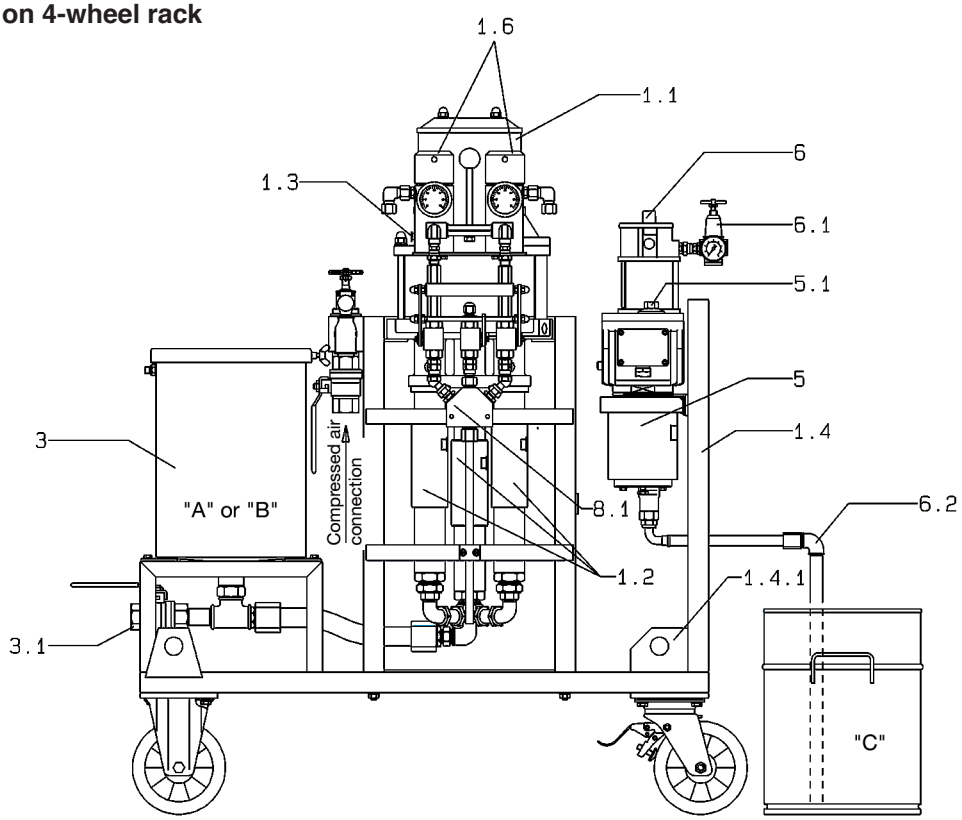
Activity	Qualification of personnel
Setup work	instructed user
Maintenance work	instructed user
Cleaning work	instructed user
Maintenance work	personnel trained by the WIWA® customer service
Repair work	personnel trained by the WIWA® customer service

- ➤ After the completion of work you must in any case check the function of all protective devices and the correct function of the machine.

Handling auxiliary materials

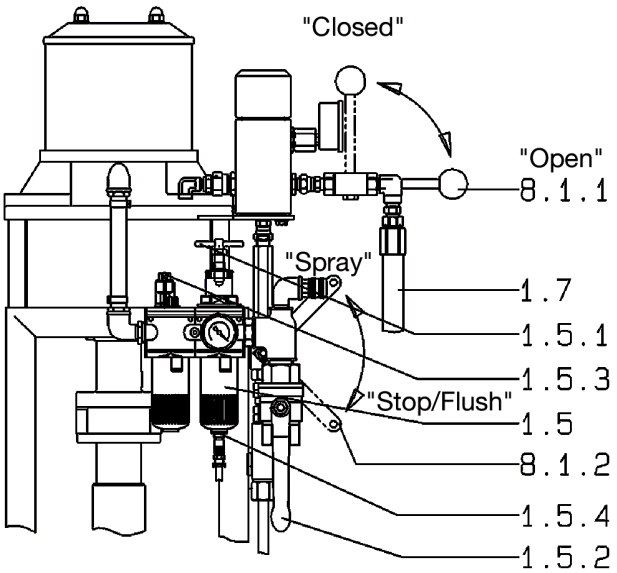
- ➤ Follow the safety notes and dosing information of the manufacturer and the generally applicable regulations when handling paints, solvents, oils, greases and other chemical substances.
- ➤ Rests of paints, solvents, oils, greases and other chemical substances must be collected in accordance with statutory provisions concerning recycling and waste disposal.
- ➤ The official local waste water laws are valid.

DUOMIX 230 on 4-wheel rack



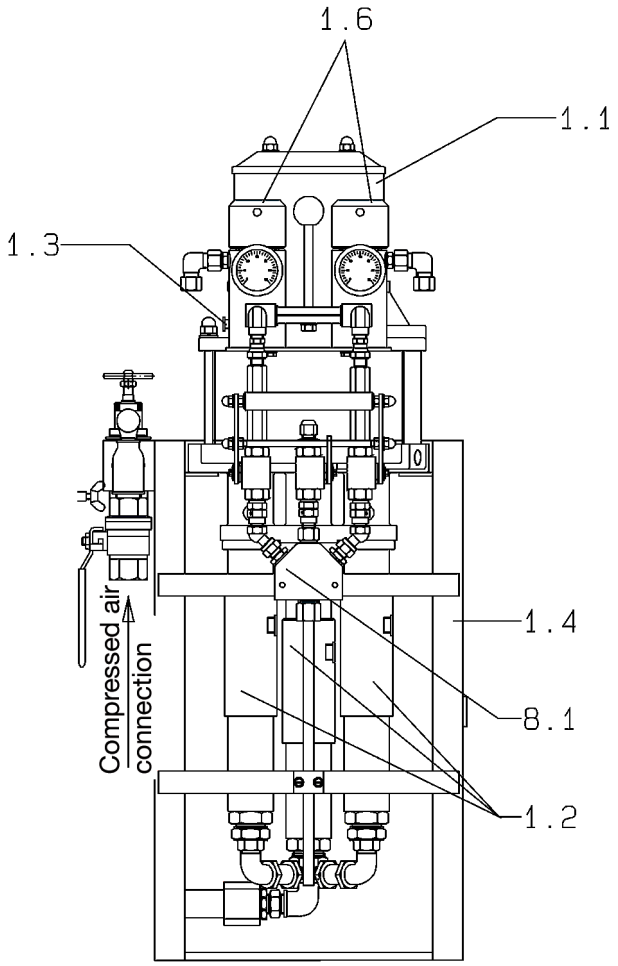
Position:

1.1	Air motor
1.2	Material pump
1.3	Safety valve
1.4.4	4-wheel rack
1.4.1	Transport bar
1.5	Maintenance unit
1.5.1	Compressed air regulator
1.5.2	Compressed air shut-off valve
1.5.3	Inspection glass
1.5.4	Drain valve
1.6	High pressure filter
1.7	Return flow hoses
3	Filling funnel*
3.1	Ball valve
5	Material flow heater*
5.1	Control button
6	Flushing pump*
6.1	Compressed air regulator
6.2	Suction line
8.1	Standard mixer
8.1.1	Lever "Return flow"
8.1.2	Lever "Spray/Stop-Flush"



* optionally - depending on customer's request

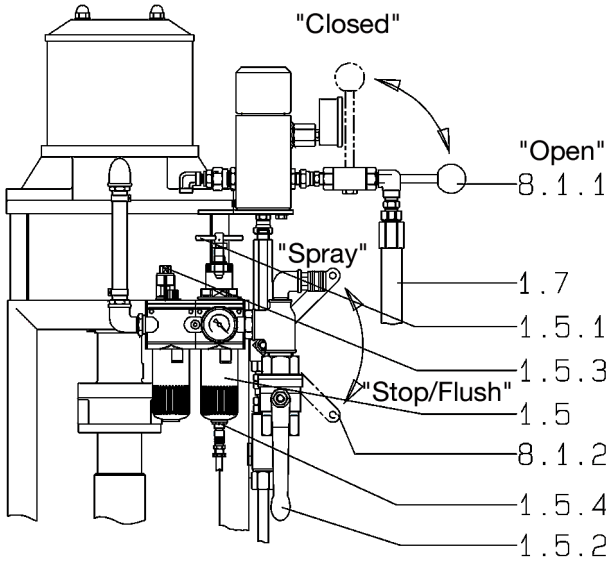
DUOMIX 230 on stationary rack



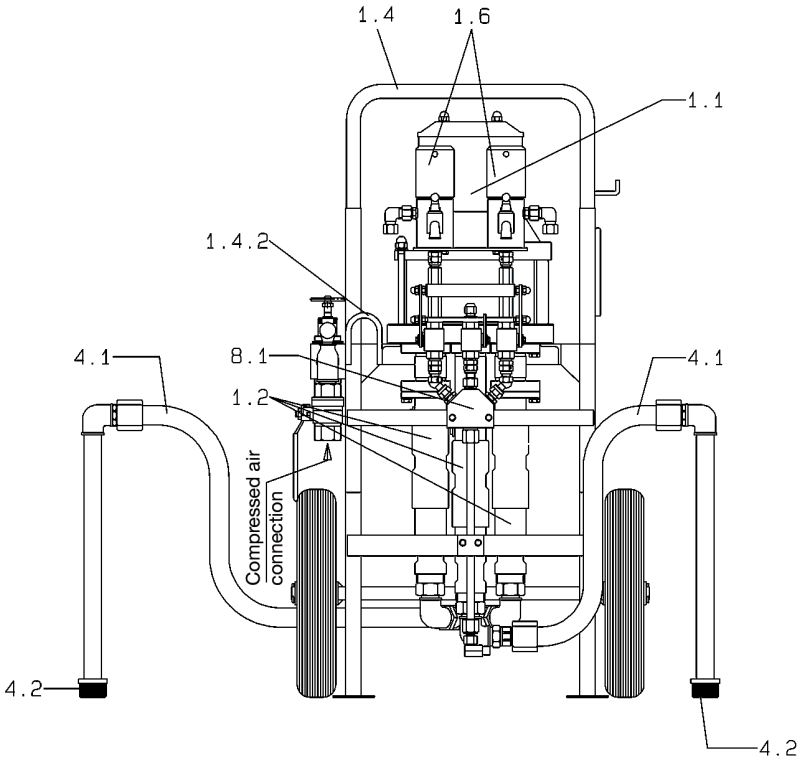
Position:

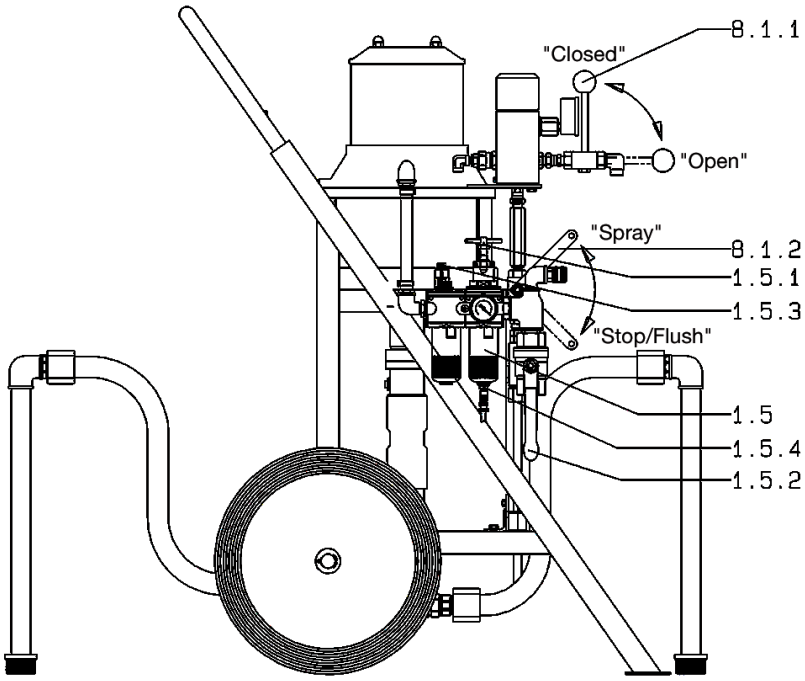
1.1	Air motor
1.2	Material pump
1.3	Safety valve
1.4	Rack*
1.5	Maintenance unit
1.5.1	Compressed air regulator
1.5.2	Compressed air shut-off valve
1.5.3	Inspection glass
1.5.4	Drain valve
1.6	High pressure filter
1.7	Return flow hoses
8.1	Standard mixer
8.1.1	Lever "Return flow"
8.1.2	Lever "Spray/Stop-Flush"

* optionally - depending on customer's request



DUOMIX 230 on 2-wheel rack



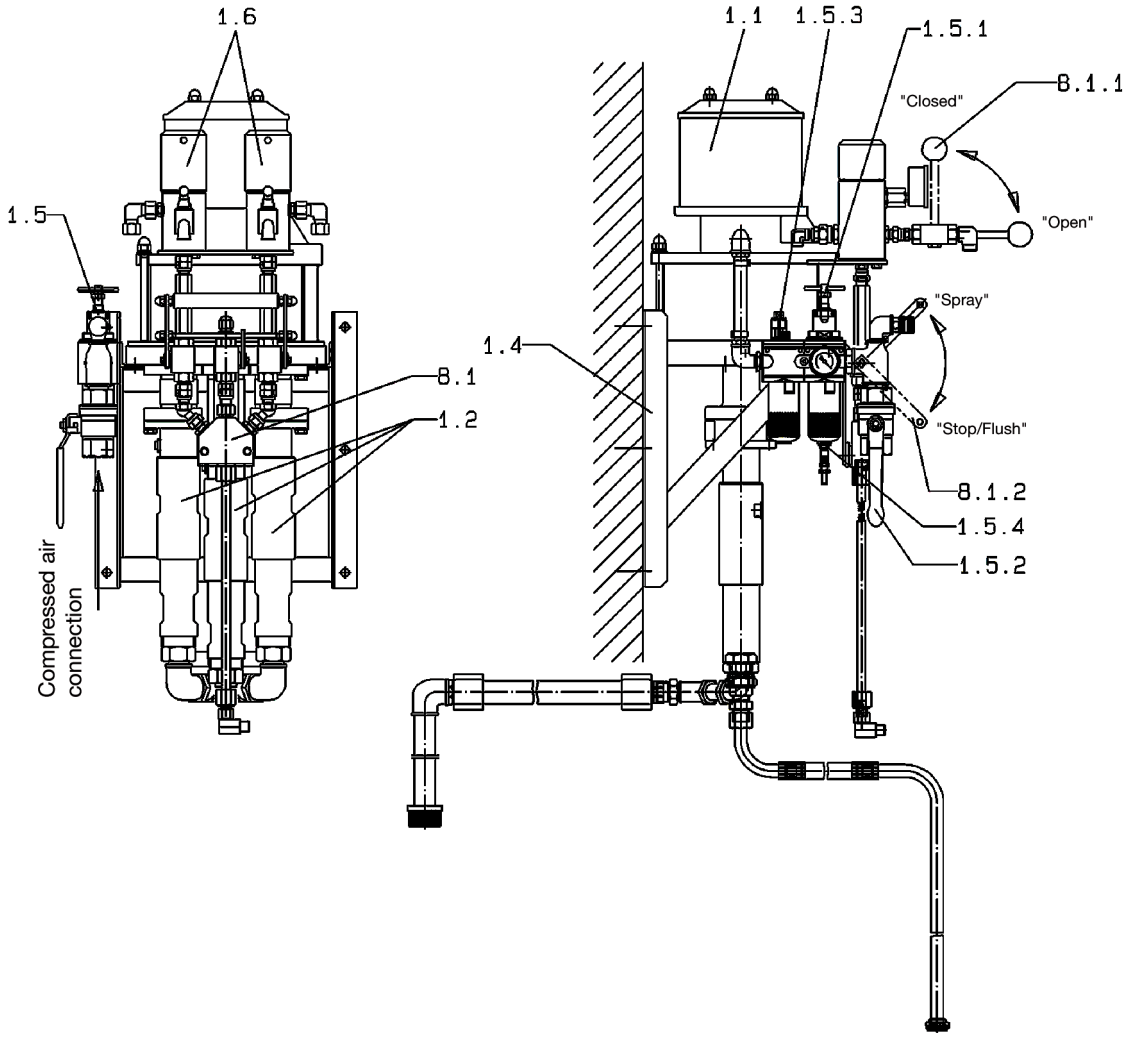


Position:

1.1	Air motor
1.2	Material pump
1.4	2-wheel rack
1.4.2	Transport eyes
1.5	Maintenance unit
1.5.1	Compressed air regulator
1.5.2	Compressed air shut-off valve
1.5.3	Inspection glass
1.5.4	Drain valve
1.6	High pressure filter
4	Suction line*
4.1	Suction hose
4.2	Suction screen
8.1	Standard mixer
8.1.1	Lever "Return flow"
8.1.2	Lever "Spray/Stop-Flush"

* optionally - depending on customer's request

DUOMIX 230 on wall bracket with pressure and dosing monitoring

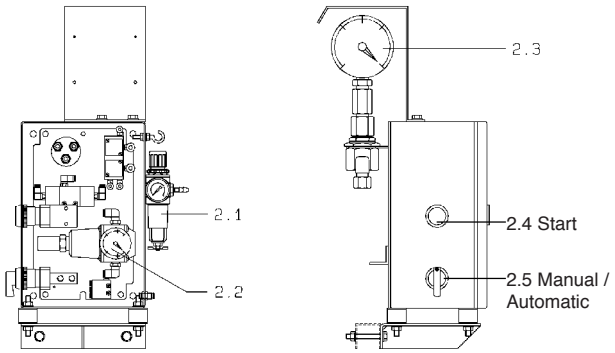


Position:

1.1	Air motor
1.2	Material pump
1.4	Wall bracket*
1.5	Maintenance unit
1.5.1	Compressed air regulator
1.5.2	Compressed air shut-off valve
1.5.3	Inspection glass
1.5.4	Drain valve
1.6	High pressure filter
8.1	Standard mixer
8.1.1	Lever "Return flow"
8.1.2	Lever "Spray/Stop-Flush"

* optionally - depending on customer's request

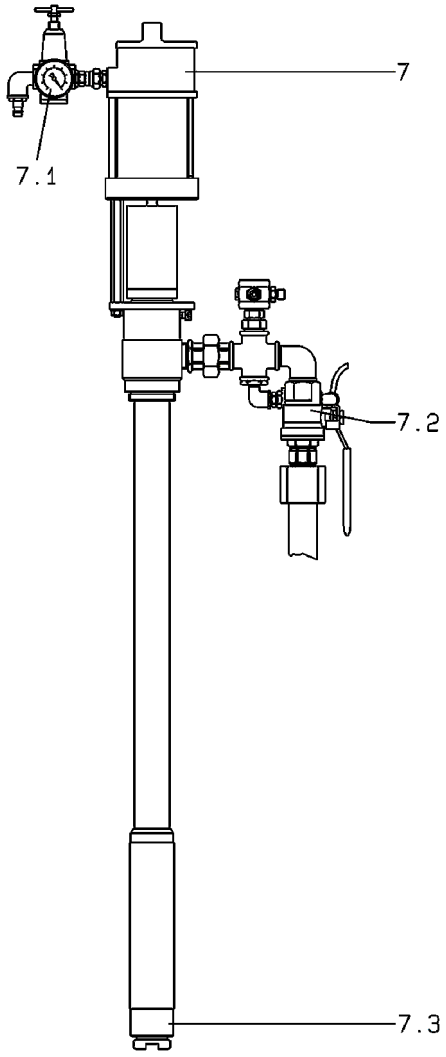
Pressure and dosing monitoring (Pos. 2)



Position:

2.1 Pressure regulator with micro-filter
2.2 Precision pressure regulator
2.3 Contact pressure gauge
2.4 Switch "START"
2.5 Switch "MANUAL / AUTOMATIC"

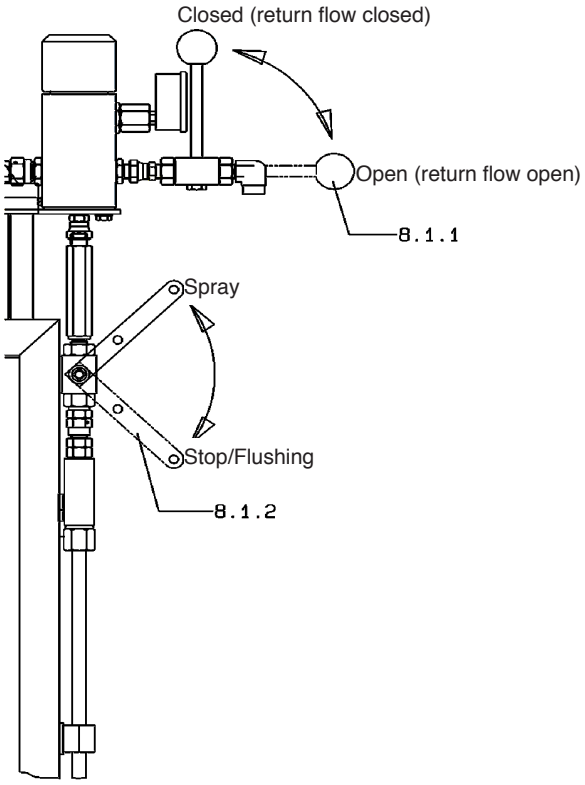
Feed pump (Pos. 7)



Position:

7.1 Pressure regulator
7.2 Ball valve
7.3 Suction

Standard mixer (Pos. 8.1)

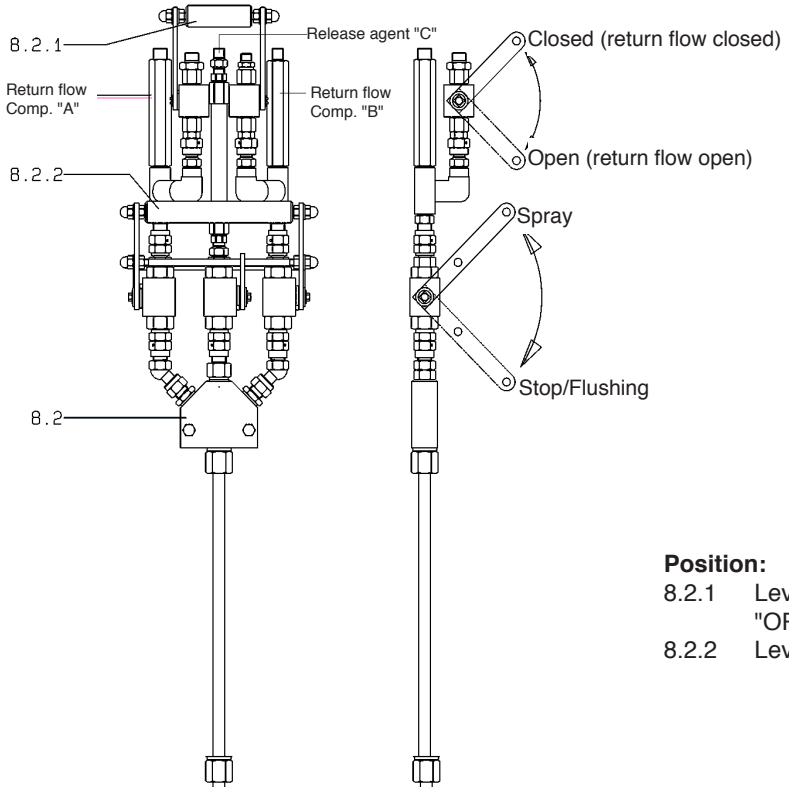


Position:

8.1.1 Lever "CLOSED / RETURN FLOW CLOSED" / "OPEN / RETURN FLOW OPEN"

8.1.2 Lever "SPRAY/STOP-FLUSH"

External mixer (Pos. 8.2)

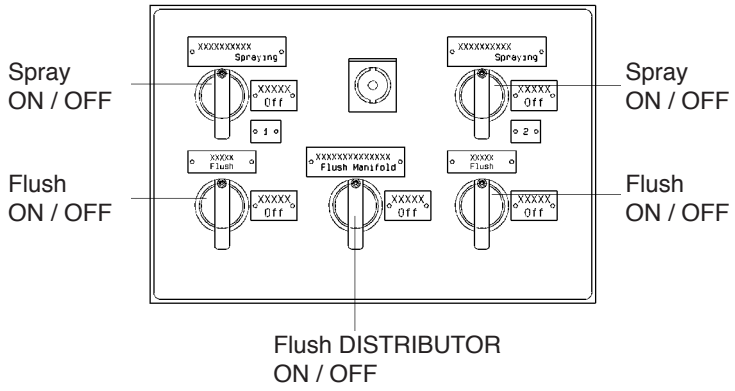


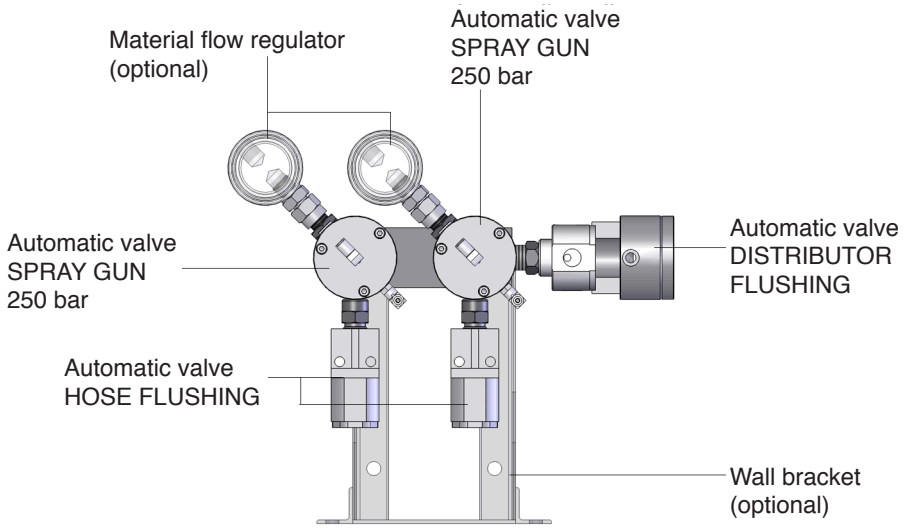
Position:

8.2.1 Lever "CLOSED / RETURN FLOW CLOSED" / "OPEN / RETURN FLOW OPEN"

8.2.2 Lever "SPRAY/STOP-FLUSH"

Dual distributor (optional)





Problem definition
You want to set up the system at the work place and prepare it for operation.

Prerequisites
The material to be applied is readily available.

All materials to be sprayed must be supplied from the manufacturer with data concerning viscosity, application temperatures, mixing ratios, etc. If this is not the case, consult the corresponding manufacturer and ask for these data.

With dual component materials the potlife must be taken into consideration. After completion of or when interrupting work, the part of the system, that had contact with the mixed material, must be cleaned with the specified cleaning agent within the potlife specified by the manufacturer. Please remember that higher temperatures reduce the potlife.
For optimal preparation of the spraying materials WIWA® offers a wide range of accessories, like e.g.:
- ➤ agitators in various sizes
- ➤ material preheating containers in different sizes
- ➤ Material Flow Heater

Procedure
High pressure spraying devices and systems can be installed inside and outside spray booths and -rooms. However, outdoor installation should be preferred in order to avoid contamination.
- ➤ Stand the unit on a level and firm base. All operating elements must be easily accessible. The compressor power must match the air requirements of the unit and the diameters of the air supply hoses must match the connections, so that an adequate air supply is ensured.

Various system components were removed and packed in a separate cardboard box for transport. Install these parts by following the machine sketch attached to the user manual.
- ➤ Connect as follows:
  - ➤ external mixer / distributor with material hose
  - ➤ Flushing pump / distributor with flushing agent hose
  - ➤ Pressure and dosing monitoring / Control cabinet for distributor with compressed air hose
  - ➤ Distributor / Spray gun(s) with material hose

  - ➤ In the control cabinet of the distributor set all switches SPRAY and FLUSH to "OFF".
  - ➤ Close and secure the spray gun before connecting it to the distributor.
  - ➤ Close the material outlet on each material pressure regulator or distributor, to which no spray gun with material hose is to be connected, with a plug. The plug must be designed to withstand the pressure applied to the material output (see machine card).

When mounting a distributor the use of a flushing pump is mandatory.

- ➤ Supplement the disassembled hoses as follows:

Component drawing	Hoses running from	to
Feed hoses	Feed pump (optional)	Dosing system or material container
Return hoses	High pressure filter	Transfer pumps
Spraying hoses	Distributor	Spray gun

Take care that all hoses and pumps are only used with the components intended for this purpose (A or B).

Standard component (A) = Blue

Hardener (B) = Red

Dual component systems work with very high pressures!

- ➤ Check all rotatable parts, nuts, screws and hose connections and tighten these, so that no material will emerge from connections and cause injuries.
- ➤ The dual component system must be connected to an electrically conductive object with the grounding cable, to prevent electrostatic charging.
- ➤ The object to be coated must also be grounded.
- ➤ Check the permissible highest pressure for material hose and spray gun. It must be higher than or equal the maximum operating pressure of the system as specified on the type plate.
- ➤ Compare the maximum air input pressure of the safety valve with the specifications in the machine card. These data must match.
- ➤ Now fill the system with the release agent (see chapter 7.2 Maintenance plan). We recommend to use the WIWA® release agent, Order-Nro 0163333.
- ➤ Fill the lubricator on the service unit with pneumatics oil or anti-freeze agent or a corresponding mixture and perform the settings described in chapter 8.4 "Maintenance of the service unit". Only use the pneumatics oil specified in chapter 10.1.

For optimal protection we recommend
the WIWA® pneumatics oil, order-no. 0632579 and
the WIWA® anti-freeze agent, order-no 0631387.

Result
The machine is now ready for operation. You can continue with initial start-up (chapter 5.1).

5.1 Initial start-up

Problem definition

After assembly in the factory the correct functioning of this machine was checked with a testing medium.
You must flush the complete system with the solvent that belongs to the application material, to protect the sprayed material against being impaired by the test medium.

Prerequisites

Always wear the protective clothing stipulated, as solvent fumes and spilled cleaning agents cannot be entirely avoided.

The following is required:

- 2 open containers with the material to be applied (component **A**+**B**), hereafter referred to as container "**A**" + "**B**".
- 2 open containers with solvent, hereafter referred to as container "**C**".
  For each material component **A**+**B** you should have a separate solvent container "**C**" available, to prevent material reactions and damage to the system.
- 2 empty, open containers for solvent/test medium mixture, hereafter referred to as container "**D**".Use a separate container "**D**" for each material component to avoid material reactions and thus possible damage to the system.

Do not use cone-top cans or drums with bunghole!
When using metal containers you must always take care not to touch the container wall with the spray gun (because of possible electrostatic charging).

- Check whether the material hoses are suitable for the maximum working pressure and have the specified safety factor. Material hoses must be leak tight and free of kinks, signs of abrasion or bulges. Hose assemblies must be tight and compliant with the maximum pressures.
- When using material flow heaters (option) make sure that these are cold during cleaning.
  Before starting the material flow heater the spraying material must circulate in cold condition, because there may still be solvent residues in the material flow heater or in the entire system.

Procedure

If the device is not equipped with one of the following accessories, you can skip the corresponding section.

Step 1

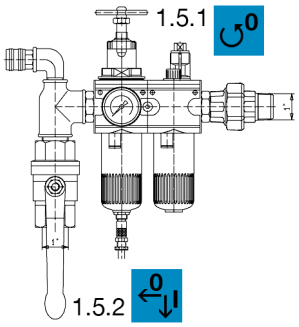


Figure 5.1.1

- Close the compressed air shut-off valve (Fig. 5.1.1, Pos. 1.5.2) and the compressed air regulator (Fig. 5.1.1, Pos. 1.5.1) on the service unit.

Step 2

- Connect the system to the compressed air supply.

2.4 Start
2.5 Manual / Automatic

Step 3

- Insert suitable and clean filter elements into the high pressure filters (chapt. 3, Pos. 1.6).
  Observe and follow the notes in chapter 7.3. The mesh size should always be slightly finer than the bore of the nozzle used.

Filter element	Nozzle size	
	more than	up to
M 200 (white)		0.23 mm/.009"
M 150 (red)	0.23 mm/.009"	0.33 mm/.013"
M 100 (black)	0.33 mm/.013"	0.38 mm/.015"
M 70 (yellow)	0.38 mm/.015"	0.66 mm/.026"
M 50 (orange)	0.66 mm/.026"	

Do not use a filter element when applying coarse pigmented or fibre filled materials. However, the standard suction screen (chapt. 3, Pos. 4.2) should remain in the screen housing or be replaced by a coarse mesh screen.
In case of a material change both the filter element in the high pressure filter and the metal screen in the suction system must be cleaned or, if necessary, replaced.

Step 4

- Hold the return hoses (chapt. 3, Pos. 1.7) each into an empty container "**D**" and secure these against accidental sliiping out.

Step 5

- Prepare the solvent supply.

Always keep the solvent for each component separate!

➤ **Version with suction line** (chapt. 3, Pos. 4)**:**
- Place the suction of the material pumps **A**+**B** into the solvent "**C**" belonging to the material.

➤ **Version with filling funnel** (chapt. 3, Pos. 3)**:**
- Close the ball valves (chapt. 3, Pos. 3.1 **A**+**B**) on the drain valves.
- Fill solvent into the filling funnels.

➤ **Version with feed pumps** (chapt. 3, Pos. 7)**:**
- Place the suction (chapt. 3, Pos. 7.3 **A**+**B**) of the feed pumps into the solvent "**C**" belonging to the material.
- Open the ball valves (chapt. 3, Pos. 7.2 **A**+**B**).
- Turn the compressed air regulators (chapt. 3, Pos. 7.1 **A**+**B**) of the feed pumps clockwise to set a pressure of approx. 1 - 2 bar.

Step 6

Version with distributor:

➤ Set all switches on the distributor to "OFF".

Step 7

➤ Vent the complete system.

a) Version with standard mixer (chapt. 3, Pos. 8.1)

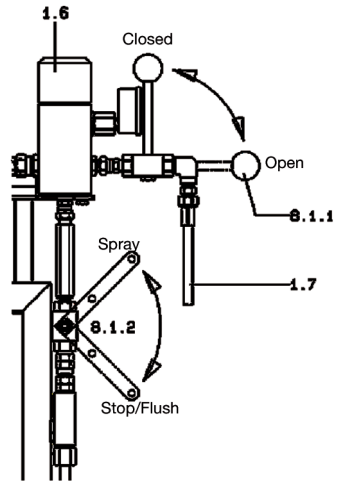


Figure 5.1.2

On this equipment version the return hoses (Fig. 5.1.2, Pos. 1.7) are connected to the high pressure filters. The circulation of material through the system or the drainage and/or relieving the pressure from the equipment is controlled by operating the lever (Fig. 5.1.2, Pos. 8.1.1). This circulation results in a uniform material consistency throughout the complete system or the ventilation of the equipment.

➤ Circulation / ventilation
The return flow hoses (Fig. 5.1.2, Pos. 1.7) run from the high pressure filters to the material containers.

➤ Drainage of containers / relieving the pressure:
The return flow hoses (Fig. 5.1.2, Pos. 1.7) run from the high pressure filters to the empty material containers.

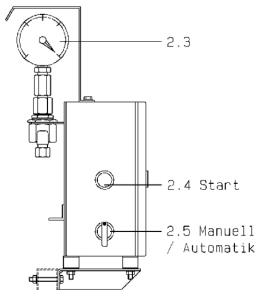
➤ Shift the lever (Fig. 5.12, Pos. 8.1.1) to position "OPEN / Return flow open".

➤ Set the lever (Fig. 5.1.2, Pos. 8.1.2) to position "STOP/FLUSH":

➤ Open the ball valve (Fig. 5.1.1, Pos. 1.5.2) on the service unit.

➤ Turn the compressed air regulator (Fig.. 5.1.1, Pos. 1.5.1) on the service unit clockwise to a pressure of approx. 0.5 - 1 bar.

➤ **Version with pressure and dosing monitoring** (chapt. 3, Pos. 2)**:**



- Set the selector switch MANUAL/ AUTOMATIC (Fig. 5.1.3, Pos. 2.5) to "MANUAL"
- Press the Start button (Fig. 5.1.3, Pos. 2.4).

Figure 5.1.3

➤ Flush thoroughly through the return flow hoses (chapt. 3, Pos. 1.7 **A**+**B**). Pump the contaminated material into the empty containers "**D**" provided for this purpose, until clean solvent starts to run out.

➤ Pull the lever (Fig. 5.1.2, Pos. 8.1.1) up ("CLOSED / Return flow closed").
The material flow through the return flow hoses is now interrupted.

➤ Set the lever (Fig. 5.1.2, Pos. 8.1.2) to position "SPRAY".

b) Version with external mixer
(Chapt. 3, Pos. 8.2)

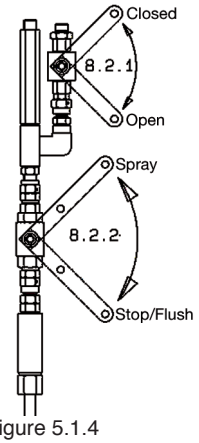


Figure 5.1.4

With this equipment design no Return flow hoses are connected to the high pressure filters, these are part of the hose package for the external mixer and are to be connected there. The lever between the high pressure filters (Fig. 5.1.4, Pos. 8.2.1) is used to relieve the system pressure or to flush the high pressure filters (see chapter 8.3).
The system is vented through the external mixer.

➤ Shift the lever (Fig. 5.1.2, Pos. 8.1.2) to position "CLOSED/ Return flow closed".

➤ Shift the lever (Fig. 5.1.4, Pos. 8.2.1) to position "OPEN".

➤ Set the lever (Fig. 5.1.4, Pos. 8.2.2) to position "STOP/FLUSH":

➤ Open the ball valve (Fig. 5.1.1, Pos. 1.5.2) on the service unit.

➤ Turn the compressed air regulator (Fig.. 5.1.1, Pos. 1.5.1) on the service unit clockwise to a pressure of approx. 0.5 - 1 bar.

➤ **Version with pressure and dosing monitoring** (chapt. 3, Pos. 2)**:**
- Set the selector switch MANUAL/AUTOMATIC (Fig. 5.1.3, Pos. 2.5) to "MANUAL".
- Press the Start button (Fig. 5.1.3, Pos. 2.4).

➤ Flush thoroughly through the return flow hoses (chapt. 3, Pos. 1.7 **A**+**B**).
Pump the contaminated material into the empty containers "**D**" provided for this purpose, until clean solvent starts to run out.

➤ Pull the lever (Fig. 5.1.4, Pos. 8.2.1) to position "CLOSED". The material flow through the return flow hoses is now interrupted.

➤ Set the lever (Fig. 5.1.4, Pos. 8.2.2) to position "SPRAY".

Step 8

➤ **Version with distributor:**
In the control cabinet of the distributor set all switches SPRAY to "ON" and all switches FLUSH to "OFF".

➤ Pull the trigger lever to open the spray gun. Spray the contaminated solvent, which is in the complete system, into an open container "**D**", until clean solvent starts to run out.

Do not use cone-top cans or drums with bung-hole to avoid possible electrostatic charging. When using metal containers avoid contact between spray gun and container wall.

Step 9

➤ Allow the system to drain empty.

➤ **Version with suction line** (chapt. 3, Pos. 4)**:**
- Place the suction of the material pumps **A**+**B** into the solvent "**C**".
- Interrupt the compressed air supply:
For this purpose turn the compressed air regulator (Fig.. 5.1.1, Pos. 1.5.1) on the service unit completely anti-clockwise.

➤ **Version with filling funnel** (chapt. 3, Pos. 3)**:**
- Place the material collecting vessel under the drain valves on the filling funnels.
- Open the ball valves (chapt. 3, Pos. 3.1).
- Empty the filling funnels.
- Close the ball valves (chapt. 3, Pos. 3.1).
- Interrupt the compressed air supply:
For this purpose turn the compressed air regulator (Fig.. 4.2.1, Pos. 1.5.1) on the service unit completely anti-clockwise.

➤ **Version with feed pumps** (chapt. 3, Pos. 7)**:**
- Take the suction (chapt. 3, Pos. 7.3 **A**+**B**) out of the solvent "**C**" belonging to the material.
- Completely regulate the compressed air regulator (chapt. 3, Pos. 7.1 **A**+**B**) back by turning anti-clockwise.
-

- Interrupt the compressed air supply:
For this purpose turn the compressed air regulator (Fig.. 5.1.1, Pos. 1.5.1) on the service unit completely anti-clockwise.

Step 10

➤ Prepare the material supply.

Standard component (A) = Blue

Hardener (B) = Red

➤ **Version with suction line** (chapt. 3, Pos. 4)**:**
- Place the suction (chapt. 3, Pos. 4.1 **A**+**B**) into the material **A**+**B** to be applied.
- Open the ball valve (Fig. 5.1.1, Pos. 1.5.2) on the service unit.
- Adjust the pressure regulator (Fig. 5.1.1, Pos. 1.5.1) to a pressure of approx. 0.5 - 1bar.
- Set the control button (chapt. 3, Pos. 5.1) for the material flow heater (option) to the desired temperature.
- On the version with pressure and dosing monitoring (option) press the start button (Fig. 5.1.3, Pos. 2.4) for a short moment.
- Set the lever (standard mixer: Fig. 5.1.2, Pos. 8.1.2 / external mixer Fig. 5.1.4, Pos. 8.2.2) to "STOP / FLUSH".
- Set the lever (standard mixer: Fig. 5.1.2, Pos. 8.1.1 / external mixer: Fig. 5.1.4, Pos. 8.2.1) to "OPEN / Return flow open".
- Pump the solvent residues out of the system through the return flow hoses (chapt. 3, Pos. 1.7 **A**+**B**) into the containers "**D**", until the material to be applied starts to run out.

Keep holding the return flow hoses!

➤ **Version with filling funnel** (chapt. 3, Pos. 3)**:**
- Fill the material to be applied into the filling funnels (chapt. 3, Pos. 3 **A**+**B**).
- Open the ball valve (Fig. 5.1.1, Pos. 1.5.2) on the service unit.
- Adjust the pressure regulator (Fig. 5.1.1, Pos. 1.5.1) to a pressure of approx. 0.5 - 1bar.
- Set the control button (chapt. 3, Pos. 5.1) for the material flow heater (option) to the desired temperature.
- On the version with pressure and dosing monitoring (option) press the start button (Fig. 5.1.3, Pos. 2.4) for a short moment.
- Set the lever (standard mixer: Fig. 5.1.2, Pos. 8.1.2 / external mixer: Fig. 5.1.4, Pos. 8.2.2) to "STOP / FLUSH".
- Set the lever (standard mixer: Fig. 5.1.2, Pos. 8.1.1 / external mixer: Fig. 5.1.4, Pos. 8.2.1) to "OPEN / Return flow open".

- Pump the solvent residues out of the system through the return flow hoses (chapt. 3, Pos. 1.7 **A**+**B**) into the containers "**D**", until the material to be applied starts to run out.

Keep holding the return flow hoses!

➤ **Version with feed pumps** (chapt. 3, Pos. 7)**:**
- Place the suction (chapt. 3, Pos. 7.3 **A**+**B**) into the material **A**+**B** to be applied.
- Open the ball valve (Fig. 5.1.1, Pos. 1.5.2) on the service unit.
- Adjust the pressure regulator (Fig. 5.1.1, Pos. 1.5.1) to a pressure of approx. 0.5 - 1bar.
- Set the control button (chapt. 3, Pos. 5.1) for the material flow heater (option) to the desired temperature.
- On the version with pressure and dosing monitoring (option) press the start button (Fig. 5.1.3, Pos. 2.4) for a short moment.
- Set the lever (standard mixer: Fig. 5.1.2, Pos. 8.1.2 / external mixer: Fig. 5.1.4, Pos. 8.2.2) to "STOP / FLUSH".
  Set the lever (standard mixer: Fig. 5.1.2, Pos. 8.1.1 / external mixer: Fig. 5.1.4, Pos. 8.2.1) to "OPEN / Return flow open".
- Open the ball valve (chapt. 3, Pos. 7.2 **A**+**B**).
- Set the compressed air regulators (chapt. 3, Pos. 7.1 **A**+**B**) for both feed pumps to 3 - 4 bar.
- Pump the solvent residues out of the system through the return flow hoses (chapt. 3, Pos. 1.7 **A**+**B**) into the containers "**D**", until the material to be applied starts to run out.

Keep holding the return flow hoses!

➤ **Version with flushing pumps** (chapt. 3, Pos. 6)**:**
Place the suction line (chapt. 3, Pos. 6.2) into the appropriate solvent container "**C**".

Step 11

➤ Allow the material to circulate in the system for the purpose of ventilation.
This results in a uniform consistency of the material and, when using a material flow heater, a uniform material temperature throughout the system.

Perform this step before every start of work!

➤ Hold the return hoses (chapt. 3, Pos. 1.7 **A**+**B**) into the original drums or filling funnels, depending on the material, and secure them against accidental slipping out.

➤ **Version with flushing pumps** (chapt. 3, Pos. 6)**:**
- Regulate the compressed air regulators (chapt. 3, Pos. 6.1) on the service unit for the flushing agent pump to 3 - 6.5 bar, depending on the length of the material hoses.

➤ **Version with material flow heaters:**
- Allow the material to circulate, until a uniform temperature distribution in the materi2.4 Start been reached. Check the temperature with a temperature sensor (optionally availat2.5 Manual / Automatic

a) Material flow heater (chapt. 3, Pos. 5)
- Set the regulating button (chapt. 3, Pos. 5.1) to the desired temperature (0 - 80 °C).
- Observe and follow the notes in the separate user manual for the material flow heater.

b) Drum floor heater
- Switch on the drum floor heater and set the regulating button to the desired material temperature (0 - 80 °C).

c) Hose heater
- Switch on the hose heater and set the regulating button to the desired material temperature (0 - 80 °C).

➤ Slowly pump the material, until the complete system has been ventilated.

➤ Shift the lever (standard mixer: Fig. 5.1.2, Pos. 8.1.1 / external mixer: Fig. 5.1.4, Pos. 8.2.1) up to position "CLOSED/ Return flow closed".

➤ Set the lever (standard mixer: Fig. 5.1.2, Pos. 8.1.2 / external mixer: Fig. 5.1.4, Pos. 8.2.2) to "SPRAY".

➤ **Version with distributor:**
Set all switches SPRAY to "ON".

➤ Slowly turn the regulator (Fig. 5.1.1, Pos. 1.5.1) on the service unit to adjust the desired spraying pressure..
Operate the spray gun with the installed spray nozzle to compensate the pressure of both components. Thereby spray the emerging material into an open container "**D**".

Do not use cone-top cans or drums with bunghole to avoid possible electrostatic charging. When using metal containers you must always take care not to touch the container wall with the spray gun.

Step 12

➤ Check the reading of the pressure gauges for the high pressure filters (chapt. 3, Pos. 1.6).

These must show almost identical pressure values.

➤ **Version with pressure and dosing monitoring** (chapt. 3, Pos. 2)**:**

Set the red contact pointer in the contact pressure gauge (chapt. 3, Pos. 2) by using the enclosed key (see chapter 5.2).

Upper contact pointer
with closed spray gun(s): approx. +20 bar
Lower contact pointer
with opened spray gun(s): approx. -20 bar

Any change in spraying pressure requires a new setting of the contact pressure gauge. If the pointer of the contact pressure gauge does not move or moves only insignificantly, the system must not be taken into operation. RISK OF MIXING FAULTS!!!

➤ Set the selector switch MANUAL/AUTOMATIC (Fig. 5.1.3, Pos. 2.5) to "AUTOMATIC".

This changeover is mandatory, as otherwise the system will not be monitored. When set to automatic mode the system is optimally monitored and dosing faults are prevented.

Step 13

➤ Start coating work.

5.2 Spraying pressure monitoring using the pressure and dosing monitoring feature

This optional feature enables pressure monitoring of the "**B**"-component (hardener) by means of a contact pressure gauge (Fig. 5.2.1, Pos. 2.3) to avoid mixing faults.
The spraying pressure monitoring range for this component can be adjusted.

With the switch MANUAL / AUTOMATIC set to "MANUAL" (Fig. 5.2.1, Pos. 2.5) monitoring for the pressure range below the set spraying pressure is not activated.
However, in the pressure range above the set spraying pressure is maintained for safety reasons.

In the factory the pressure regulator with fine filter (Fig. 5.2.1, Pos. 2.1) in the control cabinet was set to 6 bar and the precision pressure regulator (Fig. 5.2.1, Pos. 2.2) to 1.4 bar.

These settings must not be changed.

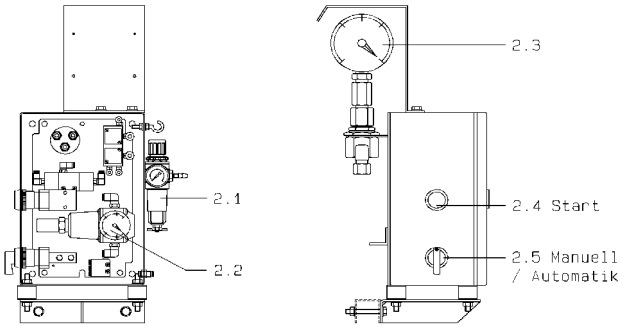


Figure 5.2.1

The actually available spraying pressure can be read by the black pointer.
The permissible spraying pressure with closed or opened spray gun can be set with the red trailing pointers.

1. Spraying pressure adjustment with open spray gun:

➤ Read the actually available spraying pressure indicated by the black pointer.
➤ Insert the enclosed key into the pressure gauge (Fig. 5.2.1, Pos. 2.3).
➤ Move the lower red trailing pointer with the driver needle to a position 20 - 30 bar **below** the lower changeover point of the material pump (lower black pointer).
➤ Pull the key back out.

2. Spraying pressure adjustment with closed spray gun:

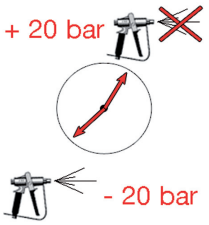


Figure 5.2.2

➤ Read the actually available spraying pressure indicated by the black pointer.
➤ Insert the enclosed key into the pressure gauge (Fig. 5.2.1, Pos. 2.3).
➤ Move the upper red trailing pointer with the driver needle to a position 20 bar **above** the dynamic pressure (above the black pointer).
➤ Pull the key back out.

The two pressure gauges on the high pressure filters must always work synchronously.

5.3 Inspection of the mixing ratio using the volumetric measuring unit

Problem definition

Use the volumetric measuring unit (optionally available):
a) to check the mixing ratio of components **A**+**B**,
b) to mix smallest quantities (e.g. for possible rework by hand).

Prerequisites
The following is required:
- 2 material containers with the components **A**+**B**
- 2 empty, open measuring vessels "**C**" for the material quantities of components **A**+**B** to be measured, subsequently
- 2 empty, open containers "**C**" for the components **A**+**B**
- 1 attachment kit for the volumetric measuring unit, (Fig. 5.3.1, Pos. 1.8), WIWA® order-no.: 0643212

Do not use cone-top cans or drums with bunghole.

Use a separate measuring vessel "C" or container "D" for each material component to avoid undesired material reactions or to be able to return the material to the original drums.

Procedure

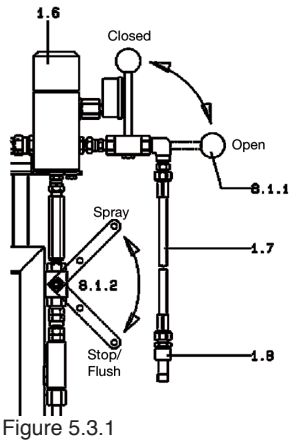


Figure 5.3.1

- Set the lever (standard mixer: Fig. 5.3.1, Pos. 8.1.2 / external mixer: Chapt. 3, Pos. 8.2.2) to "STOP / FLUSH". Set the lever (standard mixer: Fig. 5.3.1, Pos. 8.1.1 / external mixer: Chapt. 3, Pos. 8.2.1) to "OPEN / Return flow open".
- Allow the material to circulate in the system. (see chapter 5.1, step 10)
- Reduce the pressure by the compressed air regulator (chapt. 3, Pos. 1.5.2) Set the lever (standard mixer: Fig. 5.3.1, Pos. 8.1.1 / external mixer: Chapt. 3, Pos. 8.2.1) to "CLOSED / Return flow closed".
- Disconnect the return flow hoses (Fig. 5.3.1, Pos. 1.7) from the material containers **A**+**B**.
- Assemble one double nipple and one valve (attachment kit for volumetric measuring uni) each to each return flow hose (Fig. 5.3.1).
- Hold the return flow hoses separately into the containers "**D**" and secure them against accidental slipping out.
- Set the lever (standard mixer: Fig. 5.3.1, Pos. 8.1.1 / external mixer chapt. 3, Pos. 8.2.1) to "OPEN / Return flow open".
- Set the compressed air regulator (chapt. 3, Pos. 1.5.2) on the service unit to such a pressure, that material runs out of the valves of the volumetric measuring unit into the containers.Check the reading of the pressure gauges for the high pressure filters (Fig. 5.3.1, Pos. 1.6).

The two pressure gauges on the high pressure filters must always work synchronously!

- Set the lever (standard mixer: Fig. 5.3.1, Pos. 8.1.1 / external mixer chapt. 3, Pos. 8.2.1) to "CLOSED/ Return flow closed".
- Hold the return flow hoses separately into the measuring vessels "**D**" and secure them against accidental slipping out.
- Set the lever (standard mixer: Fig. 5.3.1, Pos. 8.1.1 / external mixer chapt. 3, Pos. 8.2.1) to "OPEN / Return flow open".
- Dose the required material quantities of components **A**+**B**.
- Completely reduce the pressure by the compressed air regulator (chapt. 3, Pos. 1.5.2)
- Set the lever (standard mixer: Fig. 5.3.1, Pos. 8.1.2 / external mixer: Chapt. 3, Pos. 8.2.2) to "SPRAY".
- Set all switches SPRAY on the distributor to "ON".
- Hold the spray gun into an empty open container. To relieve the pressure keep operating the spray gun, until no material comes out anymore.
- Set the lever (standard mixer: Fig. 5.3.1, Pos. 8.1.1 / external mixer: Chapt. 3, Pos. 8.2.1) to "CLOSED / Return flow closed".
- Set the lever (standard mixer: Fig. 5.3.1, Pos. 8.1.2 / external mixer: Chapt. 3, Pos. 8.2.2) to "STOP / FLUSH".
- Disconnect the double nipples and the valves from each of the return flow hoses (Fig. 5.3.1, Pos. 1.7).

Carefully disassemble the volumetric measuring unit, to prevent accidents caused by escaping residual pressures. We recommend to cover the screw fitting with a cloth when unscrewing the volumetric measuring unit, to catch any escaping material sprays.

- Clean the mixer immediately:
  a) on versions with flushing pump as specified in chapt. 7.1 end of work,
  b) on versions without flushing pump as specified in chapt. 7.2 complete cleaning.

Always consider the potlife of the material!

- Clean the volumetric measuring unit.
  For this purpose use the solvent belonging to the material and recommended by the material manufacturer, or connect the volumetric measuring unit to an available flushing pump for cleaning.
- Compare the filling level in the measuring vessels for the two components.
  Determine the mixing ratio by calculating.

6.1 Start of work

Problem definition
You would like to prepare the equipment for coating and spray painting work

Prerequisites
Always wear the protective clothing stipulated, as solvent fumes and spilled cleaning agents cannot be entirely avoided.
Check all system components once again for leaks and tighten the connections.

Do not use cone-top cans or drums with bunghole.

Take care that all hoses and pumps are only used with the components intended for this purpose **(A** or **B)**.

Procedure
If the device is not equipped with one of the following accessories, you can skip the corresponding section.

Step 1
- Connect the unit to the compressed air supply.

Step 2
- **Version with material flow heaters**
  - Adjust the desired temperature for material flow heater, drum floor heater and hose heater.

Step 3
- **Version with feed pumps** (chapt. 3, Pos. 7)**:**
  - Regulate the compressed air regulator (chapt. 3, Pos. 7.1) to 3 - 4 bar.

Step 4
- Set the lever (standard mixer: Chapt. 3, Pos. 8.1.2 / external mixer: Chapt. 3, Pos. 8.2.2) to "SPRAY".

Step 5
- **Version with distributor:**
  - Set all switches SPRAY to "ON".

Step 6
- **Version with pressure and dosing monitoring** (Chapt. 3, Pos. 2)
  The pressure and dosing unit was set acc. to chapt. 4.3.
  - Set the selector switch MANUAL/AUTOMATIC (chapt. 3, Pos. 2.5) to "MANUAL".
  - Operate the start button (chapt. 3, Pos. 2.4) for a moment.

Step 7
- Slowly set the pressure regulator (chapt. 3, Pos. 1.5.1) on the service unit to a lower spraying pressure.
- Operate the spray gun.
- Spray the rest of the solvent inside the spraying hose into a container "**D**", until coating material appears.
- Slowly set the pressure regulator (chapt. 3, Pos. 1.5.1) on the service unit to the desired spraying pressure.

Step 8
- Allow the material to circulate in the system (see chapter 5.1, step 10).

Step 9
- **Version with pressure and dosing monitoring** (Chapt. 3, Pos. 2)
  - Set the selector switch MANUAL/AUTOMATIC (chapt. 3, Pos. 2.5) to "AUTOMATIC".

If the pointer of the contact pressure gauge does not move or moves only insignificantly, the system must not be taken into operation. RISK OF MIXING FAULTS!!!

6.2 Coating work

- Unlock and open the spray gun for the coating work that is to be started next.

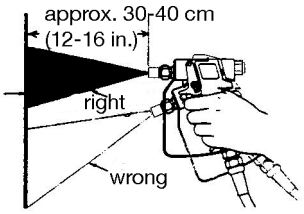


Figure 6.2.1

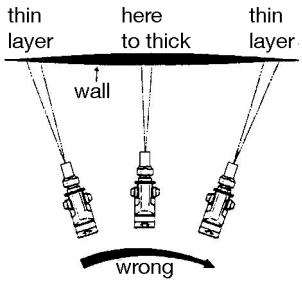


Figure 6.2.2

Working pressure
When the material is uniformly applied with shallowing out marginal zones, the optimal working pressure is reached. Operate the unit only with a working pressure as high as necessary, to achieve a good atomization at a recommended spraying distance of approx. 30 - 40 cm.

- Too **high** spraying pressure causes increased material consumption and paint mist.
- Too **low** spraying pressure results in the appearance of stripes and differences in the coating thickness.

Spray painting

- Hold the spray gun under a right angle (90°) to the area to be coated.
  If the spray gun is held under a different angle, the coating becomes irregular and blotchy (Fig. 6.2.1).
- Move your arm evenly.
  Ensure an even speed and move the spray gun parallel to the area to be coated.
  Move the spray gun with your arm and not with your wrist.
  Waving the spray gun causes irregular coating (Fig. 6.2.2).
- Already move the spray gun before pulling the trigger.
  This way you will achieve perfect, soft and smooth overlapping of the spray jet and excessively thick application of material at the beginning of the spraying process is avoided.
  Release the trigger before stopping the movement.

Work break

- Always lock the trigger if you interrupt your work for a few minutes.
- **Version <u>with</u> flushing pump** (chapt. 3, Pos. 6)**:**
  - Flush all components (mixing block chapt. 3, Pos. 8.1 / 8.2, static mixing pipe, distributor, material hose, spray gun), which had contact with the mixed material, **within the specified potlife**.
  - Observe and follow the notes in chapter 7.1 "End of work".
- **Version <u>without</u> flushing pump**
  - Flush the complete system.
  - Observe and follow the notes in chapter 7.2 "Complete cleaning".

Spray nozzles

- Replace the spray nozzles before these are worn.

Worn nozzles cause higher paint consumption and have a negative effect on the quality of paint application.

7.1 End of work - only for version with flushing pump -

Problem definition
After the end of work shut down the system and clean all system components that had contact with the mixed materials.

Prerequisites

Components that had contact with the mixed material can only be flushed, if a flushing pump is used.
Otherwise the complete system needs to be cleaned (chapter 7.2) after work, to avoid curing of the material in the system and related damage.

Always wear the protective clothing stipulated, as solvent fumes and spilled cleaning agents cannot be entirely avoided.

The following is required:
- 2 material containers with the components **A**+**B**), hereafter referred to as container **A**+**B**.
- 1 open container with solvent (with the solvent belonging to the material and recommended by the manufacturer), hereafter referred to as container "**C**"
- 1 empty, open container for contaminated cleaning agent/material mixture, hereafter referred to as container "**D**".

Do not use cone-top cans or drums with bunghole.

Take care that all hoses and pumps are only used with the components intended for this purpose (A or B).

Procedure
If the device is not equipped with one of the following accessories, you can skip the corresponding section.

Step 1
- Close and secure the spray gun.

Step 2
- **Version with material flow heater:**
  - Regulate the temperatures on material flow heaters, drum floor heaters and hose heaters completely back.

Step 3
- Turn the compressed air regulator (chapt. 3, Pos. 1.5.1) on the service unit back until it is light to move.

Step 4
- **Version with pressure and dosing monitoring** (chapt. 3, Pos. 2)**:**
  - Set the selector switch (chapt. 3, Pos. 2.5) to "MANUAL".

Step 5

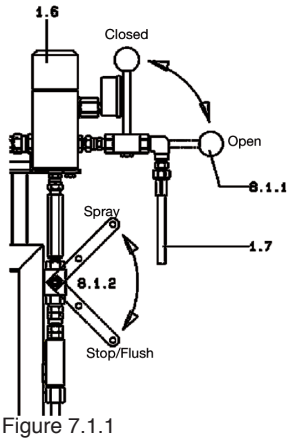


Figure 7.1.1

- Set the lever (standard mixer: Fig. 7.1.1, Pos. 8.1.2 / external mixer Fig. 7.1.2, Pos. 8.2.2) to "FLUSH".
  The lever (standard mixer: Fig. 7.1.1, Pos. 8.1.1 / external mixer: Fig. 7.1.2, Pos. 8.2.1) remains in position "CLOSED/ Return flow closed".

Step 6
- **Version with distributor:**
  - Set all switches SPRAY to "OFF" and all switches FLUSH to "ON".
  - For flushing the distributor set the switch FLUSH distributor to "ON"

On the distributor all switches SPRAY must be in position "OFF".

Step 7
- Set the pressure regulators (chapt. 3, Pos. 6.1) for the flushing pumps to a lower pressure.

Step 8
- Open all spray guns as well as the flushing gun, until clean solvent comes running out.
  The complete mixing block, the static mixer, the distributor, the material hoses and the spray guns are thereby cleaned.
  The material inside the system up to the mixing block (components **A**+**B**) may remain in the system, because no curing will occur.

Do not use cone-top cans or drums with bunghole to avoid possible electrostatic charging. When using metal containers you must always take care not to touch the container wall with the spray gun.

Step 9
- Regulate the compressed air regulator (chapt. 3, Pos. 1.5.1) on the service unit back anti-clockwise until it is light to move.

Step 10

➤ **Version with feed pumps** (chapt. 3, Pos. 7)**:**
  ➤ Regulate the compressed air regulators for the feed pumps (chapt. 3, Pos. 7.1 **A**+**B**) anti-clockwise, until they are light moving.
  ➤ Close the ball valves (chapt. 3, Pos. 7.2) on the feed hoses.

Step 11

➤ Regulate the compressed air regulators (Pos. 6.1) on the flushing pumps back anti-clockwise until they are light to move.

Step 12

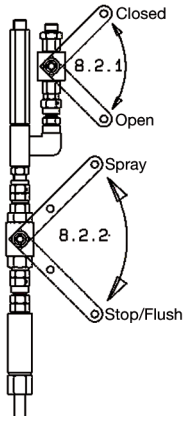


Figure 7.1.2

➤ To relieve the pressure shift the lever (standard mixer: Fig. 7.1.1, Pos. 8.1.1 / external mixer: Fig. 7.1.2, Pos. 8.2.1) forward to position "OPEN / Return flow open", until both pressure gauges on the high pressure filters (chapt. 3, Pos. 1.6) or the pointer of the contact pressure gauge (chapt. 3, Pos. 2.3) of the pressure and dosing monitoring unit (optional) indicates 0 bar.

Step 13

➤ After the ventilation return the lever (standard mixer: Fig. 7.1.1, Pos. 8.1.1 / external mixer: Fig. 7.1.2, Pos. 8.2.1) to position "CLOSED/ Return flow closed".

Step 14

➤ Operate the spray gun once again for a moment to relieve any flushing pressure residues, so that the entire system has been relieved.

The system must be completely pressureless before it is shut down.

Step 15

➤ Set all switches on the control cabinet of the distributor to "OFF".

In order to avoid unnecessary interruptions of work make sure that the containers always contain material so that the pumps will not draw in air.
However, if this should happen, the system will automatically switch off (only version with pressure and dosing monitoring).
Always vent the system before continuing coating work!

7.2 Complete cleaning

Problem definition

You want to clean the system completely after the end of work or before changing the material.

Prerequisites

Always wear the protective clothing stipulated, as solvent fumes and spilled cleaning agents cannot be entirely avoided.

The following is required:

➤ 2 open container with cleaning agent (with the solvent belonging to the material and recommended by the manufacturer), hereafter referred to as container "**C**". For each material component **A**+**B** you should have a separate solvent container "**C**" available, to prevent material reactions and damage to the system.
➤ 2 empty, open container for contaminated cleaning agent/material mixture, hereafter referred to as container "**D**".

Do not use cone-top cans or drums with bung-hole.

Both components must be kept separate, also when flushing.
Use a separate solvent and collecting container for each component to avoid material reactions and thus possible damage to the system.

The solvent temperature should not rise too high. DANGER OF EXPLOSION!

Procedure

If the device is not equipped with one of the following accessories, you can skip the corresponding section.

Step 1

➤ Switch of the plant completely.
➤ For this purpose regulate the compressed air regulator (chapt. 3, Pos. 1.5 A+B) on the service unit completely back.
➤ Close and secure the spray gun.

Step 2

➤ **Version with material flow heater:**
  ➤ Make sure that the temperature regulators on material flow heater, drum floor heater and hose heater have been regulated back completely.

Step 3

➤ Place the return flow hoses (chapt. 3, Pos. 1.7) into the containers "**D**". Secure these against accidental slipping out.
  ➤ **Version with filling funnel** (chapt. 3, Pos. 3):
    • Insert the return flow hoses into the filling funnels **A**+**B**.
    • Secure these against accidental slipping out.

Step 4

➤ Prepare the solvent supply.
  ➤ **Version with suction line** (chapt. 3, Pos. 4)**:**
    • Place the suction of the material pumps **A**+**B** each into a container with the solvent "**C**" belonging to the material.
  ➤ **Version with filling funnel (chapt. 3, Pos. 3):**
    • Open the ball valves (chapt. 3, Pos. 3.1 **A**+**B**) on the drain valves.
    • Empty the containers.
    Thereby catch the material of components **A**+**B** in separate containers.
    • Close the ball valves (chapt. 3, Pos. 3.1 **A**+**B**) on the drain valves of the filling funnels.
    • Fill solvent into both filling funnels.
  ➤ **Version with feed pumps** (chapt. 3, Pos. 7)**:**
    • Place the suction (chapt. 3, Pos. 7.3 **A**+**B**) of the feed pumps into the solvent "**C**" belonging to the material.
    • Open the ball valves (chapt. 3, Pos. 7.2 **A**+**B**).
    • Turn the compressed air regulators (chapt. 3, Pos. 7.1 **A**+**B**) of the feed pumps clockwise to set a pressure of approx. 1 - 2 bar.

Step 5

➤ **Version with pressure and dosing monitoring** (chapt. 3, Pos. 2)**:**
  ➤ Set the selector switch MANUAL/AUTOMATIC (chapt. 3, Pos. 2.5) to "MANUAL".

Step 6

➤ **Version with flushing pump** (chapt. 3, Pos. 6):
  ➤ Regulate the compressed air regulator (chapt. 3, Pos. 6.1) to 3 - 6.5 bar, depending on the length of the material hoses.

Step 7

➤ Set the pressure regulator (chapt. 3, Pos. 1.5.1) on the service unit to such a pressure, that the pump runs slowly.

Step 8

➤ **for version with filling funnel** (chapt. 3, Pos. 3):
  ➤ Shift the lever (standard mixer: Fig. 7.1.1, Pos. 8.1.1 / external mixer: Fig. 7.1.2, Pos. 8.2.1) to position "OPEN/ Return flow open".
  ➤ Set the lever (standard mixer: Fig. 7.1.1, Pos. 8.1.2 / external mixer: Fig. 7.1.2, Pos. 8.2.2) to "STOP / FLUSH".
  ➤ Allow the material to circulate through the system, until the material residues of components **A**+**B** have been mixed with the solvent in the containers.
  ➤ Close the circulation.
  ➤ Guide the return flow hoses separately into separate containers "**D**" and fasten them.
  ➤ Open the circulation.
  ➤ Empty the filling funnels through the return flow hoses.
  ➤ Guide the return flow hoses into the filling funnels and fasten them.
  ➤ Take care of the exact assignment (blue/blue or red/red)!

Keep repeating this step, until clean solvent comes running out.

  ➤ Fill some more solvent into the filling funnels to clean the mixer.
  ➤ Guide the return flow hoses separately into separate containers "**D**" and fasten them.

Step 9

➤ Shift the lever (standard mixer: Fig. 7.1.1, Pos. 8.1.1 / external mixer: Fig. 7.1.2, Pos. 8.2.1) up to position "CLOSED/ Return flow closed".
➤ **Version without distributor:**
  ➤ Set the lever (standard mixer: Fig. 7.1.1, Pos. 8.1.2 / external mixer: Fig. 7.1.2, Pos. 8.2.2) to "SPRAY".
➤ **Version with distributor:**
  ➤ Set the lever (standard mixer: Fig. 7.1.1, Pos. 8.1.2 / external mixer: Fig. 7.1.2, Pos. 8.2.2) to "FLUSH".
  ➤ In the control cabinet of the distributor set all switches SPRAY to "ON".

Step 10

➤ Pull the trigger lever to unlock and open the spray gun.
➤ **Version with distributor:**
  ➤ Open the flushing gun to clean the distributor.
➤ Spray the contaminated solvent, which is in the complete system, into an open container "**D**", until clean solvent starts to run out.

Do not use cone-top cans or drums with bunghole to avoid possible electrostatic charging. When using metal containers avoid contact between spray gun and container wall.

Step 11

➤ Shift the lever (standard mixer: Fig. 7.1.1, Pos. 8.1.1 / external mixer: Fig. 7.1.2, Pos. 8.2.1) down to position "OPEN/ Return flow open".

➤ **Version without distributor:**
  ➤ Set the lever (standard mixer: Fig. 7.1.1, Pos. 8.1.2 / external mixer: Fig. 7.1.2, Pos. 8.2.2) to "STOP / FLUSH".
➤ **Version with distributor:**
  ➤ In the control cabinet of the distributor set all switches SPRAY to "OFF".

Step 12

➤ Pump the material residues out of the system through the return flow hoses (Pos. 1.7 **A**+**B**) into the containers "**D**", until clean solvent starts to run out.

Keep holding the return flow hoses!

Step 13

➤ Shift the lever (standard mixer: Fig. 7.1.1, Pos. 8.1.1 / external mixer: Fig. 7.1.2, Pos. 8.2.1) up to position "CLOSED/ Return flow closed".

Step 14

➤ **Version with feed pump** (chapt. 3, Pos. 7)**:**
  ➤ Completely reduce the pressure by the compressed air regulator (chapt. 3, Pos. 7.1)
  ➤ Close the ball valves (chapt. 3, Pos. 7.2).

Step 15

➤ Regulate the compressed air regulator (chapt. 3, Pos. 1.5.1) on the service unit back anti-clockwise until it is light to move.

Step 16

➤ **Version with flushing pump** (chapt. 3, Pos. 6)**:**
  ➤ Completely reduce the pressure by the compressed air regulator (chapt. 3, Pos. 6.1)

Step 17

➤ Lift the suction lines out of the solvent containers.
  ➤ **Version with filling funnel** (chapt. 3, Pos. 3)**:**
    • Drain the solvent from the filling funnels.

Step 18

➤ **Version with distributor:**
  ➤ In the control cabinet of the distributor set all switches SPRAY to "ON".

➤ Operate the spray gun once again for a moment to relieve any flushing pressure residues, so that the entire system has been relieved.

The system must be completely pressureless before it is shut down.

7.3 Material change

1. Decommissioning

➤ Perform the work steps described for decommissioning complete cleaning (chapter 7.2).

For a paint change EPOXY - POLYURETHANE the system must be thoroughly cleaned. The system must be thoroughly cleaned with the solvent belonging to the material, before it is filled with new material.

2. Filter inspection

➤ Check and clean the filter elements in the high pressure filters as described in chapter 8.3/1 before changing the material.

3. Material change

➤ Prepare the material supply:

Standard component (A) = Blue

Hardener (B) = Red

➤ **Version with suction line** (chapt. 3, Pos. 4)**:**
  • Place the suction of the material pumps **A**+**B** into the material A+B to be applied.
➤ **Version with filling funnel** (chapt. 3, Pos. 3)**:**
  • Close the ball valves (chapt. 3, Pos. 3.1).
  • Fill the material to be applied into the filling funnels **A**+**B**.
➤ **Version with feed pumps** (chapt. 3, Pos. 7)**:**
  • Place the suction of the feed pumps **A**+**B** into the material A+B to be applied.
➤ **Version with flushing pumps** (chapt. 3, Pos. 6)**:**
  • Place the suction line into the appropriate solvent container "**C**".

4. Start of work

➤ Observe and follow the notes given in chapter 5.1.

8.1 Inspection cycles

According to the accident prevention instructions for "Work with fluid spraying equipment" BGR 500, chapter 2.36, the unit needs to be inspected and serviced regularly by an expert (WIWA® Customer Service).

The unit needs to be inspected:

- before initial commissioning,
- after the modification or repair of parts of the system, which could affect safety,
- after work breaks longer than 6 months,
- but at least every 12 months.

For decommissioned units the inspection can be postponed until the next commissioning. The inspection results must be recorded in writing and kept until the next inspection. The inspection report or a copy thereof must be available at the place of use of the equipment.

8.2 Maintenance plan

Warning!
Disassembling the pressurized spraying unit can cause severe injuries to body and eyes.

- **Always switch off the spraying unit before starting maintenance and repair work.**
- **Depressurize the the complete system.**
- **Be extremely careful when disassembling high pressure filters, material hoses and spray gun.**
- **Before disassembly cover the screw connections on the material hoses with a cloth to catch possible material spatter.**

Check the release agent

- Before each start-up check the release agent level in the release agent chamber, if necessary add release agent up to the highest possible level.
- Regularly check the release agent for discolouration caused by spraying material.
  - Discolouration of the release agent can be checked by draining off a small amount of release agent. After the examination top up the amount of release agent that had been drained off.
  - In case of excessive discolouration and high spraying material content:
    - Clean the release agent chamber.
    - Change the pump seals (see spare parts list for material pump).
    - Fill in new release agent.
    - We recommend to use the WIWA® release agent, Order-Nro 0163333.

This work must only be performed by personnel trained by WIWA® or the WIWA® Customer Service.

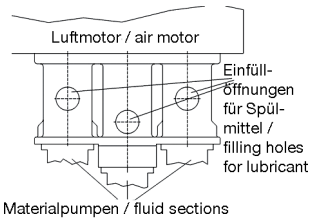


Figure 8.2.1

Filling in and drain off release agent (Fig. 8.2.1)
The total filling quantity is approx. 100 ml of release agent per pump.

Maintenance of the high pressure filter

- Clean the high pressure filter at least after every material change or once per week (see chapter 8.3).

Further maintenance notes for the individual components can be found in the appendix to the corresponding spare parts list.

8.3 Maintenance of the high pressure filter

Always switch off the complete power supply and relieve the pressure from the system before starting to service the high pressure filter.

Changing and cleaning the filter element or the O-ring

Step 1

- Perform the work steps as described in chapter 7 "Decommissioning".

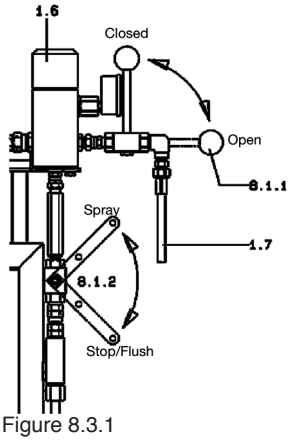


Figure 8.3.1

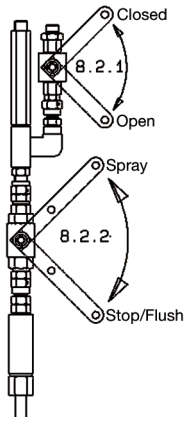


Figure 8.3.2

Step 2

- Set the lever (standard mixer: Fig. 8.3.1, Pos. 8.1.2 / external mixer: Fig. 8.3.2, Pos. 8.2.2) to "STOP / FLUSH".

Step 3

- **Version with external mixer** (chapt. 3, Pos. 8.2):
  - Shift the lever (Fig. 8.3.2, Pos. 8.2.1) to position "CLOSED".

Step 4

➤ Shift the lever between the high pressure filters (Pos. 8.1.1) to position "OPEN / Return flow open" to make sure that the machine is relieved of any pressure.

Step 5

➤ Use the stud driver to unscrew the cap from the high pressure filter.

Step 6

➤ Loosen and remove the nut from the filter element.

Step 7

➤ Clean the filter element with solvent.

For this purpose use only the solvent belonging to the Material.
Replace the filter element, if it shows any signs of damage.

Step 8

➤ Plug the filter element back on the stud and retighten the nut.

Step 9

➤ Replace the O-ring if it shows signs of wear.

Step 10

➤ Screw the cap on the high pressure filter and tighten it with the stud driver.

for high pressure filters in R- and RS-design
It is mandatory to slightly grease the threads for easier assembly/disassembly.

8.4 Maintenance of the service unit

Lubricant or anti-freeze agent

➤ Also check and, if necessary, top up the lubricant for the fan motor in the container of the service unit.
➤ High humidity can cause icing of the motor.
➤ In case of icing use pure anti-freeze agent.

Adjusting the fog oiler on the maintenance unit

➤ Allow the air motor to run slowly with an air inlet pressure of approx. 4 bar.
➤ In the inspection glass of the fog oiler check whether one drop of lubricant is released into the compressed air with every 10 to 15 double strokes of the air motor. Should this not be the case, use a screwdriver to adjust the regulating screw on the lubricator accordingly.
➤ Check the amount of oil in the oil container every day. The maintenance unit must never be operated without oil. The max. oil level is indicated by a circumferential groove in the container. To fill the oil container loosen the filler plug and fill the container directly.

Only use the lubricants and anti-freeze agents listed in the chapter 10.1.

Draining the condensation water

➤ The accumulated condensate is automatically drained off through the drain valve. For this purpose hold the hose into an empty collecting vessel.
➤ Check the vessel regularly for dirt residues and clean it as required.

Silica gel filter / moisture filter (option)

If the drum with the B-component is equipped with a screwed-in moisture filter, the granulate inside the filter must be dried at regular intervals.

➤ Drying temperature: approx. 50 °C
➤ Drying time: approx. 4 h
➤ Drying cycle: always after application of 1000 l of material

Only heat up the granulate.
Heating up the complete filter can damage the housing.

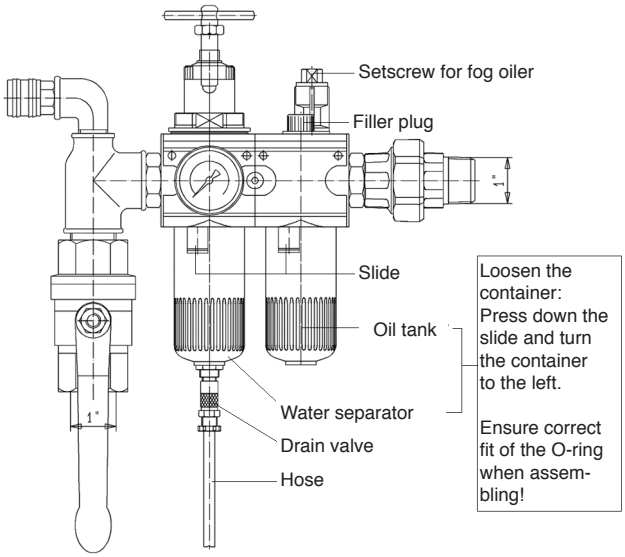


Figure 8.4.1

Fault	Possible cause	Remedy
1. The feed pumps work without interruption. With the relieve tap opened no material comes out of the output distributor.	- The material container is empty. - The ball valve is closed. - The suction line is defective. ⇨ Pump draws in air. - The feed pump(s) is (are) defective.	- Replace the material container. - Open the ball valve. - Replace the suction line. - repair the feed pump(s).
2. The feed pumps do not delver any material into the dual component system. (With the relieve tap opened material comes out of the output distributor.)	The dirt trap before the material inlet on the dual component system is soiled.	- Open the ball valve. - Clean the dirt trap of the dual component system.
3. No pressure built up by hardener pump during downwards stroke of metering pump. The pressure of standard components rises.	The bottom valve of the hardener pump is defective.	- Disassemble and clean the bottom valve. - Replace defective ball or valve plate.
4. No pressure built up by hardener pump during upwards stroke of dosing pump.	The piston valve of the hardener pump is leaking.	- Disassemble and clean the piston valve. - Replace defective ball or valve plate.
5. The hardener pump does not generate pressure in up and down stroke.	- The hardener pump does not receive any material. - The burst disc on the high pressure filter is defective. - The ventilation valve of the hardening component is leaking. - The ball valve on the material inlet is closed.	- Check the material feed. - Check the burst dis for the hardening component on the high pressure filter. - Check the ventilation valve for the hardening component for function and leak tightness. - Open the ball valve.
6. During the up stroke the pressure of hardener and standard components is considerably higher than during the down stroke, or the pressure of both components slowly increases synchronously.	A piston valve of the two A-pumps does not work.	- Check and clean both piston valves. - Replace defective balls or valve plates.
7. The standard component pumps do not generate any pressure in up stroke. The pressure in the hardener side is very high.	Both piston valves do not work.	- Check and clean both piston valves. - Replace defective balls or valve plates.

Fault	Possible cause	Remedy
8. In the up stroke the pressure of hardener and standard components is considerably higher than during the down stroke. The feed hose swells up or the pressure relief valve on the output distributor opens and the material is fed back into the container through the return flow hose.	One bottom valve of the A-component pump does not work.	- Check and clean both bottom valves. - Replace defective balls or valve plates.
9. No pressure generated for the standard component during up and down stroke. The pressure in the hardener component is very high.	- The standard component pump does not receive any material. - Burst discs on high pressure filter defective. - Lever (Pos. 8.1.1 / 8.2.1) is leaking. - Lever (8.1.2 / 8.2.2) is closed.	- Check the material supply. - Check the burst discs on the high pressure filter for the standard component. - Check lever (Pos. 8.1.1 / 8.2.1) for leak tightness and function. - Check lever (8.1.2 / 8.2.2).
10. When bleeding, the pressure of the standard component remains applied.	- Lever (Pos. 8.1.1 / 8.2.1) does not open. - Return flow hoses are clogged. - The high pressure filter element is excessively soiled.	- Check lever (Pos. 8.1.1 / 8.2.1). - Check return flow hoses for free flow. - Clean the high pressure filter.
11. When bleeding, the pressure of the hardening component remains applied. The pressure of standard components drops.	- Lever (Pos. 8.1.1 / 8.2.1) of hardening component does not open. - Return flow hoses are clogged. - The high pressure filter element is excessively soiled.	- Check lever (Pos. 8.1.1 / 8.2.1). - Check return flow hoses for free flow. - Clean the high pressure filter.
12. When spraying the pressure of the standard component always increases in comparison with the hardener component.	- The high pressure filter element for the standard component starts to block up. - The seals of the hardener component pump are leaking.	- Clean the high pressure filter element or install a coarser element. - Repair the hardener component pump (renew the seals).
13. When spraying the pressure of the hardener component always increases in comparison with the standard component.	- The high pressure filter element for the hardening component starts to block up. - The seals of the standard component pump are leaking.	- Clean the filter element for the high pressure pump or install a coarser element. - Repair the standard component pump (renew the seals).
14. When spraying not enough pressure or material is transferred to the spray gun, even though the pressure in the system is high enough.	- The filter elements are excessively soiled. - Mixing block, static mixer, paint hose or spray gun are blocked. - The spray gun nozzle is clogged.	- Clean the filter elements of the high pressure filters or use coarser elements. - Clean the mixing block. - Clean or replace static mixer, material hoses and spray gun. - Replace the spray gun nozzle.

Fault	Possible cause	Remedy
15. When spraying the air motor of the dual component system runs jerkily. The spraying pressure indicated by the pressure gauges and the air pressure drop when the spray gun is opened.	- Insufficient compressed air supply. - The cross-section of the compressed air supply line is too narrow. - The air pressure in the supply network is too low. - The air pressure set on the maintenance unit is identical with the pressure in the net.	- Close the spray gun, so that the pressure can build up again. - Increase the cross-section of the compressed air line. - Increase the air pressure in the net. - Turn the maintenance unit slightly back.
16. When flushing the mixing block with a pressure relieved dual component system and closed ventilation, the contact pressure gauge of the pressure and dosing unit indicates rising pressure.	The check valves in the mixing block do not work.	- Clean the mixing block. - Replace defective balls, valve plates or compression springs.
17. The flushing pump does not work when changing from "SPAY" to "FLUSH".	- The flushing pump is defective. - The lever (Pos. 8.1.2 / 8.2.2) on the mixing block does not open.	- Check whether the flushing pump is operating. - Check lever (8.1.2 / 8.2.2), replace if necessary. - If necessary disconnect the flushing hose from lever (8.1.2 / 8.2.2) and replace it with a manual spray gun. - Check the function of the flushing pump.
18. Compressed air escaping from the air motor at the guide axes.	The air motor seals are worn.	Seal the air motor.
19. The air motor no longer works, even though the compressed air supply is assured. No material pressure available in the system.	The air motor control is defective.	Have the air motor repaired in the WIWA - Service workshop.
20. The system cannot be started. However, the pressure gauge on the maintenance unit indicates pressure.	- The ball valve on the service unit is closed. Only with pressure and dosing unit: - The pressure supply for the control cabinet is interrupted. - The filter pressure regulator on the control cabinet is incorrectly adjusted.	- Open the ball valve on the service unit. Only with pressure and dosing unit: Adjust the compressed air supply for the control cabinet to 8-10 bar.
21. Only with pressure and dosing unit: The system can only be started for a short while (only as long as the START button is held depressed).	- The switch MANUAL/AUTOMATIC is in position "AUTOMATIC" - The material pressure of the hardening component is higher than the red contact indicator for high pressure warning. - The contact pressure gauge submits an incorrect signal.	- Set the switch MANUAL/ AUTOMATIC to position "MANUAL". - Relieve the material pressure. - Replace the defective contact pressure gauge.

Fault	Possible cause	Remedy
22. The contact pressure gauge indicates pressure, even though the system pressure has been relieved.	The contact pressure gauge is defective.	Replace the contact pressure gauge.
23. The contact pressure gauge does not indicate any pressure or only up to a certain pressure. The system is under full air intake. When spraying the pointer sticks at certain pressure and does not pulsate.	The contact pressure gauge is defective (oil has run out of the pressure transmitter of the pressure gauge).	Replace the contact pressure gauge.
24. The dual component system does no longer work in switch positions "SPRAY" and "FLUSH".	- The potlife was disregarded. - Mixing unit, material hoses and spray gun were not flushed. ⇨ the material has cured. The pilot hoses are not leak tight.	Try to clean the components that had been hardened by the mixed material, replace if necessary.
25. Hardener or paint emerging from the bottom part of the air motor.	The seals on the material pumps are worn.	Replace the seals on the material pumps.
26. A possibly installed material flow heater does not heat up.	- The electric power supply is interrupted. - The ambient temperature is below 5 - 8 °C. - Technical defect in the material flow heater.	- Observe and follow the separate user manual for the material flow heater. - Check the electric power supply. - Press the button of the overload protection until the glowing lamp stays on. - Have the material flow heater checked by exper personnel with profound knowledge in the field of electrical engineering.

10.1 Operating means / special tools

Release agent

➤ Release agent, (0.5 l)	WIWA®	order-number	0163333

Materials required for maintenance and repair work

➤ Retention agent, (50 ml)	WIWA®	order-number	0000015
➤ Lubricant, (acid-free grease, 0.4 kg)	WIWA®	order-number	0000025
➤ Anti-freeze agent, (0.5 l)	WIWA®	order-number	0631387
➤ Pneumatic oil, (0.5 l)	WIWA®	order-number	0632579

Special tools

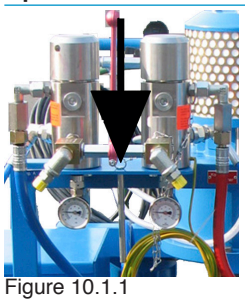


Figure 10.1.1

Fig. 10.1.1:
Key to open the high pressure filter
Attention: The high pressure filter must only be opened after the pressure has been relieved!

Figure 10.1.2

Fig. 10.1.2:
Key to open the control cabinet
(option for version with pressure and dosing unit)
Attention: Open only for repair purposes

Figure 10.1.3

Fig. 10.1.3:
Key to adjust the spraying pressure
(option for version with pressure and dosing unit)

10.2 Instruction Certificate

This certificate follows the EC-Directive for working utensils 85/655/EEC, section II article 7.
The owner of the device specified below has instructed the operating personnel.

.....
(Manufacturer, type designation, year of construction, order-number)

The instruction was conducted by the representative of the owner:

.....
(Foreman or responsible superior, name, department

The instructed person has read and understood the user manual for the equipment listed above, especially the chapter about safety, and declares that he is able to operate the unit in a safe way.

.....
(Operating personnel, date, name)

.....
(Personnel for repair and maintenance, date, name)

.....
(Personnel for electric / electronics, date, name)

10.3 Machine card

This user manual is only valid in combination with the following machine card.

The machine card contains all important and safety relevant data and information about the machine.
- ➤ exact designation and manufacturer data
- ➤ technical data and limiting values
- ➤ equipment and test certificate
- ➤ data of purchasing
- ➤ Machine identification (machine components and accessories with article and spare parts numbers)

Make sure that the data on the machine card match the data on the type plate. In case of discrepancies or if the type plate is **missing** please **notify** us immediately.