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1 Foreword

Dear valued customer,

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

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

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

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

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

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

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

We would like to wish you successful results with your machine,

WIWA Wilhelm Wagner GmbH & Co. KG.
2 Safety

This machine has been designed and manufactured with consideration to all safety aspects. It reflects current engineering practice and the valid accident prevention regulations. The machine left the factory in faultless condition and guarantees a high level of technical safety. However, improper operation and misuse will pose a risk to:

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

Any method of work that has a negative influence on the safety of the operating personnel and the machine is fundamentally prohibited. All persons involved in the installation, commissioning, operation, care, repair and maintenance of the machine must have read and understood the operation manual beforehand - in particular the "Safety" chapter.

Your safety depends on it!

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

2.1 Explanation of symbols

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

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

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

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

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

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

- General risk of accident
- Risk of explosion due to explosive atmosphere
Safety

Risk of explosion due to explosive substances
Risk of accident due to electricity or electrostatic charge
Risk of crushing due to lifting movements
Risk of cutting injuries due to rotating machine parts
Risk of burning due to hot surfaces
Risk of freezing due to cold surfaces

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

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

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

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

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

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

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

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

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

Always observe and follow all information in this operation manual and in the separate operation manuals for the individual machine parts or the optionally available auxiliary devices.

2.2.1 Working pressure

**WARNING**

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

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

2.2.2 Risks due to the spray jet

**WARNING**

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

- Never aim the spray gun at yourself, other persons or animals!
- Never hold the finger or hand in front of the spray gun!
- Never reach into the spray jet!
- Always hold the spray gun tightly in your hands while working since great recoil forces can arise at high working pressures.

**WARNING**

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

- Secure the spray gun whenever interrupting work!
- Prior to each commissioning, always check the spray gun lock!
2.2.3 Risks due to electricity

**WARNING**

In atmospheres containing solvents, electrical cables can become brittle or porous. They can injure you due to electric shock.

- Check electrical cables for externally visible damage before each commissioning.
- Never patch electrical cables.
- Have damaged electrical cables replaced immediately by qualified personnel with electrical training.

2.2.4 Risks due to electrostatic charge

**WARNING**

The high flow velocities during the airless spray process can result in an electrostatic charge.

Static discharges can result in fire and explosions.

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

**WARNING**

Dirty machines can become electrostatically charged. Fire and explosion can be triggered by severe static discharges.

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

2.2.5 Risk due to hot surfaces

**CAUTION**

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

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

**WARNING**
Machines that are not explosion-protected must not be used in operating facilities that fall under the explosion protection ordinance!

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

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

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

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

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

**WARNING**
Heating solvents can lead to an explosion.
Serious personal injuries and property damage may result.

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

2.2.7 Health risks

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

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

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

**WARNING**

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

➤ Put the machine out of operation immediately if you detect safety feature defects or any other faults on the machine.

➤ Only put the machine back into operation once the faults have been fully rectified.

The machine is equipped with the following safety features:

➤ Master switch / emergency off,

➤ Ground cable

Check the safety features on the machine:

➤ Prior to commissioning,

➤ Always prior to starting work,

➤ After all set-up work,

➤ After all cleaning, maintenance, and repair work.
Checklist on the pressureless machine:
- Seal on the safety valve damaged?
- Safety valve damaged?
- Function of the master switch faultless?
- Function of the compressed air valve on the spray gun faultless?

Checklist on the pressurized machine:
- Function of the safety valve OK?

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

2.4.1 Master switch / emergency off

In an emergency, switch the electrical system off immediately using the master switch on the operating panel (Fig. 2) and shut off the oil supply.

The compressed air supply to the spray gun is not interrupted!
Material pressure can still be present!

Fig. 2: Master switch

2.5 Operating and maintenance personnel

2.5.1 Obligations of the machine owner

The machine owner:
- is responsible for training the operating and maintenance personnel,
- must instruct the operating and maintenance personnel on correct handling of the machine, and on wearing the correct work clothing and protective equipment,
- must make work aids, such as e.g. lifting gear for transporting the machine or container, available to the operating and maintenance personnel,
- must make the user manual accessible to the operating and maintenance personnel and must ensure that this remains constantly available,
- must ensure that the operating and maintenance personnel have read and understood the user manual.

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

2.5.2 Personnel qualifications

Differentiation is made between 2 groups of personnel, depending on their qualifications:
- Instructed operators have received verified instruction from the machine owner regarding the tasks entrusted to him and the possible risks if the correct procedure is not followed.
- Trained personnel have received instruction provided by the machine manufacturer and are capable of carrying out maintenance and repair work on
the machine, independently recognizing possible dangers and avoiding risks.

2.5.3 Authorized operator

<table>
<thead>
<tr>
<th>Activity</th>
<th>Qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set-up and operation</td>
<td>Instructed operator</td>
</tr>
<tr>
<td>Cleaning</td>
<td>Instructed operator</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Trained personnel</td>
</tr>
<tr>
<td>Repair</td>
<td>Trained personnel</td>
</tr>
</tbody>
</table>

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

2.5.4 Personal protective equipment

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

- **Use eye protection**
  Wear protective goggles to prevent eye injuries due to material spray, gases, vapors, or dust.

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

- **Use respiratory protection**
  Although the airless spray process minimizes the paint mist with the right pressure adjustment and correct work method, we recommend that you wear a respiratory protection mask.

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

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

Observe our General Business Conditions (GBC) at www.wiwa.de.

2.6.1 Spare parts

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

2.6.2 Accessories

➤ If you use original WIWA accessories, their suitability for use in our machines is guaranteed.
➤ If you use third-party accessories, these must be suitable for the machine - in particular with respect to the working pressure, the current connection data, the connection variables, and use in Ex-zones, if applicable. WIWA will not be liable for any damage or injuries due to these parts.
➤ It is essential to observe the safety provisions applicable to the accessories. You can find these safety provisions in the separate operation manuals for the accessories.

2.7 How to respond in an emergency

2.7.1 Shutting down the machine

In an emergency, shut down the machine immediately
EMERGENCY OFF switch 0/Off.

Fig. 3: Machine OFF

This process is not suitable for decommissioning. The machine is not flushed.
➤ For controlled decommissioning, please see chap. “6.7 Decommissioning” on page 50.
➤ After remedying the emergency situation, the machine must be flushed (see chap. “6.3 Flushing” on page 48).
Observe the pot life of the materials used.
2.7.2 Leakage

**WARNING**

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

➤ Bring the machine to an immediate standstill and relieve the pressure.

➤ Tighten threaded connections and replace defective parts (must be performed by trained personnel).

➤ Do not seal leakage at connections and on high pressure hoses with the hand or by wrapping.

➤ Do not patch material hoses!

➤ Check hoses and threaded connections for leak-tightness when starting the machine up again.

2.7.3 Injuries

If case of injuries caused by processing material or solvents, always have the manufacturer's safety data sheet ready to show the doctor (supplier or manufacturer address, their telephone number, material designation and material number).
3 Machine description

The **DUOMIX PU HYDRAULIC SYSTEM** is a 2-component coating unit for industrial use. Seamless and smooth coatings and linings can be applied using this machine.

Due to the fixed mixing ratio of the pumps, the exact dosing of both components is ensured at all times. Every mixing ratio from 1:1 to 10:1 can be realized with a simple exchange of the fluid pumps.

Your machine has been designed according to your specific requirements (material to be processed, mixing ratio, output, etc.).

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

3.1 Intended use

The **DUOMIX PU HYDRAULIC SYSTEM** is suitable for processing solvent-free 2-component plastics (PU foam, polyurethane and polyurea).

This machine can be used in the production of new parts for the construction of tubes, shafts, and sewer ducts and pipeline construction as well as in the area of renovation of existing infrastructures, e.g. swimming pools, sewage treatment plants, biogas plants, gravel filling, washing facilities and many more.

Intended use also includes:

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

3.2 Erroneous use

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

Erroneous use applies in particular if

➤ impermissible materials are processed,
➤ unauthorized modifications or changes are implemented,
➤ the safety features are removed, modified or bypassed,
➤ spare parts are installed that were not manufactured or delivered by **WIWA** (see chap. 2.6.1),
➤ accessories are used that are not suitable for the machine (see chap. 2.6.2),
➤ machines without Ex identification are used in potentially explosive atmospheres.
➤ the machine is operated outside of the operating limits according to the type plate.
3.3 Machine design

Fig. 4: View from the left front and right rear

<table>
<thead>
<tr>
<th>No.</th>
<th>Designation</th>
<th>For details, see</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Operator front</td>
<td>Chap. 3.4 on page 20</td>
</tr>
<tr>
<td>2</td>
<td>Material fluid heater</td>
<td>Chap. 3.7 on page 22</td>
</tr>
<tr>
<td>3</td>
<td>Overflow for bursting disc safety device</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Component A return</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Component B return with silica gel filter</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Parking brakes</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Hydraulic unit</td>
<td>Chap. 3.6 on page 22</td>
</tr>
<tr>
<td>8</td>
<td>Oil stop cock</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Dirt trap in the material intake lines</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Proportioning pump</td>
<td>Chap. 3.5 on page 21</td>
</tr>
</tbody>
</table>
### 3.4 Operating panel

![Operating panel diagram](image)

**Fig. 5: The operating panel in the overview**

<table>
<thead>
<tr>
<th>No.</th>
<th>Designation</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Button for turning on and off the hydraulic unit, valves and control module</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Button for turning the heating system on and off flashing = selected continuously lit - at least 1 material fluid heater is heating</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Control module with touch screen</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Button for acknowledging error messages (RESET)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Master switch</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>USB interface (optional)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Pressure gauge and compressed air regulator for both feed pumps</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Pressure gauge and compressed air regulator for the spray gun</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>ISO circulation</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>ISO material pressure display</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>POLY material pressure display</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Plug for the hose heater</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Plug for the temperature sensor in the hose bundle</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>ISO material hose connection</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Compressed air connection for the spray gun</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>POLY material hose connection</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>POLY circulation</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Pressure gauge and oil pressure regulator for the proportioning pump</td>
<td></td>
</tr>
</tbody>
</table>
The functional principle of all pressure regulators installed on the machine is the same:

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

3.5 Proportioning pump

The proportioning pump conveys the two components of the processing material separately through the material fluid heater to the intermediate piece.

The hydraulic motor drives the two fluid pumps. The mixing ratio is the result of the relationship between the pump sizes.

Depending on the material requirements, the mixing ratio can be aligned by exchanging the fluid pumps. Please get in contact with WIWA in this case, since 3 fluid pumps are required in these cases.

<table>
<thead>
<tr>
<th>No.</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hydraulic motor</td>
</tr>
<tr>
<td>2</td>
<td>Hydraulic outputs</td>
</tr>
<tr>
<td>3</td>
<td>Hydraulic input</td>
</tr>
<tr>
<td>4</td>
<td>Material outputs</td>
</tr>
<tr>
<td>5</td>
<td>Dirt trap in the material inlet</td>
</tr>
</tbody>
</table>

Fig. 6: Proportioning pump 1 : 1
3.6 Hydraulic unit

<table>
<thead>
<tr>
<th>No.</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Electric motor</td>
</tr>
<tr>
<td>2</td>
<td>Temperature and fill level sensor</td>
</tr>
<tr>
<td>3</td>
<td>Oil filter</td>
</tr>
<tr>
<td>4</td>
<td>Oil stop cock</td>
</tr>
<tr>
<td>5</td>
<td>Oil reservoir, an axial piston pump is located inside</td>
</tr>
<tr>
<td>6</td>
<td>Oil cooler</td>
</tr>
<tr>
<td>7</td>
<td>Reservoir (optional)</td>
</tr>
<tr>
<td>8</td>
<td>Oil filler opening</td>
</tr>
</tbody>
</table>

Fig. 7: Hydraulic unit

3.7 Material fluid heater

Each component is heated to the required application temperature in the material fluid heater.

<table>
<thead>
<tr>
<th>No.</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ISO material outlet</td>
</tr>
<tr>
<td>2</td>
<td>POLY material outlet</td>
</tr>
</tbody>
</table>

The material fluid heaters are switched on and off on the operating panel (see chapter 3.4 on page 20).

The heater can remain turned on during brief work interruptions.

The temperatures for both material fluid heaters are set on the control module.

The current temperature values can also be called up on the control module (see chapter 4.3 on page 29).

Overheating of the material is prevented through the automatic temperature control and by setting the maximum temperature value (see chapter 4.3.7 on page 33).

The power level for the material fluid heater can be reduced on the control cabinet depending on the local conditions of the power supply.

Fig. 8: Material fluid heater
3.8 Hose bundle

During spraying, the material is pumped through a heated hose bundle to the spray gun.

<table>
<thead>
<tr>
<th>No.</th>
<th>Content of a hose segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cable with plug for the temperature sensor</td>
</tr>
<tr>
<td>2</td>
<td>Compressed air line for the spray gun</td>
</tr>
<tr>
<td>3</td>
<td>ISO material hose</td>
</tr>
<tr>
<td>4</td>
<td>POLY material hose</td>
</tr>
<tr>
<td>5</td>
<td>Cable with plug for the hose heater</td>
</tr>
</tbody>
</table>

The operating voltage of the hose bundle is determined by the plug of the temperature sensor.

The plug for the hose bundle heater is always 4-pole and is suitable for 230 V or 400 V depending on the temperature sensor.

The complete hose bundle can be composed of several hose assembly segments. The number and combination of segments is dependent on the desired output and length of the hose bundle.

A 3 m whip end, in which an additional temperature sensor is located, is connected to the last segment.

Connect, at a maximum, the permitted number of hose bundles of the same type, so that an optimal power distribution at all phases is guaranteed.

Example for 400 V: max. 3xL1 + 3xL2 + 3xL3.

How many segments may be connected at a maximum for which type can be found in the following table. The individual hose bundle segments are identified by colour.

<table>
<thead>
<tr>
<th>Type</th>
<th>L1 ⇔ green</th>
<th>L2 ⇔ yellow</th>
<th>L3 ⇔ magenta</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 V</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>230 V / 3-phase</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>230 V / 1-phase</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
3.9 Silica gel filter

The silica gel filter is a moisture filter that is screwed into the drum cover of the Iso component. It prevents the isocyanate from crystallizing due to a reaction with the moisture in the air.

The silica gel filter contains a granulate that discolors from orange to white when fully saturated with moisture. In order to re-establish the function of the filter, the granulate must be dried.

➤ During operation, open the ball valve, so that air can flow into the material drum.

➤ When putting the machine out of operation for an extended period, close the ball valve to prevent moisture from penetrating through the filter.

> Fig. 10: Silica gel filter

Observe chap. “7.4 Maintaining the silica gel filter” on page 54.

3.10 Optional expansions and accessories

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

You can find the detailed accessory catalogue at www.wiwa.de. For further information and order numbers, you can also contact an approved WIWA dealer or WIWA customer service.

3.10.1 Feed pumps with holders

Feed pumps are used for pumping material from barrels or containers. They support the proportioning pump with the pumping of highly viscose materials. Feed pumps are operated with compressed air and are controlled via a separate compressed air regulator.

Suitable holders for storing the feed pumps can optionally be installed on the frame, e.g. for during transport.

> Fig. 11: Feed pumps with holders
3.10.2 Hose holder

A holder for storing the hose bundle can optionally be installed on the frame.

Fig. 12: PU hydraulic system with hose holder

3.10.3 Protective cover

3.10.4 Acoustic signal for level monitoring
4 Control module

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

![Start-up screen](image)

![System status](image)

4.1 Menu window

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

![Header for the menu window](image)

<table>
<thead>
<tr>
<th>No.</th>
<th>Designation or description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Using the home button, you can return to the basic display (system status) from all menu windows for the controls.</td>
</tr>
<tr>
<td>2</td>
<td>Menu window number</td>
</tr>
<tr>
<td>3</td>
<td>Menu window name</td>
</tr>
<tr>
<td>4</td>
<td>The warning symbol appears if there is a fault (alarm).</td>
</tr>
<tr>
<td>5</td>
<td>Display of the operating mode</td>
</tr>
</tbody>
</table>

4.1.1 Display of the operating mode

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

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Filling" /></td>
<td>Filling</td>
</tr>
<tr>
<td><img src="image" alt="Spraying" /></td>
<td>Spraying</td>
</tr>
<tr>
<td><img src="image" alt="Machine in park position" /></td>
<td>The machine is located in park position.</td>
</tr>
<tr>
<td><img src="image" alt="Machine stopped" /></td>
<td>The machine is stopped.</td>
</tr>
</tbody>
</table>
4.2 Menu structure

The controller is divided into 2 areas - the generally accessible operating area and the password-protected settings area.
4.2.1 Navigation

The individual menu windows may be selected via the buttons in the overview, the main menu, or the settings menu. Furthermore, the following standard functions are available for navigation in the menu structure:

- **Home**: return to the basic display (system status)
- **Level up**: change to the next higher menu level
- **Forward**: page forward on the same menu level
- **Back**: page back on the same menu level

4.2.2 Entry fields

In various menu windows, in addition to the display and selection fields, there are also entry fields. If you would like to make an entry, press on the respective entry field. As a result, the keypad is shown. In order to enter values, press the respective characters one after another. Confirm the entry with **ENT** (Enter).

4.2.3 Buttons

All the functions of the controls can be selected using the buttons on the touch screen.

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

The control buttons are identified through the following symbols:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Alarm icon]</td>
<td>Alarm</td>
<td>![Setting for the units of measurement icon]</td>
<td>Setting for the units of measurement</td>
</tr>
<tr>
<td>![Alarm history icon]</td>
<td>Alarm history</td>
<td>![Parking icon]</td>
<td>Parking</td>
</tr>
<tr>
<td>![Date and time icon]</td>
<td>Date and time</td>
<td>![Service icon]</td>
<td>Service</td>
</tr>
<tr>
<td>![Pressure adjustment icon]</td>
<td>Pressure adjustment</td>
<td>![Set-up icon]</td>
<td>Set-up</td>
</tr>
<tr>
<td>![Main menu icon]</td>
<td>Main menu</td>
<td>![Language selection icon]</td>
<td>Language selection</td>
</tr>
<tr>
<td>![Hydraulic setting icon]</td>
<td>Hydraulic setting</td>
<td>![Temperature setting icon]</td>
<td>Temperature setting</td>
</tr>
<tr>
<td>![Information icon]</td>
<td>Information</td>
<td>![Counter icon]</td>
<td>Counter</td>
</tr>
</tbody>
</table>
4.3 Operating area

All displays and functions relevant for the operation are available in the system status or main menu, or can be selected from there.

4.3.1 System status

![System status diagram]

<table>
<thead>
<tr>
<th>No.</th>
<th>Display / function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Display of the temperatures for the iso component, the hose bundle and the poly component. If the displays are constantly changing between 0.0 °C and 999.9 °C, the temperatures are below freezing. The display of the temperatures only occurs above 0°C.</td>
</tr>
<tr>
<td>2</td>
<td>Display of the material pressures for the iso and poly component</td>
</tr>
<tr>
<td>3</td>
<td>Permissible pressure difference between the iso and poly component</td>
</tr>
<tr>
<td>4</td>
<td>As soon as the machine has switched over into automatic mode, the pressure difference between the two components is determined and displayed graphically. If the pressure of the iso component is higher than the pressure of the poly component, a red bar appears to the left of the center. In the opposite case, a blue bar appears to the right of the center.</td>
</tr>
<tr>
<td>5</td>
<td>Move the fluid pumps into park position (see chap. “4.3.3 Parking” on page 31)</td>
</tr>
<tr>
<td>6</td>
<td>Switch to the main menu (chap. “4.3.2 Main menu” on page 30)</td>
</tr>
<tr>
<td>7</td>
<td>Start the hydraulic unit (chap. “4.4.1 Pressure adjustment” on page 36)</td>
</tr>
<tr>
<td>8</td>
<td>Entry field for the batch number of a new report in the data log</td>
</tr>
<tr>
<td>9</td>
<td>Entry field for the user number of a new report in the data log</td>
</tr>
<tr>
<td>10</td>
<td>Start and end the report for data log (chap. “4.3.4 Data log” on page 32)</td>
</tr>
</tbody>
</table>
### 4.3.2 Main menu

<table>
<thead>
<tr>
<th>No.</th>
<th>Display / function</th>
<th>For details, see</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Display current alarm (if present)</td>
<td>Chap. “4.3.5 Alarms” on page 32</td>
</tr>
<tr>
<td>2</td>
<td>Fill level</td>
<td>Chap. “4.3.6 Fill level” on page 32</td>
</tr>
<tr>
<td>3</td>
<td>Temperature setting</td>
<td>Chap. “4.3.7 Temperature setting” on page 33</td>
</tr>
<tr>
<td>4</td>
<td>Language selection</td>
<td>Chap. “4.3.8 Language selection” on page 33</td>
</tr>
<tr>
<td>5</td>
<td>Display alarm history</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Switch to the Setup/settings area (only with password)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Display day, lot and total counters</td>
<td>Chap. “4.3.10 Counter” on page 34</td>
</tr>
<tr>
<td>8</td>
<td>Set date and time</td>
<td></td>
</tr>
</tbody>
</table>
4.3.3 Parking

During parking, the fluid pumps are moved into the lowest position.

In order to prevent damage to the machine due to hardening of the material, move the machine into the park position during each work interruption and before each end of work, so that no material remains stationary in the pumps.

For numbers, see Fig. 19.

1 During parking, "Parking" (background color: green) is displayed (see Fig. 19). Background color: red = Parking OFF (see Fig. 18)

2 "Control pressure" (background color: yellow) indicates that the working pressure must be reduced for parking. In order to reduce the pressure, carefully disconnect the spray gun. The display switches to "Parking in position" (background color: green) as soon as the park position is reached.

3 The arrow shows the current running direction of the fluid pumps. As soon as the park position is reached, the proportioning pump stops. The main valve switches off. The park symbol appears in the upper right corner of the menu window (see Fig. 20).
4.3.4 Data log

In the data log, job-related reports can be stored.

To store a new report in the data log, proceed as follows:

1. Enter the batch number and user number for the new report.
2. Press the LOG button to start the report.

During reporting, the LOG button is highlighted in green. The user and batch cannot be changed during this process.

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

The reports saved in the data log can be viewed, downloaded or printed out via WLAN with the WIWA Datalogger.

Observe the separate operation manual for the WIWA Datalogger.

4.3.5 Alarms

If certain faults occur during operation, then a corresponding alarm will be displayed and stored in the alarm history. The chapter 8.2 on page 58 features an overview of possible alarms with instructions indicating how the underlying fault may be corrected.

After the fault has been corrected, the alarm is acknowledged with the Reset button. The previously activated menu is displayed again.

4.3.6 Fill level

For refilling, press SET ISO / SET POLY, e.g. after a drum change.

The predefined quantity (see chap. “4.4.2 Hydraulic setting” on page 36) is written 1x in the ACTUAL fill level.
4.3.7 Temperature setting

The TARGET temperatures for both components and the hose bundle can be entered in the temperature menu and the temperature monitoring for the components and the hose bundle can be switched on and off.

<table>
<thead>
<tr>
<th>No.</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Heater and temperature monitoring</td>
</tr>
<tr>
<td></td>
<td>ON = green</td>
</tr>
<tr>
<td></td>
<td>OFF = gray</td>
</tr>
<tr>
<td>2</td>
<td>Set target temperature</td>
</tr>
<tr>
<td>3</td>
<td>Current actual temperature</td>
</tr>
</tbody>
</table>

Press the corresponding entry field to enter the target temperatures for the two components and the hose bundle.

<table>
<thead>
<tr>
<th>Factory setting</th>
<th>°C</th>
<th>°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper limit</td>
<td>90</td>
<td>194</td>
</tr>
<tr>
<td>Lower limit</td>
<td>20</td>
<td>68</td>
</tr>
</tbody>
</table>

4.3.8 Language selection

The menu language for the controls can be set in the language menu. The language menu consists of a total of 3 menu windows, between which can be switched using the arrow keys (forward) and (backward).

To select a language, press the corresponding flag symbol.
4.3.9 Alarm history

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

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

4.3.10 Counter

The counter menu consists of 2 menu windows, between which can be switched using the arrow keys ➢ (forward) and ◄ (backward).

➤ The output volume of material per day, per batch and in total is displayed for the iso and poly component in the "Counter" menu window.

➤ The total volume of material circulating in the machine is displayed for the iso and poly component in the "Counter circulation" menu window.

These values in the counter menu are calculated based on the measuring pulses of the stroke counter and the conveyed volume of the fluid pumps per double stroke.

To enter the conveyed volume for the fluid pumps for the iso and poly components, press the corresponding entry fields (see Fig. 29, no. 1 and no. 2).

The daily counter is only active if the preset minimum pressure of both components is exceeded.

The daily counter can be reset to 0 (zero) using the reset key. Confirm the reset with OK. The total counter can not be reset.

The displays for the total counter and circulation counter are each distributed across 2 columns. If the value in the second column reaches 100000, this value is set to 0 and the value in the first column is increased by 1
4.3.11 Time setting

The system date and system time for the controls can be set in the "Time setting" menu window.

The system date and system time are particularly relevant for the documentation of the alarms in the alarm history.

To make an entry, press the corresponding entry field (hours, minutes, seconds, year, month, day).

4.4 Setting area (setup)

All parameters that are relevant for the work process are stored in the setting or setup area.

Please note that this area is password-protected and may only be accessed by authorized persons. The responsible persons possess the password. In case this is lost, please contact WIWA.

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pressure adjustment</td>
</tr>
<tr>
<td>2</td>
<td>Set fill level</td>
</tr>
<tr>
<td>3</td>
<td>Service area (only for WIWA technicians)</td>
</tr>
<tr>
<td>4</td>
<td>Info (show the software versions of the display and the controls)</td>
</tr>
<tr>
<td>5</td>
<td>Setting for the units of measurement</td>
</tr>
</tbody>
</table>
4.4.1 Pressure adjustment

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Upper limit for the maximum permitted material pressure per component. If one or both values are exceeded, the machine goes into a fault condition and switches off.</td>
</tr>
<tr>
<td>2</td>
<td>Maximum permitted pressure difference between the material pressures of the components.</td>
</tr>
<tr>
<td>3</td>
<td>Maximum duration for exceeding the pressure difference. If the specified duration is exceeded, the machine goes into a fault condition and switches off.</td>
</tr>
<tr>
<td>4</td>
<td>The monitoring of the material pressures begins when reaching the differential pressure value set here and ...</td>
</tr>
<tr>
<td>5</td>
<td>... the number of strokes set here.</td>
</tr>
</tbody>
</table>

4.4.2 Hydraulic setting

The reaction of the hydraulic unit in the case of a work interruption is set in the "Hydraulic" menu window.

1. Time delay for switching the hydraulic unit into pressure-less circulation after the standstill of the proportioning pump.
2. Time delay for switching off the hydraulic unit after switching into pressure-less circulation.
3. Percentage value of the last set material pressure when the material pressure is dropping, at which the pressure-less circulation of the hydraulic unit is to be ended.
4.4.3 Set fill level

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Actual fill level in the controls</td>
</tr>
<tr>
<td>2</td>
<td>Set minimum fill level. A warning is output when the min. fill level is reached</td>
</tr>
<tr>
<td>3</td>
<td>Enter the size of the container from which the spraying material is taken</td>
</tr>
<tr>
<td>4</td>
<td>Switch between the warning triangle or STOP and specify whether a warning (warning triangle) should be output or the unit should be switched to STOP when the min. fill level is fallen below.</td>
</tr>
<tr>
<td>5</td>
<td>Refilling e.g. after a drum change, press SET ISO / SET POLY. The predefined quantity (see 3) is written 1x in the ACTUAL fill level.</td>
</tr>
</tbody>
</table>

4.4.4 Info

The "Info" menu window shows the version number of the stored program controls (PLC) and the display. Furthermore, the contact data for the manufacturer can be found here.

4.4.5 Setting for the units of measurement

The units of measurement for the display of the temperatures, pressures and volumes is set in the "Settings" menu window. Press the corresponding buttons to switch between:

- the metric system (°C, bar, liters) and
- the American system (°F, psi, USgal).

4.4.6 Logout of setup

The logout takes place automatically.
5 Transport, installation and assembly

The machine left the factory in faultless condition, packaged correctly for transport.

Check the machine at the time of receipt for any transport damage and for completeness.

5.1 Transport

When transporting the machine, observe the following information:

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

➤ The machine must be lifted exclusively at the intended attachment points for lifting accessories.

➤ Make sure that carrier cables are freely suspended for cranes of the machine.

➤ When using a forklift, make sure that the length of the forks is sufficient. Each of the lift truck forks must be guided through the two forklift retainers located opposite each other on the bottom of the frame.

➤ Secure the load on the transport vehicle to prevent sliding and falling. Lock the parking brakes.

➤ Attention! Risk of tipping! Ensure the load is evenly distributed, in order to prevent the machine from tipping.

➤ When lifting or loading the machine, do not transport other objects simultaneously (e.g. material drums) with the machine.

➤ Never stand under suspended loads or in the loading area.

➤ There is a risk of death here!

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

➤ Disconnect the entire energy supply to the machine - even for short transport distances.

➤ Empty the machine prior to transport - residual liquids may still leak out of the machine during transport.

➤ Remove all loose parts (e.g. tools) from the machine.

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

5.2 Installation site

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

The machine may not be operated in explosion protection zones!

<table>
<thead>
<tr>
<th>Ambient temperature</th>
<th>minimum</th>
<th>maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 °C</td>
<td>32 °F</td>
</tr>
<tr>
<td></td>
<td>40 °C</td>
<td>104 °F</td>
</tr>
</tbody>
</table>
Transport, installation and assembly

WARNING
A life-threatening situation can arise for the operating personnel due to lightning!
➤ Never operate a machine outdoors during a storm!
➤ The machine owner must ensure that the machine is equipped with suitable lightning protection equipment.

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

Safety measures at the installation site:
➤ For safe operation of the machine, stability and sufficient free space must be ensured.
➤ Fasten the machine to its installation site, in order to secure it against unintended movement.
➤ Keep the working area clean, especially all walking and standing areas. Remove any spilled material and solvents immediately.
➤ In order to prevent harm to health and damage to property, ensure sufficient ventilation and airing of the workplace. Always observe the processing instructions of the material manufacturer.
➤ Protect all items neighboring the spray object against possible damage due to paint mist.

5.3 Assembly

WARNING
If untrained personnel carry out assembly work, they endanger themselves and others, as well as risking the operational safety of the machine.
➤ Electrical and electronic parts may only be installed by specialist personnel with electrical training; all other parts, e.g. the spraying hose and spray gun, may only be installed by personnel trained for this.

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

5.3.1 Connecting the hose bundle to the intermediate piece

WARNING
If the connections for the hose bundle are subjected to strain, these may be torn out. The escaping material under high pressure may cause injuries and damage to property.
➤ If tensile forces are anticipated on the hose bundle connections (for example due to the positioning of the spray gun), then it is necessary to utilize strain relief!
If the hose bundle is too tightly curved, the hoses in the hose bundle may become kinked.

➤ Do not undercut the minimum bending radius of 30 cm!

1. Connect the hoses and cables of the hose bundle to the intermediate piece as follows:

<table>
<thead>
<tr>
<th>No.</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Plug for the heater</td>
</tr>
<tr>
<td>2</td>
<td>Plug for the temperature sensor</td>
</tr>
<tr>
<td>3</td>
<td>Material hose for the ISO component</td>
</tr>
<tr>
<td>4</td>
<td>Compressed air line for the spray gun</td>
</tr>
<tr>
<td>5</td>
<td>Material hose for the POLY component</td>
</tr>
</tbody>
</table>

Fig. 38: Connections on the intermediate piece

5.3.2 Connecting the segments of the hose bundle

When connecting the individual hose bundle segments, observe the information in chap. 3.8 on page 23.

1. Connect the hoses and plug for the individual hose bundle segments according to Fig. 39.

2. Arrange the plug opposite to prevent damage due to tensile loads (see Fig. 40).

3. Fix the connections with tape (see Fig. 41).
5.3.3 Connecting the spray gun

Observe the separate operation manual for the spray gun used.

**WARNING**

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

➤ Prior to installation, check the maximum permissible working pressure of the spraying hose and the spray gun. It must be greater than or equal to the maximum working pressure stated on the type plate.

5.3.4 Installing the feed pumps and return flow hoses

1. Place the feed pumps in the larger bung holes of the material drum. Pay attention to a horizontal installation position and a secure hold of the pumps. We recommend installing on a drum cover.

Always pay attention to a correct component assignment.

| red | Iso component (isocyanate) |
| blue | Poly component (polyol) |

2. Make sure that all material and compressed air shut-off valves are closed.

The iso material reacts to humidity and crystallizes. Observe the information of the material manufacturer.

The ventilation system for the B component is therefore equipped with a silica gel filter. Observe “7.4 Maintaining the silica gel filter” on page 54.

3. Place the return flow hoses (optional) into the material drums through the smaller bung hole openings and secure them against slipping out unintentionally.

With material supply from barrels:
Screw the return flow hose of the ISO component to the silica gel filter into the drum cover (see Fig. 42). Screw the return flow hose of the POLY component directly into the drum cover (see Fig. 42).

![Fig. 42: Installing the feed pumps and return flow hoses](image-url)
In order to prevent material contamination, we recommend leading the return flow hoses back into a separate material collection container during the following work:

➤ during the initial cleaning, in order to flush out the test medium material mixture,
➤ after each cleaning of the system,
➤ during each material change, in order to pump out the material mixture.

4. Connect the material hoses to the feed pumps and connect them to the corresponding material inlet on the proportioning pump.

5. Connect the compressed air lines to the feed pumps.

5.3.5 Grounding the machine

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

➤ Prior to installation, check the maximum permissible working pressure of the spraying hose and the spray gun. It must be greater than or equal to the maximum working pressure stated on the type plate.

<table>
<thead>
<tr>
<th>System components</th>
<th>Grounding</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUOMIX PU hydraulic system</td>
<td>The machine is grounded via the power cable.</td>
</tr>
<tr>
<td>Spray gun</td>
<td>Grounding occurs through the connection with the WIWA material hoses.</td>
</tr>
<tr>
<td>WIWA material hoses are conductive.</td>
<td></td>
</tr>
<tr>
<td>Material hopper (external)</td>
<td></td>
</tr>
<tr>
<td>object to be coated</td>
<td>Grounding according to the local provisions.</td>
</tr>
<tr>
<td>Cleaning agent container (external)</td>
<td></td>
</tr>
</tbody>
</table>

5.3.6 Connecting the power

**WARNING**

Improper work on live parts can lead to dangerous injuries due to electric shock.

➤ All work on live parts may only be carried out in de-energised condition by qualified electricians.
➤ The local provisions must always be observed.

**WARNING**

When using in an atmosphere containing solvents, the risk exists that the power cable will become brittle or porous and could cause dangerous injuries due to electric shock.

➤ Check the power cable for externally visible damage before each commissioning.
Transport, installation and assembly

Never patch the power cable.
Have damaged power cables replaced immediately by qualified personnel with electrical training.

1. Before connecting the machine to the power supply, check whether the electrical data specified on the type plate on the control cabinet corresponds to that at the operation site.
2. Observe the direction of rotation of the motor.

5.3.7 Connecting the compressed air

The feed pumps (optional) require compressed air for operation.

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

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

➤ Only use air that is dried, and free of oil and dust!
➤ The compressed air supplied must correspond to compressed air quality grade 4 according to DIN ISO 8573-1.

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

The compressed air connection is located on the right on the back of the operator front.

<table>
<thead>
<tr>
<th>No.</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Feed pumps (optional)</td>
</tr>
<tr>
<td>2</td>
<td>Compressed air connection</td>
</tr>
</tbody>
</table>

Fig. 43 Compressed air connections
6 Operation

Prerequisites:
➤ The machine must be correctly installed and fully assembled.
➤ Only put the machine into operation if you are equipped with the prescribed personal protective equipment. Details on this can be found in chap. 2.5.4 on page 15.
➤ The spraying material must be available in sufficient quantity.
➤ 2 collecting vessels are also required for surplus material. These containers are not included in the scope of delivery.

**WARNING**
If fluid pumps run dry, this can lead to fire or an explosion due to the resulting friction heat.
➤ During operation ensure that the drums never run empty. Never leave the machine running when unattended.
➤ However, if this were to happen, bring the respective pump to an immediate standstill and add material.

**WARNING**
If the machine does not automatically switch off during a malfunction, a dangerous overpressure, for example, can build up in the machine which can lead to parts exploding and thus to serious injuries and property damage.
➤ Never leave the machine running when unattended. You must be able to intervene quickly in an emergency.

The specified pressures are only guideline values and may need to be adjusted depending on the viscosity of the material or the hose length used.

Always pay attention to a correct component assignment.
red = Iso component (isocyanate)  blue = Poly component (polyol)

Do not use any solvents.

The machine may only be operated within the temperature range that is recommended by the material manufacturer in order to prevent a crystallisation of the material and damage to the machine. Observe the safety data sheet of the material manufacturer.

Observe and follow the operation manuals for the attachments, such as e.g. the spray gun.

Observe the safety data sheet of the respective material manufacturer when processing and storing coating materials.
6.1 Putting the machine into operation

➤ Check if all safety devices are present and fully functional.
➤ Check the oil level in the oil reservoir and refill if necessary (e.g. NUTO H46 filtered).
➤ Flush the machine (see chap. 6.3 on page 48) in order to flush out the factory-made test substance (during initial commissioning) or the remains of the previous spraying material.
➤ During commissioning (flushing), check that all machine parts are leak-tight and tighten the connections if necessary.
➤ Ensure the machine and the object to be coated are correctly earthed (see chap. 5.3.5 on page 42).
➤ Check whether the power and compressed air connections are correctly established.

6.1.1 Work steps during commissioning

1. Start the machine
2. Set the controls (only during initial commissioning)
3. Fill and vent the machine
4. Turn on the material fluid heater and hose heater
5. Equalize the pressure of both components
6. Observe the operation manual of the spray gun with respect to commissioning.
7. Start spraying

6.1.2 Starting the machine

1. Turn master switch to "On". The display in on and the hydraulic unit is switched on.
2. Press ON / OFF button in order to switch on the unit. The button illuminates green.

6.1.3 Setting the controls

During the initial commissioning, the parameters for the machine controller must be set by trained personnel, such as e.g.:
➤ Units for display values,
➤ Pressure adjustment,
➤ Temperature setting,
➤ Stroke counter setting,
➤ Date/time setting.

Detailed information on this can be found in chap. 4.4 on page 35.
6.1.4 Filling and venting the machine

1. Disassemble the gun body including drive from the spray gun - observe the operation manual for the spray gun while doing so.

2. Optionally, if feed pumps are present:
   a. Open the compressed air shut-off valves on the feed pumps.
   b. Set an air inlet pressure of 5-6 bar at the compressed air regulator for the feed pumps.

3. Set a low pressure on the oil pressure regulator so that the proportioning pump runs slowly.

4. Hold the distributor of the spray gun over 2 collecting vessels in such a way that the components are collected separately.

5. Open the material shut-off valves on the distributor of the spray gun.

6. Close the material shut-off valves on the distributor of the spray gun when the air has completely escaped from the machine and material discharges clean and bubble-free.

Alternatively, the two components can be vented individually - to do so, perform work steps 5, 6 and 7 separately for the iso and poly components.

In order to lead the escaping material back to the material drum, each component must be individually vented. Hold the distributor over the material drum of the respective component that is being vented and open only this material shut-off valve.

6.1.5 Turning on the material fluid heater and hose heater

In order to achieve an optimum spraying result, the entire machine including the hose bundle must be heated to the preset temperature before spraying. Plan an appropriate heating time before spraying. The heating time depends on various factors, such as e.g. outside temperature, viscosity of the material, initial temperature of the material.

**CAUTION**

The connections on the intermediate piece can significantly heat up depending on the set temperature. A risk of burns exists.

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

1. Unroll the hose bundle completely.

2. Switch on the heating system.

   ➤ Press button. The button illuminates green.

The material fluid heaters achieve the target temperature more quickly than the hose bundle. Therefore, first switch on the heater for the hose bundle and then the material fluid heaters after a delay!
3. Wait until the application temperature is reached.

If too high of a pressure is set for the proportioning pump during the heating phase, the pressure of a component can increase so much that the machine switches off due to the overpressure.

- Make sure the set pressure is low!

### 6.1.6 Pressure compensation

Due to the different material characteristics of the iso and poly components, the pressure in the system during the heating phase can potentially build up differently. For optimum work results, we recommend a maximum pressure difference of 10 - 20 bar between the two components. If the pressure difference is greater, the pressure of the component with the higher pressure must be relieved. There are several options for this - depending on the equipment of the machine.

- For versions without circulation or discharge hoses, proceed as follows:
  1. Disassemble the gun body including drive from the spray gun - observe the operation manual for the spray gun while doing so.
  2. Slowly open the material shut-off valve for the component with the higher pressure on the distributor of the spray gun until the pressure has equalized. Let the escaping material flow into a collecting vessel.
  3. Close the material shut-off valve.

- For versions with circulation or discharge hoses, proceed as follows:
  1. Make sure that the return flow hoses (for circulation) are fastened to the material drums or the discharge hoses are led into collecting vessels.
  2. Briefly open the discharge valve for the component with the higher pressure on the intermediate piece until the pressure has equalized.
6.1.7 Circulation

Only switch on the material fluid heater during circulation when absolutely necessary.

1. Set the ball valve on the intermediate piece to circulation.
2. Switch on the hydraulic unit. The proportioning pump begins to run.
3. If necessary, regulate the oil pressure.

Fig. 46 Ball valves at circulation

6.2 Spraying

1. Observe the operation manual for the spray gun, e.g. PUGUN 4040. Possibly install the distributor to the gun body of the spray gun.
2. Set the oil pressure. The oil pressure influences the spray pattern.
3. Set the ball valves on the intermediate piece to spraying (see Fig. 47).
4. Unlock the spray gun.
5. Initially spray on a test surface in order to check the spray pattern.
6. Regulate the oil pressure until the optimal spray pattern is achieved.

Fig. 47 Ball valves at spraying

6.3 Flushing

During an initial commissioning or recommissioning, the machine must be flushed with a cleaning agent (here: Mesamoll) so that the spraying material is not influenced by the test substance with which the machine was tested in the factory for faultless function.

Flushing the machine is also necessary:
- when material is changed
- at the end of work and when decommissioning in order to flush spraying material out of the machine during an interruption to the spray operation before it hardens.

Observe the pot life of the materials used.

1. Close the compressed air shut-off valves on the feed pumps.
2. Close the material shut-off valves on the spray gun.
3. Take the feed pumps out of the material drums. The parking tubes on the frame are used for temporary storage.
4. Replace the material drum with a container with a suitable cleaning agent.
5. Place feed pumps into the cleaning agent container - while doing so, make sure the pumps are standing securely and are held firmly.
6. Fill the machine with cleaning agent and vent (see chap. 6.1.4 on page 46).
6.4 Work interruption

If the work is only to be interrupted briefly in order to then continue spraying with the same material, the unit can be held at the temperature.

Switch the machine into park mode before each work interruption or decommissioning.

1. Move the machine into park position (see chap. 4.3.3 on page 31).
2. Close the material shut-off valves on the spray gun.

The heating system can remain switched on in the park position in order to keep the material at the temperature. Only switch off the heater when required.
3. Close the material and compressed air shut-off valves on the spray gun.

The suction for the feed pumps remain in the material drums or are stored in the parking tubes filled with release agent on the frame, e.g. for brief transport.

The parking tubes for the feed pumps must always be filled with release agent. Release agent should reach to 3 cm below the rim when the feed pump is inside it.

6.5 Changing the drum

Replace the material drum before it is completely emptied.
In order to receive a timely warning from the controls, set an appropriate minimum quantity (see chap. "4.4.2 Hydraulic setting" on page 36).

Never allow the machine to run empty in order to prevent the suction of air. The suction of air can lead to faults in the pressure build-up of both components and to crystallization of the isocyanate.

The material fluid heater can remain switched on during the drum change.

Always pay attention to a correct component assignment.

red = Iso component (isocyanate)  blue = Poly component (polyol)

1. Close the compressed air shut-off valves on the feed pumps.
2. Close the material shut-off valves on the spray gun.
3. Take the feed pumps out of the material drums and store in the holders on the frame (if present).
4. Replace empty material drums with full ones.
5. Place feed pumps into the new material drum- while doing so, make sure the pumps are held securely and firmly.
6. Vent the machine (see chap. 6.1.4 on page 46).
7. Equalize the pressure of both components (see chap. 6.1.6 on page 47).
6.6 Material change

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

1. Shut down the machine as described in chap. 6.7 on page 50.
2. Clean the material screen of both components at the material inlets of the proportioning pump; replace them when heavily soiled.
3. Put the material into operation with the new material as described in chap. 6.1 on page 45.

6.7 Decommissioning

During longer work interruptions and/or before a material change, the machine must be completely shut down.

1. Move the machine into park position (see chap. 4.3.3 on page 31).
2. Turn off the heating system (material fluid heater and hose heater).
3. Turn the oil pressure regulator and compressed air regulator for the feed pumps down completely.
4. Close the compressed air shut-off valves on the feed pumps.

**WARNING**

The machine remains under pressure in order to prevent a crystallisation of the material in the material hoses. An unintentional escape of the material can cause personal injuries.

➤ Do not open any stop cocks or valves!

5. Press ON / OFF button - the button goes out.
6. Turn master switch to 0 / OFF.
7. Clean the machine externally after each use.

**WARNING**

Use only cleaning agents recommended by the material manufacturer to clean the machine.

8. Fill the complete system with preserving agent - observe the information from the material manufacturer while doing so.

6.8 Relieving the pressure

1. Pull the trigger of the spray gun in order to relieve the pressure in the hose bundle.
2. Disassemble the spray gun from the terminal block.
3. Open one material valve on the distributor of the spray gun until the pressure of the respective component is completely relieved; always open only one material valve!
4. Repeat work step 3 on the material valve for the other component.
5. Install the spray gun.

6.9 Shutdown

1. Shut down the machine as described in chap. 6.7 on page 50.
2. Replace the material with the preserving agent recommended by the material manufacturer and appropriate for the material.
3. Fill and vent the machine (see chap. “6.1.4 Filling and venting the machine” on page 46).
4. Relieve the machine's pressure, as described in chap. 6.8 on page 50.

6.10 Storage

Store the machine in a place where it is protected against dirt, moisture, frost, and heat.

<table>
<thead>
<tr>
<th>Storage temperature</th>
<th>minimum</th>
<th>maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 °C</td>
<td>32 °F</td>
</tr>
<tr>
<td></td>
<td>40 °C</td>
<td>104 °F</td>
</tr>
</tbody>
</table>

6.11 Disposal

It is necessary to collect residues of spraying material, cleaning fluids, oil, greases and other chemical substances according to the legal regulations for recycling or disposal. The official local waste water protection laws apply.

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

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

**WARNING**

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

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

**WARNING**

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

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

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

Prior to maintenance and repair work:

1. Shut off the compressed air supply.
2. Disconnect the power supply.
3. Completely de-pressurize the machine.

**WARNING**

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

➤ Protect yourself against suddenly ejecting material by covering threaded connections with a cloth while loosening them.

➤ Loosen threaded connections particularly cautiously and allow the pressure to escape slowly.

➤ Remove the blockages (see fault table in chapter 8 on page 57).

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

7.1 Regular testing

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

➤ prior to first commissioning,

➤ after changes to / the servicing of parts of the installation that affect safety,

➤ after an interruption to operation lasting more than 6 months,

➤ although at least every 12 months.
In the case of machines that have been put out of use, the test can be delayed until the next time commissioning takes place.

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

7.2 Maintenance schedule

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

<table>
<thead>
<tr>
<th>Time frame</th>
<th>Activity</th>
<th>For further reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to each commissioning</td>
<td>Check release agent level in the fluid pumps</td>
<td>Chap. 7.3.1 on page 54</td>
</tr>
<tr>
<td>1 time per week</td>
<td>Visual inspection of the compressed air and material hoses for damage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Visual inspection of the machine for leakage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Check oil level in the hydraulic unit</td>
<td>Operation manual for the hydraulic unit</td>
</tr>
<tr>
<td></td>
<td>Check silica gel filter (among other things, the degree of saturation of the drying pellets)</td>
<td>Chap. 7.4 on page 54</td>
</tr>
<tr>
<td>Every 50 operating hours</td>
<td>Check the release agent of the fluid pumps for material residues</td>
<td>Chap. 7.3.2 on page 54</td>
</tr>
<tr>
<td>Every 3 years</td>
<td>have the compressed air and material hoses checked by a specialist and replace if necessary</td>
<td></td>
</tr>
</tbody>
</table>

7.3 Maintaining the proportioning pump

To prevent damage due to material hardening, the release agent chambers of the fluid pumps are filled with release agent as a material plasticizer. Depending on the characteristics of the material to be processed, signs of wear will appear on the fluid pump packing after a certain time in operation. The material may be pressed by the packing in this case, and may then harden. The wear of the packing can be recognized by the discoloration of the release agent.
The fluid pumps are equipped with the following maintenance equipment:

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To fill the release agent, open the cover of the equalizing tank and press the release agent in by means of the dosing bottle.</td>
</tr>
<tr>
<td>2</td>
<td>The release agent must be between the &quot;MIN&quot; and &quot;MAX&quot; marks in the equalizing tank.</td>
</tr>
<tr>
<td>3</td>
<td>To drain release agent, unscrew the draining screw.</td>
</tr>
</tbody>
</table>

7.3.1 Checking the release agent level in the fluid pumps

Prior to each commissioning, check the release agent level in the fluid pumps and refill with release agent if necessary.

7.3.2 Checking the release agent of the fluid pumps for material residues

Check the release agent in the fluid pumps every 50 operating hours for material residues. If material residues are discovered in the release agent, you must assume that the packing for the respective fluid pump is worn.

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

7.4 Maintaining the silica gel filter

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

1. Remove the silica gel filter,
2. Dry or replace the granulate and
3. Reinstall the silica gel filter.

7.4.1 Removing the silica gel filter

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

1. Shut down the machine and relieve the pressure.
2. Close the ball valve on the silica gel filter.

3. Unscrew the silica gel filter together with the double nipple from the drum or T-piece.

4. Press the locking slide on the cover down and pull the cover off upwards.

### 7.4.2 Drying or replacing the granulate

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

1. Remove the silica gel filter according to chap. 7.4.1.

2. Shake the granulate into a collecting vessel.

**Drying:**

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

- Only heat the granulate. Heating the entire filter can destroy the housing.
- Do not dry in a microwave! The pellets can burst and make the granulate unusable.

The drying can take up to 4 hours depending on the degree of saturation. When the granulate is orange again, it is completely regenerated. Pour the granulate straight back into the container of the silica gel filter and close it.

**Replacement:**

For replacement, fill 65g/0.14 lbs of new granulate (see chap. Operating materials or Spare part lists) into the silica gel filter container and dispose of the used granulate according to the local regulations.

### 7.4.3 Installing the silica gel filter

1. Complete work steps 2-4 mentioned in chap. 7.4.1 in the reverse sequence.
Make sure the O-ring is seated correctly! No granulate may be stuck in the screw connection!
When screwing in the double nipple use thread locker or Teflon tape.

7.5 Recommended operating fluids
Only use original operating fluids from WIWA:

<table>
<thead>
<tr>
<th>Operating fluid</th>
<th>Description</th>
<th>WIWA order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic oil</td>
<td>e.g. NUTO H46 filtered</td>
<td></td>
</tr>
<tr>
<td>for silica gel filter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drying pellets (65g/0.14 lbs)</td>
<td>0648622</td>
<td></td>
</tr>
<tr>
<td>Teflon tape</td>
<td>0000099</td>
<td></td>
</tr>
<tr>
<td>Locking agent (50 ml)</td>
<td>0000015</td>
<td></td>
</tr>
</tbody>
</table>
8 Malfunctions and their elimination

8.1 General troubleshooting

<table>
<thead>
<tr>
<th>Fault</th>
<th>Possible cause(s)</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The machine will not start.</td>
<td>Energy supply is interrupted</td>
<td>Securely position oil, compressed air and power supply.</td>
</tr>
<tr>
<td></td>
<td>Master switch in &quot;OFF&quot; position.</td>
<td>Turn master switch to &quot;ON&quot;.</td>
</tr>
<tr>
<td></td>
<td>Machine not switched on.</td>
<td>Switch on machine.</td>
</tr>
<tr>
<td></td>
<td>Hydraulic unit has incorrect direction of rotation</td>
<td></td>
</tr>
<tr>
<td>The machine starts, but the proportioning pump does not run.</td>
<td>Hydraulic unit off</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Incorrect direction of rotation of the hydraulic unit motor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oil stop cock closed</td>
<td></td>
</tr>
<tr>
<td>The feed pumps are working uninterrupted, no material escapes on the spray gun.</td>
<td>The material drum is empty.</td>
<td>Replace material drum.</td>
</tr>
<tr>
<td></td>
<td>The suction is defective ⇔ the pump draws in air.</td>
<td>Replace suction.</td>
</tr>
<tr>
<td></td>
<td>The intake strainer is clogged.</td>
<td>Clean or replace intake strainer.</td>
</tr>
<tr>
<td></td>
<td>The feed pump(s) is (are) defective.</td>
<td>Repair feed pump(s).</td>
</tr>
<tr>
<td></td>
<td>Circulation is switched on.</td>
<td>Set the ball valves on the intermediate piece to spraying.</td>
</tr>
<tr>
<td>The feed pump does not pump material into the machine.</td>
<td>The dirt trap in the material inlet before the proportioning pump is contaminated.</td>
<td>Clean the dirt trap.</td>
</tr>
<tr>
<td>During the downstroke of the proportioning pump, a fluid pump does not generate pressure. The pressure on the other components increases.</td>
<td>The bottom valve of the fluid pump without pressure is dirty or defective.</td>
<td>Remove and clean the bottom valve. Replace defective ball or valve plate.</td>
</tr>
<tr>
<td>During the upstroke of the proportioning pump, a fluid pump does not generate pressure.</td>
<td>The piston valve of the fluid pump without pressure is leaking.</td>
<td>Remove and clean the piston valve. Replace defective ball or valve plate.</td>
</tr>
<tr>
<td>A fluid pump does not generate pressure during the upstroke and downstroke. The pressure of the other component is very high.</td>
<td>The pump without pressure does not receive any material.</td>
<td>Check material supply.</td>
</tr>
<tr>
<td></td>
<td>Both valves are dirty or defective.</td>
<td>Check valves.</td>
</tr>
<tr>
<td>During drainage, the pressure of one component remains stationary. The pressure of the other component drops.</td>
<td>Return flow hose (optional), material hose or spray gun are clogged.</td>
<td>Check return flow hose (optional) and material hoses for passage. Check valve.</td>
</tr>
</tbody>
</table>
## Malfunctions and their elimination

<table>
<thead>
<tr>
<th>Fault</th>
<th>Possible cause(s)</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>During spraying, the pressure of one component constantly increases in comparison to the other component.</td>
<td>The packing for the pump without pressure is leaking.</td>
<td>Repair pump without pressure (replace packing).</td>
</tr>
<tr>
<td></td>
<td>Filter on spray gun clogged.</td>
<td>Clean filter.</td>
</tr>
<tr>
<td></td>
<td>Mixing chamber clogged.</td>
<td>Clean mixing chamber.</td>
</tr>
<tr>
<td>During spraying, insufficient pressure or material arrives at the spray gun, although the pressure in the machine is high.</td>
<td>The material hose or the spray gun are overgrown.</td>
<td>Clean or replace material hoses and spray gun.</td>
</tr>
<tr>
<td></td>
<td>The mixing chamber of the spray gun is clogged.</td>
<td>Replace mixing chamber in the spray gun.</td>
</tr>
<tr>
<td>The hydraulic motor no longer operates, although the oil supply is established. No material pressure is present in the machine.</td>
<td>The hydraulic motor controller is defective.</td>
<td>Have the hydraulic motor repaired by WIWA customer service</td>
</tr>
<tr>
<td></td>
<td>Safety fuse of the pneumatic valve defective.</td>
<td>Have the safety fuse replaced by a qualified electrician.</td>
</tr>
<tr>
<td>The fill level and/or the color of the release agent is changing in the release agent container (inspection glass).</td>
<td>The packing for the fluid pumps is worn.</td>
<td>Have the packing and seals of the fluid pumps replaced.</td>
</tr>
<tr>
<td>A material fluid heater does not heat up.</td>
<td>Technical defect in the material fluid heater.</td>
<td>Have the material fluid heater checked by a qualified electrician.</td>
</tr>
</tbody>
</table>

### 8.2 Error messages on the display

<table>
<thead>
<tr>
<th>Error message</th>
<th>Possible cause(s)</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Poly overpressure&quot;</td>
<td>Mixing element on the Poly side clogged.</td>
<td>Disassemble the spray gun and relieve the valve of the Poly component.</td>
</tr>
<tr>
<td></td>
<td>Poly dirt trap clogged.</td>
<td>Clean Poly dirt trap.</td>
</tr>
<tr>
<td></td>
<td>Poly sensor cable not connected or defective.</td>
<td>Connect or repair Poly sensor cable.</td>
</tr>
<tr>
<td></td>
<td>Air in the system.</td>
<td>Vent the system.</td>
</tr>
<tr>
<td>&quot;Iso overpressure&quot;</td>
<td>Mixing element on the Iso side clogged.</td>
<td>Disassemble the spray gun and relieve the valve of the Iso component.</td>
</tr>
<tr>
<td></td>
<td>Iso spray gun filter clogged.</td>
<td>Clean Iso spray gun filter.</td>
</tr>
<tr>
<td></td>
<td>Iso dirt trap clogged.</td>
<td>Clean Iso dirt trap.</td>
</tr>
<tr>
<td></td>
<td>Iso sensor cable not connected or defective.</td>
<td>Connect or repair Iso sensor cable.</td>
</tr>
<tr>
<td></td>
<td>Air in the system.</td>
<td>Vent the system.</td>
</tr>
</tbody>
</table>
### Malfunctions and their elimination

<table>
<thead>
<tr>
<th>Error message</th>
<th>Possible cause(s)</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Iso excessive temperature&quot; - reset is flashing</td>
<td>Temperature sensor defective.</td>
<td>Switch off &quot;Iso&quot; heater.</td>
</tr>
<tr>
<td></td>
<td>Controller faulty.</td>
<td>Have the controller checked by a qualified electrician.</td>
</tr>
<tr>
<td></td>
<td>Sensor cable not connected or defective.</td>
<td>Check sensor line.</td>
</tr>
<tr>
<td>&quot;Poly excessive temperature&quot; - reset is flashing</td>
<td>Temperature sensor defective.</td>
<td>Switch off &quot;Poly&quot; heater.</td>
</tr>
<tr>
<td></td>
<td>Controller faulty.</td>
<td>Have the controller checked by a qualified electrician.</td>
</tr>
<tr>
<td>&quot;Hose bundle sensor&quot;</td>
<td>Sensor defective or sensor cable not connected.</td>
<td>Repair sensor or connect sensor cable.</td>
</tr>
<tr>
<td>&quot;Poly pressure sensor&quot; or &quot;Iso pressure sensor&quot; (only in automatic mode)</td>
<td>Cable break.</td>
<td>Repair or replace cable.</td>
</tr>
<tr>
<td>&quot;Poly &gt; Iso&quot; (only in automatic mode)</td>
<td>Iso filter clogged.</td>
<td>Clean Iso filter.</td>
</tr>
<tr>
<td></td>
<td>Iso material drum is empty.</td>
<td>Replace or fill Iso material drum.</td>
</tr>
<tr>
<td>&quot;Iso &gt; Poly&quot; (only in automatic mode)</td>
<td>Poly filter clogged.</td>
<td>Clean Poly filter.</td>
</tr>
<tr>
<td></td>
<td>Poly material drum is empty.</td>
<td>Replace or fill Poly material drum.</td>
</tr>
<tr>
<td>&quot;Air supply too low&quot;</td>
<td></td>
<td>Check mains air pressure.</td>
</tr>
<tr>
<td>&quot;Reset blocked&quot;.</td>
<td>Reset button pushed longer than 30 sec.</td>
<td>Let go of reset button.</td>
</tr>
<tr>
<td>&quot;Hose bundle heater&quot; - the machine switches off.</td>
<td>No temperature increase despite the heater being switched on.</td>
<td>Have hose (3m whip) checked or replaced by a qualified electrician.</td>
</tr>
<tr>
<td>&quot;Poly fill level min.&quot; or &quot;Iso fill level min&quot;</td>
<td>Fill level too low</td>
<td>Refill</td>
</tr>
<tr>
<td></td>
<td>Fill quantities or fill level limits set incorrectly</td>
<td>Check settings and set correctly as required</td>
</tr>
<tr>
<td>&quot;Oil level min.&quot;</td>
<td>Too little oil in the oil reservoir</td>
<td>Refill oil</td>
</tr>
<tr>
<td>&quot;Oil temperature max.&quot;</td>
<td>Oil temperature in the oil reservoir too high</td>
<td>Let cool off Possibly place machine in the shade Ensure cooling</td>
</tr>
<tr>
<td>&quot;Iso temperature sensor&quot; or &quot;Poly temperature sensor&quot;</td>
<td>Cable damaged or sensor defective.</td>
<td>Repair cable or replace sensor.</td>
</tr>
</tbody>
</table>

After each elimination of a fault, the reset button must be pushed. You will arrive back at the menu that was last active before the fault. If the machine has switched off, it can be started by pushing the green "ON" button.
9 Technical data

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

9.1 Machine card

The machine card contains all important and safety-relevant data and information regarding your machine:
➤ precise designation and manufacturer's data,
➤ technical data and limit values,
➤ equipment and test confirmation,
➤ procurement data,
➤ machine identification (machine components and accessories supplied with article and spare parts numbers),
➤ a list of the supplied documentation.

9.2 Type plates

The type plate for the machine is located on the side on the frame. It contains the most important technical data for the machine:
➤ the device type,
➤ the output of the proportioning pump per double stroke,
➤ the pressure ratio,
➤ the maximum permissible air inlet pressure and working pressure,
➤ the maximum permissible material processing temperature and
➤ the year of manufacture.

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

Furthermore, some machine components have a separate type plate, such as e.g. the control cabinet.

This type plate is located on the side on the control cabinet.

Before connecting the machine to the power supply, check whether the electrical data specified on the type plate on the control cabinet corresponds to that at the operation site.
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