Working Instructions
Translation
Heating element butt welding machine

WIDOS 4002 S WI CNC®
Identification of product

<table>
<thead>
<tr>
<th>Model:</th>
<th>Workshop machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type:</td>
<td>WIDOS 4002 S WI-CNC®</td>
</tr>
<tr>
<td>Serial number, year of construction:</td>
<td>see type plate</td>
</tr>
</tbody>
</table>

**Customer entries**

<table>
<thead>
<tr>
<th>Inventory-no.:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td></td>
</tr>
</tbody>
</table>

**Order of spare parts and after sales service:**

**Manufacturer’s address**

WIDOS
Wilhelm Dommer Söhne GmbH
Einsteinstr. 5
D -71254 Ditzingen

Phone: +49 (0) 71 52 99 39 0
Fax: +49 (0) 71 52 99 39 40
E-Mail: info@widos.de
Introduction

Purpose of the document

These working instructions give you information about all important questions which refer to the construction and the safe working of your machine. Just as we are, you are obliged to engage in these working instructions, as well. Not only to run your machine economically but also to avoid damages and injuries. Should questions arise, contact our advisers in the factory or in our subsidiary companies. We will help you with pleasure.

According to our interest in making our products and working instructions continuously better, we kindly ask you to inform us about problems and defects which occur in exercise. Thank you.

Structure of the working instructions

The working instructions are arranged in chapters, which belong to the different using phases of the machine. Therefore the searched information can be found easily.
1. DESCRIPTION OF PRODUCT ................................................................. 7
  1.1. Usage and purpose-oriented use ................................................. 7
  1.2. Safety measures .................................................................... 7
  1.3. Conformity ............................................................................ 7
  1.4. Marking of the product ............................................................. 8
    1.4.1. Technical data ................................................................ 8
      1.4.1.1. WIDOS 4002 S WI-CNC General data ..................... 8
      1.4.1.2. Basic machine ............................................................... 8
      1.4.1.3. Heating element .......................................................... 9
      1.4.1.4. Planer ........................................................................ 9
      1.4.1.5. 3-zone heating element (optional) ............................. 9
  1.5. Tools and accessories ............................................................... 9

2. SAFETY RULES ................................................................. 10
  2.1. Explanation of the different symbols ...................................... 10
  2.2. Obligations of the owner ....................................................... 11
  2.3. Obligations of the worker ...................................................... 11
  2.4. Measures of organization ..................................................... 11
  2.5. Information about safety precautions .................................... 11
  2.6. Instructions for the staff ......................................................... 11
  2.7. Maintenance and inspection, repair ...................................... 12
  2.8. Dangers while handling the machine ..................................... 12
  2.9. Dangers due to electrical energy .......................................... 12
  2.10. Dangers due to the pneumatic ............................................. 12
  2.11. Special dangers ................................................................. 13
    2.11.1. Danger of combustion at the heating element and at the welding area 13
    2.11.2. Danger of crushing by clamping tools and guide rods ........ 13
    2.11.3. Danger of catching clothes by the planer ....................... 13
    2.11.4. Danger of stumbling over pneumatic and electric cables .... 13
    2.11.5. Risk of injury by noise ................................................... 13
  2.12. Warranty and liability .......................................................... 14

3. DESCRIPTION OF PROCESS ........................................... 15

4. OPERATING AND INDICATING ELEMENTS ......................... 16
  4.1. Elements on the front side ..................................................... 16
  4.2. Elements on the right side .................................................... 17
    4.2.1. Main switch ................................................................. 17
    4.2.2. Service unit ................................................................. 17
  4.3. Pneumatic components on the machine ............................. 18
## Contents

4.4. Socket at the machine (at the front) ................................................................. 19
4.5. Elements at the heating element ................................................................. 19

5. **STARTING AND OPERATING** ............................................................. 20

5.1. Starting ........................................................................................................ 20
5.2. Separating claws ......................................................................................... 20
5.3. Description of the display .......................................................................... 21
  5.3.1. Emergency-stop .................................................................................. 21
5.4. Buttons on the touch screen ..................................................................... 22
  5.4.1. Small symbol buttons ....................................................................... 22
  5.4.2. Large symbol buttons ..................................................................... 23
5.5. Accessories for reading data in and out (option) .................................... 24
  5.5.1. Legitimacy cards .............................................................................. 24
  5.5.2. Bar code scanner ............................................................................. 24
  5.5.3. SD card and drive .......................................................................... 24
  5.5.4. Read out WICON with USB flash drive ........................................... 25
5.6. Switching the WI–CNC® 1.1 / 1.3 on ....................................................... 26
  5.6.1. Select machine type with digital way-measuring device ................. 27
  5.6.2. Define dimension .......................................................................... 29
  5.6.3. Specialties for welding standard >LAB< ....................................... 31
  5.6.4. How to enter further settings like traceability, ½ cooling time or RAM > USB .......................................................... 35
      5.6.4.1. How to set date, time, buzzer and language ......................... 36
5.7. Welding with the WI–CNC® 1.1 - 1.3 ...................................................... 38
  5.7.1. Copy internal data onto SD card and delete internal data (RAM) ........... 50
5.8. Setting the welding angle ......................................................................... 52
  5.8.1. Welding of T-piece 90° .................................................................... 52
  5.8.2. Drillings at the table ....................................................................... 53

6. **EQUIPMENT CARE / MAINTENANCE / REPAIR** ............................ 54

6.1. Maintenance and inspection, repair ......................................................... 54
6.2. How to clean the operator panel (touch screen) .................................... 54
6.3. Fuses in the switch cabinet ..................................................................... 55
6.4. Safety switch and end switch at the machine ....................................... 55
6.5. Clamping elements .................................................................................. 56
6.6. Planer ......................................................................................................... 56
6.7. Storage ....................................................................................................... 56
6.8. Disposal ...................................................................................................... 56

7. **TRANSPORT** ....................................................................................... 57

7.1. WI-CNC® 1.1 / 1.3 .................................................................................. 57
7.2. 4002 S CNC .......................................................................................... 57
8. ELECTRIC AND PNEUMATIC DIAGRAMS .......................................................... 58
  8.1. Pneumatic diagram ..................................................................................... 58
  8.2. Electric diagrams for 4002 S WI-CNC® ....................................................... 59

9. SPARE PARTS LIST .......................................................................................... 85

10. DECLARATION OF CONFORMITY .................................................................. 86
1. Description of product

This chapter gives important basic information about the product and its prescribed use. All technical details of the machine are put together as a general arrangement.

1.1. Usage and purpose-oriented use

The WIDOS 4002 S WI-CNC is a workshop machine and especially designed for the heating element butt welding of plastic pipes and fittings from \( \varnothing = 90 \) up to 315 mm (Standard-\( \varnothing \): 90 / 110 / 125 / 140 / 160 / 180 / 200 / 225 / 250 / 280 / 315 mm).

The machine is screwed tightly on a steel pipe frame in the correct working height and has a movable machine slide (left-hand) and 2 (optional 4) clamping tools. For the compensation of diameter tolerances, the right table half is movable crosswise to the working direction.

For the fabrication of segmented bends, both clamping tools are swiveling up to 15° each.

All use going beyond is not prescribed.

The manufacturer is not responsible for damages caused by misuse.

The risk is held only by the user.

Also part of the appropriate usage are

- following all indications of the working instructions and
- performing the inspection and maintenance works.

1.2. Safety measures

At incorrect usage of the machine, incorrect operation or incorrect maintenance, the machine itself or products being around can be damaged or destroyed.

Persons in the dangerous zone may be injured.

For that reason, these working instructions have to be read thoroughly and the according safety rules have absolutely to be followed.

1.3. Conformity

The machine corresponds in its construction to the valid recommendations of the European Community as well as to the according European standard specifications.

The development, manufacturing and mounting of the machine were made very carefully.
1.4. Marking of the product

The product is marked by a type-plate at the basic machine. It contains the machine type, the serial number and the year of construction.

1.4.1. Technical data

All important technical data of the singular components are mentioned. This allows a quickly information about the capacity and the structure.

1.4.1.1. WIDOS 4002 S WI-CNC  General data

<table>
<thead>
<tr>
<th>Material:</th>
<th>PP, PE, PVC, C-PVC, PVDF,</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipe dimension:</td>
<td>Outside-(\varnothing) = 90 - 315</td>
</tr>
<tr>
<td>Voltage:</td>
<td>400 V / 3 Ph</td>
</tr>
<tr>
<td>Frequency:</td>
<td>50 Hz / 60 Hz</td>
</tr>
<tr>
<td>Power:</td>
<td>5,8 kVA</td>
</tr>
<tr>
<td>Wires cross section:</td>
<td>1,5 mm(^2)</td>
</tr>
<tr>
<td>Max. working pressure</td>
<td>8 bar</td>
</tr>
<tr>
<td>Weight, without reducer inserts and packing):</td>
<td>325 kg</td>
</tr>
<tr>
<td>Dimensions: (width x depth x height)</td>
<td>1000 x 1500 x 1300 mm</td>
</tr>
<tr>
<td>1000 x 1600 x 1400 mm (with conversion kit)</td>
<td></td>
</tr>
<tr>
<td>Emissions</td>
<td>- The sound pressure level during planing is below 80 dB (A)</td>
</tr>
<tr>
<td></td>
<td>- In case of use of the prescribed plastics and if the work is performed within the temperature range up to 260 °C / 500 °F, no toxic fumes will be generated.</td>
</tr>
<tr>
<td>Environmental conditions in the welding area</td>
<td>- Be aware of cleanliness (no dust at the welding spot)</td>
</tr>
<tr>
<td></td>
<td>- If secured by appropriate measures that allowed conditions for welding are indicated, it is possible – insofar as the welder is not handicapped in his skills - to work at any outside.</td>
</tr>
<tr>
<td></td>
<td>- protect from moisture influence</td>
</tr>
<tr>
<td></td>
<td>- avoid strong sun radiation</td>
</tr>
<tr>
<td></td>
<td>- protect from strong wind</td>
</tr>
<tr>
<td></td>
<td>- attention when swiveling out the heating element</td>
</tr>
</tbody>
</table>

1.4.1.2. Basic machine

<table>
<thead>
<tr>
<th>Frame material:</th>
<th>Construction steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servo motor:</td>
<td></td>
</tr>
<tr>
<td>Power:</td>
<td>2,89 kW</td>
</tr>
<tr>
<td>Voltage:</td>
<td>400 V (± 10 %)</td>
</tr>
<tr>
<td>Amperage:</td>
<td>6,3 A</td>
</tr>
<tr>
<td>Frequency:</td>
<td>50 Hz / 60 Hz</td>
</tr>
<tr>
<td>Type of protection:</td>
<td>IP 55</td>
</tr>
<tr>
<td>Engine revolution:</td>
<td>4000 (U/min)</td>
</tr>
<tr>
<td>Driving torque:</td>
<td>max. 8,2 Nm</td>
</tr>
</tbody>
</table>
1.4.1.3. Heating element

<table>
<thead>
<tr>
<th>Power</th>
<th>3,5 kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage:</td>
<td>400 V (± 10 %) / 3 Ph</td>
</tr>
<tr>
<td>Amperage per phase:</td>
<td>15,2 A (± 10 %)</td>
</tr>
<tr>
<td>Frequency:</td>
<td>50 Hz / 60 Hz</td>
</tr>
<tr>
<td>Surface:</td>
<td>anti-stick coated</td>
</tr>
</tbody>
</table>

1.4.1.4. Planer

<table>
<thead>
<tr>
<th>Motor:</th>
<th>Three-phase universal motor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power:</td>
<td>0,37 kW</td>
</tr>
<tr>
<td>Voltage:</td>
<td>400 V (± 10 %) / 3 Ph</td>
</tr>
<tr>
<td>Amperage:</td>
<td>1,02 A</td>
</tr>
<tr>
<td>Frequency:</td>
<td>50 Hz / 60 Hz (± 10 %)</td>
</tr>
</tbody>
</table>

1.4.1.5. 3-zone heating element (optional)

<table>
<thead>
<tr>
<th>Power:</th>
<th>3,8 kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage:</td>
<td>400 V (± 10 %) / 3 Ph</td>
</tr>
<tr>
<td>Amperage per phase:</td>
<td>16,6 A (± 10 %)</td>
</tr>
<tr>
<td>Frequency:</td>
<td>50 Hz / 60 Hz</td>
</tr>
<tr>
<td>Surface:</td>
<td>anti-stick coated</td>
</tr>
</tbody>
</table>

1.5. Tools and accessories

The following tools and accessories are part of the first delivery:

<table>
<thead>
<tr>
<th>1</th>
<th>Key for switch cabinet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ring/fork wrench size SW 19</td>
</tr>
<tr>
<td>1</td>
<td>Tubular hexagon box wrench size 27</td>
</tr>
<tr>
<td>each 1</td>
<td>Allen key with T-grip size 4; 5; 6</td>
</tr>
<tr>
<td>each 1</td>
<td>Allen key bent size 3; 6; 7; 8</td>
</tr>
</tbody>
</table>

Order numbers and singular components on request at the WIDOS company.

The following optional accessories are available on request:

- Program WICON for reading out the data (possibility of displaying included in USB stick)
2. Safety rules

The basic condition for the safety conscious handling and the fault free operation of this machine is the knowledge of the basic safety advises and rules.

- These working instructions contain the most important indications for running the machine according to the safety regulations.
- The safety indications need to be followed by all persons working on the machine.

2.1. Explanation of the different symbols

The following denominations and symbols indicating dangers are used in the working instructions:

This symbol signifies a possible endangering for the life and the health of persons.
- Not following these indications may conduct to severe consequences for health.

This symbol means a potential dangerous situation.
- Not following these indications may conduct to slight injuries or damages on goods.

This symbol means a possible dangerous situation due to hot surfaces.
- The non-respect of these indications may conduct to heavy burns, respectively to self-ignition or even fire.

This symbol means a possible dangerous situation by moving parts of the machine
- The disrespect of these indications may cause heavy crushing of parts of the body resp. damages of parts of the machine.

This symbol means a possible risk of injury by noises exceeding 80 dB (A).
- Ear protection is obligatory

This symbol gives the most important indications for the appropriate handling of the machine.
- Not following these indications may conduct to disturbances and damages on the machine or items in the surrounding.

Under this symbol you will get tips and particularly important information.
- This shall help you to use all functions of the machine in an optimal way and makes the work easier for you.

The accident prevention measures are valid (UVV).
2.2. Obligations of the owner

The owner is obliged only to let persons work at the machine, who

- know about basic safety and accident prevention rules and are instructed in the handling of the machine, as well as who
- have read and understood the safety chapter of this manual and certify this by their signature.

*The safety-conscious working of the staff has to be checked in regular intervals.*

2.3. Obligations of the worker

All persons who are to work at the machine are obliged before working:

- To follow the basic safety and accident protection rules;
- To have read and understood the safety chapter and the warnings in this manual and to confirm by their signature that they have well understood them;
- To inform themselves about the functions of the machine before using it.

2.4. Measures of organization

- All equipment required for personal safety is to be provided by the owner.
- All available safety equipment is to be inspected regularly.

2.5. Information about safety precautions

The working instructions have to be permanently kept at the place of use of the machine. They are to be at the operator’s disposal at any time and without effort.

In addition to the manual, the common valid and the local accident protection rules and regulations for the environmental protection must be available and followed.

All safety and danger indications on the machine have to be in a clear readable condition.

Every time the machine changes hands or is being rent to third persons, the working instructions are to be sent along with and their importance is to be emphasized.

2.6. Instructions for the staff

- It must be clearly defined who is responsible for transport, mounting and dismounting, starting the operation, setting and tooling, operation, maintenance and inspection, repair and dismounting.
- Only skilled and trained persons are allowed to work at the machine.
- A person who is being trained may only work at the machine under supervision of an experienced person.
2.7. Maintenance and inspection, repair

All maintenance and repair work are to be basically performed with the machine in off-position.
During this, the machine has to be secured against unintended switching on.

Prescribed maintenance and inspection work have to be performed in time.
The DVS recommends inspection work after 1 year.
For machines with a specially high usage percentage, the inspection cycle should be shortened.
The work must be performed at the WIDOS GmbH company or by an authorized partner.

2.8. Dangers while handling the machine

The machine WIDOS 4002 S WI-CNC is constructed according to the latest technical standard and the acknowledged technical safety rules.
However, dangers for the operator or other persons standing nearby may occur. Also material damages are possible.
The machine may only be used in safety-technical impeccable status.

- Disturbances which may affect the safety of the machine must be cleared immediately.

2.9. Dangers due to electrical energy

Works on the electric parts may only be performed by skilled workers.

- The electric equipment of the machine is to be checked regularly.
  Loose connections and damaged cables are to be replaced immediately.
- If works on conductive parts are necessary, a second person is required who may switch the power off in case of emergency.
- The machine is to be protected from rain and dropping water.

2.10. Dangers due to the pneumatic

Pressure lines have to be depressurized before any kind of repair.
There is a particular danger for the eyes due to compressed air emerging suddenly.

- Replace defective pneumatic hoses immediately.
- Make a visual inspection of the pneumatic lines before beginning to weld.
2.11. Special dangers

2.11.1. Danger of combustion at the heating element and at the welding area

You may burn parts of the body and inflammable materials may ignite!
The heating element is heated up to a temperature of more than 200° C / 392 °F!

- Do not touch the surface of the heating element.
- Do not leave the heating element unattended.
- Keep enough safety distance to inflammable materials.
- Do wear safety gloves.
- Switch off the heating element after use.

2.11.2. Danger of crushing by clamping tools and guide rods

Heavy injuries by squeezing may occur between the two inner clamping tools.

- Do not put hands between the clamped pipe ends.
- Do not put hands or step between the inner clamping tools with pipes not yet clamped.
- Do not touch the guide bar of the support.
- Do not stop at opening or closing the machine.

2.11.3. Danger of catching clothes by the planer

You can cut yourself or even get bones broken!

- Do wear clothes tight to the body.
- Do not touch the face of the planer.

2.11.4. Danger of stumbling over pneumatic and electric cables

Take care that no person has to step over cables.
Lay the cables in such a manner that the danger is minimized.

2.11.5. Risk of injury by noise

Noise exceeding 80 dB (A) may occur; during planing it is obligatory to wear ear protection!
2.12. Warranty and liability

Basically, our “General Terms of sale and delivery” are valid. They are at the owner’s disposal latest at conclusion of the contract. Guarantee and liability demands referring to personal injuries or damages on objects are excluded if they are caused by one or several of the following reasons:

- Not using the machine according to the prescriptions.
- Unsuitable transport, mounting, starting, operating and maintenance of the machine.
- Operating the machine without or with not correctly fixed safety devices.
- Not following the indications of the working instructions.
- Unauthorized structural modifications on the machine.
- Unsatisfactory inspection of machine parts which are subject to wearing.
- Unsatisfactory performed repairs.
- In case of catastrophes through action of an external body or actions of God.
3. Description of process

Basically, the international and national process guidelines are to be followed!

At first, the clamping tools are mounted on the slide.

For welding angles and bends, the clamping tools can be turned on both sides.

The plastic pipes are clamped by means of the clamping tools.

Then the front sides of the pipes are planed parallel and the misalignment of the pipes is checked.

Now the heating element is swiveled in and the pipes are pressed against the heating element under defined adjusting pressure (this process is called "bead up time").

After the prescribed bead height being reached, pressure is reduced, the heat up time begins.

The function of this time is to heat the pipe ends up to welding temperature.

After expiration of the heat up time, the slide is opened, the heating element is removed quickly and the pipes are closed again hydraulically.

The time gap from the removal of the heating element to joining the pipes is called change over time.

The pipes are joined under prescribed welding pressure and then cool down under pressure (cooling time).

The welded joint can be unclamped, the welding process is finished.

Heating element heats the pipes up to welding temperature.

welded pipe with internal and external bead
4. Operating and indicating elements

4.1. Elements on the front side

<table>
<thead>
<tr>
<th>No.</th>
<th>Denomination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Heating element</td>
</tr>
<tr>
<td>2</td>
<td>Planer</td>
</tr>
<tr>
<td>3</td>
<td>Protective enclosure</td>
</tr>
<tr>
<td>4</td>
<td>Support angle and pipe bracket (option)</td>
</tr>
<tr>
<td>5</td>
<td>Switch cabinet with fuses etc.</td>
</tr>
<tr>
<td>6</td>
<td>Clamping tools</td>
</tr>
<tr>
<td>7</td>
<td>WI CNC with emergency-stop and USB connection</td>
</tr>
<tr>
<td>8</td>
<td>Heating element handle, here placed at the safety switch</td>
</tr>
<tr>
<td>9</td>
<td>Swinging WI-CNC with emergency-stop and USB connection (NEW replacing no. 7)</td>
</tr>
</tbody>
</table>
4.2. Elements on the right side

<table>
<thead>
<tr>
<th>No.</th>
<th>Denomination</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Main switch</td>
</tr>
<tr>
<td>11</td>
<td>Electric connecting cable</td>
</tr>
<tr>
<td>12</td>
<td>Service unit with pressure gauge (pneumatic)</td>
</tr>
<tr>
<td>13</td>
<td>Plug for compressed air hose, connection with local compressed air supply (not included in delivery)</td>
</tr>
<tr>
<td>14</td>
<td>Manual outlet for condensed water</td>
</tr>
</tbody>
</table>

4.2.1. Main switch

You activate and shut the machine off with the main switch.

Shut the machine off during all work within the machine and secure the machine against unintentional activation.

4.2.2. Service unit

The service unit (LFR-1/8-D-7-MINI) adjusts the incoming compressed air to the set working pressure and compensates fluctuations in pressure. It frees the compressed air of dirt and condensation water. The use with any other fluid (liquid or gas) is a misapplication.

Adjusting the regulator:
- Slowly pressurize the complete system.
- Pull the pressure setting button upwards (away from the housing).
- Turn the pressure setting button until the desired pressure is shown on the manometer. The input pressure must be at least 1 bar higher than the output pressure.
- Press the pressure setting button downwards (towards the housing) to secure it against unintentional turning.
4.3. Pneumatic components on the machine

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Benennung</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>QM21</td>
</tr>
<tr>
<td></td>
<td>Pneumatic valve for: heating element move out of machine</td>
</tr>
</tbody>
</table>

Safety switch inactive

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Benennung</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>BG21</td>
</tr>
<tr>
<td></td>
<td>Safety switch „release handle heating element“</td>
</tr>
</tbody>
</table>

Safety switch active
(by heating element handle)
4.4. **Socket at the machine (at the front)**

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Benennung</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>XZ20</td>
</tr>
</tbody>
</table>

4.5. **Elements at the heating element**

- **Standard heating element**
- **3–zone heating element (optional)**

There are 3 different states:
- **illuminating:** only interrupted by short switch-off pulses: the heating element is being heated up, the desired temperature is not yet reached. The desired and the actual temperature are displayed alternating on the display of the control.
- **blinking:** the temperature of the heating element is maintained by a pulse-position ratio.
- **off:** the desired temperature has been exceeded, the heating element is cooled automatically onto desired temperature, or the heating element is switched off.
5. Starting and operating

The indications of this chapter are supposed to instruct you in the operation of the machine and to lead you during the skilled starting of the machine.

This includes:

- the safe operation of the machine
- using all possibilities
- economic operation of the machine

5.1. Starting

The machine may only be operated by skilled and authorized persons.

A plastic welder exam according to DVS and DVGW can be taken for the qualification.

In dangerous situations for man, workpiece or machine immediately push the emergency-stop or shut the machine off at the main switch.

Connect the mains plug with the local mains supply 400V / 3 Ph / 6,1 kVA / 50 Hz, right-handed rotary field.

**Necesarily** arrange the machine horizontally.

Plug the service unit at the right machine side to the local compressed air supply (6 – 8 bar) by means of an compressed air hose.

After switching on the machine, check the phase-sequence. For that purpose switch on the planer (with diagnosis no. 0003) and check if it is turning in the right direction, otherwise change direction by changing the phases.

5.2. Separating claws

Take care that the separating bracket of the heating element is swinging between both separating claws.
5.3. Description of the display

<table>
<thead>
<tr>
<th>No.</th>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Emergency-stop</td>
<td>The Emergency-Stop push button snaps in when it is operated. After elimination of the danger, it must be unlocked again by turning it in direction of the arrow. <strong>Attention:</strong> Heating element is not switched off!</td>
</tr>
</tbody>
</table>
| 2   | Display       | Touch screen for: 
- selecting dimensions and different functions of welding cycles
- carrying out welding functions |

5.3.1. Emergency-stop

When pushing the emergency-stop push button on the control panel, the working process can be interrupted if the workpiece, tools or persons are endangered by the working pressure.

The emergency-stop push button snaps when it is operated. The display then shows:

Display:
2nd line: **emergency stop**

After elimination of the danger, the Emergency-stop push button must be unlocked again by turning it anticlockwise direction. Then the tables can be opened and closed again with buttons $$<>$$ and $$<->$$.

To return into normal operation, the machine must be switched off and on again over the main switch.

If the Emergency-Stop push button is pressed when the heating element is moved in, there is the danger of being burnt. The heating element cools down very slowly.
5.4. Buttons on the touch screen

Three variations are possible:

**Dark button**: button inactive, cannot be pressed

**Light button**: button active, for manual working step

**Light, animated button**: advice for next working step

5.4.1. Small symbol buttons

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abort</td>
<td>Forward with: (INSERT PIPES CLEANING)</td>
</tr>
<tr>
<td>Manual driving apart</td>
<td>No (red)</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Parameter</td>
</tr>
<tr>
<td>Welding standard</td>
<td>Plus</td>
</tr>
<tr>
<td>Information</td>
<td>Verifying off</td>
</tr>
<tr>
<td>Yes (green)</td>
<td>Verifying on (black)</td>
</tr>
<tr>
<td>Copy</td>
<td>Identify carriage automatically, (option, with digital way measuring system)</td>
</tr>
<tr>
<td>blank</td>
<td>backwards</td>
</tr>
<tr>
<td>Minus</td>
<td>Manual driving together</td>
</tr>
<tr>
<td>Next construction stage</td>
<td>Check oil level</td>
</tr>
<tr>
<td>Next</td>
<td></td>
</tr>
</tbody>
</table>
### 5.4.2. Large symbol buttons

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling</td>
<td>Button (colored) active</td>
</tr>
<tr>
<td>Bead-up</td>
<td>Button (black) inactive</td>
</tr>
<tr>
<td>Heat-up</td>
<td>Weld no.</td>
</tr>
<tr>
<td>Driving apart</td>
<td>OK (green)</td>
</tr>
<tr>
<td>Unclamping</td>
<td>Not OK (red)</td>
</tr>
<tr>
<td>Initial position</td>
<td>Select parameters</td>
</tr>
<tr>
<td>Drag pressure measuring</td>
<td>Ramp, pressure built-up</td>
</tr>
<tr>
<td>Check (black)</td>
<td>Start</td>
</tr>
<tr>
<td>Insert heating element</td>
<td>Change-over</td>
</tr>
<tr>
<td>Check heating temperature</td>
<td>Check mismatch</td>
</tr>
<tr>
<td>Turn planer</td>
<td>Pressure build-up – please check if pipes are slipping through</td>
</tr>
<tr>
<td>Insert planer</td>
<td></td>
</tr>
</tbody>
</table>

07.05.19 Working instructions WIDOS 4002 S WI CNC Page 23 of 86
5.5. Accessories for reading data in and out (option)

5.5.1. Legitimacy cards

There are 3 different types of cards which are accepted by the card reader:

1. With each supplied machine a **general legitimacy card** (5 pieces) is basically supplied with. It is of white color and gives the legitimating to operate all functions (including special functions).

2. **Pipe data card**: on this card all dimensions of a pipe are memorized (parameters are stored in the control unit). For ordering the card, the pipe diameter, the pipe wall thickness and the material should be specified.

3. Optionally, a **gas legitimacy card** (yellow) can be supplied. With this card, no changes can be made in the system. The computer will ask automatically for a **pipe data card** for setting the pipe data.
   - Protect the cards from humidity and dirtiness.
   - Do not bend the cards or expose them to high magnetic fields.
   - The card is not transferable.

5.5.2. Bar code scanner

- For reading the bar code in, put the scanner with the scanning surface vertically over the bar code and press the activation button on the bottom side. Reading in is confirmed with a beep tone.
- Scanner is ready when the scanning surface is glowing red.

5.5.3. SD card and drive

The machine is equipped with a SD card drive. The machine stores the welding data in the internal memory as well as on the SD card if there is one plugged in.

The SD card with 64 MB of memory stores appr. 32,000 weldings.

- The SD card must be formatted by “FAT 16” necessarily before usage.
- Insert the card with its inscription to the top **carefully** and with low force into the reading unit.
- The card can be read out with a WICON program.
- The card may not be bent, opened, overheated and become wet!

Please only use SD cards purchased from WIDOS. We will not be liable for any cards from other manufacturers!
5.5.4. **Read out WICON with USB flash drive**

You may read out the welding data onto a PC by the USB flash drive.

Plug the USB flash drive into the USB interface in your PC.
As soon as the USB flash drive has been plugged, it appears as removable medium in the drive list.
Open the WIDOS folder, there you will find:
- WICON2000 viewer for considering and printing the welding data,
- working instructions for WICON2000 viewer as PDF file.
5.6. Switching the WI – CNC® 1.1 / 1.3 on

Actuate the main switch at the WI – CNC® 1.1 / 1.3 and (chapter: Fehler! Verweisquelle konnte nicht gefunden werden., No.: 3). As soon as the switch is activated, the display illuminates (the computer is being initialized).

Either: Identify with the (optional) scanner and corresponding bar code on the legitimacy card.
Or: Press: < → and enter the 4-digit identifying information with the keypad.
Press < → afterwards.

Enter bar code with the keypad.
Confirm bar code with: < →.
Basic menu:
Indication: currently connected machine type
1030 = free weldings in RAM / max. appr. 32,000 memory space available at USB (or in case of: = no memory available at USB)
Indication: user name (bar code)

In the basic menu you may:
Either: drive the machine into initial position by pressing: .
Or: identify the machine type with: .

5.6.1. Select machine type with digital way-measuring device

Indication: current software version,
Indication: serial number
Indication: validity until next maintenance

Press , the machine identifies automatically.
This error message appears if no way-measuring system is available and no basic machine is connected.

Press: ☐️ in order to identify the machine manually.

Indication: all machine types,
the selected machine type is highlighted.

Confirm the selected machine type with: ☐️.

Indication: currently connected machine type
Indication: free memory space in RAM / on USB device
Indication: user name
5.6.2. Define dimension

Press < =>$ in order to select dimensions.

Image only appears if you press < =>$:

Scroll the text with <$\downarrow$>, it is explained on the screen.

Press < =>$ in order to exit the help menu
Select material with <➕/➖>: PE / PP / SLM30 or lab material.
Select pipe outer diameter with <➕/➖>.
Select wall thickness with <➕/➖>, the current SDR value appears automatically.
Temperature is indicated according to DVS specification, cannot be changed.
Select welding method with <DVS>: DVS / NEN / LAB you want to weld with.

Indication: welding standard possibilities, the selected welding standard is highlighted.

Confirm welding standard with <➕>.

Either: Confirm selected welding standard with <➕>.
Or: Press <➕> and select another welding standard.
Either: Confirm settings with <\>.
Or: Press <\> for further settings.

5.6.3. Specialties for welding standard >LAB<

Select lab material with <\>/ <>: LAB0 ; LAB1 ;....
Select pipe outside diameter with <\>/ <>.
Select wall thickness with <\>/ <>, the current SDR value appears automatically.
Select temperature with <\>/ <>.
Select welding method with <\>: DVS / NEN / LAB you want to weld with.
Confirm settings with <\>.
Select “edit material name” with < escrita >.
Select pipe outside diameter with < interpolação >.
Select wall thickness with < interpolação >, the current SDR value appears automatically.
Select temperature with < interpolação >.
Select welding method with < DVS >: DVS / NEN / LAB you want to weld with.
Confirm settings with < ok >.

You may change the material name by adapting the entry via keypad.
You may confirm it with < ok > afterwards.

By tapping on each parameter you may change each one especially as you wish.
Indication: change parameters (bead-up)

Select bead-up time with < or >.
Select bead-up pressure with < or >.
Confirm settings with <.

Indication: change parameters (heat-up)

Select heat-up time with < or >.
Select heat-up pressure with < or >.
Confirm settings with <.

Indication: change parameters (change-over)

Select change-over time with < or >.
Confirm settings with <.
Indication: change parameters (cooling 1)

Select cooling time 1 with <↑/↓>.
Select cooling pressure 1 with <↑/↓>.
Confirm settings with <→>.

Indication: change parameters (cooling 2)

Select cooling time 2 with <↑/↓>.
Select cooling pressure 2 with <↑/↓>.
Confirm settings with <→>.
5.6.4. How to enter further settings like traceability, ½ cooling time or RAM > USB

Indication: current dimensions

Press < > for further settings.

Press < > in order to select traceability, button changes to < >.
Press < > in order to select ½ cooling time, button changes to < >.
Press < > in order to copy all existing weldings from RAM to the connected device at the USB interface.
Either: Exit further settings with < >.
Or: Enter diagnosis menu with < >.
Or: Press < > for further settings: time, date and buzzer.
5.6.4.1. How to set date, time, buzzer and language

Press < >

Indication: different languages, by selecting the language it is highlighted

Volume: Tap on the volume bar depending on the volume, the volume bar refreshes, or tap on < > in order to disable the buzzer, button changes to < >.

Language: Tap on the desired language, the language is highlighted.

Time + date: Press < > in order to set time and date.

Indication: date and time

Set day, month and year as well as hour and minute with < >. Confirm it with < >.
Indication: different languages, by selecting the language it is highlighted

Confirm it with ⚪.

Basic menu:
Indication: current machine type
Indication: current date and time
Indication: user name
5.7. Welding with the WI–CNC® 1.1 - 1.3

The WI–CNC® 1.1 - 1.3 is activated (chapter: 5.6), and the basic machine is identified (chapter: 5.6.1 / Fehler! Verweisquelle konnte nicht gefunden werden.).

### Basic menu
- Indication: current machine type
- Indication: current date and time
- Indication: user name

Press ➤ in order to start welding.

In case you have a basic machine without digital way-measuring device, the following error message appears:

Confirm the error message with ✅.

In case you have not driven the basic machine into initial position while activating it, the following error message appears:

Confirm the error message with ✅.
Basic menu:
Indication: current machine type
Indication: current date and time
Indication: user name

Go back with < and drive the machine into initial position, otherwise welding is not possible.

Check dimensions if they match the pipes.
Confirm settings with <.

Check dimensions if they match the pipes.
Confirm settings with <.
Select current weather condition on the left side.
Select protective measure on the right side and carry it out at the machine.

Either: Confirm settings with <.
Or: Confirm settings with <, the last project name and next weld number register automatically. Then continue with: 1 (page: 37).

Indication: current project name – number 1
Indication: current project name

Either: Change indicated project name with the keypad.
Or: Press <, you may select project name – number 2…5 and use or change it if necessary.

Indication: current weld number,
the weld number is stored with relation to the project

You may change the weld number with the keypad, the next welding is counted forward automatically.
Confirm weld number with <.
In case you have connected a heating element with PLC function and if the current temperature has not reach the nominal temperature, the following appears:

Indication: pipe dimension, time + outside temperature (optional)
Indication: nominal temperature (orange) and current temperature (red)

Confirm error message with <✔>.

Indication: pipe dimension, time + outside temperature (optional)
Indication: nominal temperature (orange) and current temperature (red)
You may drive the carriage apart and together with <←→> / <←→>.

As soon as the heating element is heated up to nominal temperature, the following appears:

Indication: pipe dimension, time + outside temperature (optional)
Indication: nominal temperature (orange) and current temperature (red)
You may drive the carriage apart and together with <←→> / <←→>.

Press <✔> (flashing).
This message appears only if the basic machine is not completely driven apart:

Indication: pipe dimension, time + outside temperature (optional)

Indication: nominal pressure: ps, drag pressure: p0, current pressure: pi and current temperature

Press < in order to drive basic machine completely apart.

Fix the pipes in the clamping rings and clean the pipe ends.
Confirm with <.

Press < in order to start drag pressure measuring.
Starting and operating

**Chapter 5**

Indication: pipe dimension, time + outside temperature (optional)

Indication: nominal pressure: ps, drag pressure: p0, current pressure: pi and current temperature

The drag pressure is being measured, afterwards the following appears automatically:

In case you have clamped the pipes too far in, the following appears:

Confirm error message with ✅.

Afterwards release the clamping rings and clamp one or both pipes farther out.

Press 🔄 in order to start drag pressure measuring.
Insert the planer into the machine in-between the pipe ends and let it snap in the front. Press <[button]>, the planer starts rotating as long as you keep it pressed.

Cut pipes ends until a circular chip has formed running around the pipes and <[light bulb]> is flashing. Then release <[button]>.
Indication: pipe dimension, time + outside temperature (optional)
Indication: nominal pressure: ps, drag pressure: p0, current pressure: pi and current temperature

Take the planer out of the machine and put it back into the reception box. Remove the chips created without touching the welding surfaces.

Either: The pipe ends are plane; then press <.Skip> in order to start mismatch checkup; the machine drives the pipes ends together.

Or: The pipe ends are not plane; then reinsert the planer into the basic machine and repeat planing with <.Delete>.

Indication: pipe dimension, time + outside temperature (optional)
Indication: nominal pressure: ps, drag pressure: p0, current pressure: pi and current temperature

Check mismatch at the abutting pipe ends; mismatch must not exceed 10% of the wall thickness according to DVS.

The gap must not exceed 0.5 mm for pipes with OD ≤ 355 mm and 1.0 mm for pipes with OD 400 – 630 mm.

In case mismatch is not correct, you can compensate it by changing the clamping of the pipes; afterwards necessarily repeat planing with: <.Delete>.

In case mismatch is correct, you may:
Either: Continue welding with <.Delete>,
Or: Carry out a test pressure with: in order to check the slipping of the pipes.

Keep pressed; the machine will build up the adjusted pressure. Simultaneously check nominal and current pressure.

Or: The pipes are slipping at a current pressure ≤ nominal pressure; then you must increase the clamping of the pipes and repeat planing with.

This message appears only if machine has a GPS receiver (optional).

Insert the heating element into the machine and confirm it with.
Once bead-up is complete, pressure is reduced and heat-up starts.

The end of the heat-up is signaled by beeps; the following appears:

The machine drives apart.

Either: You remove the heating element from the machine during change-over putting it back into the reception box.
Or: You do not remove the heating element during change-over; then the following appears:

Confirm error message with <✓>; welding is aborted.

Indication: machine type
Indication: date and time
Indication: user name

Once change-over has finished, the machine will drive the pipes together.

Indication: pipe dimension, time + outside temperature (optional)
Indication: nominal pressure: ps, drag pressure: p0, current pressure: pi and current temperature
Indication: elapsed cooling [s]

Indication: pipe dimension, time + outside temperature (optional)
Indication: nominal pressure: ps, drag pressure: p0, current pressure: pi and current temperature
Indication: elapsed cooling 2 [min]
Message appears only if welding is not correct:

- Indication: pipe dimension, time + outside temperature (optional)
- Indication: nominal pressure: \(p_s\), drag pressure: \(p_0\), current pressure: \(p_i\) and current temperature

Error during welding is indicated. Confirm error message with <✓>.

Release the clamping rings and remove the welded pipe from the basic machine. Confirm error message with <✓>.

In case welding is correct, the following appears automatically:

- Indication: pipe dimension, time + outside temperature (optional)
- Indication: nominal pressure: \(p_s\), drag pressure: \(p_0\), current pressure: \(p_i\) and current temperature
- Indication: welding parameters ok

Release the clamping rings and remove the welded pipe from the basic machine. Confirm removal of the welded pipe with <✓>. 
Welding is completed.

5.7.1. Copy internal data onto SD card and delete internal data (RAM)

Connect the USB stick or any other memory medium to one of the USB interfaces (chapter: Fehler! Verweisquelle konnte nicht gefunden werden., no. 4).

Press <esto> for further settings.

Press <esto> in order to copy all existing weldings from the RAM onto the connected device at the USB interface.
In case there is no stick / memory media plugged into the USB interface, the following appears:

Plug stick / memory media into an USB interface and confirm error message with <✓>.

In case no welding is stored in the RAM, the following appears:

Confirm error message with <✓>.

Either: Press <✓> and delete the RAM memory.
Or: Press <☐> and do not delete the RAM memory.
5.8. Setting the welding angle

In order to adjust the angle, first remove screw 3. Detach screws 1 and 2, then turn the clamping tool around the rotary point onto the desired angle. Markings have been fixed to the table for angles \(11.25^\circ\) and \(15^\circ\), other angles must be adjusted by goniometer. Afterwards retighten screws 1 and 2.

5.8.1. Welding of T-piece 90°

T-pieces with 90° (and cross-pieces optional) up to OD = 250 mm can be welded.

The optional available T-piece clamping tools are screwed on with the corresponding adapter plates just as the clamping tools that belong to the standard equipment.
5.8.2. Drillings at the table

- The clamping tool is fixed on one side by means of a centering bolt. It serves as gravity center for a possible angle setting.
- The left clamping tool can be displaced by 20 mm to the left.
- At the slotted hole on the clamping tool, any angles from 0-15° can be adjusted. For the exact setting of 11.25° and 15°, figure stamps are existing.
6. Equipment care / maintenance / repair

Goal of the chapter is:
- Keeping the nominal state and the operation capacity of the apparatus.
- Increasing the efficiency by avoiding non-planned outage.
- Efficient planning of the maintenance work and the maintenance tools.

6.1. Maintenance and inspection, repair

All maintenance and repair work is to be carried out generally at a shut-off machine. The machine must be thus secured against unintentional activation.

Prescribed maintenance and inspection work should be performed in time. The DVS gives the advice of inspection work after 1 year.

Validity of the current maintenance will be indicated on the screen after activation:

The work should be performed at the WIDOS GmbH company or by an authorized partner.

- The operating staff has to be informed before the starting of the maintenance work.
- Check the tightness of all screwed connections.
- Check the function of the safety devices after completion of the maintenance work.

6.2. How to clean the operator panel (touch screen)

Clean the operator panel regularly and proceed as follows:
- Activate the machine.
- Spray some cleaning agent onto the cleaning cloth. Do not spray directly onto the operator panel.
- Clean the operator panel. Wipe the cloth from the edge of the screen to the inside in case you clean the display.

Only clean the operator panel after you have switched it off.
By this, you can be sure not to activate functions unintentionally while touching the keys.

Do not clean the operator panel using compressed air or steam cleaners.
Never use any solvents or abrasives.

Use a wet cleaning cloth with cleaning agent.
As cleaning agents, please only use flush fluid or foaming cleaning agents for photos.
6.3. Fuses in the switch cabinet

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Bezeichnung / Funktion</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC1</td>
<td>Main fuse</td>
</tr>
<tr>
<td>FC2</td>
<td>Fuse control</td>
</tr>
<tr>
<td>QA1</td>
<td>Contactor emergency stop</td>
</tr>
<tr>
<td>QA40</td>
<td>Easy start planer</td>
</tr>
<tr>
<td>KF1</td>
<td>Control emergency stop</td>
</tr>
<tr>
<td>XD01</td>
<td>Feeding</td>
</tr>
<tr>
<td>KF2</td>
<td>Rear panel adapter</td>
</tr>
<tr>
<td>QB1</td>
<td>Main switch</td>
</tr>
<tr>
<td>QA21</td>
<td>Semiconductor relay heating element L1</td>
</tr>
<tr>
<td>QA22</td>
<td>Semiconductor relay heating element L2</td>
</tr>
<tr>
<td>TB11</td>
<td>Servor control table</td>
</tr>
<tr>
<td>TB1</td>
<td>24 V- switch supply unit</td>
</tr>
<tr>
<td>KF106</td>
<td>Servo enable</td>
</tr>
<tr>
<td>FC3</td>
<td>Fuse control unit 24 V</td>
</tr>
</tbody>
</table>

6.4. Safety switch and end switch at the machine

- 1 safety switch: release handle heating element (BG21)
- 1 end switch: reference point table (BG111)

Check end switch and safety switch regularly for correct functioning (and optionally for being soiled).
6.5. Clamping elements

In order to warrant a long service time you should regularly clean and lubricate the threaded spindles and joint pieces for the pipe clamping.

6.6. Planer

- Verify the cutting performance of the planer blades, replace blades if necessary (both-sided sharpening, max. chip thickness = 0.2 mm!)
- Check the tension of the driving chain in the planer from time to time and lubricate the chain, to do it unscrew the planer housing. The chain should be hand-tight.

6.7. Storage

- Store the hydraulic control unit in a dry room.

6.8. Disposal

At the end of their life time, the apparatus and the wear parts have to be disposed of properly and non-polluting, and in accordance with the national laws of waste disposal.
7. Transport

7.1. WI-CNC® 1.1 / 1.3

The transport of the WI-CNC® 1.1 / 1.3 is carried out:

Either: in a transport box together with a WIDOS welding machine.
Or: in a separate transport box.

The transport box is more suitable for longer transports thanks to their compact design.

- Make sure that the device is not tilted too much in order that oil cannot leak out.
- Protect the hydraulic control unit from heavy shocks.
- Make sure that the box cover is closed correctly.

During the construction of the transport box a stress was put on a light-weight construction.

- Take utmost care when using automatic handling and carrying machines.

7.2. 4002 S CNC

- Swing heating element and planer between the shut clamping tools. Protect the front faces of planer and heating element e.g. with cardboard or plastic film.
- Make sure that the machine is not exposed to shocks, especially when being transported with lifting devices etc.
- Handle the machine with care, especially take care of electric cables.
8. Electric and pneumatic diagrams

8.1. Pneumatic diagram

Heizelement

Drosselrückschlagventil
GRLA-1/4-QS-8-RS-B

Normzylinder
DNC-50-160-PPV-A

Magnetventil
MEH-5/2-1/8-P-B

Wartungeinheit
LFR-1/8-D-7-MINI

Zuluft
(6 bar / 700 l/min.)

Pneumatikplan 4002 S CNC
8.2. Electric diagrams for 4002 S WI-CNC®
<table>
<thead>
<tr>
<th>Sheet nr.</th>
<th>Description</th>
<th>Model</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cover sheet</td>
<td>WIDOS 4002 S WI CNC</td>
<td>01.06.20</td>
</tr>
<tr>
<td>2</td>
<td>Table of contents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Control 230V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>CNC-computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Rear-panel adapter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Voltage supply</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Heating element</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Servo control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Servo motors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Control Computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Rear-panel computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Rear-panel computer</td>
<td></td>
<td></td>
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<tr>
<td>13</td>
<td>Rear-panel computer</td>
<td></td>
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<td>16</td>
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<td>17</td>
<td>Rear-panel computer</td>
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<tr>
<td>18</td>
<td>Rear-panel computer</td>
<td></td>
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**Note:** This is a sample of the table from the document. The full table is not visible in the provided image.
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<th>No.</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Notes</th>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>Sensor</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>USB port</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend: Use with written permission.
### Spare Parts List

**Chapter 9**

#### Feeding

- 5.8 kVA
- 400 V
- 50 Hz
- CEE-15A

#### Table

<table>
<thead>
<tr>
<th>Kommission</th>
<th>QID00G</th>
<th>Revision</th>
<th>Datum</th>
<th>Name</th>
<th>Entferne.</th>
<th>Hersteller</th>
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<td>Arzth. Bläter</td>
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<td>09.11.16</td>
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</table>

#### Diagram

- XZ20
- Peco
- Heated element socket
- Top 16A
### Spare Parts List

**Chapter 9**

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Switch</td>
<td>1</td>
</tr>
<tr>
<td>Control Panel</td>
<td>1</td>
</tr>
<tr>
<td>Electrical Encoder</td>
<td>1</td>
</tr>
<tr>
<td>Electrical Wiring</td>
<td>1</td>
</tr>
</tbody>
</table>

**Note:**
- Refer to the instruction manual for further details.
- All parts are subject to availability.

07.05.2019 Working instructions WIDOS 4002 S WI CNC Page 75 of 86
### Spare Parts List

**Chapter 9**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0123.45</td>
<td>Motor</td>
<td>1</td>
</tr>
<tr>
<td>6789.01</td>
<td>Encoder</td>
<td>1</td>
</tr>
<tr>
<td>2345.67</td>
<td>Controller</td>
<td>1</td>
</tr>
</tbody>
</table>

**Note:**
- Please refer to the material conditions for further details.
- Maintenance instructions for specific components are available upon request.
- Quick start guide included in the package.

---

07.05.2019 Working instructions WIDOS 4002 S WI CNC Page 78 of 86

---

**Revision:**
- V1.1

---

**Contact Information:**
- WIDOS GmbH
- Email: support@widos.com
- Phone: +49 1234567890

---

**Important:**
- Always refer to the latest version of the manual.
- Keep this manual in a safe and accessible location.

---

**Spare Parts List:**
- 0123.45 for Model X63.24
- 6789.01 for Interface Connection
- 2345.67 for Controller

---

**Table of Contents:**
- Chapter 9: Spare Parts List
- Table 1: Parts List
- Figure 1: Diagram of Motor Connection

---

**Instructions:**
- Regularly check motor and encoder connections for any signs of wear.
- Ensure controller cables are securely fastened to prevent disconnection.
- Use branded parts only for optimal performance.

---

**Additional Notes:**
- Standard safety precautions must be followed during installation.
- Warranty valid for 12 months from purchase date.
### Spare Parts List

**Chapter 9**

**07.05.2019 Working Instructions WIDOS 4002 S WI CNC Page 80 of 86**

#### Note

- Control emergency stop
- Servo control table

---

<table>
<thead>
<tr>
<th>Component</th>
<th>Location</th>
<th>Connection</th>
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</thead>
<tbody>
<tr>
<td>XT1:14</td>
<td>3.5</td>
<td>1</td>
</tr>
<tr>
<td>XT10:10:1</td>
<td>10.2:2.7</td>
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<tr>
<td>XR1:5</td>
<td>3.6</td>
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**Copy of drawing or only with our written permission allowed.**

---

**Commission 00002**

**Number of sheets 25**

**Date of print 09.11.16**

**Project status 08. Jun. 2015**

---

**WIDOS W 4002 S WI-CNC**

**Packaging number W4002SWI-CNC_2016**

---

**= STRAN**

---

**= LOC**
strip terminal =1\text{INST}+\text{LOC1}×\text{XG3.2}

control emergency stop control emergency stop

\begin{itemize}
  \item \text{KF224} \quad 5.5 \quad 5.5 \quad 1 \quad \text{KF226}
  \item \text{DA1A2} \quad 5.5 \quad 5.5 \quad 2
\end{itemize}

\text{voltage supply output}
### Spare Parts List

**Chapter 9**

<table>
<thead>
<tr>
<th>Note</th>
<th>Serial number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Skip Terminal

**INST + LOC - XG3.3**

<table>
<thead>
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<th>Item</th>
<th>Description</th>
<th>Quantity</th>
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</thead>
<tbody>
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**Control Module**

<table>
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<th>Description</th>
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**Kombinator**

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<th>Kombinator</th>
<th>Description</th>
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<td></td>
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</table>

**Service and Repair**

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<th>Repair</th>
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</tbody>
</table>
### Chapter 9: Working Instructions

**Title:** Spare parts list

**Date:** 07.05.2019

**Document:** WIDOS 4002 S WI CNC

**Page:** 83 of 86

---

#### Table: Spare Parts List

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 1</td>
<td>5</td>
</tr>
<tr>
<td>Part 2</td>
<td>3</td>
</tr>
<tr>
<td>Part 3</td>
<td>7</td>
</tr>
</tbody>
</table>

---

**Note:**

- For emergency stops, refer to the emergency stop section in the manual.
- Check the model name and version for compatibility.
- Replace parts as necessary.

---

**Diagram:**

- Diagram showing the layout of the machine.
- Key parts indicated for easy identification.

---

**Reference:**

- Additional instructions and specifications available in the main manual.
- Contact service department for further assistance.

---

**References:**

- WIDOS 4002 S WI CNC manual.
- Additional technical documentation.

---

**Contact:**

- Service department for any further questions.
- Technical support available online.

---
### Spare parts list

#### Chapter 9

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Plug connection</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Heating element</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Heating element</td>
<td>5</td>
</tr>
<tr>
<td></td>
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<td>4</td>
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<td>8</td>
<td>Heating element</td>
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<td>25</td>
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<tr>
<td></td>
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</tr>
</tbody>
</table>

#### Notes

- Plug connection: `= INST+LOC+1-XZ20`
- Heating element: `= INST+LOC+1-XZ20`
9. Spare parts list

You can access our website and select our spare parts lists via the qr code shown here. Select “4002 S WI-CNC”
10. Declaration of conformity

Issuing the declaration of conformity with regard to complying with the basic requirements and assembling the technical documentation is in the sole responsibility of:

<table>
<thead>
<tr>
<th>Manufacturer / Installation company:</th>
<th>WIDOS Wilhelm Dommer Söhne GmbH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>WIDOS GmbH</td>
</tr>
<tr>
<td></td>
<td>Einsteinstr. 5</td>
</tr>
<tr>
<td></td>
<td>D-71254 Ditzingen</td>
</tr>
</tbody>
</table>

Subject of the present declaration is the following device:

<table>
<thead>
<tr>
<th>Product name:</th>
<th>Heating element butt welding machine</th>
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</thead>
<tbody>
<tr>
<td>Model name:</td>
<td>WIDOS 4002 S WI-CNC</td>
</tr>
<tr>
<td>Machine number:</td>
<td></td>
</tr>
<tr>
<td>Year of construction:</td>
<td></td>
</tr>
</tbody>
</table>

For the stated device we herewith declare that it complies with the **basic requirements** stipulated in the following designated harmonizing regulations:

**in the sense of the EC guideline EC-Machinery Directive 2006/42/EC**

<table>
<thead>
<tr>
<th>Standard</th>
<th>Title</th>
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<tbody>
<tr>
<td>DIN EN ISO 12100</td>
<td>Safety of machines, basic concepts, general layout guidelines</td>
</tr>
<tr>
<td>DIN EN ISO 4413</td>
<td>Safety specifications for fluid technical installations and components</td>
</tr>
<tr>
<td>DIN EN 60555, DIN EN 50082, DIN EN 55014</td>
<td>Electro-magnetic resistance</td>
</tr>
<tr>
<td>DIN EN 60204.1</td>
<td>Electric equipment of industrial machines</td>
</tr>
<tr>
<td>DIN EN 60950</td>
<td>Safety of equipments of the information technology</td>
</tr>
</tbody>
</table>

Entitled to compile the technical documentation:

<table>
<thead>
<tr>
<th>Name:</th>
<th>WIDOS Wilhelm Dommer Söhne GmbH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>Einsteinstr. 5</td>
</tr>
<tr>
<td></td>
<td>D-71254 Ditzingen</td>
</tr>
</tbody>
</table>

Signed on behalf of the company:

| Name, first name:              | Dommer, Martin                                                        |
| Function:                      | Technical director                                                    |

Heimerdingen, 07.05.2019

Place / Date                | Legally binding signature
This declaration is to certify the compliance with the mentioned harmonizing regulations, however does not include any assurance of properties.