Working Instructions
Translation

Heating Element-Butt Welding Machine

WIDOS MINIPLAST 2 / T-Piece

Keep for further use!
### Identification of Product

<table>
<thead>
<tr>
<th>Type:</th>
<th>WIDOS MINIPLAST 2 / T-Piece</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial number / year:</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>

### Address of manufacturer

**WIDOS**  
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D-71254 Ditzingen  

Phone: +49 7152 9939 0  
Fax: +49 7152 9939 40
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 to continuously improve our products and working instructions, we kindly ask you to inform us about problems and defects which occur in exercise.

Thank you.

Structure of the working instructions

This manual is arranged in chapters, which belong to the different using phases of the machine. Therefore the searched information can be easily found.
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<td>34</td>
</tr>
</tbody>
</table>
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. Application and prescribed use

The WIDOS MINIPLAST 2 / T-Piece is made for heating element butt welding of pipes and fittings made out of PE, PP and PVDF with a diameter range of $\varnothing = 20\:\text{mm} - 110\:\text{mm}$ (T-piece up to OD 90 mm).
The basic clamping tools can be swivelled up to 45° on each side for the fabrication of T-pieces and segmented bends.
Due to the compact and small construction, the machine can be easily used in the pipe system.
For narrow bends and fittings, small basic clamping tools are available.

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 purpose oriented use is

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

1.2. Overview

<table>
<thead>
<tr>
<th>No.</th>
<th>Denomination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Planer</td>
</tr>
<tr>
<td>2</td>
<td>Heating element</td>
</tr>
<tr>
<td>3</td>
<td>Protective box</td>
</tr>
<tr>
<td>4</td>
<td>Table support (optional)</td>
</tr>
<tr>
<td>5</td>
<td>Basic machine</td>
</tr>
</tbody>
</table>
1.3. Dangers while handling the machine

The machine WIDOS MINIPLAST 2 / T-Piece is constructed according to the latest state-of-the-art and the acknowledged technical safety rules. However, dangers for the operator or other persons standing nearby may occur.

The machine is only to be used
• according to the prescription
• in safety technical impeccable status

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

1.4. 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.

1.5. Marking of the product

The product is marked by a type plate on the basic frame.

It contains the type of the machine, the serial number and the year of construction.

1.5.1 Technical data

1.5.1.1 WIDOS MINIPLAST 2 / T-Piece General data

<table>
<thead>
<tr>
<th>Material:</th>
<th>PP, PE, PVDF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipe dimension:</td>
<td>outside-Ø = 20 - 110 mm</td>
</tr>
<tr>
<td>Pipe dimension at T-piece:</td>
<td>outside-Ø = 20 - 90 mm</td>
</tr>
<tr>
<td>Sheet steel carrying case (l x w x h):</td>
<td>710 x 410 x 410 mm</td>
</tr>
<tr>
<td>Total weight (without packing):</td>
<td>30 kg</td>
</tr>
<tr>
<td>Fuse:</td>
<td>10 A</td>
</tr>
<tr>
<td>Wire cross section:</td>
<td>1,5 mm²</td>
</tr>
</tbody>
</table>

Environment

- Keep the workshop clean (no dust at the welding area)
- If secured by an appropriate measurement that allowed conditions for welding are indicated, it is possible to work in any outside temperature condition as far as the welder is not constrained in its manual skill
- avoid humidity if need be use a tent
- avoid strong sun beams
- if it is windy shut the pipe ends.
Emissions:

- Noise exceeding 80 dB (A) may occur; during planing it is obligatory to wear ear protection!
- When using the named pipe materials and when welding below 260 °C (500 °F) no toxicant damp arises.

### 1.5.1.2 Heating element

<table>
<thead>
<tr>
<th>Power:</th>
<th>500 Watt</th>
<th>500 Watt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage:</td>
<td>230 V (± 10 %)</td>
<td>110 V (± 10 %)</td>
</tr>
<tr>
<td>Current:</td>
<td>2.2 A (± 10 %)</td>
<td>4.5 A (± 10 %)</td>
</tr>
<tr>
<td>Frequency:</td>
<td>50 Hz</td>
<td>50 - 60 Hz</td>
</tr>
<tr>
<td>Outside-Ø:</td>
<td>145 mm</td>
<td>145 mm</td>
</tr>
<tr>
<td>Surface:</td>
<td>antisticking coated</td>
<td></td>
</tr>
</tbody>
</table>
| Mounted elements: | - electronic temperature control  
|                 | - control lamp  
|                 | - connecting cable with plug |
| Weight:        | approx. 2 kg |

### 1.5.1.3 Planer

| Weight:        | approx. 2 kg |

### 1.5.1.4 Basic machine with table support

| Material frame and clamping tools: | Aluminium |
| max. force | 600 N |

### 1.5.1.5 Electric planer (optional)

<table>
<thead>
<tr>
<th>Power:</th>
<th>550 W</th>
<th>840 W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage:</td>
<td>230 V (± 10 %)</td>
<td>120 V (± 10 %)</td>
</tr>
<tr>
<td>Current:</td>
<td>2.4 A</td>
<td>7.0 A</td>
</tr>
<tr>
<td>Frequency:</td>
<td>50 Hz</td>
<td>50-60 Hz</td>
</tr>
<tr>
<td>Weight:</td>
<td>on request</td>
<td>on request</td>
</tr>
</tbody>
</table>

See spare parts list for order-numbers and single parts, when ordering, please state the machine number!
1.6. Equipment and accessories:

Following accessories are part of the first delivery:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ring / fork key size 10</td>
</tr>
<tr>
<td>1 each</td>
<td>curved Allan key size 3; 4</td>
</tr>
<tr>
<td>1</td>
<td>Torx-screw driver T10</td>
</tr>
<tr>
<td></td>
<td>screws for reduction inserts, flat-head screws</td>
</tr>
<tr>
<td></td>
<td>for reduction inserts, flat-head screws</td>
</tr>
<tr>
<td></td>
<td>for optional fitting clamping tools</td>
</tr>
<tr>
<td>option</td>
<td>Stub end holder</td>
</tr>
</tbody>
</table>
2. Safety rules

The base for the safe handling and the fault-free operation of this machine is the knowledge of the basic safety indications and rules.

- These working instructions contain the most important indications to run the machine safely.
- The safety indications are to be followed by all persons working on the machine.

2.1. Explanation of the different symbols

In the working instructions the following denominations and signs are used for dangers:

This symbol means a possibly danger for the life and the health of persons.
- The disrespect of these indications may have heavy consequences for the health.

This symbol means a possible dangerous situation.
- The disrespect of these indications may cause slight injuries or damages on goods.

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

This symbol gives important indications for the proper use of the machine.
- The disrespect of these indications may conduct to malfunctions and damages on the machine or on goods in the surrounding.

Under this symbol you get user tips and particularly useful information.
- It is a help for using all the functions on your machine in an optimal way and helps you to make the job easier.

The regulations for the prevention of accidents 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 organisation

- 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 much 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

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

The machine WIDOS Miniplast 2 / T-piece 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
- according to the purpose-oriented use
- in safety technical impeccable status

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

Only skilled persons are allowed to work at electrical appliances.

- The electrical equipment of the machine has to be checked regularly. Loose connections and damaged cables have to be replaced immediately.
- Protect the heating element and planer from rain and dropping water.
- According to VDE 0100, the use on construction sites is only allowed with a power distributor with a FI-safety switch.

2.8. Specific dangers

2.8.1 Danger of combustion by heating element and welding area

You can burn yourself, inflammable materials can be ignited!

The heating element is heated up to more that 250° C (482 °F)!

- Do not leave the heating element unsupervised.
- Do not touch the surfaces of the heating element.
- Take enough safety distance to inflammable materials.
- Do wear safety gloves.
- Make sure that no person is in the swinging area of the heating element.
- When cleaning the hot heating element with detergents (e.g. with PE cleaner) there is the danger of inflammation. For this reason, please take care that the inflammation point is above the actual temperature of the heating element. Do not bring any fire sources (e.g. cigarettes) close thereto.

2.8.2 Danger of stumbling over electric wires

- Make sure that no person must step over the wires of heating element and planer.
2.8.3  Danger of cutting and catching clothes by the planer

You can cut yourself or even get bones broken.

- Only wear clothes tight to the body.
- Do not wear rings or jewellery during the work.
- If necessary, wear a hair-net.
- Do not touch the faces of the planer.
- Take care that no person is standing in the swivelling area of the planer.
- Take care that the planer does not catch your clothes.

2.9.  Structural modifications on the machine

- No modifications, extensions or reconstructions may be made on the machine without permission of the manufacturer.
- Machine parts that are not in perfect condition are to be replaced immediately.
- Only use original WIDOS spare and wear parts.

2.10. Warranty and liability

Fundamentally our "General Sales and Delivery Conditions" are valid. They are at the owner’s disposal latest when signing 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
- inexpert transport, mounting, starting, operating, and maintenance of the machine
- ignoring the information given in this manual
- structural modifications on the machine without permission
- unsatisfactory checking of parts of the machine which are worn out
- repairs performed in an inexpert way
- in case of catastrophes and force majeure.
3. Description of the welding process

_Basically, the international and national guidelines are to be followed._

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

Then the front of the pipes are planed by means of the _planer_ and the pipe mismatch is checked.

Now the heating element is moved in and the pipes are pressed against the heating element under defined adjustment pressure. This process is called _adjusting_.

After the prescribed bead height being reached the pressure is reduced and the _heat up time_ begins. During this period the pipe ends are heated up.

After completion of the heat up time the support moves apart, the heating element should be removed as fast as possible and the pipes are moved together again. The time period between the removal of the heating element and the closing of the pipes is called _change over time_.

The pipes are joined with the prescribed welding pressure and then cool down under pressure (_cooling time_).

The welding joint can be unclamped, the welding process is finished.
4. Operating and indicating elements

4.1. Elements on the basic frame / table support

<table>
<thead>
<tr>
<th>No.</th>
<th>Denomination</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Screws for horizontal offset</td>
<td>- Loosen the screws for moving forward or backward the clamping tool</td>
</tr>
<tr>
<td>7</td>
<td>Hexagon screws (4x)</td>
<td>- Setting the angle (in case of fabrication of segmented bends)</td>
</tr>
<tr>
<td>8</td>
<td>Upper guide bar</td>
<td>- Guidance of the slide</td>
</tr>
<tr>
<td>9</td>
<td>Spindle</td>
<td>- Advance of slide</td>
</tr>
<tr>
<td>10</td>
<td>Tightening nut</td>
<td>- Tightening of the pipes</td>
</tr>
<tr>
<td>11</td>
<td>Screws for vertical offset</td>
<td>- Loosen the screws for moving up or down the clamping tool</td>
</tr>
<tr>
<td>12</td>
<td>Scale</td>
<td>- Display of the applied welding force</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- max. display: 60 kp</td>
</tr>
<tr>
<td>13</td>
<td>Handwheel</td>
<td>- Open / close the slide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- application of adjustment force</td>
</tr>
<tr>
<td>14</td>
<td>Lower guide bar</td>
<td>- Guidance of the slide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Fixing the planer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Support for heating element</td>
</tr>
<tr>
<td>15</td>
<td>Star wheel for basic frame</td>
<td>- Fixing the basic frame onto the table support</td>
</tr>
</tbody>
</table>
4.2. Elements on the heating element and the planer

<table>
<thead>
<tr>
<th>No.</th>
<th>Denomination</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>On - / off switch</td>
<td>- Switching the machine on / off</td>
</tr>
<tr>
<td>17</td>
<td>Knob with slot</td>
<td>- Adjustment temperature of the heating element</td>
</tr>
<tr>
<td>18</td>
<td>Control lamp green</td>
<td>- There are three different states:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>off: the heating element is not being heated up or is cooling down.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>blinking: the temperature of the heating el. is being maintained by</td>
</tr>
<tr>
<td></td>
<td></td>
<td>means of a certain pulse-position ratio.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>on: the heating element is being heated up at the moment. Desired</td>
</tr>
<tr>
<td></td>
<td></td>
<td>temperature has not yet been reached.</td>
</tr>
<tr>
<td>19</td>
<td>Ratchet</td>
<td>- Turning the planer by means of the ratchet</td>
</tr>
<tr>
<td>20</td>
<td>Star grip screw and tin disc</td>
<td>- Attaching the planer at the guidance bar by turning the screw and tin</td>
</tr>
<tr>
<td></td>
<td></td>
<td>disc</td>
</tr>
</tbody>
</table>
4.3. Elements at the electric planer (optional)

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Button on/off</td>
<td>- The button must be pushed for planing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The planer has to be switched off after each planing process</td>
</tr>
<tr>
<td>22</td>
<td>Locking knob</td>
<td>- Keeps the on/off button in position: ON</td>
</tr>
<tr>
<td>23</td>
<td>Star grip screw and tin disc</td>
<td>- Attaching the planer at the guidance bar by turning the screw and tin disc</td>
</tr>
</tbody>
</table>

Be especially cautious, there is the danger of cuttings!
Only activate the planer if it has been placed into the machine and secured by locking tin disc and star grip screw.
4.4. **Clamping tools**

- Put the pipe into the open clamping tool, shut the clamping tool, swivel the clamping nut into the upper clamping ring and fix the pipe by the clamping nut.

4.4.1 **Height adjustment for right clamping tool**

The right clamping tool may be adjusted in order to compensate the height.

- For this purpose detach the pan-head screws and shift the clamping tool on the sloping platform (arrow) until the height is balanced.
- Afterwards necessarily tighten the pan-head screws again.

4.4.2 **Cross adjustment for left clamping tool**

The left clamping tool may be adjusted in transverse manner to the axis in order to compensate differences.

- Detach the two pan-head screws on the left side and shift the clamping tool (arrow) until the difference is balanced.
- Afterwards tighten the 2 pan-head screws again.
5. Starting and operating

The instructions of this chapter are supposed to initiate in the operation of the machine and lead during the appropriate starting of the machine.

This includes:
- the safe operation of the machine
- using all the possible options
- economic operation of the machine

5.1. Starting

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

For the qualification a plastic welding exam can be taken according to DVS and DVGW.

Lay electric cables thoroughly (danger of stumbling)!

Works on electric devices may only be performed by electric experts.

The electric equipment of the machine has to be checked routinely. Loose connections and damaged cables have to be removed immediately.

The heating element is to be protected against rain and trickling water, if necessary, use a welding tent.

According to VDE 0100, the use on construction sites is only allowed through a power distributor with a FI-safety switch.

In dangerous situations for persons and the machine, the machine has to be unplugged immediately.

Switch off the machine after completion of the works and during breaks.

Take care that no unauthorized person has access to the machine.

- Connect the heating element to the mains (230 V / 16 A / 50 Hz) (110 V / 16 A / 50-60Hz).

- Take care of the surrounding conditions:
  - The welding should not be performed under direct sun rays influence, use a welding umbrella if necessary.

- In case of surrounding temperature below 5 °C (41 °F) measures should be taken:
  - Build up a welding tent or heat up the pipe ends if necessary.

- In addition, take measures against rain, wind and dust.
5.2. Changing the reduction inserts

- Unscrew the in-screwed reduction inserts by means of the enclosed Allan key.
- Screw on reduction inserts of the desired diameter.
- For the fabrication of bends, the angle on the basic clamping tools can be set (on each side from \(-45^\circ\) up to \(+45^\circ\)).

![Large basic clamping tool](image1)
![Narrow basic clamping tool](image2)

5.3. Welding process

Basically, the valid welding regulations (ISO/CEN/DVS...) are to be observed.

- There is the risk of burning parts of your body, inflammable materials can be ignited!
- The heating element is heated up to more than 250° C (482 °F)!
- Do not leave the heating element unattended.
- Take enough safety distance to inflammable materials.
- Always put the heating element back into the reception box before and after each use.
- Only transport the heating element at the holder, do not touch the surface with bare hands.
- Do wear safety gloves as protection against burning!
- A stop-watch should be available in order to be able to register the actual times for heating up and cooling down.
A table must be available from which the prescribed parameters (times and forces) for the pipe diameters to be welded can be taken.

The heating element surfaces are to be clean and, above all, free from grease. Therefore they are to be cleaned with non-fraying paper and detergent (e.g. technically pure alcohol or pipe-cleansing cloths which can be bought at the WIDOS company) before every welding or if they are dirty. The anti-adhesive coating of the heating element has to remain undamaged in the working area.

Switch on the heating element and set the needed welding temperature at the adjusting screw at the grip.

The control lamp blinks when the desired temperature has been reached and is maintained by a certain pulse-position ratio.

Screw in the reduction inserts according to the pipe outside diameter to be welded, set the angle, if necessary.

Clamp the basic frame into the table support, fix the table support directly onto the supporting surface or insert machine directly into the pipe system without table support.

Machine working directly in the pipe system

Lay the workpieces into the clamping device, tighten firmly the tightening nuts and align the workpieces with respect to one another.

Put the planer between the workpiece ends, fix them on the guide rod by turning the star wheel and plane with low pressing force.

Insert the electric planer (optional) between the ends of the workpieces, lock it by turning the star grip at the guide rod. Switch on planer at the on/off button and keep it switched on with the locking knob. Plane the pipes with low force. For releasing the locking knob, push shortly the button.

Planing must be performed until a revolving chip has been formed on both sides.

Noise exceeding 80 dB (A) may occur when working with electric planer; during planing it is obligatory to wear ear protection!

Always put the planer back into the reception box before and after each use.

Only transport the planer at the holder, not at the surfaces.

Do not grip between the clamped pipe ends.

Take care that the planer does not catch parts of your clothes.

Open slide again, remove the planer and put it into the reception box. Remove the chips without touching the worked surfaces.
• Close support.

• Check pipe mismatch and gap at the abutting pipe ends. 
  According to DVS 2207, the mismatch on the pipe outside should not exceed 0.1 x pipe wall 
  thickness, the admissible gap should not exceed 0.5 mm.
  You may compensate a mismatch by using the horizontal and vertical displacement of the clamping 
  tools (chapter:: 4.4.1 und 4.4.2).
  In case mismatch compensation was effected, renewed planing has to be carried out afterwards.

• Take the adjustment force for the pipe dimension to be welded from the table and add the motivity.

• Open slide again somewhat.

• Take the heat up time, the maximum change-over time, the cooling-down time and the bead height 
  for the pipe dimension to be welded from the table.

• Bring the heating element which has been cleaned and brought to its nominal temperature 
  between the pipes with the handle facing downwards (hang into guide bar).

• Close the slide smoothly with the determined adjustment force. 
  The applied force can be gathered from the force scale on the handwheel. 
  When the prescribed circulating bead height has been reached, reduce the force (heat up pressure 
  = approx. 10 % of the adjustment pressure).

• Now the heat up time starts. Press the stop-watch and compare the actual time with the nominal 
  time taken from the table.

• After expiration of the heat up time, open slide, remove heating element as quickly as possible, put 
  it into the reception box and close the support smoothly. 
  The maximum time limit for this purpose is predetermined by the value for the change over time 
  taken from the table.

• Press the stop-watch when the welding pressure has been built up. 
  If necessary, readjust the pressure during cooling down (the pressure for cooling down is the same 
  as the adjustment pressure).

• After expiration of the cooling down period stop the pressure, remove the welded parts and open 
  the slide.
5.4. Welding process for T-pieces

Loosen clamping tools and setting of angle.

Set the welding angle and tighten again the clamping tool.

Put the planer between the clamping tools.
Lay the pipes prepared for the angle to be welded onto the planer and clamp them by means of the clamping tool.
The planer can be moved on the guide for centering between the pipes.

Plane the pipes with little pressing force until a revolving chip has been formed.
Open slide and remove planer.
Remove the chips without touching the worked surfaces.

Close slide.
Check pipe mismatch and gap at the abutting pipe ends.
According to DVS 2207, the mismatch on the pipe outside should not exceed 0.1 x pipe wall thickness, the admissible gap should not exceed 0.5 mm.
If necessary effect a horizontal (right-hand clamping tool) or a vertical (left-hand clamping tool) mismatch compensation.
In case mismatch compensation was effected, renewed planing has to be carried out afterwards.
Open support again somewhat and bring the heating element which has been cleaned and brought to its nominal temperature between the pipes with the handle facing upwards.

Close the slide smoothly with the determined adjustment force. Add the motivity of the slide to the adjustment or welding force taken from the table.

When the prescribed circulating bead height has been reached, reduce the force (heat up pressure = approx. 10 % of the adjustment pressure). Now the heat up time starts.

After expiration of the heat up time open the slide, remove the heating element as quickly as possible (put it into the reception box) and close the slide smoothly.

Build up the necessary welding pressure, readjust the pressure during cooling down if need be (adjustment pressure = cooling pressure).

Open the clamping tools and remove the branch.
Open slide.
Cut off the tip of the welded branch and clamp into the clamping tool.
Also clamp the other pipe prepared for welding.

Put the planer between the clamping tools.
The planer can be moved on the guide for centering between the pipes.
Plane the pipes with little pressing force until a revolving chip has been formed.
Open slide and remove planer. Remove the chips without touching the worked surfaces.
Check pipe mismatch and plane again.
Open slide again somewhat and bring the heating element which has been cleaned and brought to its nominal temperature between the pipes with the handle facing upwards.

Close the slide smoothly with the determined adjustment force.

When the prescribed circulating bead height has been reached, reduce the force (heat up pressure = approx. 10 % of the adjustment pressure). Now the heat up time starts.

After expiration of the heat up time open the slide, remove the heating element as quickly as possible (put it into the reception box) and close the support smoothly.

Build up the necessary welding pressure, readjust the pressure during cooling down if need be (adjustment pressure = cooling pressure).

After expiration of the cooling down time unclamp the finished T-piece and start a new welding process.
6. Fabrication of T-pieces (90°)

Basis: desired angle of junction

Step 1: preparation / sawing of pipes

<table>
<thead>
<tr>
<th>angle of junction</th>
<th>90°</th>
</tr>
</thead>
<tbody>
<tr>
<td>sawing angle 1</td>
<td>45°</td>
</tr>
<tr>
<td>sawing angle 2</td>
<td>45°</td>
</tr>
</tbody>
</table>

Step 2: first welding

<table>
<thead>
<tr>
<th>angle of junction</th>
<th>90°</th>
</tr>
</thead>
<tbody>
<tr>
<td>setting angle 3</td>
<td>45°</td>
</tr>
</tbody>
</table>

Step 3: cut the prong

Dimension x = 5mm + 10% of wall thickness
(tolerance for face cutting and welding)

<table>
<thead>
<tr>
<th>angle of junction</th>
<th>90°</th>
</tr>
</thead>
<tbody>
<tr>
<td>cutting angle 4</td>
<td>45°</td>
</tr>
</tbody>
</table>

Step 4: second welding

<table>
<thead>
<tr>
<th>angle of junction</th>
<th>90°</th>
</tr>
</thead>
<tbody>
<tr>
<td>setting angle 5</td>
<td>45°</td>
</tr>
</tbody>
</table>
7. Welding log and tables

You can access our website and select our welding tables via the qr code shown here. Select “ 2500-ASM 160-315 ” and the corresponding material (PE / PP /PVDF).
### Report for heated socket welding of tubular components

<table>
<thead>
<tr>
<th>Employer</th>
<th>Contracting company</th>
<th>Welding machine:</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Make:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Machine no.:</td>
<td></td>
</tr>
<tr>
<td>Order no.</td>
<td>Name of the welder</td>
<td>Year of manufacture:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identity no.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Weather conditions**
- 1 = sunny
- 2 = dry
- 3 = rain or snowfall
- 4 = wind

**Protective measures**
- 1 = none
- 2 = Screen
- 3 = tent
- 4 = heating

In the case of multiple designations follow the figures as above.
(e.g., 34 = rain and wind)

<table>
<thead>
<tr>
<th>Weld no.</th>
<th>Date</th>
<th>Pipe size Ø d x s (mm)</th>
<th>Data of fitting 1)</th>
<th>Measured temperature at socket and spigot (°C)</th>
<th>Heat-up time 2)</th>
<th>Cool down 2)</th>
<th>Ambient temperature °C</th>
<th>Code no.</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>charge no.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Signature of welder:**

**Date and signature of the welder inspector:**

1) These data may be entered by agreement.
2) The measured values must be entered.

A = ref. of manufacturer
B = fitting code number
1 = socket
2 = angle
3 = t-piece
4 = reduction
5 = cap
6 = adapter
7 = instruments
8. Maintenance and repair

8.1. General

Prescribed maintenance and inspection works should be performed in time. The DVS gives the advice of inspection works after 1 year. For machines with a specially high usage percentage the testing cycle should be shortened. The works should be performed at the WIDOS GmbH company or by an authorized partner. Replace damaged parts immediately, be particular careful with electrical parts - dirt and wetness are very good current conductors.

8.2. Clamping elements

- For a long service life clean and grease regularly the threaded spindles and the joint parts which are used for clamping the pipes.

8.3. Planer

- Never lay the planer onto the planer discs.
- The blades of the planer must be checked for sharpness. Replace if necessary (grounded on both sides, max. thickness of the chips =0,2 mm !)

8.4. Storing

- Cover the guide rods and the spindle with a thin oil film.
- Store the machine dry.

8.5. Cleaning the machine

The used materials and clothes are to be handled and disposed off correctly, especially
- when cleaning with solvants
- when lubricating with oil and grease

8.6. Disposal

At the end of the life time, the machine has to be disposed of properly, non-polluting and in accordance with the national laws of waste disposal.
9. Transport

- Protect the machine against bumps.
- Handle the machine with care.
- Make sure that the case is closed correctly.
- Make sure that you transport the machine in its destined transport case if available.

Storing of elements in transport case:

- Basic frame
- Planer
- Basic machine
- Protective box
- Heating element
- Reduction inserts
- Tools and accessoires
10. Electric diagram
11. Spare parts list

You can access our website and select our spare parts lists via the QR code shown here. Select “Miniplast 2 / T-Piece”
12. 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>
</tr>
</thead>
<tbody>
<tr>
<td>Model name:</td>
<td>WIDOS 2500 / OD 160</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

Statement of the relevant harmonizing standards referred to, or indication of the specifications that the conformity is declared for:

<table>
<thead>
<tr>
<th>Standard</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN EN ISO 12100</td>
<td>Safety of machines, basic concepts, general layout guidelines</td>
</tr>
<tr>
<td>DIN EN 60204.1</td>
<td>Electric equipment of industrial machines</td>
</tr>
<tr>
<td>DIN EN 60555</td>
<td>Electro-magnetic resistance</td>
</tr>
<tr>
<td>DIN EN 50082</td>
<td>Safety of machinery- Human physical performance</td>
</tr>
<tr>
<td>DIN EN 55014</td>
<td>Safety of machinery- Ergonomic design principles</td>
</tr>
<tr>
<td>DIN EN 1005-2</td>
<td>Safety of machinery- Human physical performance</td>
</tr>
<tr>
<td>DIN EN 614-1</td>
<td>Safety of machinery- Ergonomic design principles</td>
</tr>
</tbody>
</table>

Entitled to compile the technical documentation:

<table>
<thead>
<tr>
<th>Name:</th>
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</tr>
</thead>
<tbody>
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<tr>
<td></td>
<td>D-71254 Ditzingen</td>
</tr>
</tbody>
</table>

Signed on behalf of the company:

<table>
<thead>
<tr>
<th>Name, first name:</th>
<th>Dommer, Martin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function:</td>
<td>Technical director</td>
</tr>
</tbody>
</table>

Heimerdingen, 06.05.2019

This declaration is to certify the compliance with the mentioned harmonizing regulations, however does not include any assurance of properties.