

# Working Instructions Translation

Heating element butt welding machine

**WIDOS 6113**



Keep for further use!

Model:	Heating element butt welding machine
Type:	<b>WIDOS 6113</b>
Serial number, year of construction:	see type label

### Customer Entries

Inventory-No.:

Place of working:

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

### Address of manufacturer

#### WIDOS

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## 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 service team 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.

Due to this structure, the searched information can be easily found.



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# 1. Description of the 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 6113** has been designed for the heating element butt welding of pipes and fittings with a diameter range of  $\varnothing = 315 - 630$  mm.

(standard diameters: 315 / 355 / 400 / 450 / 500 / 560 / 630 mm)

It is a machine for construction sites and particularly designed for the usage on-site, as well as in the workshop.

For this reason, the frame is kept small so that it can be used even under difficult conditions (e.g. ditch).

All use going beyond is not purpose-oriented.

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

- respecting all the indications of the working instructions and
- performing the inspection and maintenance work.

## 1.2. Safety measures

In case of wrong use, wrong operation or wrong maintenance, the machine itself or products standing nearby can be damaged or destroyed.

Persons being in the endangered area may be injured.

Therefore these working instructions have to be thoroughly read and the corresponding safety regulations must be necessarily adhered to.

## 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. Designation of the product

The product is designated by two type labels which are attached at the aggregate and at the basic machine.

They contain the type, the serial number and the year of construction of the machine.

### 1.4.1. Technical data

#### 1.4.1.1. WIDOS 6113 General data

Material which can be welded:	PP, PE
Pipe diameter range:	OD = 315 - 630 mm
Weight:	approx. 150 kg
Weight (without accessories):	500 kg
Feeding:	CEE-32 A
Wire cross section:	4,0 mm <sup>2</sup>
Emissions	<ul style="list-style-type: none"> <li>- Noise exceeding 80 dB (A) may occur; during planing it is obligatory to wear ear protection!</li> <li>- When using the named pipe materials and when welding below 260°C no toxicant damp arises</li> </ul>
Ambient conditions in the welding area	<ul style="list-style-type: none"> <li>- take care for cleanness (no dust at the welding area)</li> <li>- 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.</li> <li>- avoid humidity, if necessary use a welding tent</li> <li>- avoid strong sun rays influence</li> <li>- protect from wind, shut the pipe ends</li> </ul>

#### 1.4.1.2. Heating element

Power:	5,9 kW
Voltage:	400V (+-10%)
Current:	26 A (+-10%)
Frequency:	50 Hz
Surface:	non-stick-coated
Outside-Ø:	684 mm
Weight:	appr. 32 kg
Attached elements:	<ul style="list-style-type: none"> <li>- Electronic temperature control</li> <li>- Control lamps, on/off-switch</li> <li>- Connecting cable with plug</li> </ul>

#### 1.4.1.3. Planer

Motor:	Three-phase alternating current motor
Power:	1.1 kW
Voltage:	400 V (+-10%)
Nominal current	3,5 A
Frequency:	50 Hz (+-10%)
Speed of motor:	appr. 140 rpm
Attached elements:	<ul style="list-style-type: none"> <li>- On/off switch</li> <li>- Connecting cable with plug</li> <li>- Locking device</li> </ul>
Weight:	appr. 100 kg

1.4.1.4. Hydraulic aggregate open (optional)

Feeding	CEE-16A - Phase converter
Power:	2 kW
Voltage:	400 V ( $\pm 10\%$ )
Frequency:	50 Hz
Hydraulic oil tank:	ca. 10 L
Power hydraulic pump	1,8 kW
Nominal current	3,52 A
Speed:	1380 - 2820 rpm
Max. working pressure of pump:	appr. 160 bar
Working pressure:	0-160 bar adjustable
Weight:	appr. 45 kg

1.4.1.5. Hydraulic aggregate closed (optional)

Feeding	CEE-32 A - Phase converter
Power:	11 kW
Voltage:	400 V ( $\pm 10\%$ )
Frequency:	50 Hz
Hydraulic oil tank:	ca. 10 L
Power hydraulic pump	2,6 /3,1 kW
Nominal current	5,5 / 7,6 A
Speed:	1380 - 2820 rpm
Max. working pressure of pump:	appr. 160 bar
Working pressure:	0-160 bar adjustable
Weight:	appr. 56 kg

1.4.1.6. Basic frame

Reduction inserts, pipe supports:	Optional dimensions
Material frame:	Structural steel
Material reduction inserts:	Aluminum
Max. force ( $F=P \cdot A$ ):	17,33 kN (at $p= 100$ bar)
Cylinder- $\varnothing$ :	60 mm
Piston rod- $\varnothing$ :	50 mm
Length of stroke of cylinder:	420 mm
Weight	appr. 475 kg
Velocity of piston rod:	3,4 cm/s

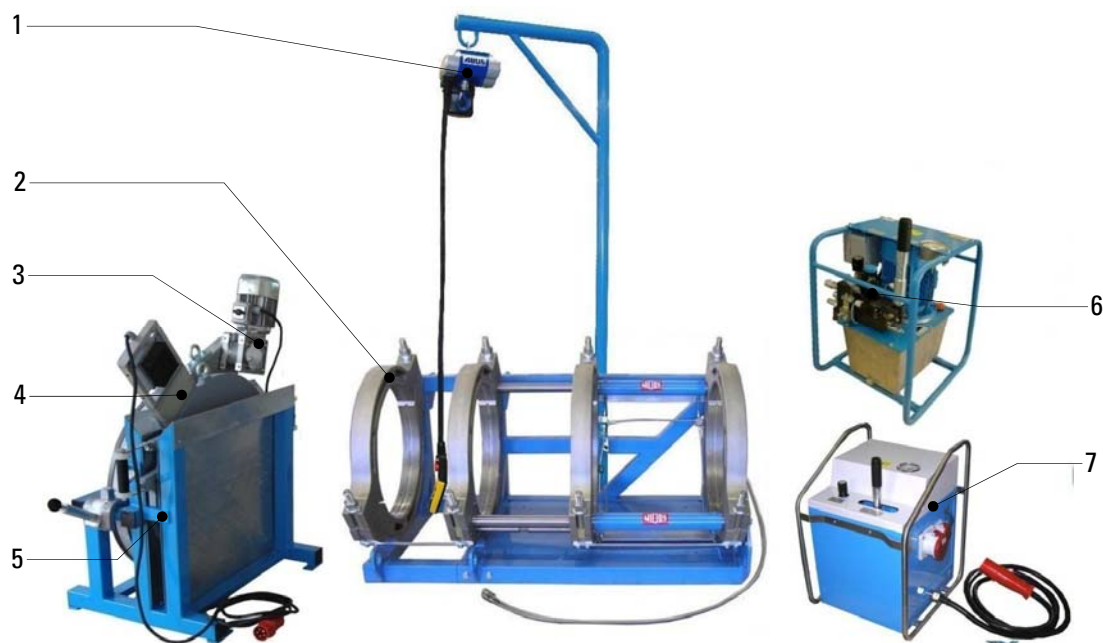
1.4.1.7. Lift-off device (optional)

Lift capacity:	appr. 100 kg
Weight (complete)	appr. 32 kg

**See spare parts list for order numbers and single parts**



## 1.5. Machine overview



1	Lift-off device (optional)
2	Basic machine with clamping devices
3	Planer
4	Heating element
5	Reception box
6	Hydraulic aggregate, open (optional)
7	Hydraulic aggregate, closed (optional)

## 1.6. Accessories:

Following tools and accessories can be part of the delivery:

<i>Pieces / machine</i>	<i>Denomination</i>
1	Tool bag for 10 parts
1	Socket spanner size 46
1	Allan key with T-grip, size 8
1	Torx screwdriver T10
1	Combination spanner size 19
1	Open ended key, size 24
Optional	<ul style="list-style-type: none"> <li>• Different reduction inserts,</li> <li>• roller stands for the pipes,</li> <li>• transformer 42V,</li> <li>• crane for insertion and removal of heating element and planer</li> </ul>

## 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 symbols and indications

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



This symbol means a possibly danger for the life and the health of persons by electrical energy.

- The disrespect of these indications may have heavy consequences for the health.



This symbol means a general possible dangerous situation.

- The disrespect of these indications may cause slight injuries or damages on goods.



This symbol means a possible dangerous situation by moving parts of the machine

- The disrespect of these indications may cause heavy crushing's of parts of the body resp. damages of parts of the machine.



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 means a possible risk of injury by noise exceeding 80 dB(A).

- Ear protection is obligatory



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 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

- 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, starting the operation, setting and tooling, operation, maintenance and inspection, repair and dismounting.
- 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 6113** 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 usage
- in safety technical impeccable status

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

## 2.8. Maintenance, inspection and repair



All maintenance and repair work have to be basically performed with the machine in off position.

During this the machine has to be secured against unauthorized switching on.



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

For machines with a specially high usage percentage the testing cycle should be shortened.

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

## 2.9. Dangers caused by electric energy



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.
- If work at alive parts are necessary, a second person has to assist who can disconnect the machine from the mains if necessary.
- All electric tools (heating element, planer and aggregate) have to be protected from rain and dropping water (if need be use a welding tent).
- According to VDE 0100, the use on construction sites is only allowed with a power distributor with a RCD (FI)-safety switch.

## 2.10. Dangers caused by the hydraulics



System parts and pressure hoses should be depressurized before beginning of any repair work. Even if the machine is switched off, pressure may be in the hydraulic accumulator!

There is a danger of injuring the eyes by hydraulic oil squirting out.

- Damaged hydraulic hoses have to be **immediately** replaced.
- Make a visual inspection of the hydraulic hoses before each work beginning.
- The hydraulic oil is inedible!

## 2.11. Specific dangers

### 2.11.1. Danger of 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.
- Always put the planer back into the reception box after and before each use.
- Transport the planer at the handle only. Do not touch the surfaces.
- Switch the planer on only for usage. If the planing pressure is too high, there is the danger that the planer tilts during planing. For that reason do not press the pipe ends stronger than necessary against the planer. If necessary, hold the planer firmly.

### 2.11.2. Risk of injury by noise



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

### 2.11.3. Danger of combustion by heating element, reception box and welding area



You can burn yourself, inflammable materials may ignite.

The heating element temperature is heated up to more than 250°C!

- Do not touch the surfaces of the heating element.
- Do not leave the heating element unsupervised.
- Take enough safety distance to inflammable materials.
- Do wear safety gloves.
- Always put the heating element back into the reception box after and before each use.
- Transport the heating element at the handle only.

### 2.11.4. Danger of crushing by clamping devices and guideways



There is a danger of serious injuries: on the one hand between the inner clamping devices and on the other hand between the outer clamping device and the end of the guideway.

- upon opening / closing the clamping tools
- upon opening / closing the machine.
- upon mounting the reducer inserts.
- Upon clamping the pipes
- Do not stand or put hands between clamped pipe ends.
- Do not stand or put hands between the inner clamping tools with not yet clamped pipes.

- Do not block opening and closing of the machine slides.
- Keep others away from the clamping area.

#### 2.11.5. Danger of stumbling over electric / hydraulic wires

- Make sure that no person has to step over the wires.
- Lay the wires in such a way that the danger is kept to a minimum.

### 2.12. Structural modifications on the machine

- No modifications, extensions or reconstructions may be made on the machine without permission of the manufacturer. In case of disrespect, the warranty or liability will expire resp. the EC declaration of conformity will get obsolete.
- Machine parts which are not in a perfect condition are to be replaced immediately.
- Only use original **WIDOS** spare and wear parts.
- In case of purchase orders please always state the **machine number!**

### 2.13. How to clean the machine

The used materials and tissues are to be handled and disposed of properly, especially:

- when cleaning with solvents
- when lubricating with oil and grease

### 2.14. 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.
- running the machine with defective or not orderly mounted safety appliances.
- 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. Functional description

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

The plastic pipes are clamped in the clamping devices.

Then the front sides of the pipes are cut plane and parallel by means of the **planer** and the misalignment of the pipes is checked.

The cleaned and heated heating element is inserted and the pipes are pressed against the heating element under defined adjusting pressure. This process is called "**adjusting**".

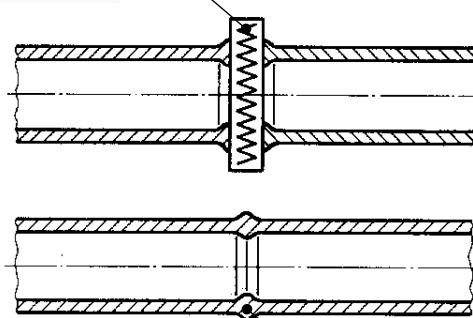
After the prescribed bead height being reached, pressure is reduced, the **heating time** begins. The function of this time is to heat up the pipe ends.

After expiration of the heating time, the slides are opened, the heating element is removed quickly and the pipes are driven together again. 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.

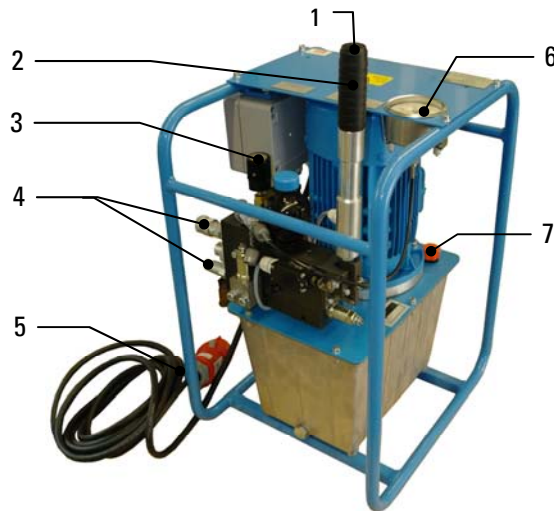
Heating element heats the pipes  
up to welding temperature



Finished welding with internal  
and external bead

## 4. Operating and indicating elements

### 4.1. Elements on open aggregate (optional)



No.	Name	Function
1	Push-button	- By pressing the push-button the motor switches over to high speed
2	Valve lever	Opening the slides. There are 4 different positions: - <b>forwards</b> : slides close. - in the middle (usual position): the pressure which is currently achieved is kept (also by means of the built-in hydraulic accumulator) - <b>Pressure release</b> : (depressurized position): a possibly existing pressure is released without moving the slides. Due to the hydraulic accumulator, it takes about 10 s until the pressure is completely released. - <b>backwards</b> : slides open
3	Setting screw for pressure relief valve	- Limitation of the pressure to the desired value.
4	Hydraulic connections for opening / closing the slides	- Non-dropping quick-acting couplings
5	Connecting cable with plug CEE-32 A	- connection to power supply
6	Pressure gauge	Display of the hydraulic pressure
7	Screw with oil dipstick	- to determine the oil level - oil filler neck



You may run the machine **quickly** in order to drive the slides back and forth as well as for the change-over by:

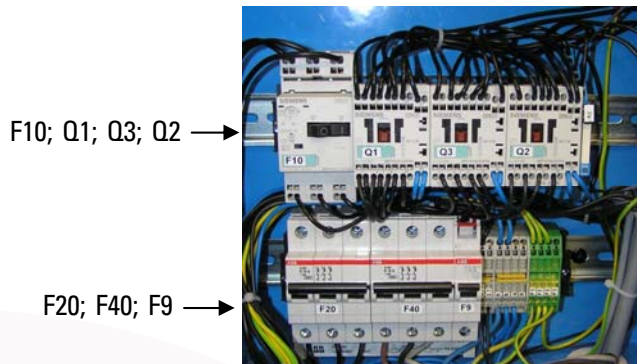
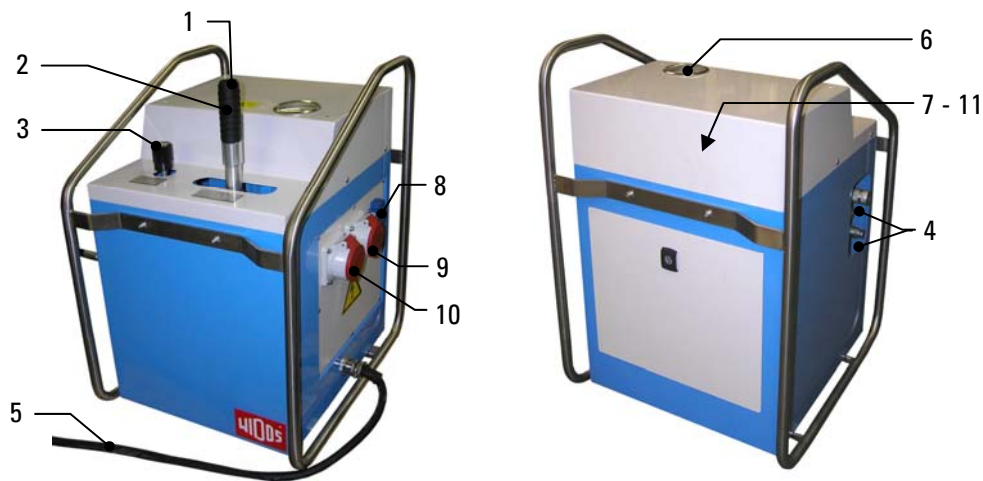
- **Pressing <button>** (Nr. 1) and <control lever> on „FORWARDS“ or „BACKWARDS“.

In order to carry out planing and for the joining you must select the **slow** speed:

- With <control lever> on „FORWARDS“ or „BACKWARDS“ **without** pressing <button>.



### 4.2. Elements on closed hydraulic aggregate (optional)



No.	Name	Function
1	Push-button	- By pressing the push-button the motor switches over to high speed
2	Valve lever	Opening the slides. There are 4 different positions: - <b>forwards</b> : slides close. - in the middle (usual position): the pressure which is currently achieved is kept (also by means of the built-in hydraulic accumulator) - <b>Pressure release</b> : (depressurized position): a possibly existing pressure is released without moving the slides. Due to the hydraulic accumulator, it takes about 10 s until the pressure is completely released. - <b>backwards</b> : slides open
3	Setting screw for pressure relief valve	- Limitation of the pressure to the desired value.
4	Hydraulic connections for opening / closing the slides	- Non-dropping quick-acting couplings
5	Connecting cable with plug CEE-32 A	- connection to power supply
6	Pressure gauge	Display of the hydraulic pressure

No.	Name	Function
7	Screw with oil dipstick	- to determine the oil level - oil filler neck
8	Socket 230 V	- Connection for e.g. SPA 600
9	Socket CEE 16 A	- Connection for heating element
10	Socket CEE 16 A	- Connection for planer
11	Cover	- Check for oil level
F9	Circuit breaker B16A	- Socket 230 V
F10	Motor protective 4,5 – 6,3 A	-Hydraulic pump
F20	Circuit breaker B16A	- Socket for heating element
F40	Circuit breaker K16A	- Socket for planer
Q1	Contactora	- slow rotational speed
Q2	Contactora	- high speed 1
Q3	Contactora	- high speed 2



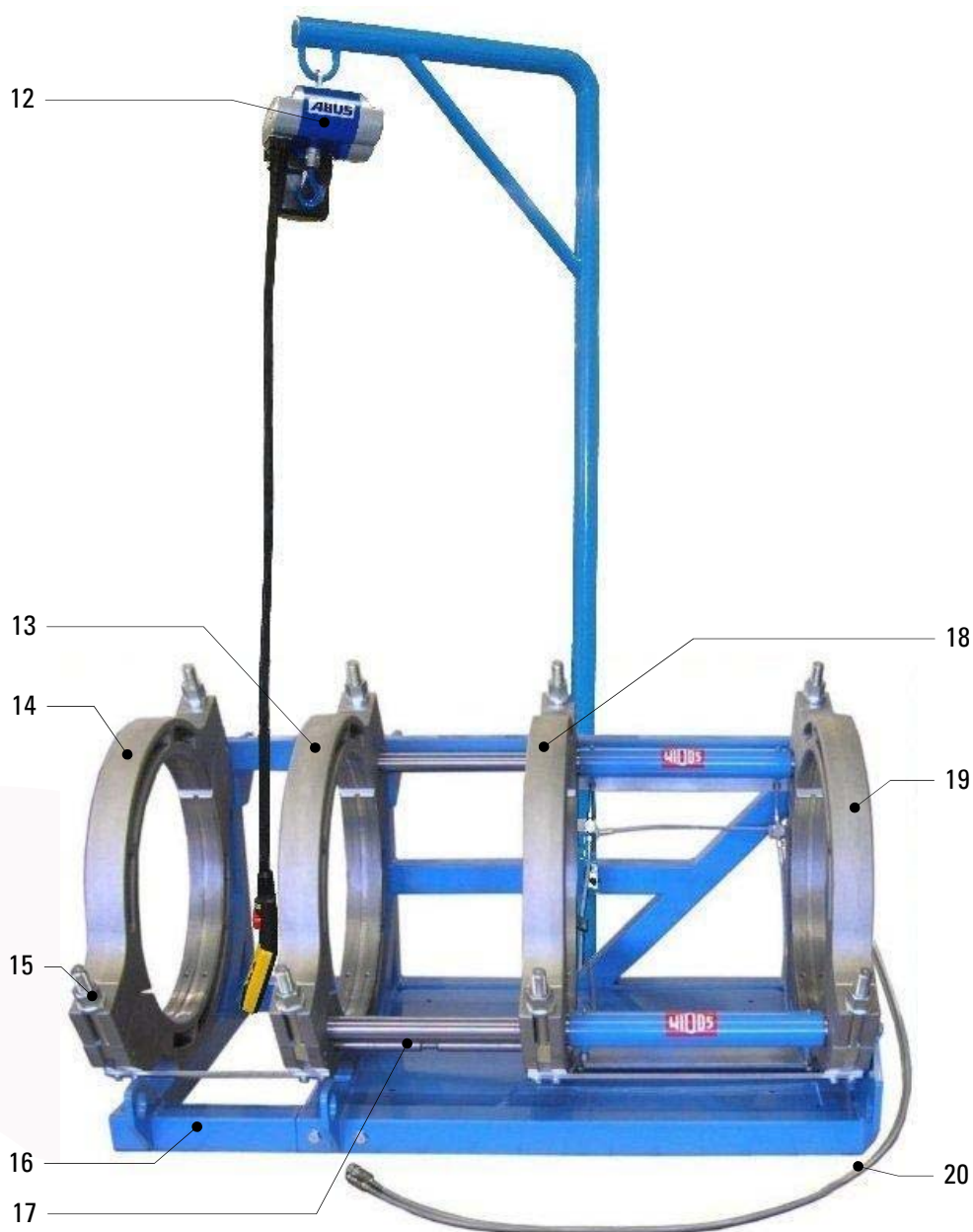
You may run the machine **quickly** in order to drive the slides back and forth as well as for the change-over by:

- **Pressing <button>** (Nr. 1) and <control lever> on „FORWARDS“ or „BACKWARDS“.

In order to carry out planing and for the joining you must select the **slow** speed:

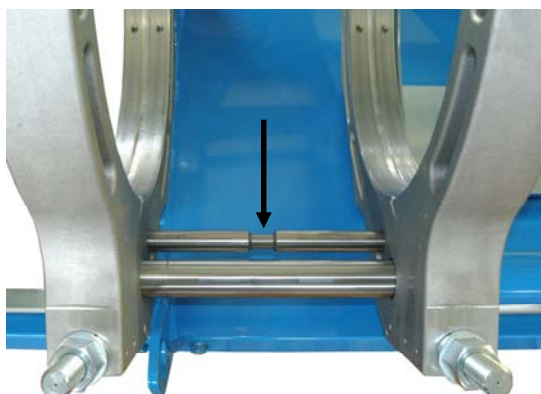
- With <control lever> on „FORWARDS“ or „BACKWARDS“ **without** pressing <button>.

### 4.3. Basic machine



<i>No.</i>	<i>Denomination / Function</i>
12	Lifting device (optional)
13	Inner clamping ring fixed
14	Outer clamping ring fixed
15	Clamping nut with washer and spindle, for clamping pipes
16	Base frame part 2, removable
17	Puller, separates the heating element and the heated tubes
18	Inner clamping ring movable
19	Outer clamping ring movable
20	Hydraulic hoses, connection with hydraulic aggregate

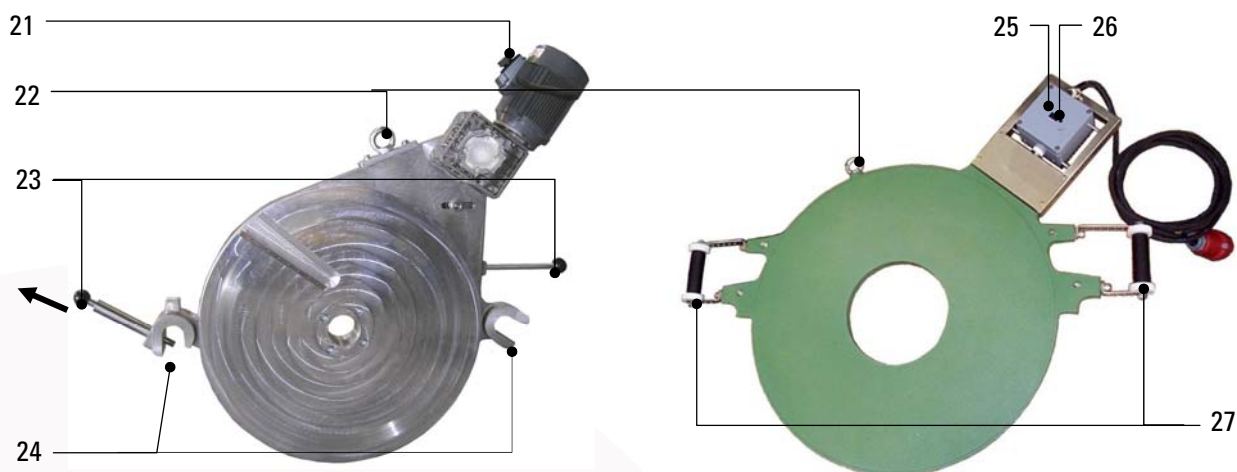
### 4.3.1. Puller for heating element



There is a puller mounted between the movable and the fixed clamping shells on the basic machine. It prevents the heating element from sticking to the heated-up pipe ends.

When inserting the heating element take care that it lies in the diminution of the throat of the tear-off bar (see arrow).

### 4.4. Elements at planer and heating element



No.	Name	Function
20	On/off switch for planer	- to switch the planer on/off. - Switch off the planer after use.
21	Lever	- Lifting facility to put in / lift off the basic machine / the heat-protected box
22	Eye and eye with locking bolt	- to lock the planer/ heating element- For holding the planer when lifting/removing. - Lever can be screwed off. in basic machine, (In order to remove the planer, pull locking bolt into arrow direction.
23	Lifting screw	- to lift / insert the heating element / planer with the lift-off device.
24	Display of temperature	- Digital display of set heating element temperature. Three different displays are possible. For meaning of the displays please refer to point 5.6 How to set the heating element temperature
25	Thermostat	- to set the required temperature.
26	Grips	- To hold the heating element when lifting / removing. The basic machine / protection box

## 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 of the machine
- economic operation of the machine

### 5.1. Safety indications



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.

In situations of danger for persons and the machine, the mains plug has to be unplugged immediately.

In case of power failure, there may still be pressure in the hydraulic system.

Therefore release pressure if need be.

After completion of the welding work and during breaks the machine has to be switched off.

Further take care that no unauthorized person has access.

Protect the machine from wetness and humidity!

According to VDE 0100, the use on construction sites is only allowed with a power distributor with a RCD (FI)-security protective switch.



Check the oil level of the hydraulic system before each starting of the control unit in order to avoid damages on the pump. The oil level must be between the two marks at the oil dipstick.

If necessary, add hydraulic oil of the quality **HLPD 32**.



The heating element surfaces must be clean, especially non greasy, therefore they need to be cleaned shortly before each welding or in case of dirtiness by means of a **fiber-free paper** and a cleaning agent (e.g. PE cleaner or pipe cleaning tissues which are available at the WIDOS company).

The anti-adhesive coating of the heating element must remain undamaged in the working area.



Take care that all hydraulic and electric connections are connected.



Make sure that pump and planer are connected in a way that they turn in right-hand direction.

- Take into account the surrounding conditions:
  - The welding may not be performed under direct sun rays influence.
  - Use a welding umbrella if necessary.
- If the surrounding temperature is under 5°C, measures have to be taken:
  - Use a welding tent or preheat the pipe ends if necessary.

In addition, take measures against rain, wind and dust.

## 5.2. Connection of hydraulic aggregate to basic machine

- Put the hydraulic hoses of the basic machine into the quick-action couplings of the hydraulic aggregate in order to weld (chapter: 4.1no: 10).

### With open hydraulic aggregate:

- Connect the mains plug of the planer to local socket, (CEE-16A / 400 V / 50 Hz, right-hand rotary field).
- Connect the mains plug of the heating element to local socket, (CEE-16A / 400 V / 50 Hz).
- Connect the mains plug of hydraulic aggregate to local socket, (CEE-32A / 400 V / 50 Hz Connect the mains plug of the planer to local socket, (CEE 16A / 400 V / 50 Hz, right-hand rotary field).

### With enclosed hydraulic aggregate:

- Connect the mains plug of the planer to the hydraulic aggregate, (CEE-16A / 400 V / 50 Hz).
- Connect the mains plug of the heating element to the hydraulic aggregate, (CEE-16A / 400 V / 50 Hz).
- Connect the mains plug of the enclosed hydraulic aggregate to the local power supply (CEE-32A / 400 V / 50 Hz, right-hand rotary field)



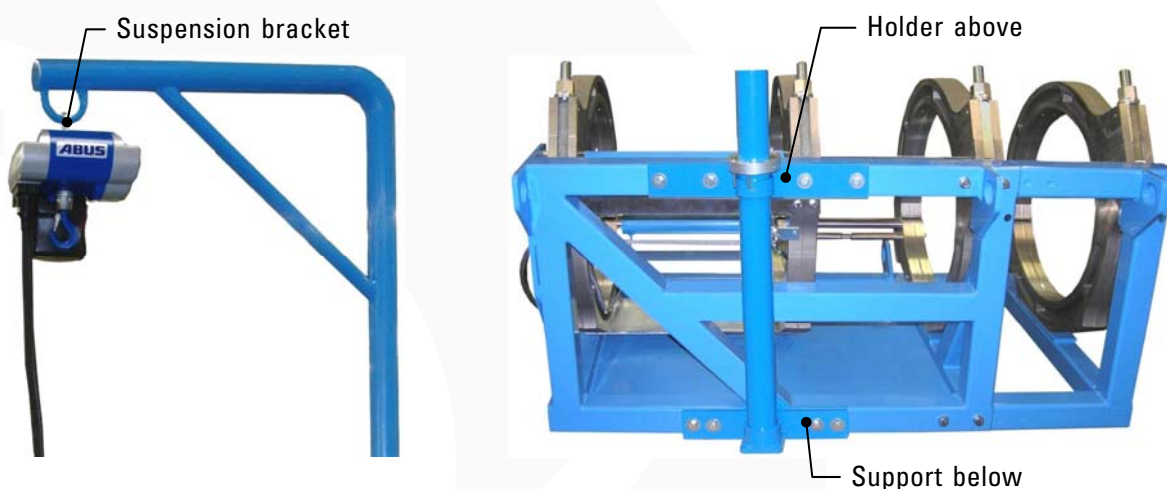
Lay hydraulic and electric wires carefully (danger of stumbling).



Verify whether the hydraulic pump is connected clockwise!

## 5.3. How to mount the lifting device (optional)

- Detach the suspension bracket on the crane motor, put and fix the bracket to the lifting device with the bolts and SL clips.



- Put the lifting device through the upper holder from above and downwards to the lower support.

## 5.4. How to replace the reduction inserts

Pipes with OD 630 have to be clamped in the basic clamping devices.

- Pipes with OD 315 - 560 mm will need reducer inserts.
- Unscrew the mounted reduction inserts by means of the provided Allan key.
- Screw the reduction inserts with the corresponding diameter into the clamping devices.

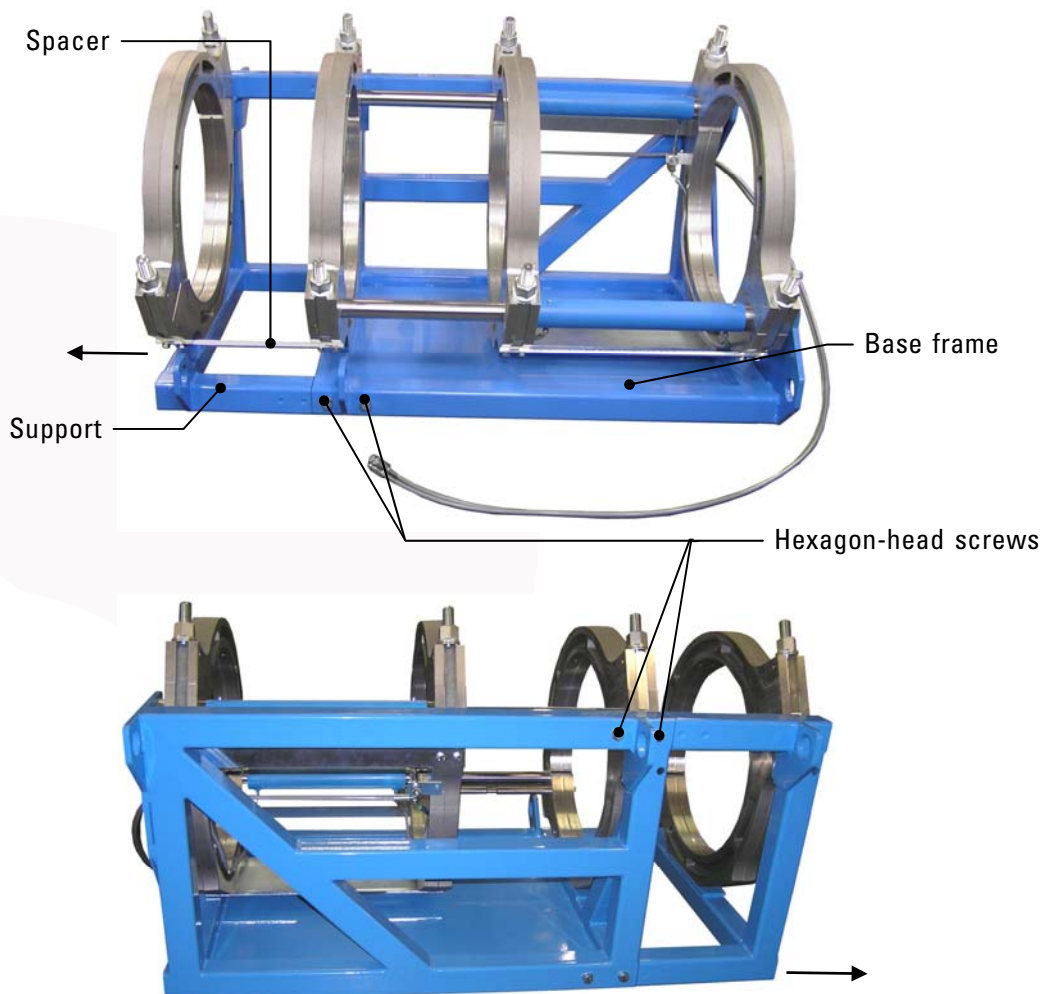
## 5.5. Remove clamping ring with support

- If necessary (e.g. T-pieces) you may detach the outer fix clamping element.  
Detach the four hexagon socket screws for the spacer and detach the 3 x 2 fixing screws of the front support.



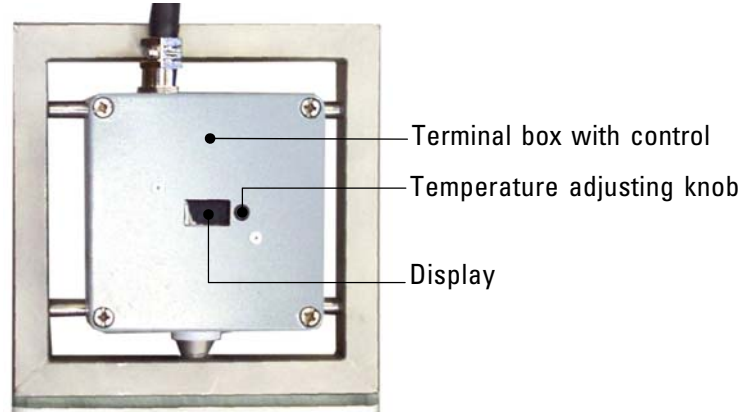
Important, do not unscrew the hexagon socket screws!

The hexagon socket screws hold a pressure piece in place within the square pipe by which both basic frames are fixed.



## 5.6. How to set the heating element temperature

As soon as the heating element is connected to the mains (400 V / 16A), it starts heating up to the desired temperature. Set the temperature with a screw driver at the adjusting knob.



**2.2.0**

Display: DESIRED temperature + blinking points between the numbers.  
The heating element is being heated up, the desired temperature is not yet reached. This display disappears after short time, followed by three lines.

**- - -**

Display: Three lines.  
The heating element is being heated up, the desired temperature is not yet reached.

**1 8 0**

Display: ACTUAL temperature (without blinking points).  
Appears as soon as a temperature of > 170°C is reached and rises continuously to DESIRED temperature. The desired temperature is maintained by a certain pulse-position ratio.

## 5.7. Welding process

**The respectively valid welding prescriptions (ISO / CEN / DVS...) are to be basically followed.**



There is the danger of serious bruising.  
On the one hand between the inner clamping devices, on the other hand between the outer clamping device and the end of the guide bar.

- Do wear safety gloves as a protection against combustion!
- A stop-watch should be available for recording the actual times for the heating and cooling.
- In the same way a table should be available from which the parameters for the pipe dimensions to be welded prescribed by the welding prescriptions may be taken from.
- 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. PE - cleaner) 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 adjust the required welding temperature (chapter: 5.6)
- Screw in the reduction inserts according to the outside diameter of the pipes to be welded.
- Put the workpieces into the clamping tools, tighten the clamping nuts tightly and align the workpieces with respect to one another.  
In case of long pipe ends, use WIDOS rollerstands for alignment.
- Close the slide, with <valve lever> on: **“forwards”**, thereby reading the **movement pressure** on the pressure gauge.  
The movement pressure is displayed exactly when the slide with the clamped-pipe passes over into its movement.
- Subsequently, open slide again such that the planer fits in-between, with <valve lever> on: **“backwards”**.
- Put the planer between the workpiece ends and let the locking snap in.



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



There is the danger that the planer draws in clothes!

Do not hold the planer on its front sides in any case.

If the planing pressure is too high, there is the danger that the planer will get stuck during planing. If necessary hold tight to the planer.

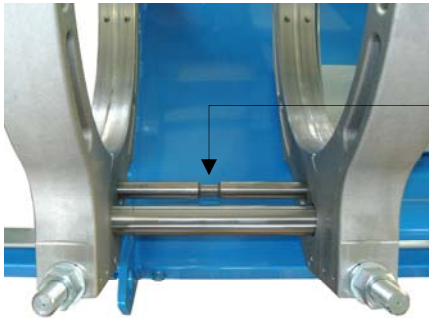


In case there are too many chips stop planer and remove them.

Necessarily take care that no chips will be drawn-in between the planer discs!

- Move the pipe ends towards one another with <valve lever> on: **“forwards”** and plane same with a planing pressure between **1 and 15** bar above the movement pressure.  
Planing must be carried out until a revolving cutting has been formed on both sides.
- Open the slide again with <valve lever> on: **“backwards”**, switch off planer motor.
- Unlock planer, remove it and put it into the protective box.
- Remove the produced cuttings without contacting the worked surfaces.
- Close the slide with <valve lever> on: **“forwards”**.
- Check pipe mismatch and gap on the joining pipe ends.
- According to DVS 2207, the mismatch on the pipe outer side must not exceed 0.1 x pipe wall thickness, the admissible gap must not exceed 0.5 mm for pipes ≤ 355 mm and 1,0 mm for pipes with 400...< 630 mm.  
The mismatch compensation is carried out via further tightening or releasing of the clamping nuts.  
In case of a mismatch compensation, planing must be carried out again afterwards.
- The adjustment pressure for the pipe dimension to be welded can be gathered from the table. Add the movement pressure.  
Set the resulting pressure value at the pressure limiter valve and check by actuating the valve lever.
- Open slide again slightly with <valve lever> on: **“backwards”**.

- Take heating up time, maximum change-over time, cooling down time and bead height for the pipe dimension to be welded from the table.
- Move the heating element, which has been cleaned and brought to nominal temperature, by means of the handle upwards between the pipes.



Take care that it lies in the zone of the diminution of the puller, if required displace the shaft!

- Move pipes to heating element smoothly to the set adjustment pressure with <valve lever> on: **"forwards"**.
- When the prescribed revolving bead height has been reached, reduce pressure. For this purpose, move the valve lever to **<Pressure release>** until heating up pressure has built up has reduced almost to zero ( $\leq 0,01 \text{ N/mm}^2$ ).
- The heating up time starts now. Press the stop watch and compare the actual time with the nominal time taken from the table.
- After expiration of the heating up time, open the slide, with <valve lever> on: **"backwards"** remove the heating element as quickly as possible, put it into the protective box and close the slide smoothly with <valve lever> on: **"forwards"**.

The maximum time frame for this process is predetermined by the value for the change-over time taken from the table.

- When the welding pressure has been built up, press the stop-watch and keep the <valve lever> for approximately 10s on the position **"forwards"** so that the hydraulic accumulator can be filled. During the cooling down period re-adjust pressure, if necessary (cooling pressure = adjustment pressure).
- After expiration of the cooling down period, release pressure with <valve lever> on: **"Pressure release"**.



Do not open basic machine!

- Open the clamping rings and remove the welded part.
- Open the slide with <valve lever> on: **"backwards"**.

The welding process is finished

## 6. Welding log and tables



## Table for PE

Foundation: 2207, 2208 DIN 16932 German association for welding

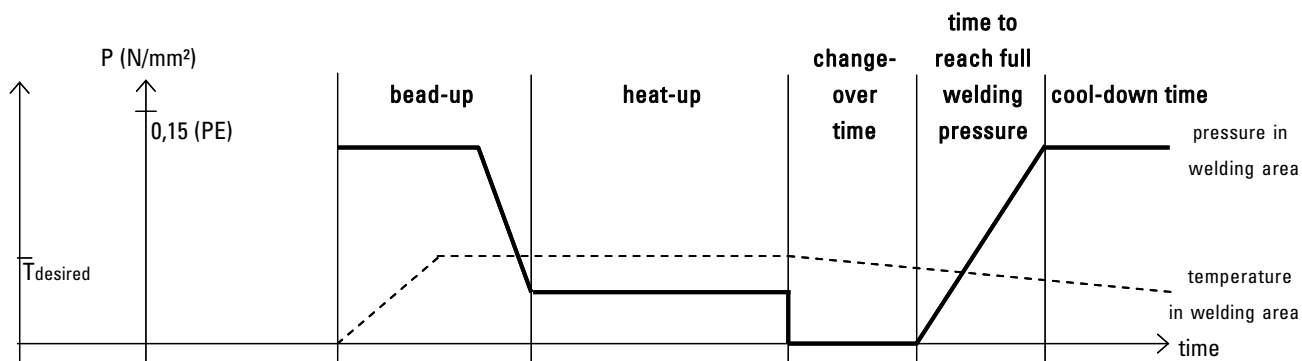
Use for: **6100 / 6100 mobile / 6200 / 6111 / 6113 / 6113 mobile**

1 bar on manometer: **173 N**

**PE 80** The value for heating element temperature is between 200° C - 220° C / 392 °F - 428 °F.  
The **smaller** the pipe wall the **higher** the temperature.

**PE 100** The standard value for heating element temperature is 220 °C / 428 °F.  
Increase the change-over time and the welding pressure time at PE 100 as fast as possible !

Additional to the given bead-up force and to the welding force the moving force of the support must be added !



pipe diameter OD [mm]	pipe wall (s) [mm]	SDR	bead-up pressure [bar]	circular bead min. [mm]	heat-up time [s]	max. change-over time [s]	time to reach welding pressure [s]	welding pressure [bar]	cool-down time [min] <b>1</b>
<b>315</b>	7,7	41	7	1,5	77	6	6	7	11
	9,7	33	9	1,5	97	7	7	9	13
	12,1	26	10	2	121	8	8	10	16
	15,0	21,0	13	2,0	150	9	9	13	19
	17,9	17,6	15	2	179	10	11	15	23
	18,7	17	16	2	187	10	11	16	24
	23,2	13,6	19	2,5	232	11	13	19	29
	28,6	11	23	3	286	13	15	23	35
	35,2	9	27	3	352	15	18	27	43
	43,1	7,4	32	3,5	431	18	22	32	52
<b>355</b>	8,7	41	9	1,5	87	7	7	9	12
	10,9	33	11	1,5	109	8	8	11	15
	13,6	26	13	2,0	136	8	9	13	18
	16,9	21,0	16	2,0	169	9	10	16	22
	20,1	17,6	19	2,5	201	10	11	19	25
	21,1	17	20	2,5	211	11	12	20	26
	26,1	13,6	24	3,0	261	12	14	24	32
	32,2	11	29	3,0	322	14	17	29	39
	39,7	9	35	3,5	397	17	20	35	48
48,5	7,4	41	3,5	485	20	24	41	58	

## Table for PE

Foundation: 2207, 2208 DIN 16932 German association for welding

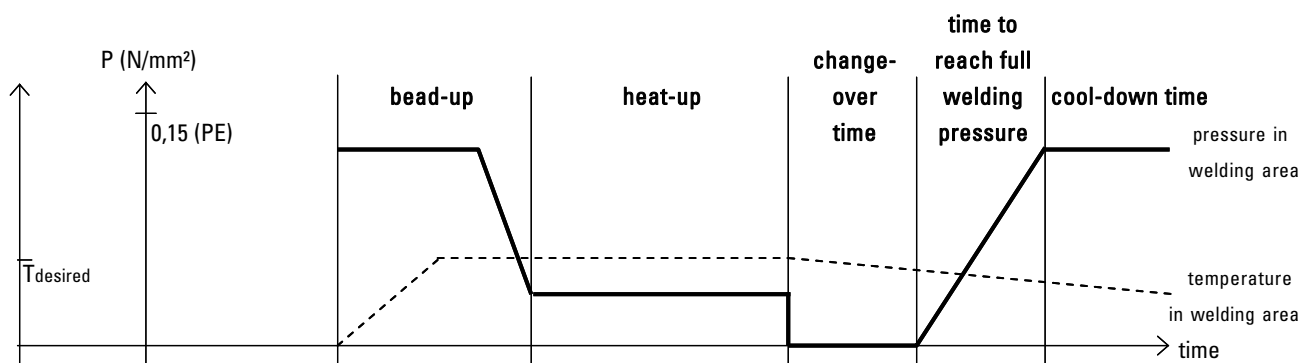
Use for: **6100 / 6100 mobile / 6200 / 6111 / 6113 / 6113 mobile**

1 bar on manometer: **173 N**

**PE 80** The value for heating element temperature is between 200° C - 220° C / 392 °F - 428 °F.  
The **smaller** the pipe wall the **higher** the temperature.

**PE 100** The standard value for heating element temperature is 220 °C / 428 °F.  
Increase the change-over time and the welding pressure time at PE 100 as fast as possible !

Additional to the given bead-up force and to the welding force the moving force of the support must be added !



pipe diameter OD [mm]	pipe wall (s) [mm]	SDR	bead-up pressure [bar]	circular bead min. [mm]	heat-up time [s]	max. change-over time [s]	time to reach welding pressure [s]	welding pressure [bar]	cool-down time [min] ①
<b>400</b>	9,8	41	11	1,5	98	7	7	11	13
	12,3	33	13	2,0	123	8	8	13	16
	15,3	26	17	2,0	153	9	9	17	20
	19,1	21,0	20	2,5	191	10	11	20	24
	22,7	17,6	24	2,5	227	11	13	24	28
	23,7	17	25	2,5	237	11	13	25	29
	29,4	13,6	30	3,0	294	13	16	30	36
	36,3	11	36	3,0	363	16	19	36	44
	44,7	9	44	3,5	447	18	23	44	54
	54,7	7,4	52	4,0	547	21	27	52	65
<b>450</b>	11,0	41	14	1,5	110	8	8	14	15
	13,8	33	17	2,0	138	9	9	17	18
	17,2	26	21	2,0	172	9	10	21	22
	21,5	21,0	26	2,5	215	11	12	26	27
	25,5	17,6	30	2,5	255	12	14	30	31
	26,7	17	31	3,0	267	12	14	31	33
	33,1	13,6	38	3,0	331	15	17	38	40
	40,9	11	46	3,5	409	17	21	46	49
	50,3	9	55	4,0	503	20	25	55	60
61,5	7,4	66	4,0	615	23	31	66	71	

## Table for PE

Foundation: 2207, 2208 DIN 16932 German association for welding

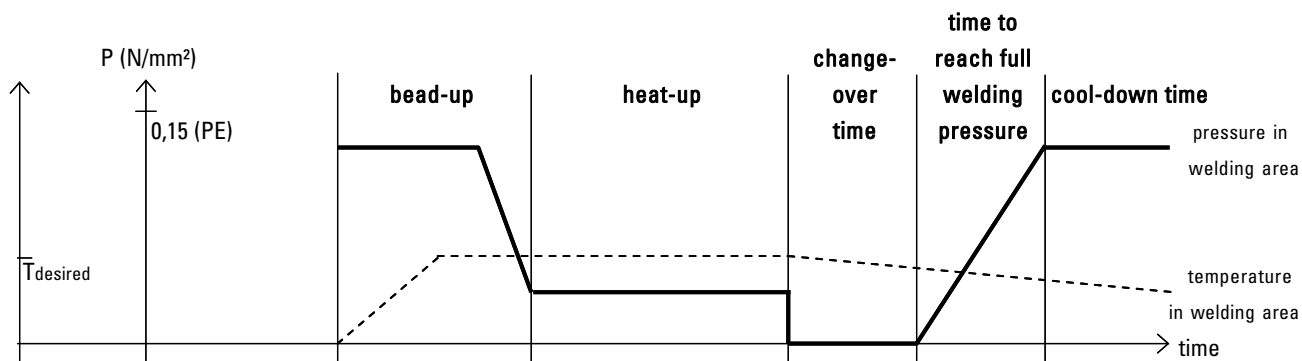
Use for: **6100 / 6100 mobile / 6200 / 6111 / 6113 / 6113 mobile**

1 bar on manometer: **173 N**

**PE 80** The value for heating element temperature is between 200° C - 220° C / 392 °F - 428 °F.  
The **smaller** the pipe wall the **higher** the temperature.

**PE 100** The standard value for heating element temperature is 220 °C / 428 °F.  
Increase the change-over time and the welding pressure time at PE 100 as fast as possible !

Additional to the given bead-up force and to the welding force the moving force of the support must be added !



pipe diameter OD [mm]	pipe wall (s) [mm]	SDR	bead-up pressure [bar]	circular bead min. [mm]	heat-up time [s]	max. change-over time [s]	time to reach welding pressure [s]	welding pressure [bar]	cool-down time [min] ①
<b>500</b>	12,3	41	17	2,0	123	8	8	17	16
500	15,3	33	21	2,0	153	9	9	21	20
500	19,1	26	26	2,5	191	10	11	26	24
500	23,9	21,0	31	2,5	239	11	13	31	30
500	28,4	17,6	37	3,0	284	13	15	37	35
500	29,7	17	39	3,0	297	13	16	39	36
500	36,8	13,6	47	3,0	368	16	19	47	45
500	45,4	11	57	3,5	454	19	23	57	55
500	55,8	9	68	4,0	558	21	28	68	66
500	68,3	7,4	81	4,0	683	25	34	81	78
<b>560</b>	13,7	41	21	2,0	137	8	9	21	18
560	17,2	33	26	2,0	172	9	10	26	22
560	21,4	26	32	2,5	214	11	12	32	27
560	26,7	21	39	3,0	267	12	14	39	33
560	31,7	17,6	46	3,0	317	14	17	46	39
560	33,2	17	48	3,0	332	15	17	48	41
560	41,2	13,6	59	3,5	412	17	21	59	50
560	50,8	11	71	4,0	508	20	25	71	61
560	62,5	9	85	4,0	625	23	31	85	72

## Table for PE

Foundation: 2207, 2208 DIN 16932 German association for welding

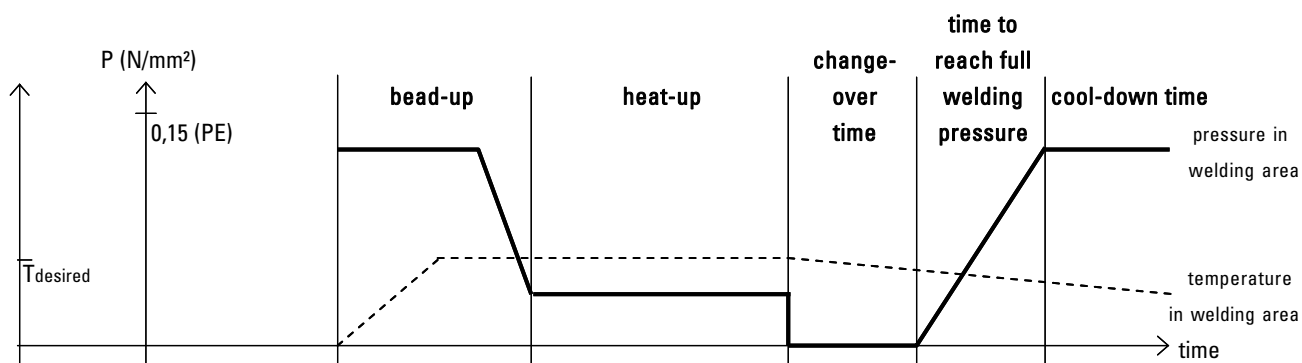
Use for: **6100 / 6100 mobile / 6200 / 6111 / 6113 / 6113 mobile**

1 bar on manometer: **173 N**

**PE 80** The value for heating element temperature is between 200° C - 220° C / 392 °F - 428 °F.  
The **smaller** the pipe wall the **higher** the temperature.

**PE 100** The standard value for heating element temperature is 220 °C / 428 °F.  
Increase the change-over time and the welding pressure time at PE 100 as fast as possible !

Additional to the given bead-up force and to the welding force the moving force of the support must be added !



pipe diameter OD [mm]	pipe wall (s) [mm]	SDR	bead-up pressure [bar]	circular bead min. [mm]	heat-up time [s]	max. change-over time [s]	time to reach welding pressure [s]	welding pressure [bar]	cool-down time [min] <b>1</b>
<b>630</b>	15,4	41	26	2,0	154	9	9	26	20
630	19,3	33	33	2,5	193	10	11	33	24
630	24,1	26	40	2,5	241	11	13	40	30
630	30,0	21	50	3,0	300	16	16	50	37
630	35,7	17,6	58	3,0	357	13	18	58	43
630	37,4	17	61	3,5	374	16	23	61	45
630	46,3	13,6	74	3,5	463	19	19	74	56
630	57,2	11	90	4,0	572	22	29	90	67
630	70	9	107	4,0	700	25	35	107	80

**1** Remaining under the cool-down time for up to 50% is allowed under the following conditions:

- prefabrication under workshop conditions
- low additional pressure at unclamping
- no additional pressure during further cooling down
- load onto the workpieces only after being completely cooled down
- Join parts with wall thickness  $\geq 15$  mm



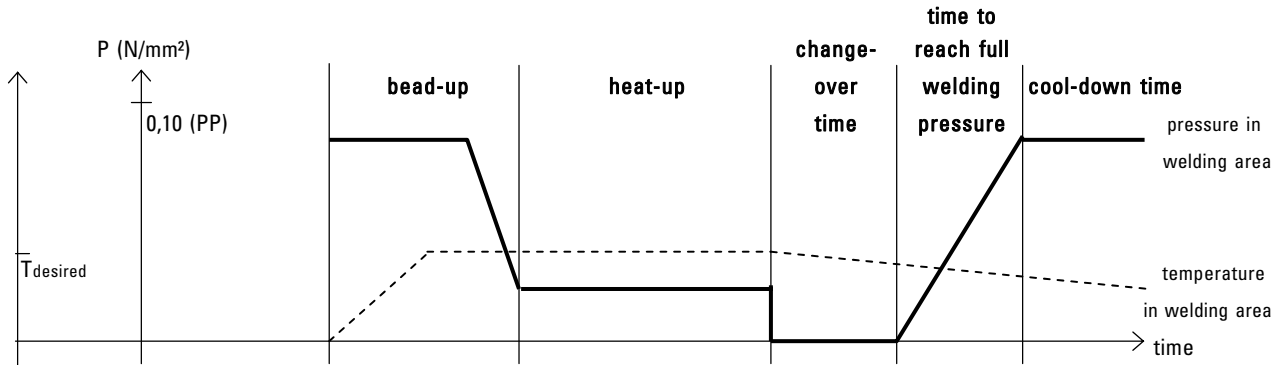
# Table for PP

Foundation: 2207, 2208 DIN 16932 German association for welding  
 Use for: **6100 / 6100 mobile / 6200 / 6111 / 6113 / 6113 mobile**

1 bar on manometer: **173 N**

The standard value for heating element temperature is 210° C ± 10° C / 410 °F ± 50 °F.  
 The **smaller** the pipe wall the **higher** the temperature.

Additional to the given bead-up force and to the welding force the moving force of the support must be added !



pipe diameter OD [mm]	pipe wall (s) [mm]	SDR	bead-up pressure [bar]	circular bead min. [mm]	heat-up time [s]	max. change-over time [s]	time to reach welding pressure [s]	welding pressure [bar]	cool-down time [min] <b>1</b>
<b>315</b>	7,7	41	5	1,0	185	6	8	5	13
	9,7	33	6	1,0	213	7	9	6	16
	12,1	26	7	1,0	246	7	11	7	20
	17,9	17,6	10	1,0	317	9	16	10	28
	28,6	11	15	2,0	420	12	24	15	44
<b>355</b>	8,7	41	6	1,0	199	6	8	6	15
	10,9	33	7	1,0	230	7	10	7	18
	13,6	26	9	1,0	264	7	12	9	22
	20,1	17,6	13	1,5	341	9	18	13	32
	32,2	11	19	2,0	448	13	28	19	48
<b>400</b>	9,8	41	7	1,0	214	7	9	7	16
	12,3	33	9	1,0	249	7	11	9	20
	15,3	26	11	1,0	221	7	10	11	17
	22,7	17,6	16	1,5	367	10	20	16	35
	36,3	11	24	2,0	480	14	31	24	54
<b>450</b>	11,0	41	9	1,0	231	7	10	9	18
	13,8	33	11	1,0	267	8	13	11	23
	17,2	26	14	1,0	308	8	15	14	27
	25,5	17,6	20	1,5	395	11	22	20	39
	40,9	11	31	2,5	508	15	35	31	59
<b>500</b>	12,3	41	11	1,0	249	7	11	11	20
	15,3	33	14	1,0	285	8	14	14	25
	19,1	26	17	1,5	331	9	17	17	30
	28,4	17,6	25	2,0	419	12	24	25	43

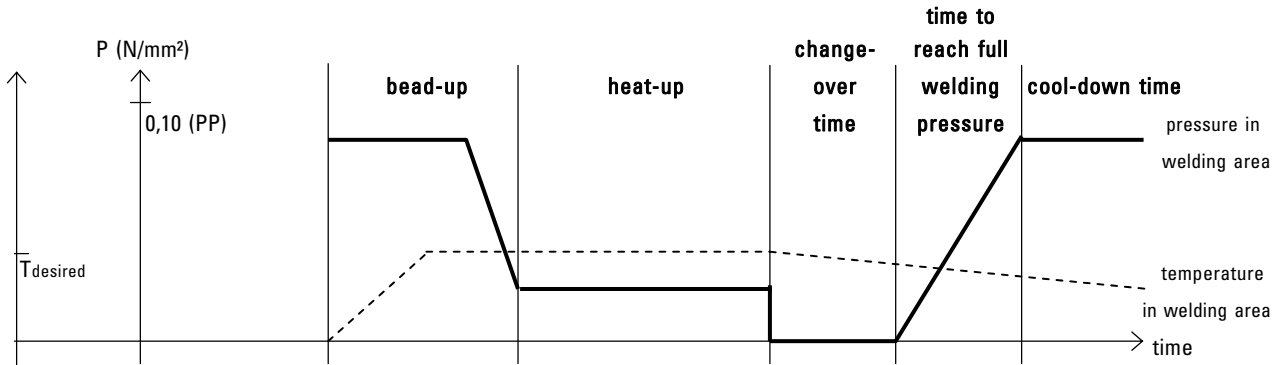
# Table for PP

Foundation: 2207, 2208 DIN 16932 German association for welding  
 Use for: **6100 / 6100 mobile / 6200 / 6111 / 6113 / 6113 mobile**

1 bar on manometer: **173 N**

The standard value for heating element temperature is 210° C ± 10° C / 410 °F ± 50 °F.  
 The **smaller** the pipe wall the **higher** the temperature.

Additional to the given bead-up force and to the welding force the moving force of the support must be added !



pipe diameter OD [mm]	pipe wall (s) [mm]	SDR	bead-up pressure [bar]	circular bead min. [mm]	heat-up time [s]	max. change-over time [s]	time to reach welding pressure [s]	welding pressure [bar]	cool-down time [min] <b>1</b>
<b>560</b>	13,7	41	14	1,0	266	7	12	14	22
	17,2	33	17	1,0	308	8	15	17	27
	21,4	26	21	1,5	354	10	19	21	33
<b>630</b>	31,7	17,6	31	2,0	444	13	27	31	48
	15,4	41	18	1,0	286	8	14	18	25
	19,3	33	22	1,5	333	9	17	22	30
	24,1	26	27	1,5	381	10	21	27	37
35,7	17,6	39	2,0	475	14	31	39	53	

**1** Remaining under the cool-down time for up to 50% is allowed under the following conditions:

- prefabrication under workshop conditions
- low additional pressure at unclamping
- no additional pressure during further cooling down
- load onto the workpieces only after being completely cooled down
- Join parts with wall thickness ≥15 mm

## 7. Maintenance and repair

### Goal of the chapter is:

- Keeping the nominal state and the operation capacity of the machine.
- Increasing the efficiency by avoiding non-planned outage.
- Efficient planning of the maintenance work and the maintenance tools.

### 7.1. Maintenance and inspection, repair



All maintenance and repair work have to be basically performed with the machine in off position.

During this the machine has to be secured against unauthorized switching on.



Prescribed maintenance and inspection work should be performed in time.

The DVS gives the advice of inspection work after 1 year.

For machines with a specially high usage percentage the testing cycle should be shortened.

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

### 7.2. How to check the hydraulic oil level

- Prior to each starting of the machine check oil level of the hydraulic unit in order to avoid damages.

Only the closed hydraulic aggregate (optional): Remove the cover of the hydraulic aggregate.

- Remove the red cover with integrated oil dip stick from the rear of the hydraulic unit.
- Detach the cap (with integrated oil dipstick) of the filler neck of the hydraulic tank.
- Clean the oil dipstick with a dry tissue and insert it again in the tank by screwing.
- Remove the oil dipstick again and check the oil level.
- The oil level must be between the two marks. Please use the hydraulic oil of the quality HLPD 32.
- If the oil level is under the lower mark, then hydraulic oil of the quality HLDP 32 must be added.
- The oil level may not be above the upper mark since otherwise there is the danger of spilling in certain situations.
- Having completed all work shut the cap again tightly.
- Do not tilt the hydraulic unit since the cap of the tank is not 100% sealed and oil may leak.

### 7.3. Used hydraulic oil

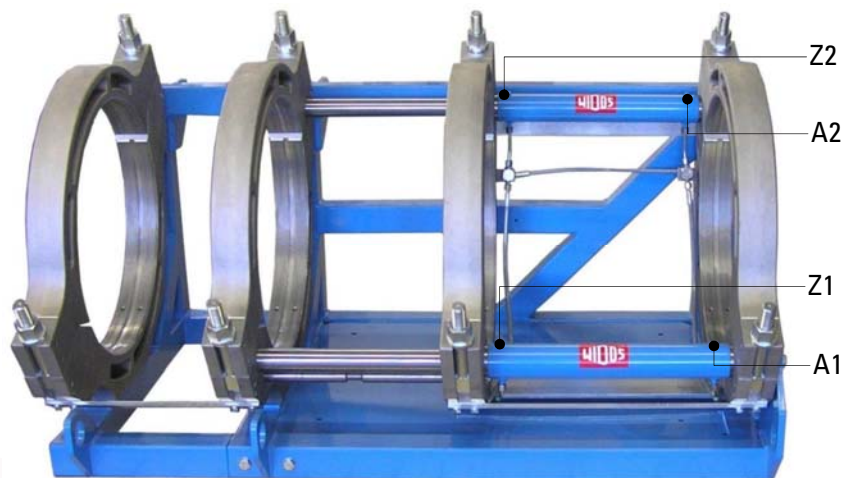


Only use **HLPD 32**.

Features: protection against corrosion, resistance to ageing, abrasion-reducing additives, high carrying capacity and particularly water binding.

The hydraulic oil has to be **disposed of properly**.

### 7.4. How to vent the hydraulic cylinders



- Venting the hydraulic cylinder is **not** required, if
  - the hoses have been disconnected from the quick-action couplings at the control unit because the remaining oil in the hose is being kept by valves and for this reason no air can enter.
- The hydraulic cylinder **must be vented** if
  - there has been too less oil in the tank and air has been attracted.
  - there were leaky spots at the hoses or in the connections.
  - the hoses were unscrewed from the basic machine.
- Eliminate the cause of the air entrance.
- Open the machine completely, with <valve lever> on: "**backwards**".
- First unscrew the lower „vent screw (Z1) for closing“(left-hand side).
- Connect the transparent venting hose and insert it in the collecting vessel of the aggregate.
- Close machine with <valve lever> on: "**forwards**" until there is no more air visible in the venting hose.
- Tighten the venting screw (Z1) again.
- Close the machine completely with <valve lever> on:"**forwards**".
- Unscrew the lower „venting screw (A1) for opening“(right-hand side).
- Connect the transparent venting hose and insert it in the collecting vessel of the aggregate.
- Press the <valve lever> to "**backwards**" drive the carriage together until there is no air visible in the venting hose.
- Afterwards tighten the screw (A1) again.

- When the venting process at the lower vent screws is completed, repeat the process at the upper „vent screw (Z2) for closing“(left-hand side), as well as at the upper „vent screw (A2) for opening“(right-hand side).



The lower vent screws always have to be vented at first because there is a direct connection between the upper and the lower cylinders.

- If air remains in the lower cylinder, it will ascend in the upper cylinder when pressure is applied.
- Make sure, there must always be enough oil in the tank.

## 7.5. Planer

- Check the stress of the drive chain in the planer and grease it regularly. The cover of the planer can be screwed off by means of the provided socket spanner.
- Do not lay the planer on its blades.
- Check the blades of the planer for sharpness, turn them if necessary (grinded on both sides, max. thickness of the shavings: 0, 2 mm!).

## 7.6. Storage

- The cylindrical waves of the basic machine are to be kept free from dirtiness and need to be covered with a thin oil film if they are not being used.
- Store dry.

## 7.7. 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.

## 7.8. Lifting device (optional)

Check the lifting device according to the inspection and service plan of ABUS Co. (working instructions is included).

## 7.9. 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.

## 8. Transport

The machine can be transported in two transport boxes or in one packing box.

One transport box contains the basic machine, the aggregate and the reception box with planer and heating element, the other box contains the reduction inserts.

- In each box holders are included which are suitable for each single component in order to avoid slipping.
  - Put the components into the box in such a way that they fit into the holders.
- The hydraulic hoses at the basic machine should not be unscrewed (air penetration).
  - Make sure that they are not squeezed.
- Handle the machine carefully.
  - Do not tilt the aggregate too much. Otherwise there is the danger that oil may come out.
  - Protect the machine 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 much care when using automatic handling and carrying machines.



During the transport of the machine there may be cold weldings between the piston rod and the eyes of the planer housing. These spots on the piston rod may damage the sealing.



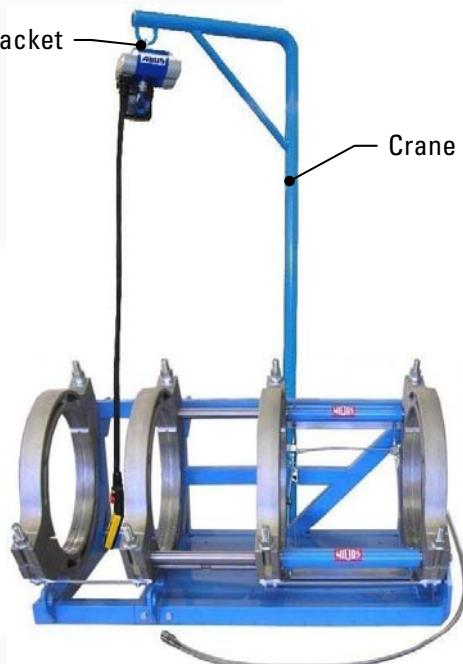
Therefore the eyes must be lubricated with PTFE spray before each transport!

For machines with lifting device (option).

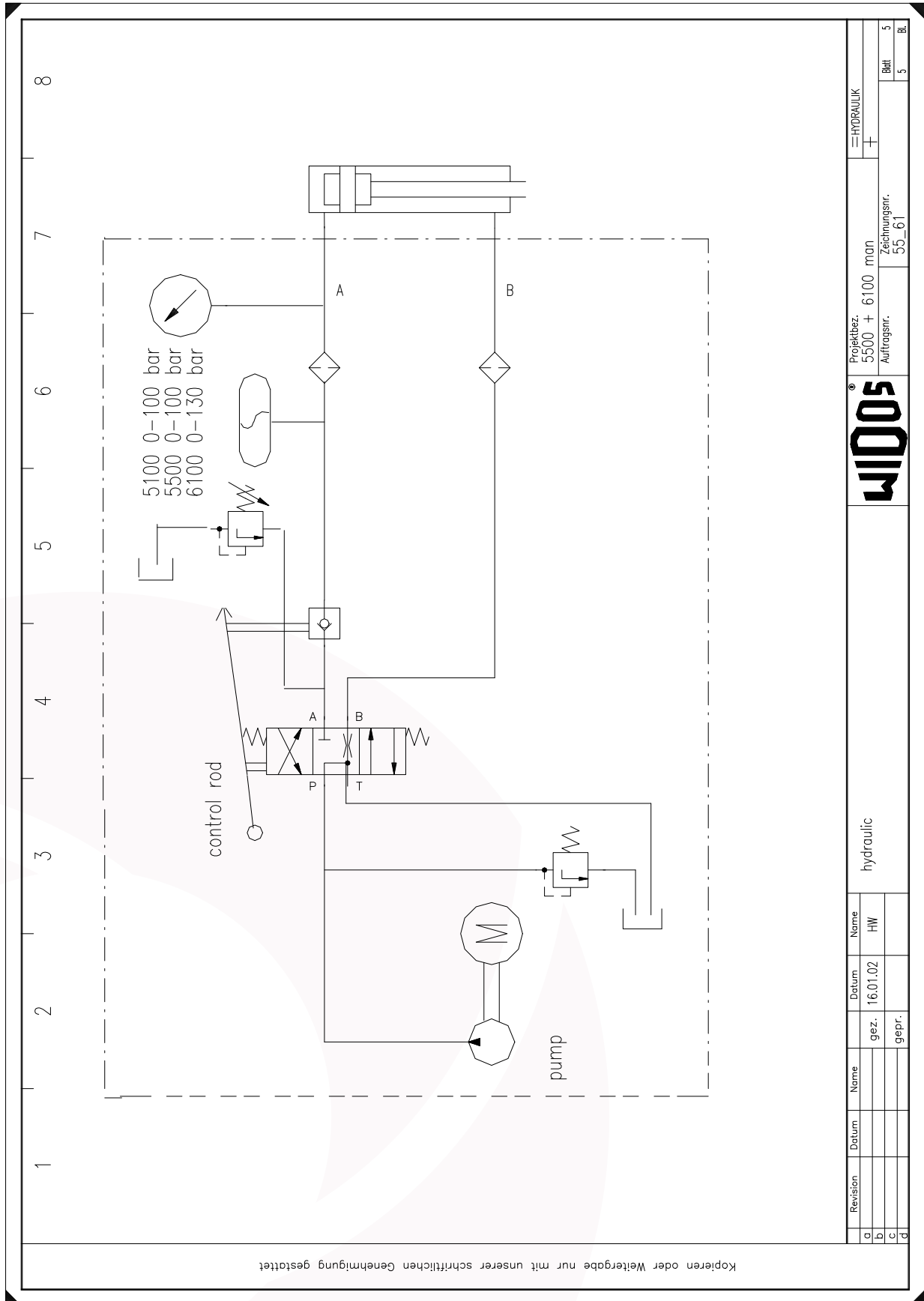
- Lift the lifting device out of the holder from above for a transport.
- If necessary disconnect the crane motor from the crane mast by demounting the suspension bracket on the crane motor.

Suspension bracket

Crane mast



## 9. Hydraulic and electric diagrams







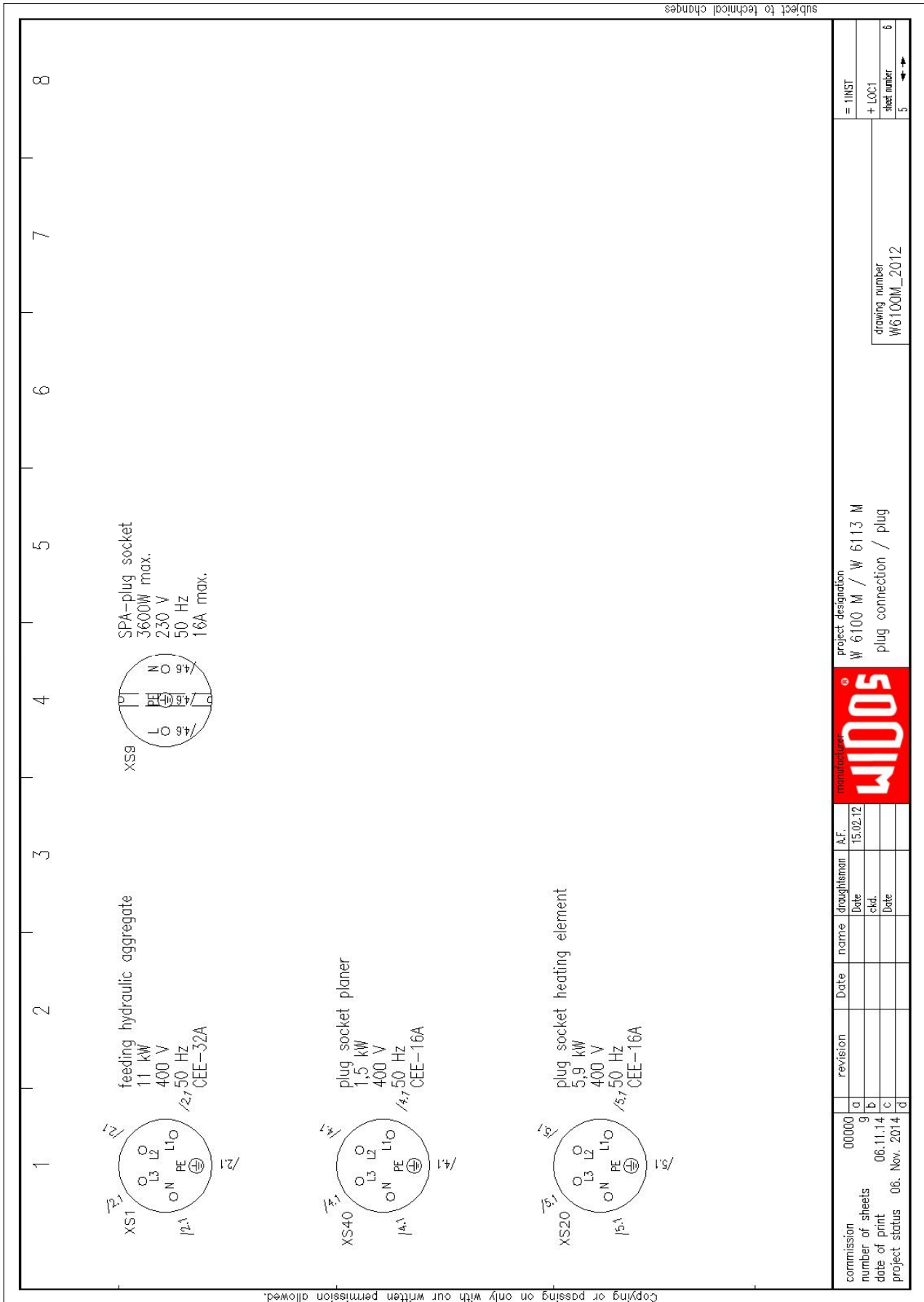










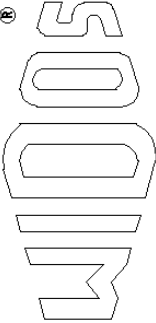








9.2. Electric diagrams with hydraulic aggregate open



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sheet number 0  
continuation sheet 1  
number of sheets 8


circuit diagram

project designation W 61XX M – hydraulic aggregate opened

machine type W61XXM

number of sheets 8

Date 06.11.14



project designation  
W 61XX M – hydraulic aggregate opened

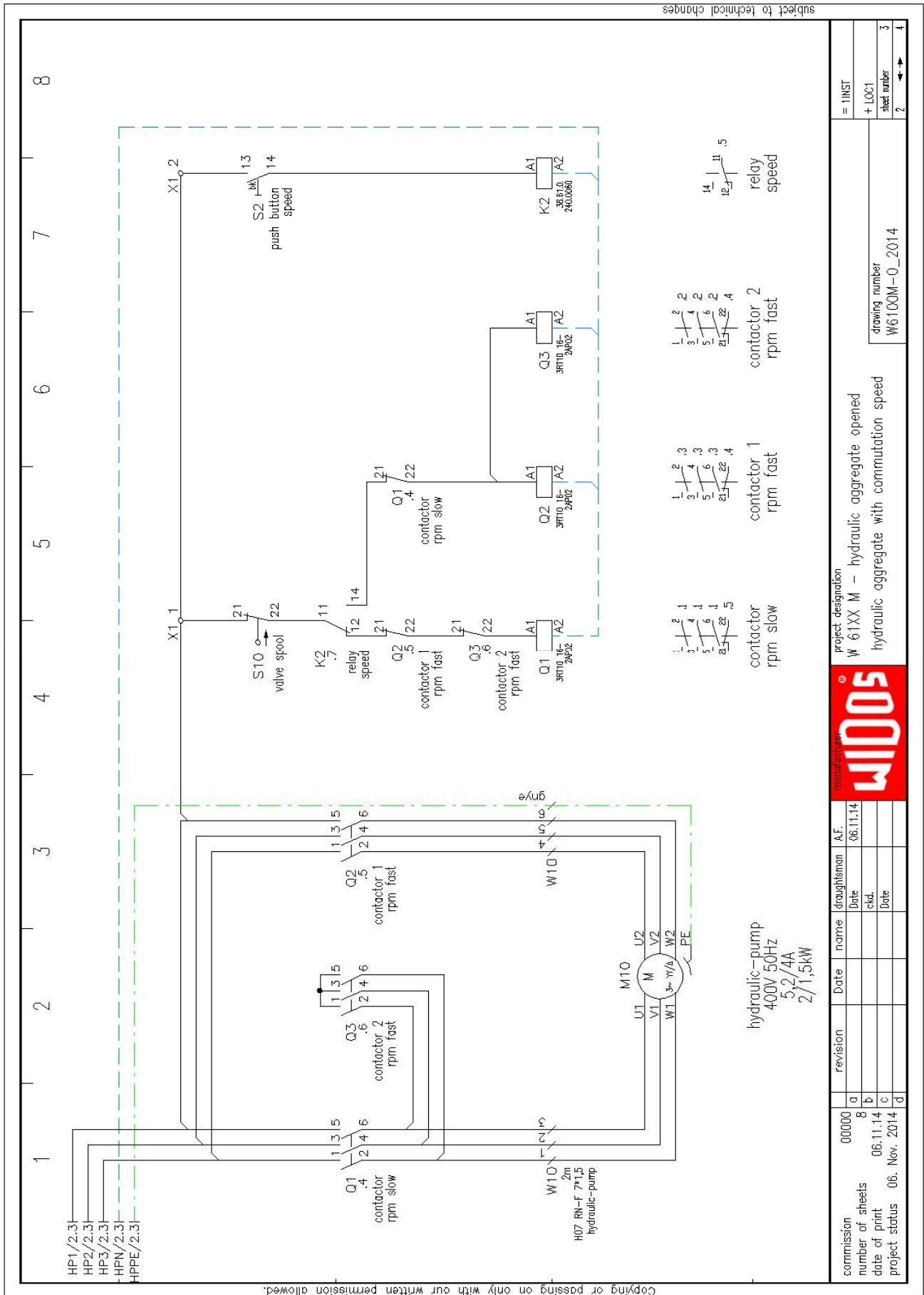
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W61DCM-0\_2014

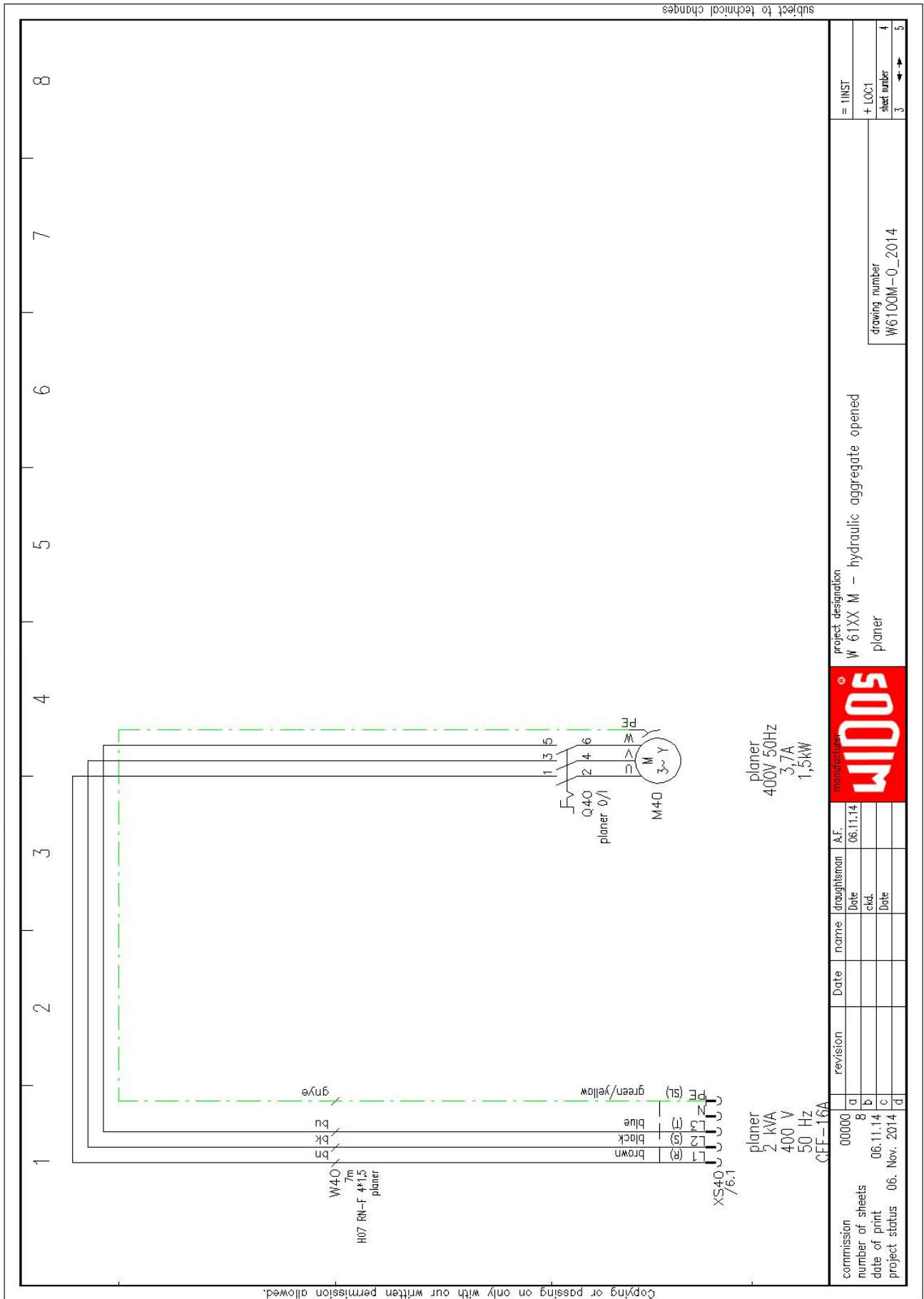
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number of sheets	8	draughtsman	A.F.	cover sheet	
date of print	06.11.14	Date			
project status	06. Nov. 2014	ckd.			

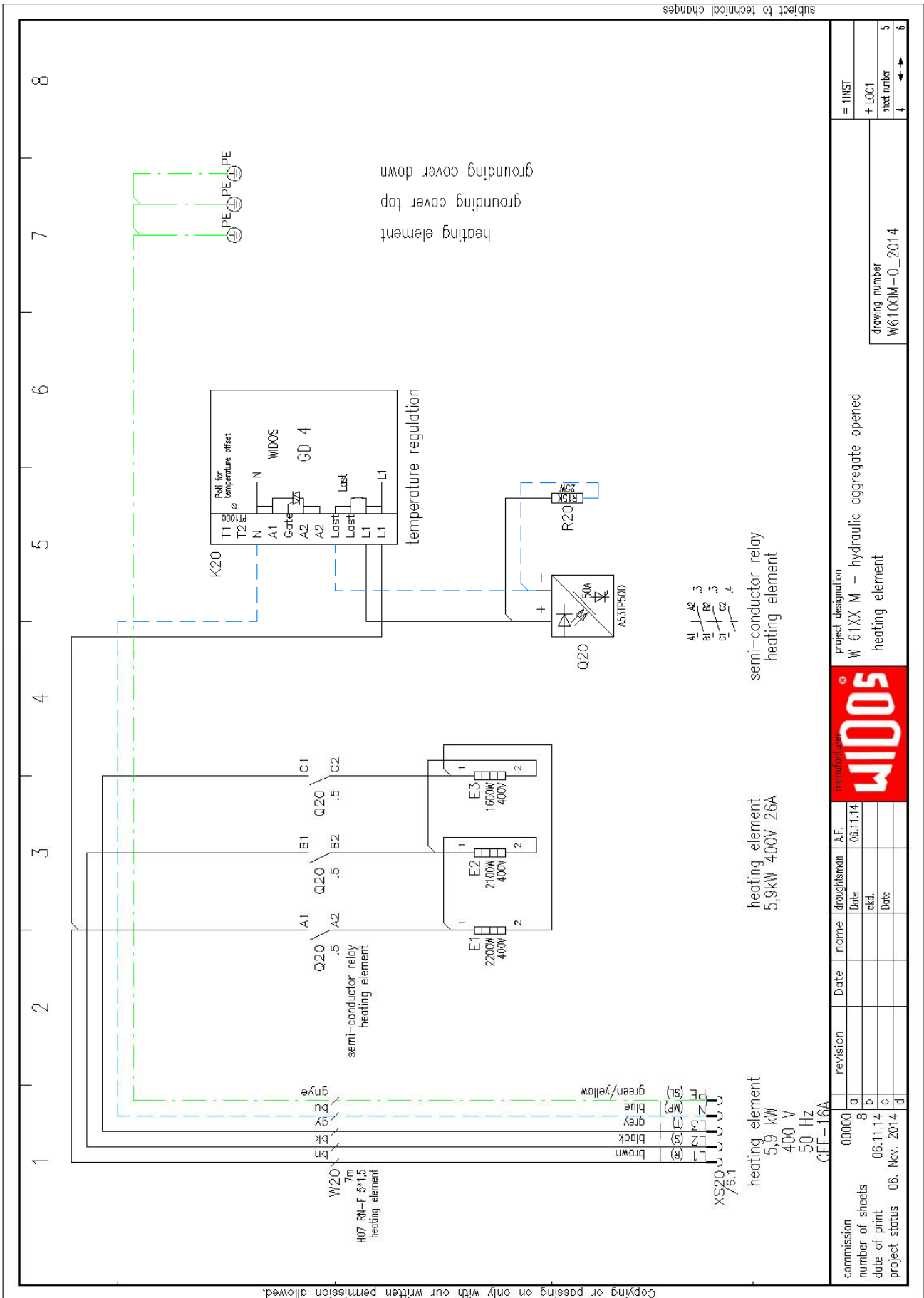
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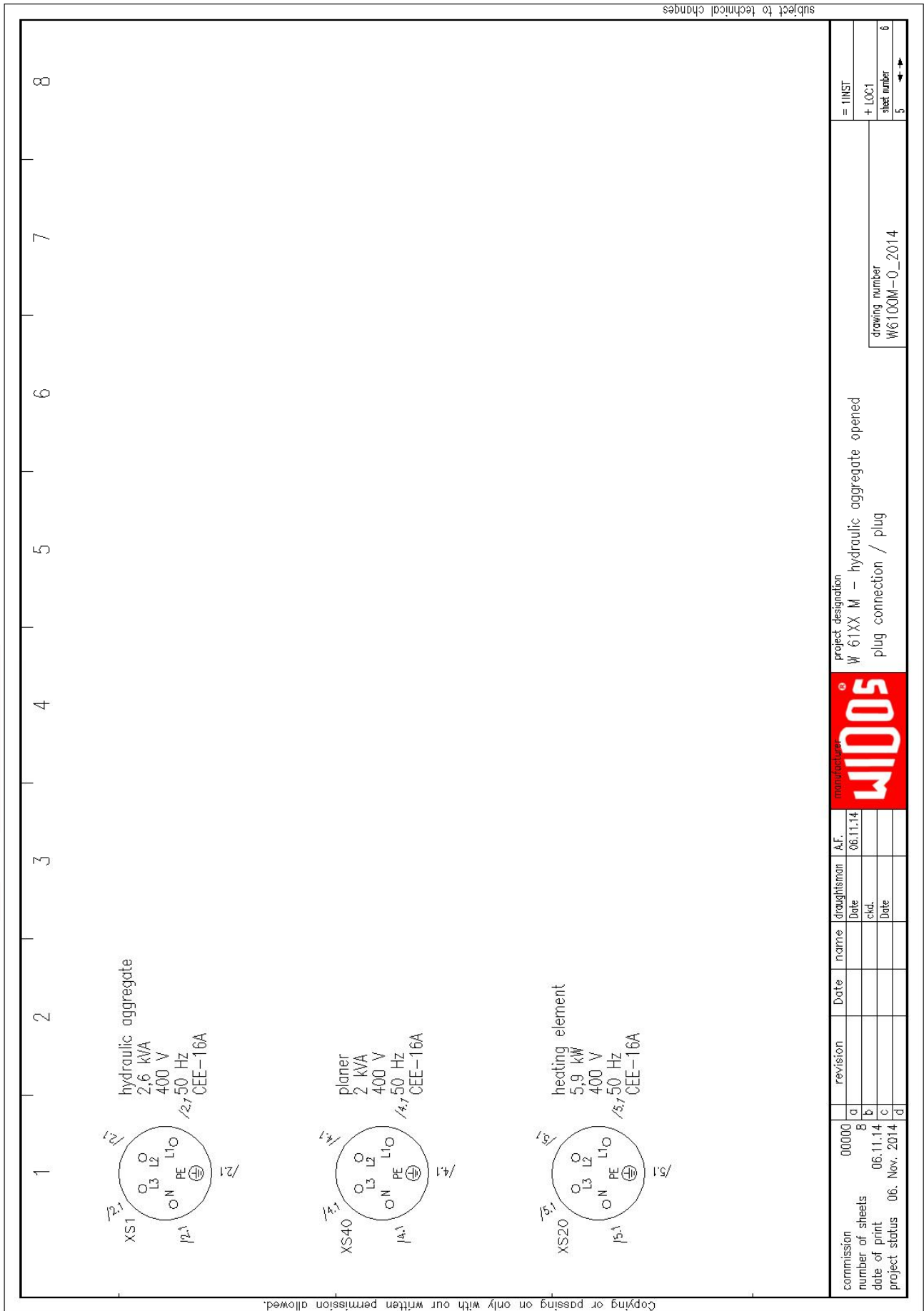










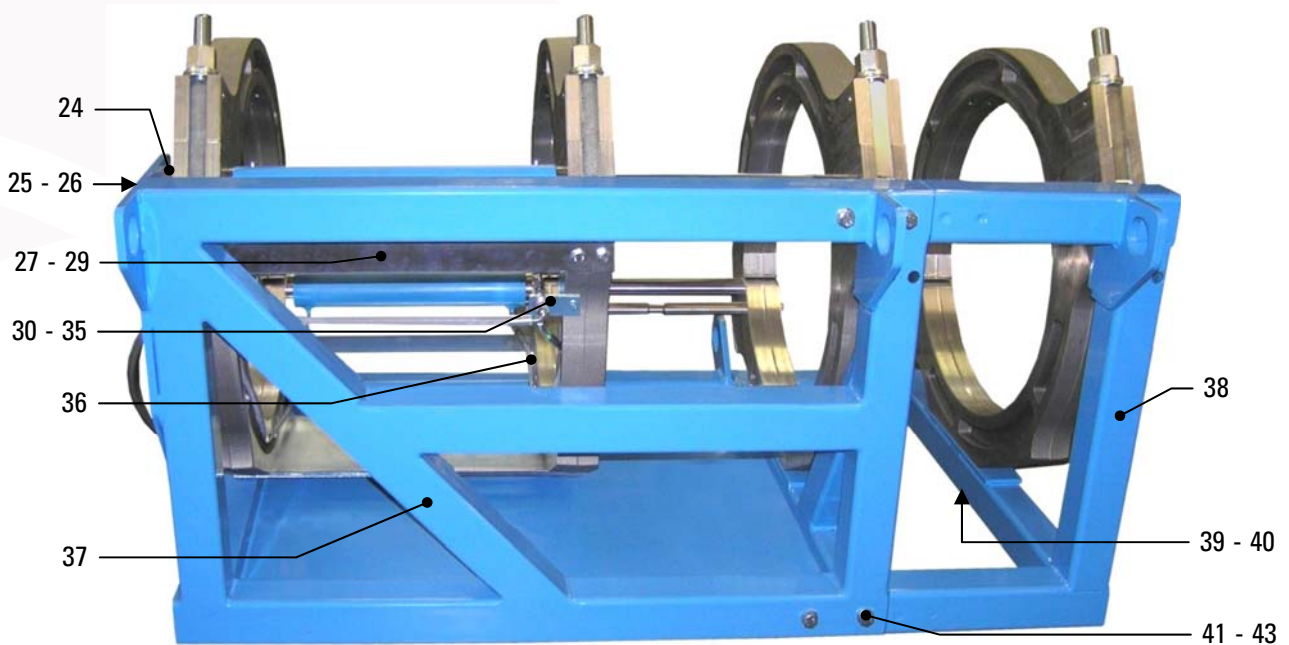
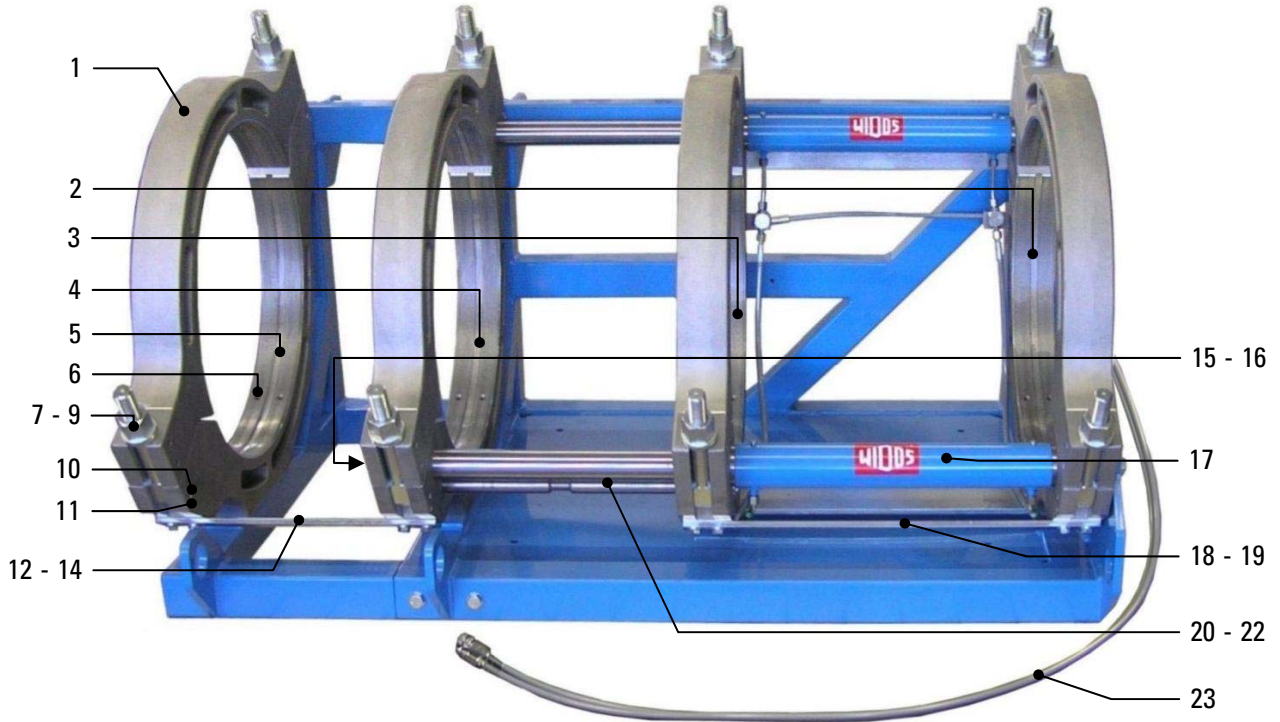






## 10. Spare parts list

### 10.1. Basic machine



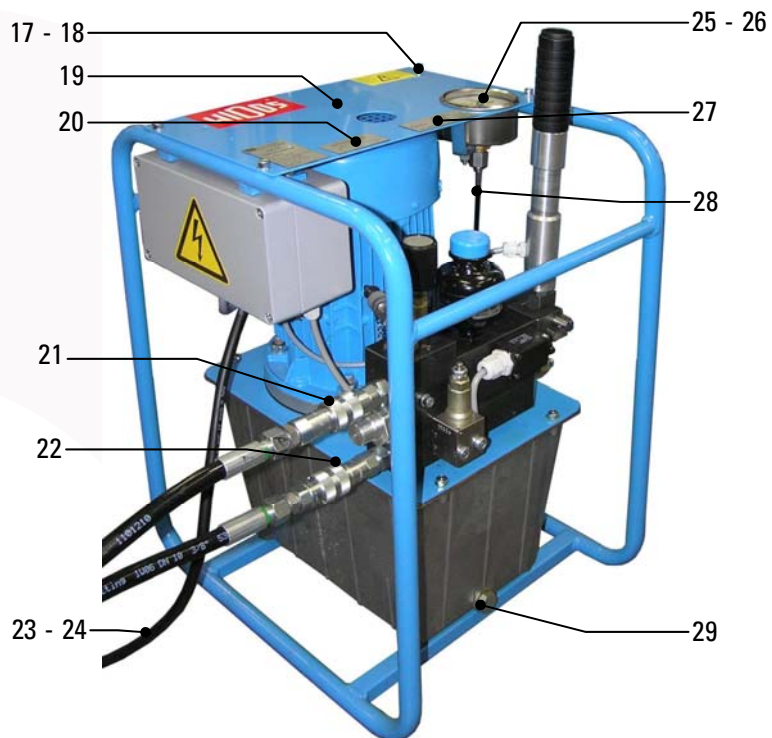
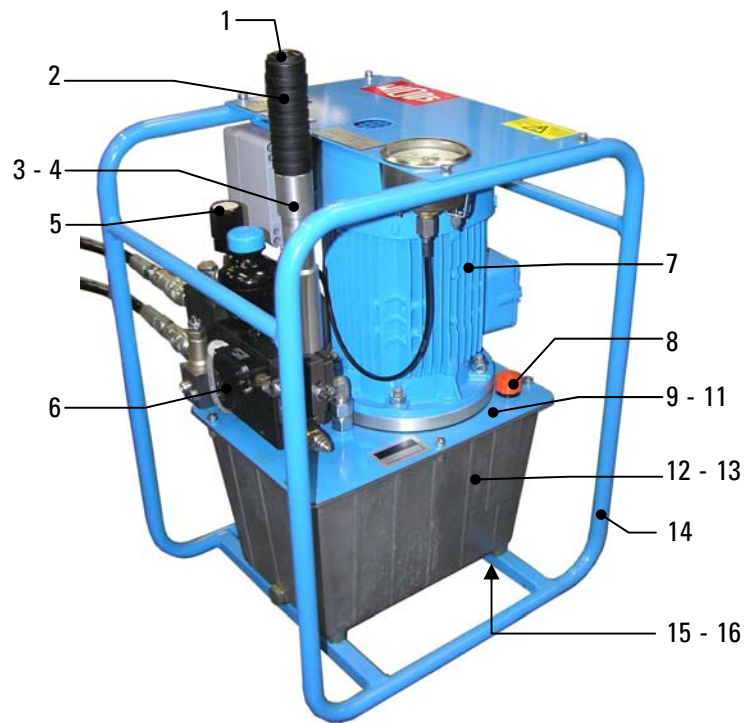
## Basic Machine WIDOS 6113

Pos.	Name	Piece	Order no.
1	Upper clamp	4	0811255
2	Outer clamp, fixed	1	0811251
3	Inner clamp, fixed	1	0811252
4	Inner clamp, movable	1	0811253
5	Outer clamp, movable	1	0811254
6	Thread insert M 10	16	GEW-M10
7	Thread spindle	8	0811257
8	Spindle nut	8	6331ß
9	Washer M 30 DIN 125	8	0125ß
10	Straight pin 10 x 80 DIN 6325	8	6325J080
11	Straight pin 8 x 80 DIN 6325	8	6325H080
12	Connecting plate 3	1	0811233
13	Hexagon-head screw M 12x30 DIN 933	4	0933L030
14	Washer M 12 DIN 125	4	0125L
15	Washer M 20 DIN 125	2	0125T
16	Hexagon-head screw M 20 x 60 DIN 933	2	0933T060
17	Hydraulic cylinder	2	0811256
	Seals for cylinder	2	0841206D
18	Connecting plate 2	1	0811262
19	Hexagon-head screw M 12x30 DIN 933	8	7991L030
20	Tear-off bar	1	0815256
21	Hexagon-head screw M 12x15 DIN 933	2	0933L015
22	Washer M 12 DIN 9021	2	9021L
23	Hose bunch	1	VSCHL6100
	Coupling plug, flat packing	1	VST14
	Coupling box, flat packing	1	VMU14
24	Extension	2	0811264
25	Hexagon-head screw M 16x150 DIN 933	2	0933P150
26	Pressure washer	2	071133
27	Connecting plate 1	2	0811261
28	Hexagon-head screw M 12x30 DIN 933	8	0933L030
29	Washer M 12 DIN 125	8	0125L
30	Holding device for filter	2	093119
31	Washer M 8 DIN 125	4	0125H
32	Hexagon-head screw M 8x20 DIN 933	2	0933H020
33	Screwed connection GE 8L R3/8"	2	VXGE8L38
34	Filter	2	V092114
35	Hydraulic hose (770 mm)	2	391113
36	Hydraulic hose long	2	on request
37	Basic frame	1	0811258
38	Basic frame detachable extension	1	0811259
39	Pan-head screw M 12x25 DIN 933	8	0933L025
40	Washer M 12 DIN 125	8	0125L

**Basic Machine WIDOS 6113**

Pos.	Name	Piece	Order no.
41	Hexagon-head screw M 16x25 DIN 933	6	0933P025
42	Washer M 16 DIN 125	6	0125P
43	Terminal Strip	3	811242
--	Reduction insert OD 315-560	8	0808...*
--	Pan head screw M 10 x 20 DIN 912	8	0912J020
--	Name plate	1	SCHT6100
--	Hydraulic oil	1 l	HLPD35
--	Allan key with T-grip, size 8	1	ZIT08
--	Socket spanner size 46	1	ZRS46
--	Open-end wrench size 24	1	ZGG24
--	Combination spanner size 19	1	ZRG19
	*) When ordering, please state the dimension of the pipe !		

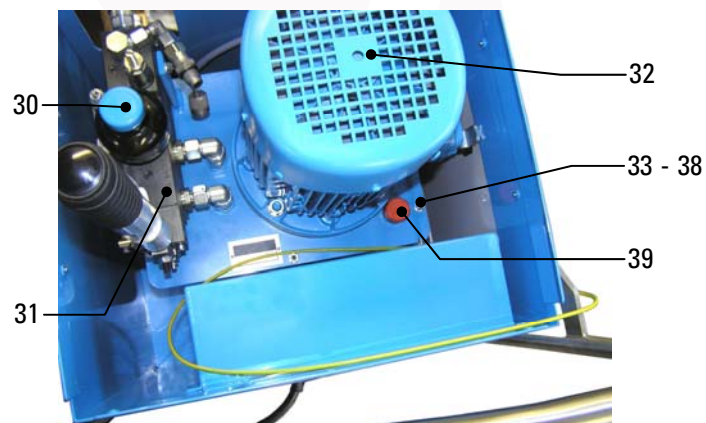
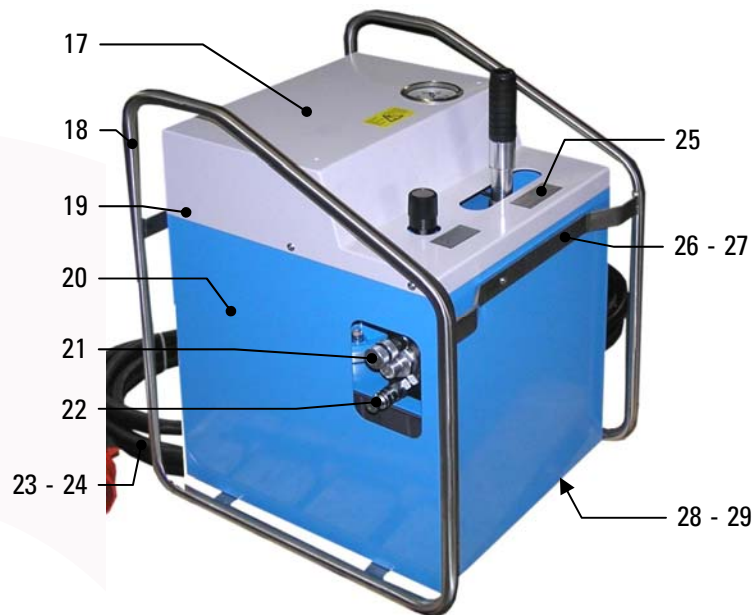
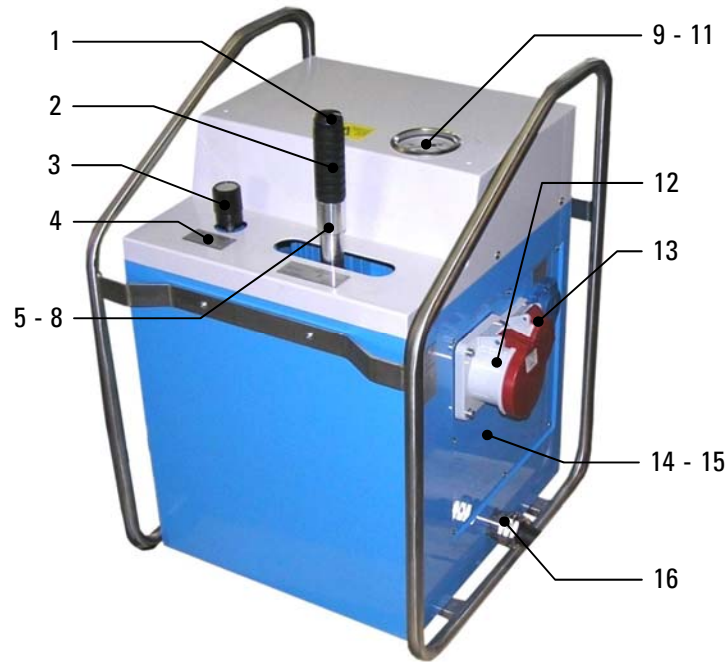
## 10.2. Hydraulic aggregate open (optional)



## Hydraulic aggregat, open WIDOS 6113

Pos.	Name	Piece	Article No.
1	Pushbutton	1	ES3801
2	Grip with thread	1	H09061
3	Grip for hydraulic aggregate	1	1060061
4	Skintop-screwing M 12 x 1,5	1	EV1012
5	Button for pressure setting	1	101022
6	Valve box	1	on request
7	Treephase motor 1,5/2,0 kW (Type FE90L-2/4)	1	on request
8	Oil dipstick	1	1010212
9	Hexagon nut M 5 DIN 934	6	0934E
10	Washer M 5 DIN 125	6	0125E
11	Tank cover	1	233236
12	Oil tank 10 l	1	on request
13	Hydraulic pump	1	on request
14	Protective frame for hydraulic aggregate	1	233221
15	Pan-head screw M 8x25 DIN 912	4	0912H025
16	Washer M8 DIN 912	4	0125H
17	Pan-head screw M 6x10 DIN 912	4	0912F010
18	Washer M 6 DIN 125	4	0125F
19	Sheet metal cover for protective mounting	1	233232
20	Plate "Manometer setting up"	1	SCHM6100
21	Coupling sleeve, flat packed	2	VMU14
22	Coupling plug, flat packed	2	VST14
23	Connecting cable 5x1,5 mm <sup>2</sup> , 7 m	1	EL02515
24	Plug 16 A	1	EST0316
25	Pressure gauge 0-250 bar	1	023004
26	Screwed connection for pressure gauge	1	V042314
27	Plate "Release pressure"	1	SCHD-L
28	Mini hose	1	V0400140
29	Oil drain screw	1	on request

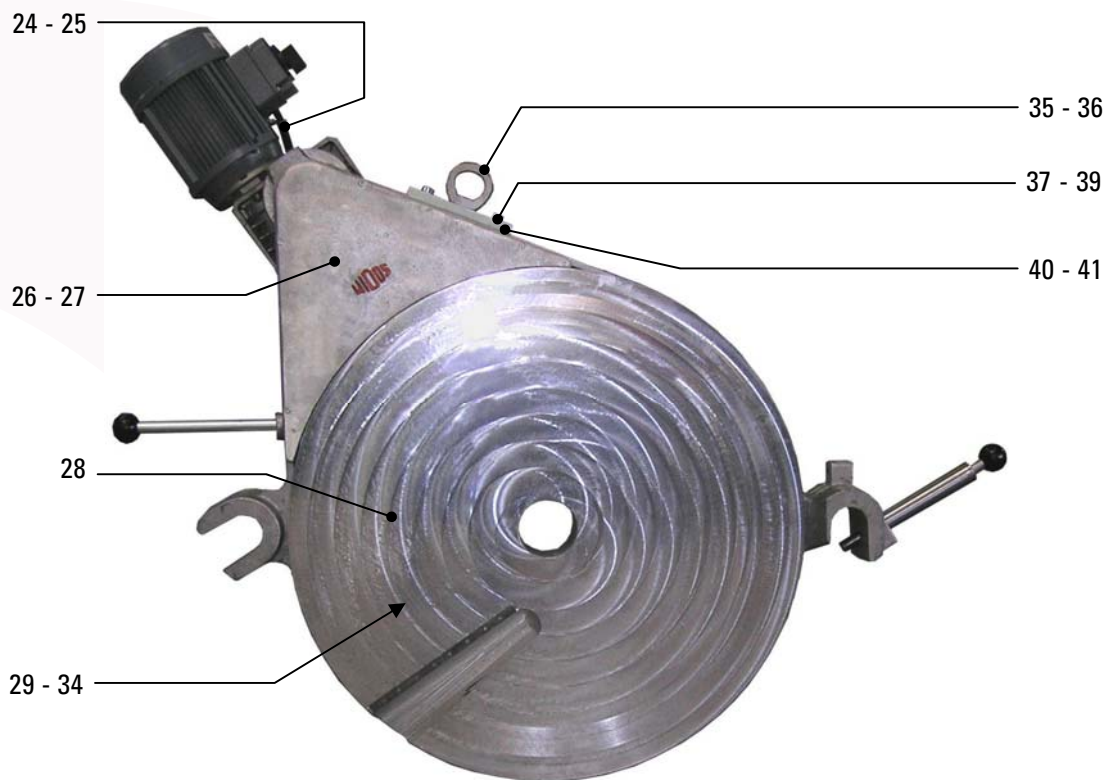
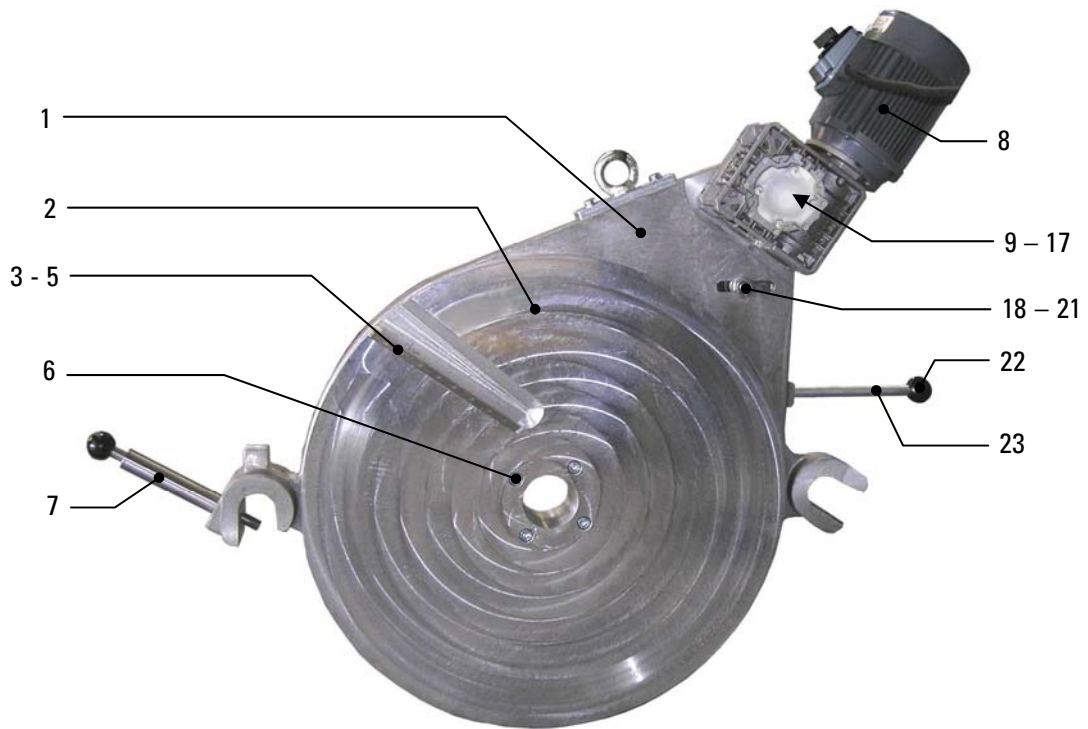
### 10.3. Hydraulic aggregate enclosed (optional)



## Hydraulic aggregat, closed WIDOS 6113

Pos.	Name	Piece	Order no.
1	Press button	1	ES3801
2	Grip with thread	1	H09061
3	Button for pressure relief valve	1	101022
4	Plate "pressure gauge adjusting value"	1	SCHM6100
5	Grip for hydraulic aggregate	1	1060061
6	Skintop screwing M 12x1,5	1	EV1012
7	Grub screw M 10x45 DIN 913	1	0913J045
8	Hexagon nut M 10 DIN 935	1	0934J
9	Pressure gauge 0-250 bar	1	023004
10	Screwed connection for pressure gauge	1	V042314
11	Mini hose	1	V0400140
12	CEE-electrical socket 400V / 16 A	2	EST16EG
13	Power socket 230V	1	EST07021
14	Fitting panel	1	1060103
15	Lens-head screw M 5x10 DIN 7379	8	7379E016
16	HKL-Screwing	1	EVH21252117
17	Cap for hydraulic box	1	1060105
18	Frame for hydraulic box	1	1060124
19	Lens-head screw M 5x16 DIN 7985	6	7379E010
20	Box for hydraulic box	1	1060102
21	Coupling sleeve, flat packed	2	VMU14
22	Coupling plug, flat packed	2	VST14
23	Connecting cable 5x4 mm <sup>2</sup> , 10 m	1	on request
24	Plug 32 A	1	EST00132
25	Plate "Release pressure"	1	SCHD-L
26	Pan-head screw M 5x10 DIN 912	4	0912E010
27	Washer M5 DIN 125	4	0125E
28	Pan-head screw M 8x25 DIN 912	4	0912H025
29	Washer M8 DIN 125	4	0125H
30	Pressure accumulator	1	103206
31	Valve box	1	on request
32	Three-phase motor 1,5/2,0KW (Type FE90L-2/4)	1	on request
33	Hexagon nut M5 DIN 935	6	0934E
34	Washer M 5 DIN 125	6	0125E
35	Tank cap	1	233236
36	Oil tank 10 l	1	on request
37	Hydraulic pump	1	on request
38	Cover plate	1	1060111
39	Oil dip stick	1	1010212

10.4. Planer

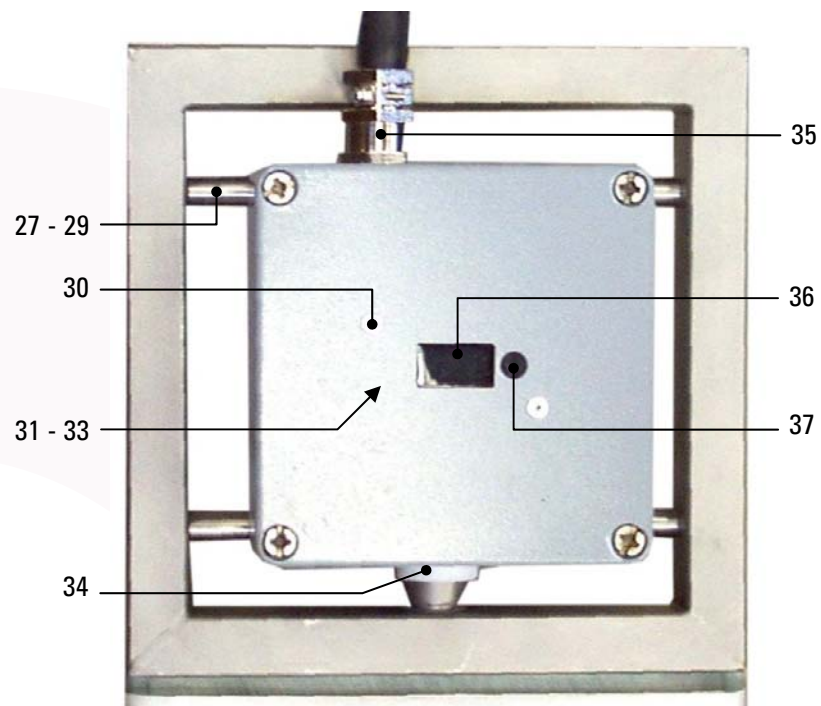
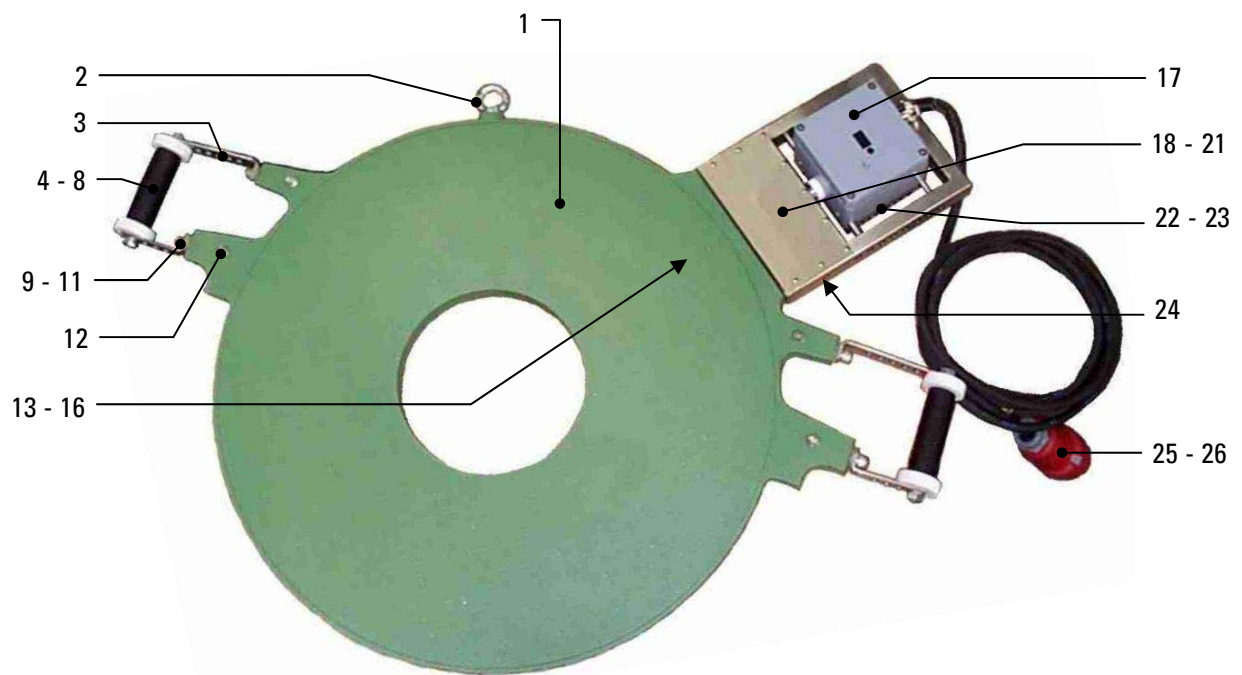




## Planer WIDOS 6113

Pos.	Name	Piece	Order no.
1	Fastener for planer	1	0814251
2	Planer disc, right-hand	1	0824022
3	Knife	4	MES120
4	Spacer	4	MU120
5	Flat-head screw M 3x8 DIN 965	16	0965C008TX
6	Pan-head screw M 12x50 DIN 912	4	0912L050
7	Locking device for planer complete	1	082420
8	Rotary current gearing motor 1.1 kW	1	ADG11400
	Switch cupboard	1	ADG1104
	Switch for geared motor	1	ADG1103
9	Pan-head screw M 8x25 DIN 912	4	0912H025
10	Pan-head screw M 8x20 DIN 912	2	0912H020
11	Washer for gear shaft	1	081414
12	Driveshaft KU63	1	0824111
13	Dowel spring 8 x 7 x 90 DIN 6885	1	6885H090
14	Dowel spring 8 x 7 x 18 DIN 6885	1	6885H018
15	Disc (front) for geared motor	1	081409
16	Flat-head screw M 8x20 DIN 7991	1	7991H020
17	Chain wheel, small	1	081412
18	Ball bearing 6003ZZ	2	L6003Z
19	Bolt	1	081410
20	Washer M 16 DIN 125	9	0125P
21	Hexagon nut M 16x1.5 DIN 934	1	0934Y
22	Ball button C 40 DIN 319	1	0319C40
23	Handle bar	1	071409
24	Cable H07 RN-F 5x1.5 <sup>2</sup> ; 6 m	1	EL02515
25	Phase-inverter plug CEE 16 A, 400 V	1	EST0416
26	Cover	1	081404
27	Pan-head screw M 4x12 DIN 912	4	0912D012
28	Planer disc, left-hand	1	0824032
29	Bearing seat	1	0824023
30	Ball bearing	1	L6030
31	Chain wheel, large (1/2", 120 teeth)	1	0814132
32	Chain 1/2" x 5/16", 158 rolls	1	K1216
33	Chain joint 1/2"	1	KSCH12
34	Flat-head screw M 10x20 DIN 7991	4	7991J020
35	Lifting eye nut M 16 DIN 582	1	0582P
36	Flat-head screw M 16 x 30 DIN 7991	1	7991P030
37	Hexagon nut M 10 DIN 985	2	0985J
38	Washer M 10 DIN 125	2	0125J
39	Pan-head screw M 10x45 DIN 7984	2	7984J045
40	Suspension plate for planer	1	081406
41	Counter plate	1	081407
--	Torx-screw driver	1	TX10

### 10.5. Heating element



## Heating Element WIDOS 6113

Pos.	Name	Piece	Order no.
1	Heating element (400 V)	1	H6113E
	Heating plate new	1	HP6113E
	Heating plate in exchange	1	HPT6113E
2	Lifting screw M 12 DIN 580	1	0580L
3	Angle long	2	08152551
4	Grip	2	071508
5	Disc without collar	2	0715091
6	Disc with collar	2	0715092
7	Insulating disc	4	071509
8	Axis for grip	2	071507
9	Angle short	2	08152552
10	Pan-head screw M 10x50 DIN 912	4	0912J050
11	Spring washer B 10 DIN 127	8	0127J
12	Tapped bushing	4	HGEW-M10
13	Temperature probe PT 1000	1	H09082
14	Holder for temperature probe	1	023536
15	Lens-head screw with cross slot DIN 7985	2	7985D006
16	Tooth lock washer M4 DIN 6797 vz	2	6797D
17	Terminal box	1	071550
	Box upper part	1	0815511
	Box bottom part	1	0815512
18	Frame with housing	1	081550-0
19	Cover for terminal box	1	071555
20	Pan-head screw M 6x16 DIN 6912	8	6912F016
21	Pan-head screw M 3x6 DIN 912	4	7985C006
22	Heat sink	1	081552
23	Pan-head screw M 4x14 DIN 912	4	0912D014
24	Insulating piece	1	071556
25	Cable, 5m	1	EL02515
26	Cekon plug 16 A	1	EST0116
27	Distance piece	4	081554
28	Tapped bushing	4	081553
29	Pan-head screw M 6x40 DIN 912	4	0912F040
30	Flat-head screw M 3x8 DIN 7991	2	7991C008
31	Centering piece for control	1	211208
32	Semiconductor relay	1	ES2010
33	Triac MAC79A8	1	H09088
34	PTFE - joining piece	1	211505
35	Screwing	1	EV10201
36	Window, tinted	1	H09071
37	Controller G4 with triac	1	H0908230D

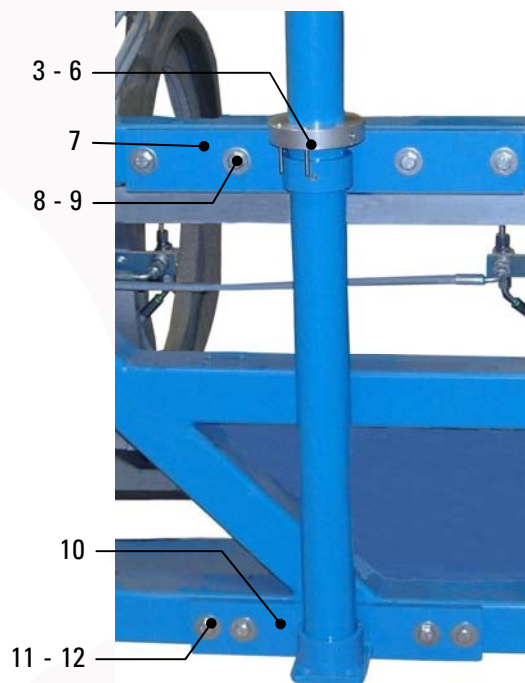
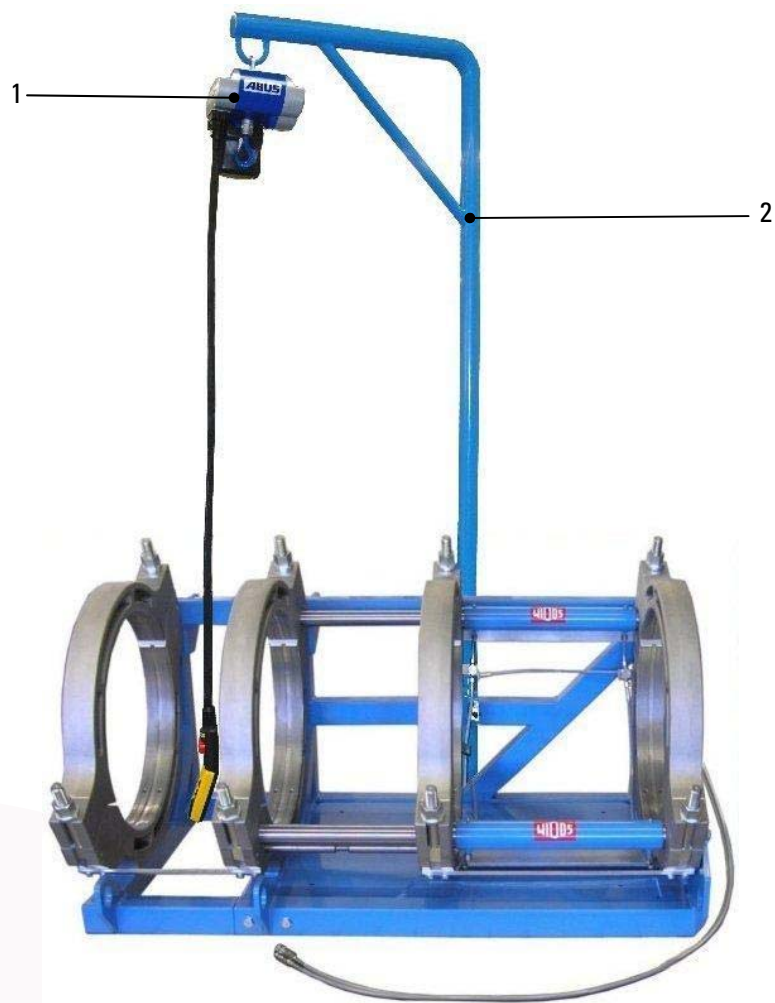
## 10.6. Protection box



**Proection Box WIDOS 6113**

Pos.	Name	Piece	Order no.
1	Reception box	1	EIN6100
2	Sheet steel	2	0815201
3	Lifting screw M 16 DIN 580	2	0580P
4	Fitting cap 60x60	4	on request

### 10.7. Lift off device (optional)



**Lift-off Device (optional) WIDOS 6113**

Pos.	Name	Piece	Order no.
1	Jib crane GMC 100.12	1	on request
2	Crane mast	1	on request
3	Limit stop for crane mast	1	081122
4	Grub screw M8x20 DIN 913	2	0913H020
5	Straight pin Ø 6x60 DIN 6325	2	6325F060
6	Lens-head screw M4x10 ISO 7380	2	7380D010
7	Holder on the top	1	0811272
8	Hexagon head screw M12x 40 DIN 933	4	0933L040
9	Washer M12 DIN 9021	4	9021L
10	Holder on the bottom	1	0811273
11	Hexagon head screw M12x 40 DIN 933	4	0933L040
12	Washer DIN 9021	4	9021L

## 11. Declaration of conformity

In the sense of the EC guideline, EC-Machinery Directive 2006/42/EG

Corporation

WIDOS GmbH  
Einsteinstr.5  
D- 71254 Ditzingen-Heimerdingen

Declares under own responsibility that the product

Plastic Welding Machine  
**WIDOS 6113**

to which this declaration refers corresponds to the following norms and normative documents:

1. DIN EN ISO 12100 – 1 and 2 (substitute for EN 292 parts 1 and 2)  
Safety of machines, basic terminology, general guidelines for design
2. DIN EN 60204.1  
Electric equipment of industrial machines
3. DIN EN ISO 4413  
Safety specifications for fluid technical installations and components
4. DIN EN 60555, DIN EN 50082, DIN EN 55014  
Electro-magnetic resistance

The technical documentation is completely available.

The following technical documentation can be examined at the corporation mentioned above:

- testing documents
- other technical documents

Ditzingen-Heimerdingen, 5/12/2015

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Martin Dommer (Technical director)