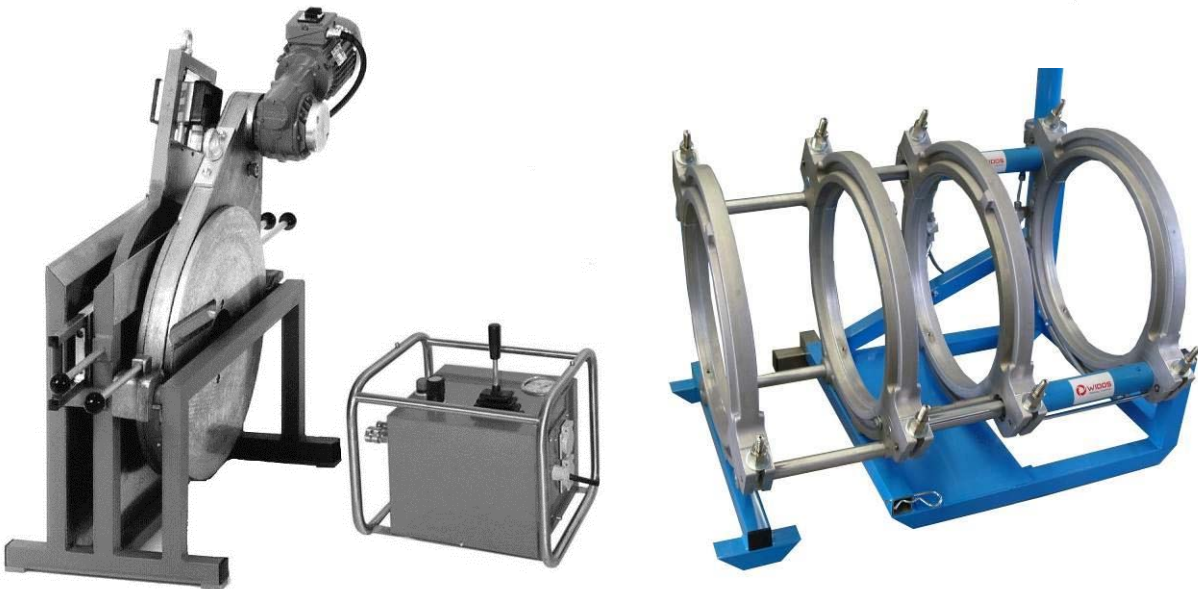


Working Instructions Translation

Heating Element Butt Welding Machine

WIDOS 5500



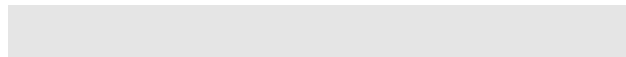
Keep for further use !

Model: Heating element butt welding machine
Type: WIDOS 5500
Serial number, year of construction: see type label

INSERTS OF CUSTOMER

inventory-no.:

place of working:



Order of Spare Parts and After Sales Service:

Address of Manufacturer

WIDOS
Wilhelm Dommer Söhne GmbH
Einsteinstrasse 5
D-71254 Ditzingen
Phone: ++49 7152 / 99 39 - 0
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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 this working instruction, 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 make our products and working instructions continuously better, we kindly ask you to inform us about problems and defects which occur in exercise.

Thank you.

Design of the Working Instructions

This manual is arranged in chapters, which belong to the different using phases of the machine. Therefore the searched informations can be found easily.



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Wilhelm Dommer Söhne GmbH

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D-71254 Ditzingen

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1. Description of product

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

1.1. Usage and purpose-oriented use

The WIDOS 5500 has been designed for heating element butt welding of pipes and fittings out of PE, PP and PVDF with a diameter range of $\varnothing = 200 - 500$.

(Standard diameters : 200 / 225 / 250 / 280 / 315 / 355 / 400 / 450 / 500)

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.

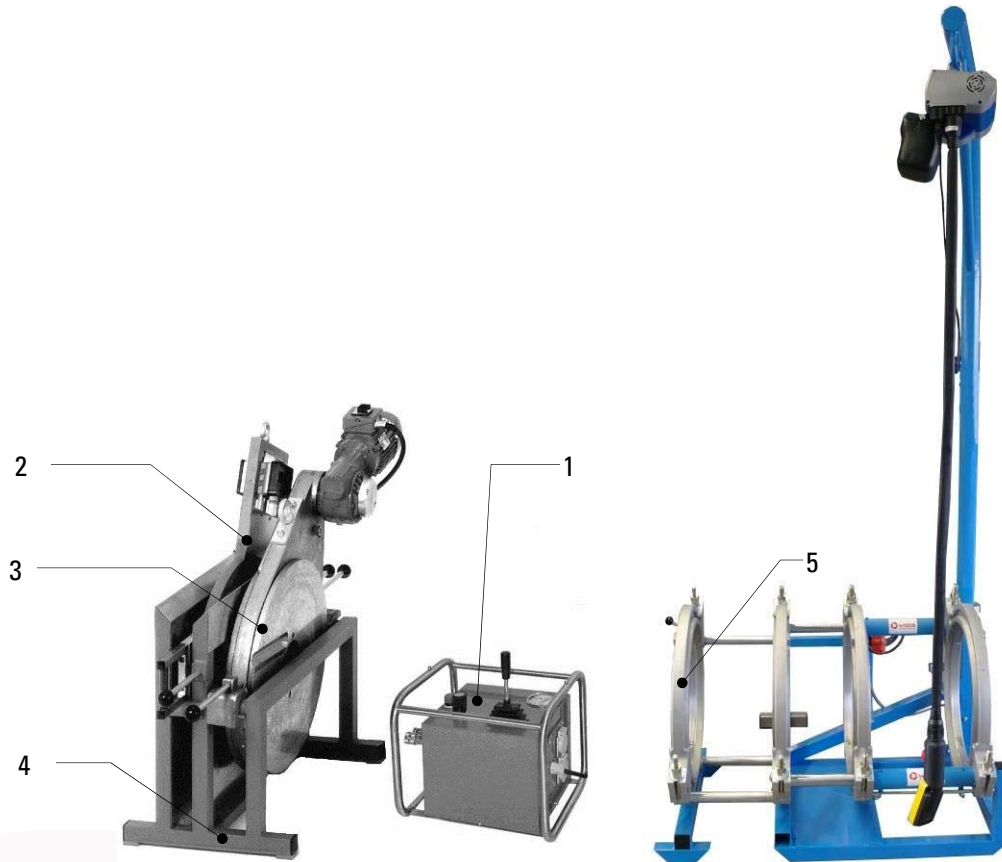
The manufacturer is not responsible for damages caused by misuse.

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 works.

1.2. Machine overview



1	Hydraulic aggregat
2	Heating element
3	Planer
4	Protective box
5	Basic machine with clamping devices
6	Lift-off device (optional)

1.3. 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.

1.4. 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. 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.

1.5.1 Technical Data

1.5.1.1 WIDOS 5500 General Data

Material which can be welded:	PP, PE 80, PVDF, PE 100
Pipe diameter range:	$\varnothing_{\text{outside}} = 200 - 500$
Box for transport machine (LxWxH): Weight:	appr. 1390 x 1340 x 1250 mm appr. 109 kg
Box for transport insert (LxWxH): Weight:	appr. 1520 x 600 x 340 mm appr. 26 kg
Weight (without boxes):	280 kg
Wire cross section:	1,5 mm ²
Fuse:	16 A
Emissions	<ul style="list-style-type: none"> - Noises 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 no toxicant damp arises.
Ambient conditions in the welding area:	<ul style="list-style-type: none"> - take care for cleanness (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 necessary use a welding tent - avoid strong sun rays influence - protect from wind, shut the pipe ends

1.5.1.2 Hydraulic aggregate

Power:	0,56 Watt
Voltage:	230 V (+-10%)
Current:	4,7 A
Frequency:	50 Hz
Displacement of phase:	appr.18°
Tank	appr. 1 L
International Protection	IP 54
Electromotor and pump:	
Speed:	2720 rpm
Max. working pressure of pump:	about 130 bar
Working pressure, adjustable:	0-130 bar
Volum velocity :	3,5 L/min
Weight :	appr. 23 kg

1.5.1.3 Heating element

Power:	5,8 kW
Voltage:	400V (+-10%)
Current:	14,5 A (+-10%)
Frequency:	50 Hz
Ø:	564 mm
Surface:	nonstick-coated
Attached elements:	<ul style="list-style-type: none"> - Electric temperature control - Signal lamp - Connecting cable with plug
Weight:	appr. 24,5 kg

1.5.1.4 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
Gear:	Gear transmission ratio: appr. 0,5
Speed of planer:	appr. 60 – 100 rpm
Attached elements:	<ul style="list-style-type: none"> - On/off switch - Connecting cable with plug
Weight:	appr. 100 kg

1.5.1.5 Basic frame

Reduction inserts, pipe supports	Optional dimensions
Material frame:	structural steel
Material reduction inserts:	aluminium
Weight:	120 kg
Cylinder-Ø:	50 mm
Piston rod-Ø:	40 mm
Length of stroke of cylinder:	200 mm
Max.force (F=P*A)	14140 N (at p= 100 bar)
Velocity of piston rod:	4,1 cm/s

1.5.1.6 Protection box

Weight protection box:	appr. 30 kg
------------------------	-------------

1.5.1.7 Lift-off device (optional)

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

See spare parts list for article numbers and single parts

1.6. Accessories:

1	Tool bag for 10 parts
1 each	Allan key angulate, size 3 / 6 / 10
1 each	Allan key with T-grip, size 4 / 5 / 7 (for reduction inserts and adapter piece)
1	Socket spanner size 27
1	Torx screw driver T10
optional	<ul style="list-style-type: none"> • Different reduction inserts • roller stands for the pipes • transformer 42V • crane for insertion and removal of heating element and planer

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.

- 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 by moving parts of the machine.

- The disrespect of these indications may cause heavy crushings 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 noises 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. Obligation 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. Obligation 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 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 5500 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 must only be used:

- according to the prescription
- 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 works 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 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.

2.9. Dangers caused by electrical 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 works 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 FI-safety switch.

2.10. Dangers caused by the hydraulics



System parts and pressure hoses should be made pressureless before beginning of any repair works. 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. Special 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 Danger of being burnt by heating element, reception box and welding area



You can burn yourself, inflammable materials can be ignited.

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.

2.11.3 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.

2.11.4 Risk of injury by noises



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

2.11.5 Danger of squeezing 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.

- 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.

2.12. Structural modifications on the machine

- No modifications, extensions or reconstructions may be made on the machine without permission of the manufacturer.
- 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. Cleaning 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**".

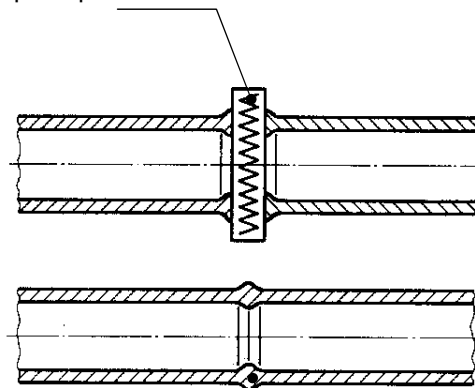
After the prescribed bead height being reached, pressure is reduced, the **heating time** begins. The function of this time is to heat up the pipe ends.

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

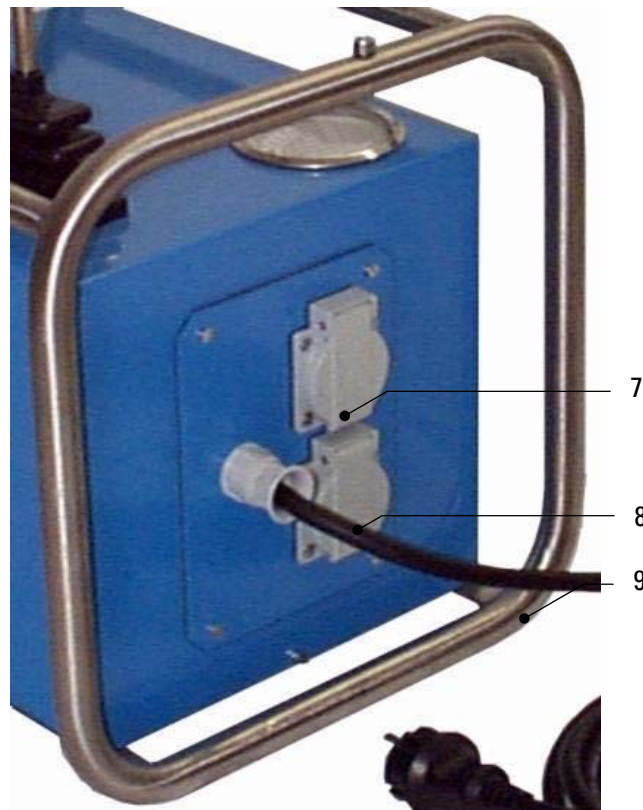
4.1. Elements on the Aggregate



No.	Name	Function
1	Screw with oil dipstick	- checking the oil level - oil filler neck
2	Hydraulic connection for opening the slides	- Non-dropping quick-acting coupling
3	Hydraulic connection for closing the slides	- Non-dropping quick-acting coupling
4	Setting screw for pressure relief valve	- Limitation of the pressure to the desired value.
5	Valve lever	Opening the slides. There are 4 different positions: - to the left side: slides close. - in the middle (usual position): the pressure which is currently achieved is kept (also by means of the built-in hydraulic accumulator) - slightly to the right side (position pressureless): 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. - to the right side: slides open
6	Pressure gauge	Digital display of the hydraulic pressure

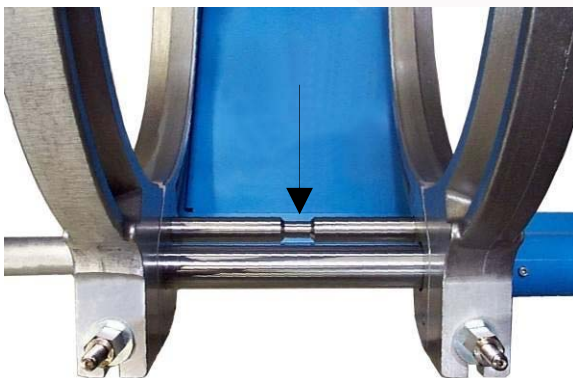
Planer and heating element have to be connected to a power distributor for building sites (400 Volt).

4.2. Elements on the Side of the Aggregate



<i>No.</i>	<i>Denomination</i>	<i>Function</i>
7	Plug socket 230 V / 50 Hz	Possibility for connecting
8	Plug socket 230 V / 50 Hz	Possibility for connecting
9	Mains cable 230 V / 50Hz	Power supply

4.3. Separating Device for Heating Element



There is a tear-off bar 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 zone of the throat of the tear-off bar (see arrow).

4.4. Elements at the Heating Element and the Planer



No.	Name	Function
10	Locking device	- Locking the planer into basic machine by planing
11	On/off switch for planer	- For switching on/off the planer. - Switch off the planer after use.
12	Lifting screw	- For lifting/inserting the heating element / planer with the lift-off device.
13	Lever	- For holding the planer when lifting / removing. - Lever can be screwed off.
14	Thermostat	- For setting the required temperature.
15	Display of temperature	- Digital display of set heating element temperature. Three different displays are possible. - For meaning of the displays please refer to chapter 5.4, Setting the Heating Element Temperature
6	Grip	- For holding the heating element when lifting / removing.

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 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 **fibre-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.

- Connect planer and heating element to a power distributor for building sites with 400 V.

- 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 / 41°F, 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 with Basic Machine

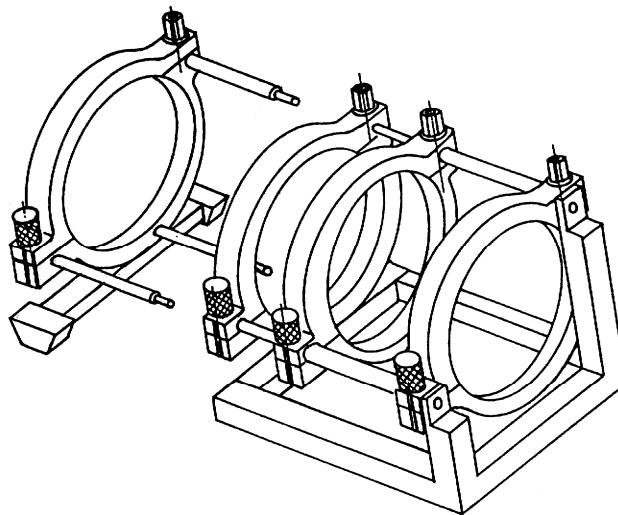
- Connect the aggregate to the mains supply (230 V/50 Hz).
- Put the hydraulic hoses of the basic machine into the quick-acting couplings of the hydraulic aggregate.



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

5.3. Replacing the Reduction 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. Pipes with OD 550 have to be clamped in the basic clamping devices.
- If necessary (e.g. for T-pieces) the outer fixed clamping device can be dismantled by unscrewing the three hexagon socket screws.

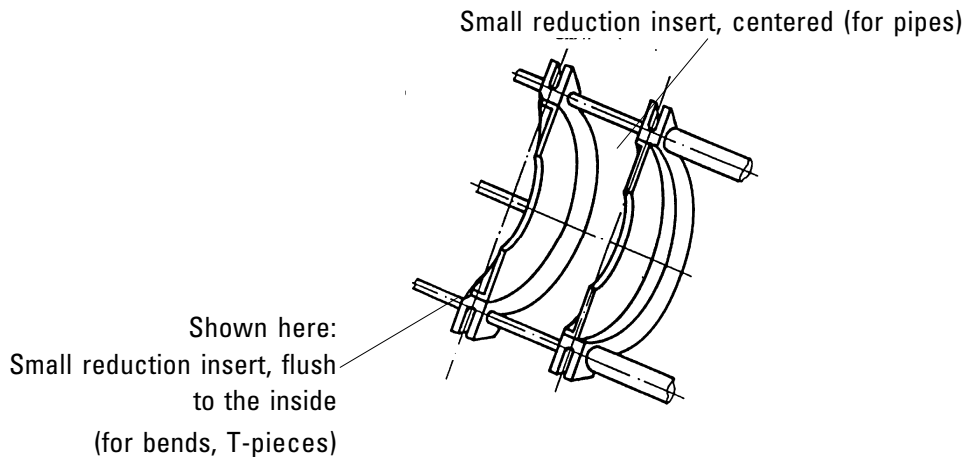


Dismantling of the outer fixed clamping device

5.3.1 Using Small and Large Reduction Inserts

Small Reduction Inserts:

- Pipe fittings often have only a short straight surface area on which they can be clamped.
- Fittings mostly need to be clamped in the inner clamping devices with the small reduction inserts.
- When fittings are to be welded (bends, T-pieces etc.), the inner small reduction insert can also be used flush to the inside or to the outside.

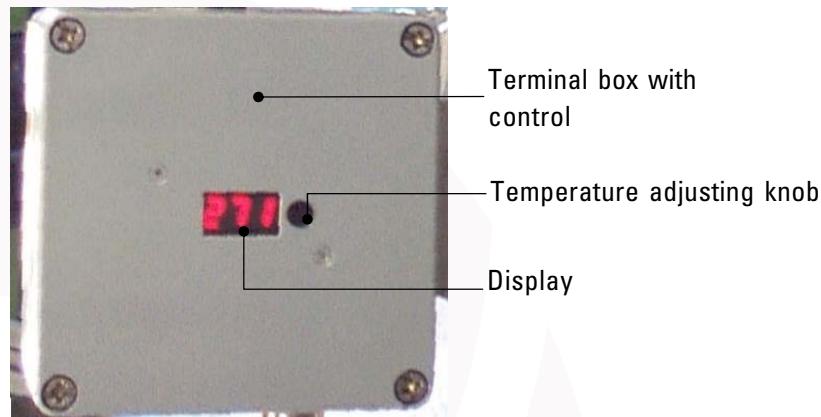


Large Reduction Inserts

- They are mainly used for a good tightening and are generally mounted on the inner clamping devices.
- Super large reduction inserts have a specially high guidance quality and are mainly used during the welding of fittings with long legs which can only be clamped with a single clamping tool.

5.4. Setting 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 / 338 °F is reached and rises continuously to DESIRED temperature. The desired temperature is maintained by a certain pulse-position ratio.

5.5. 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 burning!
- A stop-watch must be available for recording the actual times for heating and cooling.
- A welding table must be available from which the parameters for the pipe dimensions to be welded prescribed by the welding prescriptions may be taken.
- Connect the heating element and set the heating element temperature (see chapter: 5.4).
- 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 **fibre-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.
- Screw in the reduction inserts according to the outside diameter of the pipes to be welded.
- Lay the pipes to be welded into the clamping devices, tighten firmly the clamping nuts and align the pipes with respect to each other. In case of long pipe ends, use WIDOS roller stands for that purpose.
- Close the slides, valve lever on: "FORWARDS", thereby reading the **movement pressure** on the manometer. The movement pressure is displayed exactly when the slide with the clamped pipe passes over into its movement. Subsequently, open the slides again, valve lever on: "BACKWARDS", such that the planer fits there between.
- Insert the planer between the pipe ends, lock it in front and switch it on.



There is the danger that the planer pulls 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 tilts during planing. If necessary, reduce planing pressure.



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

- Move the pipe ends towards one another by means of the 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 slides again, valve lever on "BACKWARDS", switch off planer motor, unlock planer, remove it and put it into the protection box.
- Remove the produced cuttings without contacting the worked surfaces
- Close slides, 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 $0.1 \times$ pipe wall thickness, the admissible gap must not exceed 0.5 mm. The mismatch compensation is carried out by further tightening or releasing of the clamping nuts. In case mismatch compensation was carried out, planing must be repeated afterwards.
- The adjustment pressure for the pipe dimension to be welded can be gathered from the welding table. Add the movement pressure.
Set the resulting pressure value at the pressure relief valve and check it by actuating the valve lever.
- Open slides again slightly, valve lever on: "BACKWARDS".
- Gather heating time, maximum change over time, cooling 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 desired temperature, between the pipes, take care that it lies in the zone of the throat of the tear-off bar (see Chapter: 4.3).
- Close slides smoothly to the set adjustment pressure, valve lever on: "FORWARDS".
When the prescribed revolving bead height is reached, reduce pressure. For this purpose, move the valve lever to position "Pressure release" until the desired heating pressure is built up (heating pressure = approx. 10% of the adjustment pressure).
- 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 time, open the slide, valve lever on: "BACKWARDS" remove the heating element as quickly as possible, put it into the protection box and close the slide smoothly, 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 is built up, press the stop-watch and keep the control lever for approximately 10s on position „FORWARDS“ so that the hydraulic accumulator can be filled. During the cooling time re-adjust pressure, if necessary (the pressure for cooling is the same as the set adjustment pressure).
- After expiration of the cooling time, release pressure, valve lever on: "Pressure release", open the clamping devices and remove the welded part.
- Open the slide afterwards, valve lever on: "BACKWARDS".

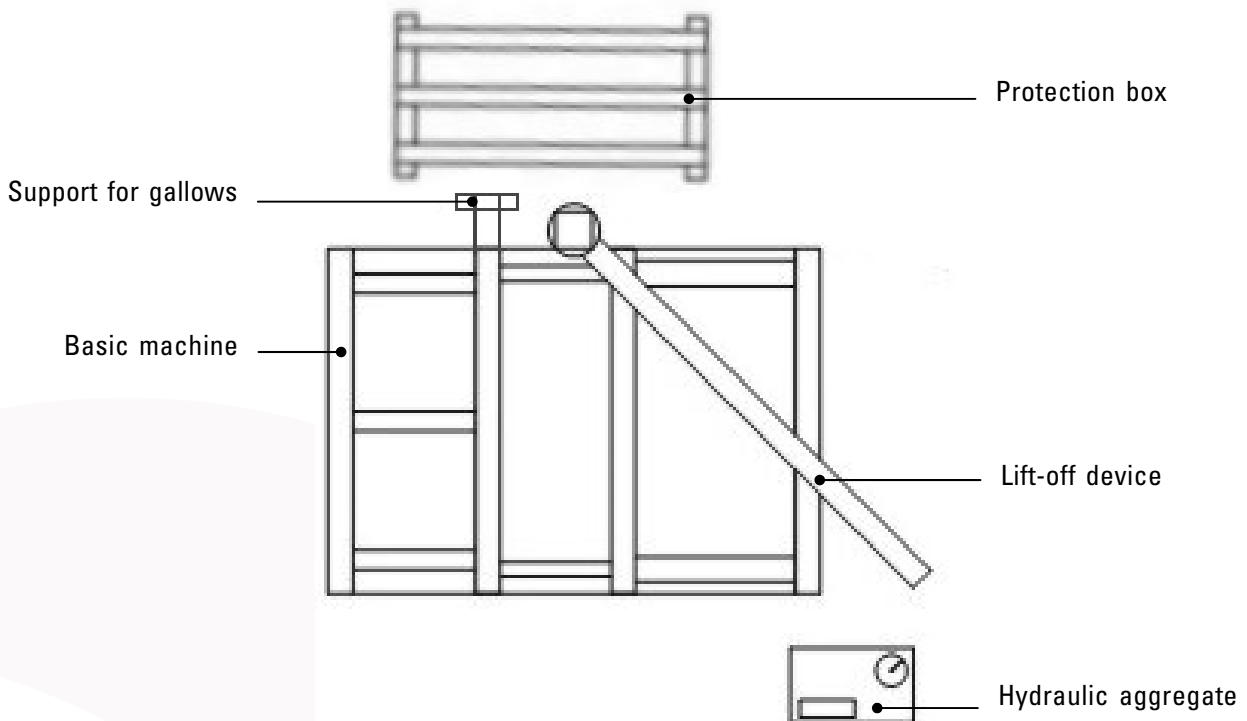
The welding process is finished.

5.6. Lift-off device (optional)

- General description
- Safety rules
- Danger indications
- Starting and maintenance
see the separate documentation (company ABUS).

5.6.1 Mounting of the machine

When mounting the machine, follow the positioning sketch:



5.6.2 Mounting the lift-off device

- Insert the crane jib into the reception at the backside of the basic machine.
- Loosen the screw and the lock washer at the hook at the top of the mast, hang in the chain hoist, tighten again lock washer and screw.
- Connect the chain hoist with the mains (230 V/50 Hz).
- The operation of the lift-off device can be started now (see the separate documentation)

5.6.3 Transport

Dismount the chain hoist from the mast for transportation of the machine.

6. Welding Log and Tables



You can access our website and select our welding tables via the qr code shown here. Select "WIDOS 5100-5500" and the corresponding material (PE / PP /PVDF).

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 works and the maintenance tools.

7.1. Maintenance and Inspection, Repair



All maintenance and repair works 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 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.

7.2. 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.

7.3. 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!).

7.4. 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.

7.5. Used Hydraulic Oil

Only use **HLPD 32**.

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

The hydraulic oil has to be disposed of properly.

7.6. Checking the Hydraulic Oil Level

- Remove the red screw at the top of the aggregate.
- Take out the oil dipstick, clean it with a dry tissue and insert it again.
- The oil level must be between the two marks.

7.7. Venting the hydraulic cylinder



- 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.
- First unscrew the lower „vent screw (Z1) for closing“ (lefthand side).
- Connect the transparent venting hose and insert it in the collecting vessel of the aggregate.
- Close until there is no more air visible in the venting hose, then tighten again the vent screw.
- Close the machine completely.
- Unscrew the lower „vent screw (A1) for opening“ (righthand side).
- Connect the transparent venting hose and insert it in the collecting vessel of the aggregate.
- Open until there is no more air visible in the venting hose, then tighten again the vent screw.
- When the venting process at the lower vent screws is completed, repeat the process at the upper „vent screw (Z2) for closing“ (lefthand side), as well as at the upper „vent screw (A2) for opening“ (righthand 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.

7.8. 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 in 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 chocs.
- 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.

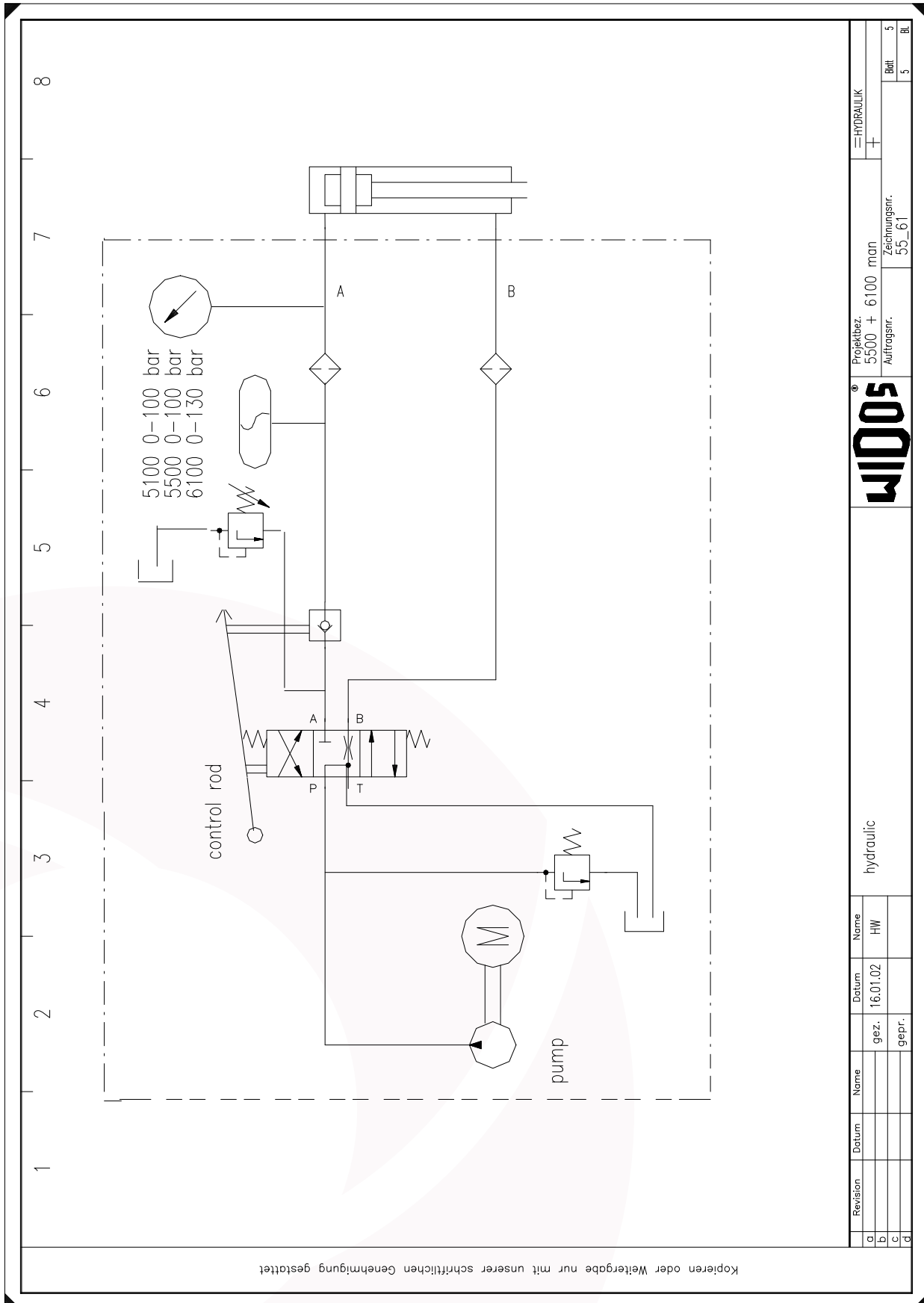


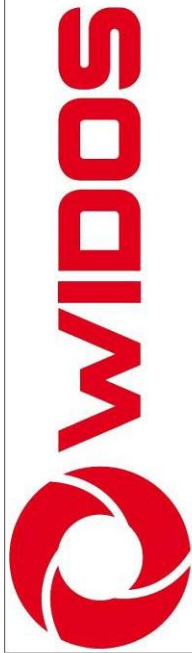
During the transport of the machine there may be cold weldings between the piston rod and the eyes of the planer housing. These spots on the piston rod may damage the sealing.



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

9. Electric and hydraulic diagrams





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Plastic Welding Technology

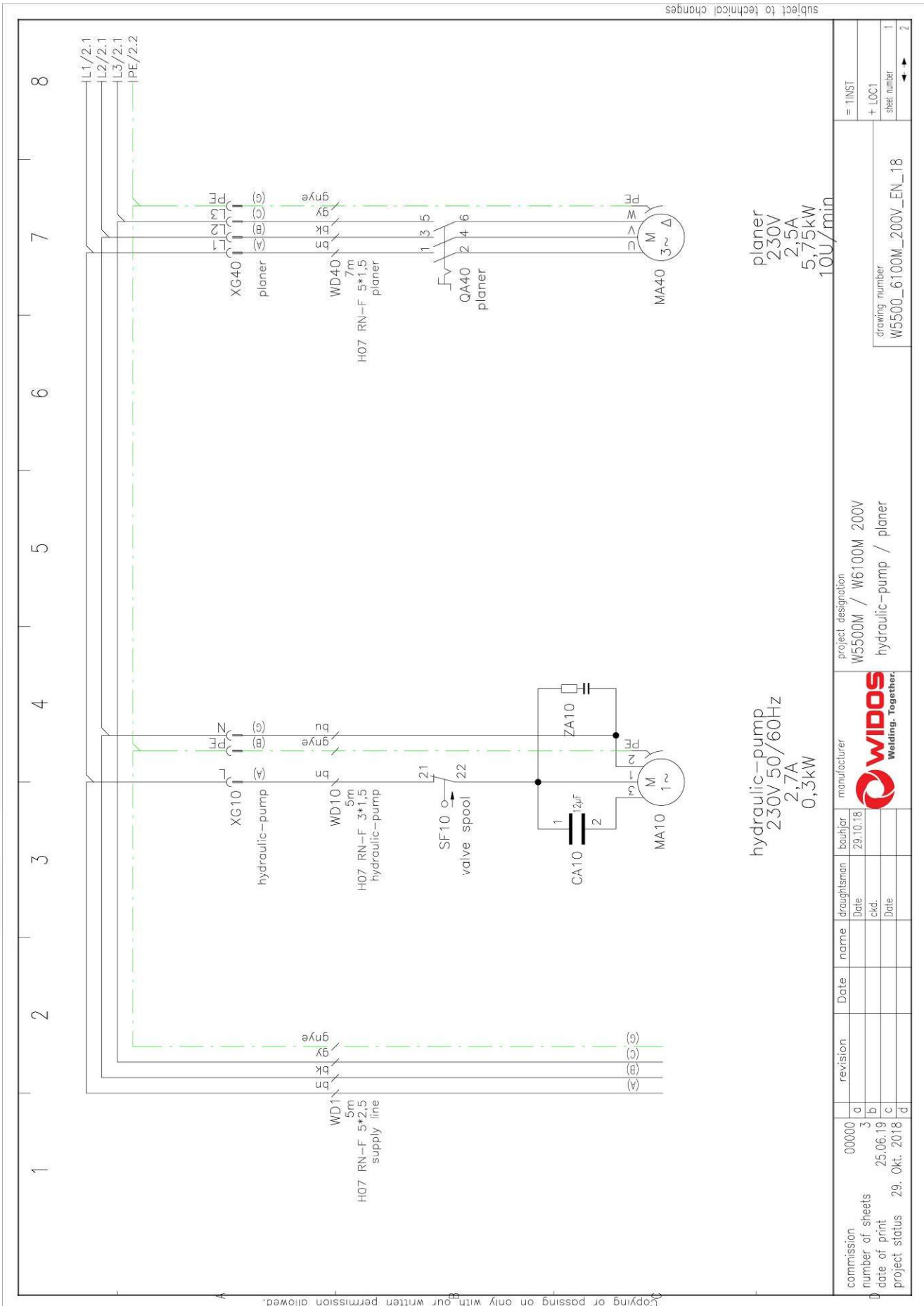
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circuit diagram

project designation W5500M / W6100M 200V
 machine type welding machine W5500/6100M – 200V
 number of sheets 3
 Date 29.10.18

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commission	00000	Date	29.10.18	manufacturer	project designation		= 000KU
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date of print	25.06.19	Date			drawing number	W5500_6100M_200V	sheet number
project status	29. Okt. 2018	chk.		Job number	00000	continuation sheet	3
						number of sheets	



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10. Spare Parts List



You can access our website and select our welding tables via the qr code shown here. Select "5500" and the corresponding material (PE / PP / PVDF).

11. 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:	
Manufacturer / Installation company:	WIDOS Wilhelm Dommer Söhne GmbH
Address:	WIDOS GmbH Einsteinstr. 5 D-71254 Ditzingen

Subject of the present declaration is the following device:	
<i>Product name:</i>	Heating element butt welding machine
<i>Model name:</i>	WIDOS 5500
<i>Machine number:</i>	
<i>Year of construction:</i>	

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:	
Standard	Title
DIN EN ISO 12100	Safety of machines, basic concepts, general layout guidelines
DIN EN 60204.1	Electric equipment of industrial machines
DIN EN 60555, DIN EN 50082, DIN EN 55014	Electro-magnetic resistance
DIN EN 1005-2	Safety of machinery- Human physical performance
DIN EN 614-1	Safety of machinery- Ergonomic design principles
EN 1037 (ISO 14118)	Safety of machinery - Prevention of unexpected start-up
EN ISO 4413	Hydraulic fluid power- General rules and safety requirements for systems and their components
DVS 2208	Welding of thermoplastics - Machines and devices for the heated tool welding of pipes, piping parts and panels
ISO 12176-1	Plastics pipes and fittings- Equipment for fusion jointing polyethylene systems – Part 1: Butt fusion

Entitled to compile the technical documentation:	
Name:	WIDOS Wilhelm Dommer Söhne GmbH
Address:	Einsteinstr. 5 D-71254 Ditzingen

Signed on behalf of the company:	
Name, first name:	Dommer, Martin
Function:	Technical director



Heimerdingen, 26.06.2019

Place / Date

Legally binding signature

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