

Working Instructions Translation

Heating element butt welding machine

WIDOS 8000



Keep for further use!

Model:	Heating element butt welding machine
Type:	WIDOS 8000
Serial number, year of construction:	see type lable

Customer Entries

Inventory-No.:

Place of working:

Order of spare parts and after sales service:

Address of manufacturer:

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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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Any changes prior to technical innovations.

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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 8000 has been designed for heating element butt welding of pipes and fittings with a diameter range of $\varnothing = 450 - 800\text{mm}$, (standard diameters: 450 / 500 / 560 / 630 / 710 / 800 mm).

Pipes of OD 800 mm are clamped without reducer inserts.

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. 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.

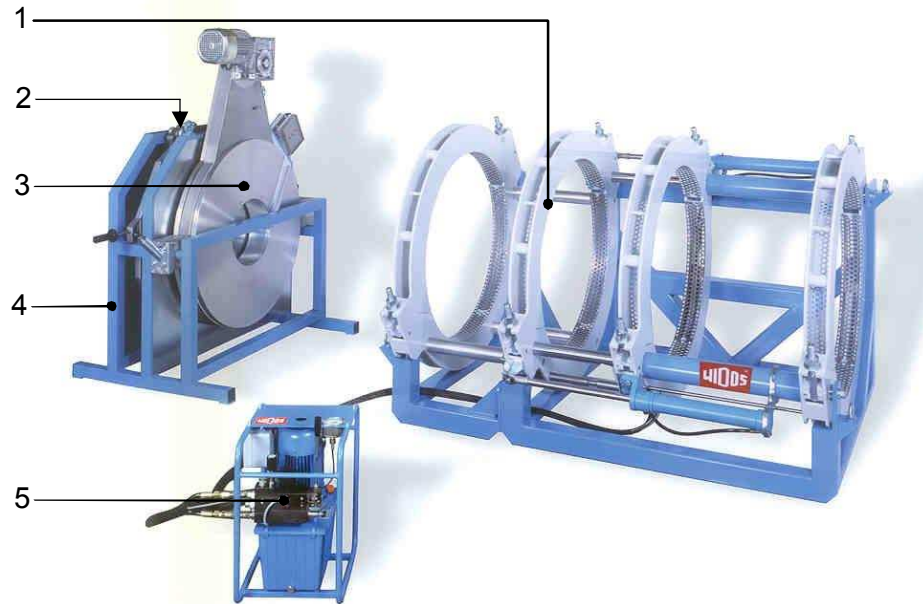
Therefore these working instructions have to be thoroughly read and the corresponding safety regulations must be necessarily adhered to.

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. Machine overview



Nr.	Benennung
1	Basic machine
2	Heating element
3	Planer
4	Reception box
5	Hydraulic aggregate
no picture	Lift-off device (optional)

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

All important technical data of each single component are displayed. They allow a rapid information about the working capacity and the structure.

1.5.1.1. WIDOS 8000 General data

Pipe diameter range:	$\varnothing_{\text{outside}} = 450 - 800 \text{ mm}$
Material which can be welded:	PP, PE80, PE 100
Weight (without accessories):	appr. 1260 kg
Emissions	<ul style="list-style-type: none"> - Noise exceeding 80 dB (A) may occur; during planing it is obligatory to wear ear protection! - When using the named pipe materials and when welding below 260°C 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. Basic frame

Material frame:	Structural steel
Material reduction inserts:	Steel
\varnothing cylinder / \varnothing piston rod:	50 / 25 mm
Cylinder stroke length:	450 mm
Max. force (F=P*A):	29,45kN (at p= 100 bar)
Weight	appr. 920 kg

1.5.1.3. Hydraulic aggregate

Feed:	CEE 16 A phase converter
Power:	1,5 / 2,0 kW
Voltage:	400 V ($\pm 10\%$)
Nominal current	5,2 / 4,0 A
Frequency:	50 Hz ($\pm 10\%$)
Displacement of phase:	appr. 18°
Hydraulic oil tank:	appr. 10 l
Insulation system	IP 54
Electromotor and pump:	
Speed:	1450 / 2900 rpm
Max. working pressure of pump:	appr. 160 bar
Working pressure:	0-160 bar adjustable
Volume velocity:	3,8 l/min
Weight:	appr. 47 kg

1.5.1.4. Heating element

Power:	14,8 kW
Voltage:	400V (+-10%)
Mains plug:	CEE 32 A
Frequency:	50 Hz
Outside-Ø:	900 mm (usable surface)
Inside-Ø	200 mm
Surface:	nonstick-coated
Attached elements:	<ul style="list-style-type: none"> - Electronic temperature control - Control lamps, on/off-switch - Connecting cable with plug
Weight:	appr. 95 kg

1.5.1.5. Planer

Motor:	Three-phase alternating current motor
Power:	1.5 kW
Voltage:	400 V (+-10%)
Mains plug:	CEE 16 A-motor protective
Frequency:	50 Hz (+-10%)
Speed n1 of motor:	appr. 1440 rpm
Gear of motor	Transmission 15:1
Chain wheel gearing:	Transmission 7:1
Speed n2 of motor:	appr. 13,5 rpm
Weight:	appr. 170 kg

1.5.1.6. Reception box

Material frame:	Structural steel
Dimension:	Appr. 1330 x 1000 x 1130 mm
Weight:	Appr. 80 kg

1.5.1.7. Lift-off device (optional)

Lift capacity:	appr. 300 kg
Weight (complete)	appr. 235 kg

1.6. Accessories:

Following tools and accessories are part of the delivery:

1	Socket spanner size 46
1 each	Hexagonal socket screw key size 8 / 14 with T-grip
1 each	- Allan key with T-grip + angulate size 8
1 each	- Ring fork wrench size 19 / 24
1	- Screw driver with Torx-drive TX10
1	- Tool bag
1	- Wire rope 0,5 m

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 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 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 8000 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. 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 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.

2.9. 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!

2.10. Specific dangers

2.10.1. 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.

2.10.2. Risk of injury by noise



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

2.10.3. 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 with wire rope and lift off device, and hold it at the handle only.
- Take care that nobody is in the lift off area.
- When cleaning the hot heating element with detergents (e.g. with PE cleaner) there is the danger of inflammation. For this reason, please take care that the inflammation point is above the actual temperature of the heating element. Do not bring any fire sources (e.g. cigarettes) close thereto.

2.10.4. 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.

2.10.5. 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.

2.11. 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!**

2.12. 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**".

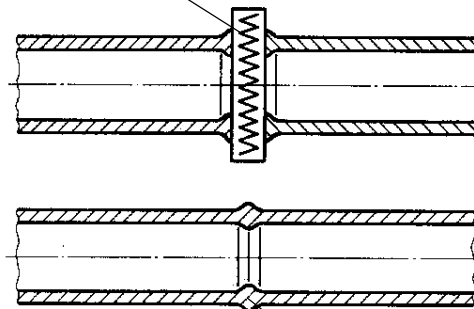
After the prescribed bead height being reached, pressure is reduced, the **heating time** begins. The function of this time is to heat up the pipe ends.

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.

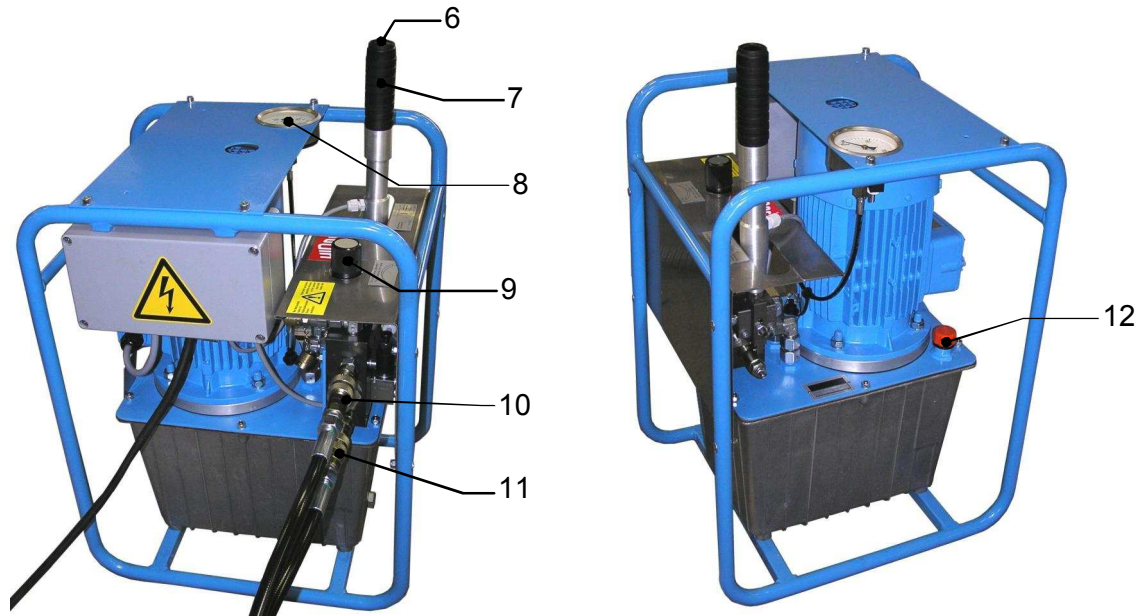
Heating element heats
the pipes up to welding
temperature



Finished welding with
internal and external
bead

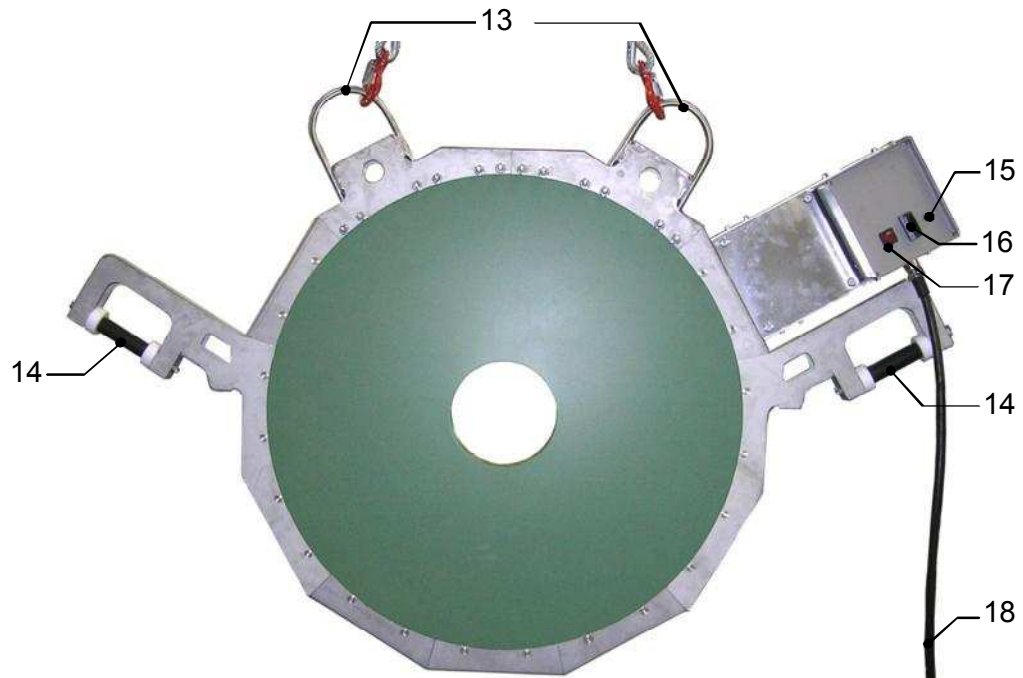
4. Operating and indicating elements

4.1. Elements on the aggregate



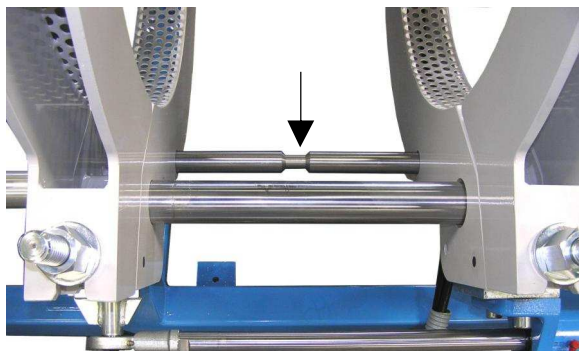
No.	Name	Function
6	Push-button	- By pressing the push-button the motor switches over to high speed
7	Valve lever	Opening the slides. There are 4 different positions: - to the left side : slides close. - in the middle (usual position): the pressure which is currently achieved is kept (also by means of 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
8	Pressure gauge	Display of the hydraulic pressure
9	Setting screw for pressure relief valve	- Limitation of the pressure to the desired value.
10	Hydraulic connection for closing the slides	- Non-dropping quick-acting coupling
11	Hydraulic connection for opening the slides	- Non-dropping quick-acting coupling
12	Screw with oil dipstick	- checking the oil level - oil filler neck

4.2. Elements at heating element



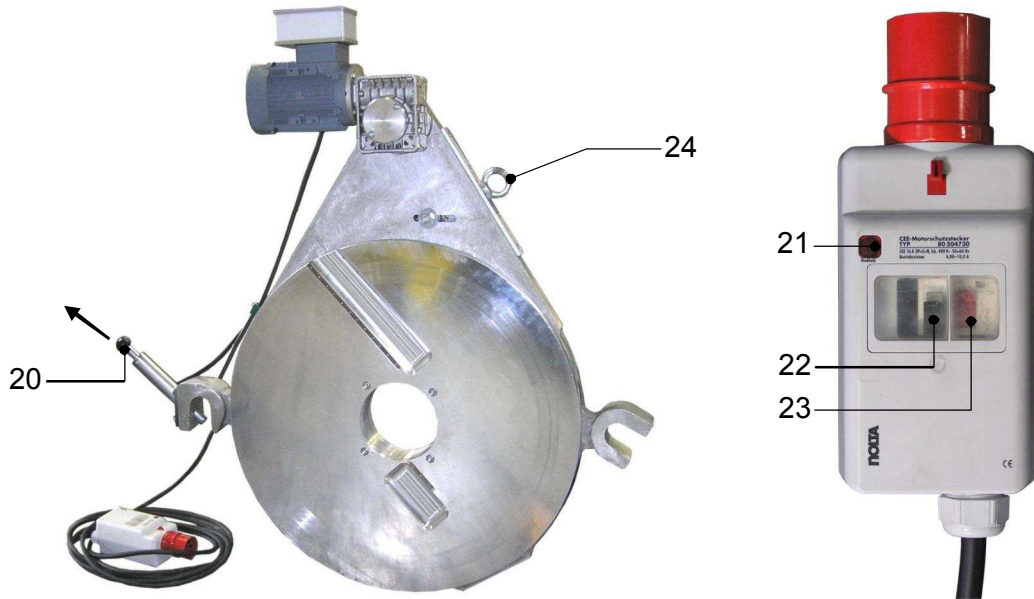
Nr.	Benennung	Funktion
13	Plate with boreholes	Attachment for heating element
14	Grip	For holding the heating element when lifting/removing.
15	On/off switch	For switching on/off the heating elemente
16	Regulator of temperature	For setting the required temperature
17	Visible type fuse	Fuse protection fort he regulator of temperature
18	Cable with plug	Connecting the heating element, CEE 16A

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 planer



No.	Name	Function
20	Planer locking	For locking the planer in basic machine / reception box, pull the planer locking in arrow device for unlocking
21	Control lamp red	If the red control lamp lightens, the planer turns in the wrong direction. Change absolutely the turning direction.
22	Button, black	For switching the planer standby
23	Button, red	Motor – protective, for switching the planer off, if the planer pressing is more than 15 bar
24	Eye bolt	Attachment for planer

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.



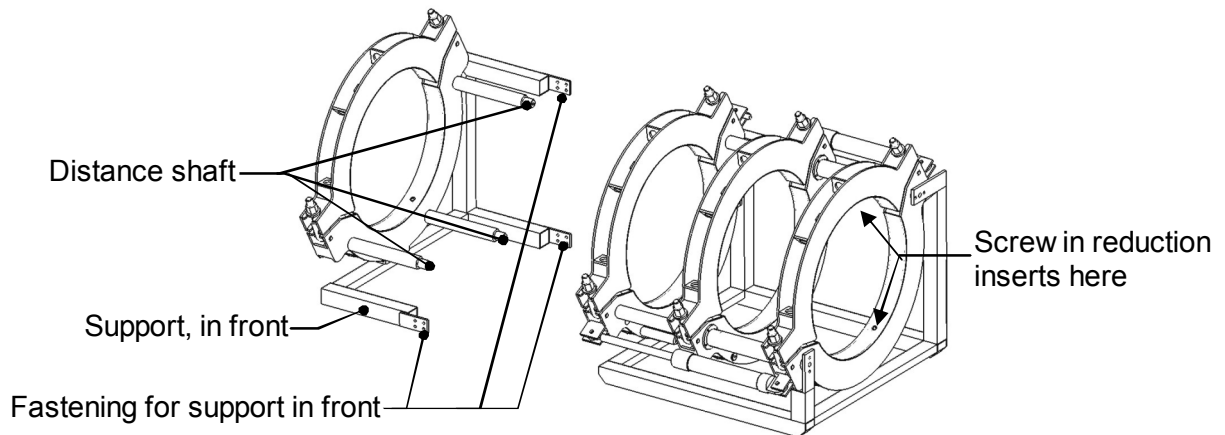
Make sure that pump and planer are connected in a way that they turn in right-hand direction.

- 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. Replacing the reduction inserts

- Pipes with OD 800 have to be clamped in the basic clamping devices.
- Unscrew the mounted reduction inserts by means of the provided Allan key.
- Screw the reduction inserts with the corresponding diameter into the clamping devices.
- If necessary (e.g. for T-pieces) the outer fixed clamping device can be dismantled by unscrewing the three hexagon socket screws for distance shaft, and the 3 x 4 fastening screws for support in front.



5.3. Connection of hydraulic aggregate with basic machine

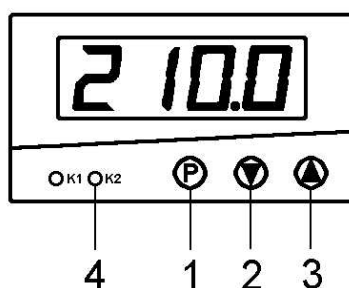
- Put the hydraulic hoses of the basic machine into the quick-acting couplings of the hydraulic aggregate.
- Connect the aggregate to the mains supply (400 V / 16 A / 50 Hz / right hand rotary field).
- Connect planer to the mains supply (400 V / 16 A / 50 Hz / right hand rotary field).
- Connect the heating element to the mains supply (400 V / 32 A / 50 Hz).



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

5.4. Setting the heating element temperature

Display = Display of the actual value



Push shortly the button P (1), the display shows <SP>, change desired value with buttons ▲ (3) ▼ (2). Push shortly the button P (1), actual temperature is displayed again (or automatic change after 30s). During heating up to desired value, the control lamp K2 (4) is on, having reached the desired temperature, the control lamp K2 (4) is blinking.

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 !



There is the danger that the planer pulls in clothes!

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



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> (Chapter:4.1, Nr. 6) and <control lever> on „FORWARDS“ or „BACKWARDS“.

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

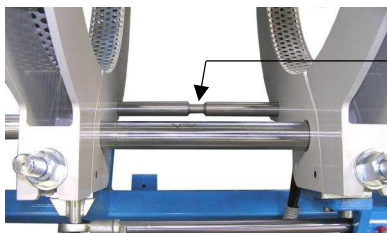
- With <control lever> on „FORWARDS“ or „BACKWARDS“ without pressing <button>.
- A stop-watch must be available for recording the actual times for heating and cooling.
- A welding table must be available from which the parameters for the pipe dimensions to be welded prescribed by the welding prescriptions may be taken.
- The heating element 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-stick coating of the heating element is to be undamaged in the working area.
- Connect the heating element and set the heating element temperature (see chapter 5.4).
- 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.
- For the face-cutting the pipes must be clamped-in in such a way that the pipes come out of at least 110 mm on the left and right from the clamping ring (towards the inner side).
- Close the slides <valve lever> on „FORWARDS“ thereby reading the **drag pressure** on the pressure gauge. The drag pressure is displayed exactly when the slide with the clamped pipe passes over into its movement.
- Open slides <valve lever> on „BACKWARDS“.
- Lift planer with a crane between the clamping tools and fix it with the planer locking device into the basic machine.
- Switch the planer on and cut the pipes until a surrounding (triple) chip is formed. The pressure onto the planer may not **exceed 15 bars of the respective drag pressure**.



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.

- You must carry out planing as long as a revolving chip (three times) has formed.
- Separate the pipes, with <control lever> on „BACKWARDS“ until the chip will tear off, **only then** switch off planer.
- Detach the planer locking device and lift crane out of the machine again. Remove the produced chips without contacting the worked surfaces.
- Shut 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, if required displace the shaft.

- Shut 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> „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 quickly with button on valve lever and <valve lever> on „BACKWARDS“, remove the heating element as quickly as possible. Then 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 <valve 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 with <valve lever> on „Pressure release“ and remove the upper reducer inserts. Remove the welded part and open the slide with <valve lever> on „BACKWARDS“.

Table for PE

Foundation: 2207, 2208 DIN 16932 German association for welding

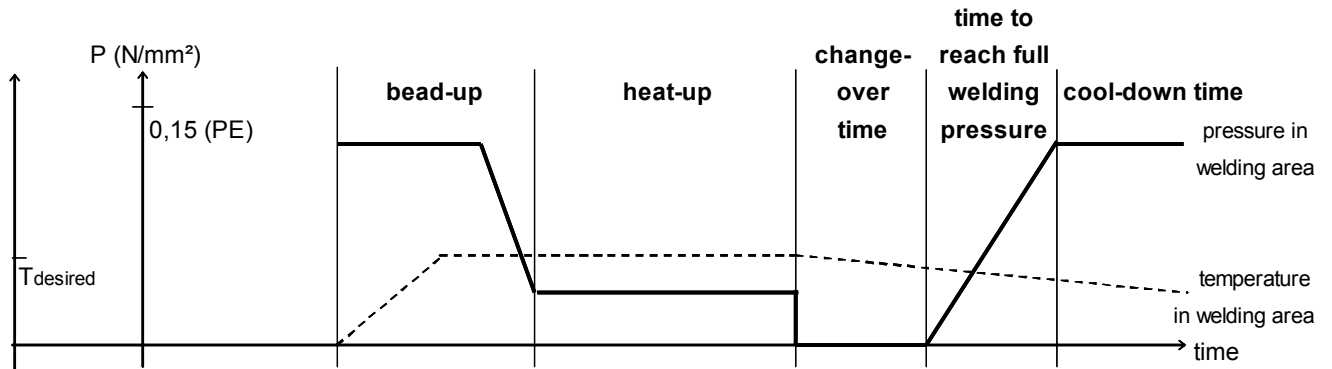
Use for: **5100 steel / 6100 steel / HRG 6 / 8000 (ab 06/2009)**

1 bar on manometer: **294,5 N**

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

PE 100 The standard value for heating element temperature is 220° C.
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
315	7,7	41	4	1,5	77	6	6	4	11
	9,7	33	5	1,5	97	7	7	5	13
	12,1	26	6	2	121	8	8	6	16
	15,0	21,0	8	2,0	150	9	9	8	19
	17,9	17,6	9	2	179	10	11	9	23
	18,7	17	9	2	187	10	11	9	24
	23,2	13,6	11	2,5	232	11	13	11	29
	28,6	11	14	3	286	13	15	14	35
	35,2	9	16	3	352	15	18	16	43
43,1	7,4	19	3,5	431	18	22	19	52	
355	8,7	41	5	1,5	87	7	7	5	12
	10,9	33	7	1,5	109	8	8	7	15
	13,6	26	8	2,0	136	8	9	8	18
	16,9	21,0	10	2,0	169	9	10	10	22
	20,1	17,6	11	2,5	201	10	11	11	25
	21,1	17	12	2,5	211	11	12	12	26
	26,1	13,6	14	3,0	261	12	14	14	32
	32,2	11	17	3,0	322	14	17	17	39
	39,7	9	21	3,5	397	17	20	21	48
48,5	7,4	24	3,5	485	20	24	24	58	

Table for PE

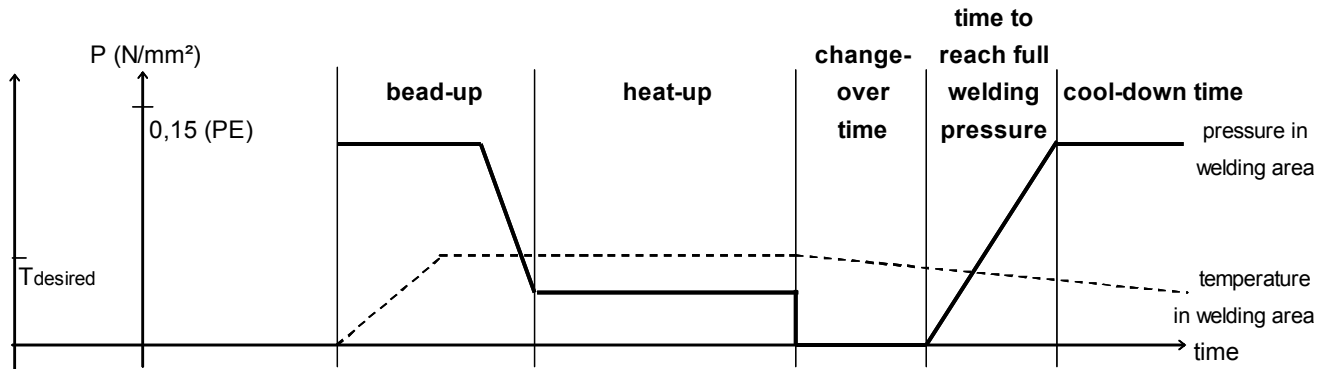
Foundation: 2207, 2208 DIN 16932 German association for welding
 Use for: **5100 steel / 6100 steel / HRG 6 / 8000 (ab 06/2009)**

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 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
400	9,8	41	7	1,5	98	7	7	7	13
	12,3	33	8	2,0	123	8	8	8	16
	15,3	26	10	2,0	153	9	9	10	20
	19,1	21,0	12	2,5	191	10	11	12	24
	22,7	17,6	14	2,5	227	11	13	14	28
	23,7	17	15	2,5	237	11	13	15	29
	29,4	13,6	18	3,0	294	13	16	18	36
	36,3	11	22	3,0	363	16	19	22	44
	44,7	9	26	3,5	447	18	23	26	54
54,7	7,4	31	4,0	547	21	27	31	65	
450	11,0	41	8	1,5	110	8	8	8	15
	13,8	33	10	2,0	138	9	9	10	18
	17,2	26	12	2,0	172	9	10	12	22
	21,5	21,0	15	2,5	215	11	12	15	27
	25,5	17,6	18	2,5	255	12	14	18	31
	26,7	17	19	3,0	267	12	14	19	33
	33,1	13,6	23	3,0	331	15	17	23	40
	40,9	11	27	3,5	409	17	21	27	49
	50,3	9	33	4,0	503	20	25	33	60
61,5	7,4	39	4,0	615	23	31	39	71	

Table for PE

Foundation: 2207, 2208 DIN 16932 German association for welding

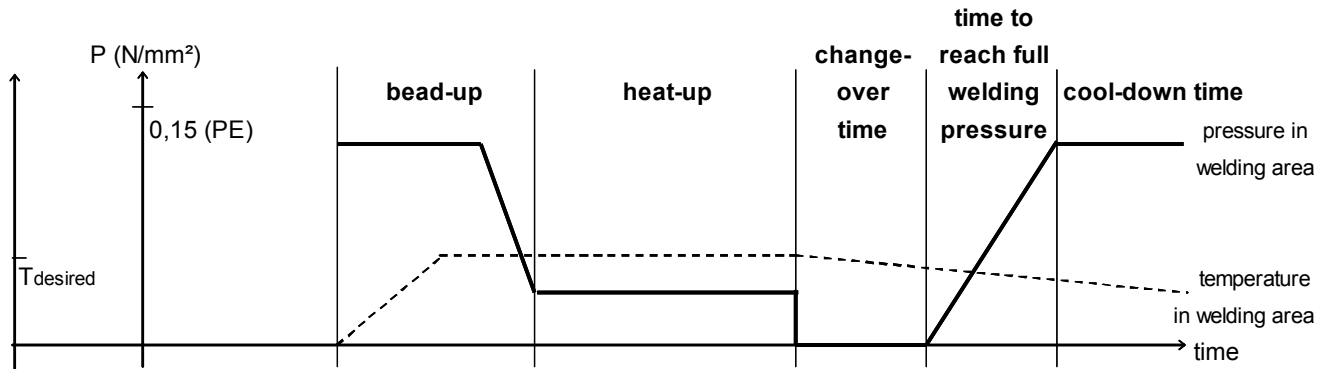
Use for: **5100 steel / 6100 steel / HRG 6 / 8000 (ab 06/2009)**

1 bar on manometer: **294,5 N**

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PE 100 The standard value for heating element temperature is 220° C.
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]
500	12,3	41	10	2,0	123	8	8	10	16
	15,3	33	12	2,0	153	9	9	12	20
	19,1	26	15	2,5	191	10	11	15	24
	23,9	21,0	19	2,5	239	11	13	19	30
	28,4	17,6	22	3,0	284	13	15	22	35
	29,7	17	23	3,0	297	13	16	23	36
	36,8	13,6	28	3,0	369	16	19	28	45
	45,4	11	34	3,5	454	19	23	34	55
	55,8	9	40	4,0	558	21	28	40	66
68,3	7,4	48	4,0	683	25	34	48	78	
560	13,7	41	12	2,0	137	8	9	12	18
	17,2	33	15	2,0	172	9	10	15	22
	21,4	26	19	2,5	214	11	12	19	27
	26,7	21	23	3,0	267	12	14	23	33
	31,7	17,6	27	3,0	317	14	17	27	39
	33,2	17	28	3,0	332	15	17	28	41
	41,2	13,6	35	3,5	412	17	21	35	50
	50,8	11	42	4,0	508	20	25	42	61
	62,5	9	50	4,0	625	23	31	50	72

Table for PE

Foundation: 2207, 2208 DIN 16932 German association for welding

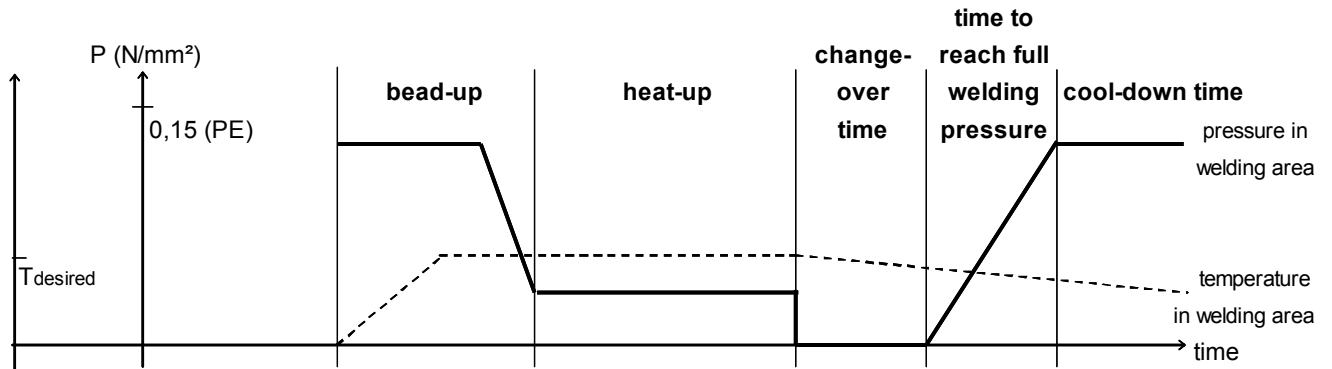
Use for: **5100 steel / 6100 steel / HRG 6 / 8000 (ab 06/2009)**

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PE 100 The standard value for heating element temperature is 220° C.
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 full welding pressure [s]	welding pressure [bar]	cool-down time [min]
630	15,4	41	16	2,0	154	9	9	16	20
	19,3	33	19	2,5	193	10	11	19	24
	24,1	26	24	2,5	241	11	13	24	30
	30,0	21	29	3,0	300	16	16	29	37
	35,7	17,6	34	3,0	357	13	18	34	43
	37,4	17	36	3,5	374	16	23	36	45
	46,3	13,6	44	3,5	463	19	19	44	56
	57,2	11	53	4,0	572	22	29	53	67
70	9	63	4,0	700	25	35	63	80	
710	17,4	41	20	2,0	174	10	10	20	22
	21,8	33	25	2,5	218	11	12	25	27
	27,2	26	30	3,0	272	12	15	30	33
	33,9	21	37	3,0	339	15	18	37	41
	40,2	17,6	44	3,5	402	17	20	44	49
	42,1	17	45	3,5	421	18	21	45	51
	52,2	13,6	55	4,0	522	21	26	55	62
	64,5	11	67	4,0	645	24	32	67	74

Table for PE

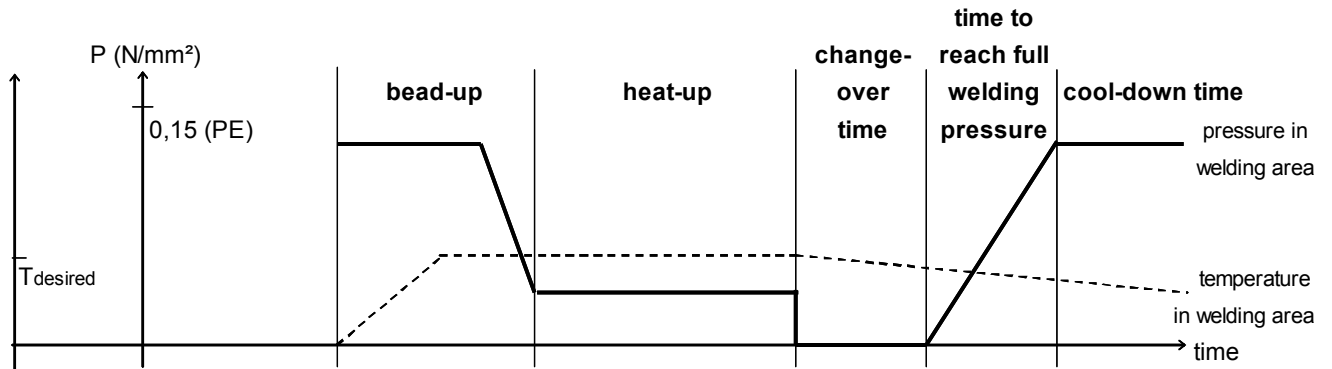
Foundation: 2207, 2208 DIN 16932 German association for welding
 Use for: **5100 steel / 6100 steel / HRG 6 / 8000 (ab 06/2009)**

1 bar on manometer: **294,5 N**

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 The **smaller** the pipe wall the **higher** the temperature.

PE 100 The standard value for heating element temperature is 220° C.
 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
800	19,6	41	25	2,0	145	9	9	25	19
	24,5	33	31	2,5	245	12	13	31	30
	30,6	26	38	3,0	306	14	16	38	37
	38,1	21	47	3,5	381	16	20	47	46
	45,3	17,6	55	3,5	453	19	23	55	55
	47,4	17	58	58	3,5	474	19	24	58

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

Table for PP

Foundation: 2207, 2208 DIN 16932 German association for welding

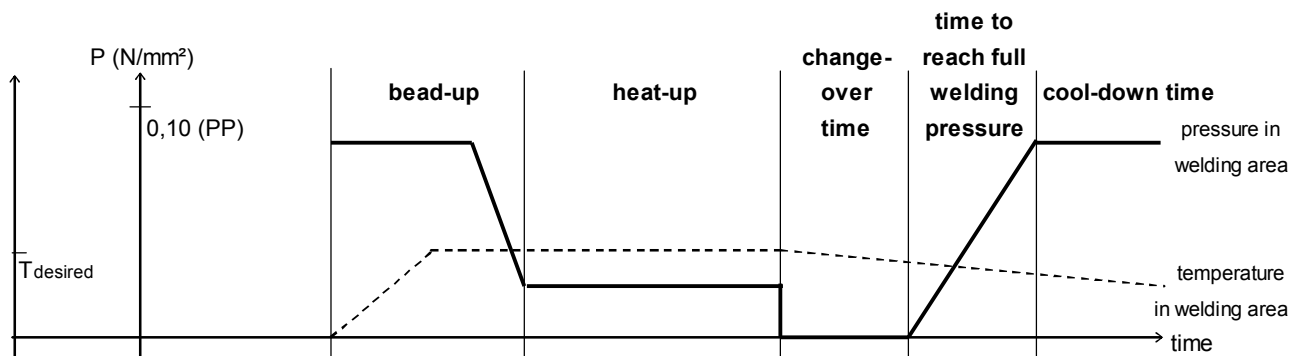
Use for: **5100 steel / 6100 steel / HRG 6 / 8000 (ab 06/2009)**

1 bar on manometer: **294,5 N**

The standard value for heating element temperature is 210° C +/- 10° C.

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] ^①
315	7,7	41	3	1,0	185	6	8	3	13
	9,7	33	4	1,0	213	7	9	4	16
	12,1	26	4	1,0	246	7	11	4	20
	17,9	17,6	6	1,0	317	9	16	6	28
	28,6	11	9	2,0	420	12	24	9	44
355	8,7	41	4	1,0	199	6	8	4	15
	10,9	33	5	1,0	230	7	10	5	18
	13,6	26	5	1,0	264	7	12	5	22
	20,1	17,6	8	1,5	341	9	18	8	32
	32,2	11	12	2,0	448	13	28	12	48
400	9,8	41	5	1,0	214	7	9	5	16
	12,3	33	6	1,0	249	7	11	6	20
	15,3	26	7	1,0	221	7	10	7	17
	22,7	17,6	10	1,5	367	10	20	10	35
	36,3	11	15	2,0	480	14	31	15	54
450	11,0	41	6	1,0	231	7	10	6	18
	13,8	33	7	1,0	267	8	13	7	23
	17,2	26	8	1,0	308	8	15	8	27
	25,5	17,6	12	1,5	395	11	22	12	39
	40,9	11	18	2,5	508	15	35	18	59
500	12,3	41	7	1,0	249	7	11	7	20
	15,3	33	8	1,0	285	8	14	8	25
	19,1	26	10	1,5	331	9	17	10	30
	28,4	17,6	15	2,0	419	12	24	15	43

Table for PP

Foundation: 2207, 2208 DIN 16932 German association for welding

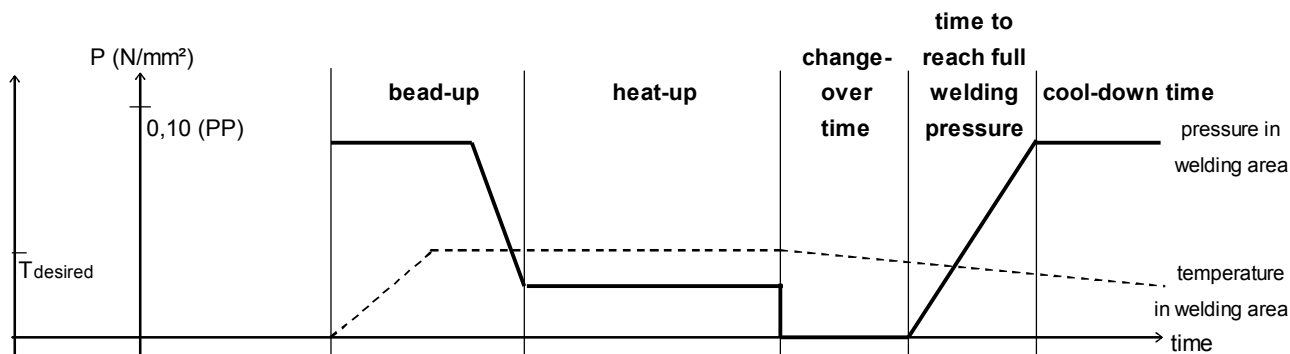
Use for: **5100 steel / 6100 steel / HRG 6 / 8000 (ab 06/2009)**

1 bar on manometer: **294,5 N**

The standard value for heating element temperature is 210° C +/- 10° C.

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] ^①
560	13,7	41	8	1,0	266	7	12	8	22
	17,2	33	10	1,0	308	8	15	10	27
	21,4	26	13	1,5	354	10	19	13	33
	31,7	17,6	18	2,0	444	13	27	18	48
630	15,4	41	11	1,0	286	8	14	11	25
	19,3	33	13	1,5	333	9	17	13	30
	24,1	26	16	1,5	381	10	21	16	37
	35,7	17,6	23	2,0	475	14	31	23	53
710	17,4	41	13	1,0	311	9	16	13	28
	21,8	33	17	1,5	358	10	19	17	34
	27,2	26	20	2,0	409	11	23	20	42
	40,2	17,6	29	2,5	503	15	35	29	59
800	19,6	41	17	1,5	338	9	18	17	31
	24,5	33	21	1,5	385	11	21	21	38
	30,6	26	26	2,0	436	12	26	26	46
	45,3	17,6	37	2,5	533	16	39	37	65

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

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.

- The operating staff has to be informed before the starting of the maintenance works.
- Check the tightness of loosened screws.
- Check the function of the safety devices after completion of the maintenance works. Especially insulation, tension resistance and protective cables resistance.

7.2. 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.

7.3. Cleaning the machine

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

- during cleaning with solvents.

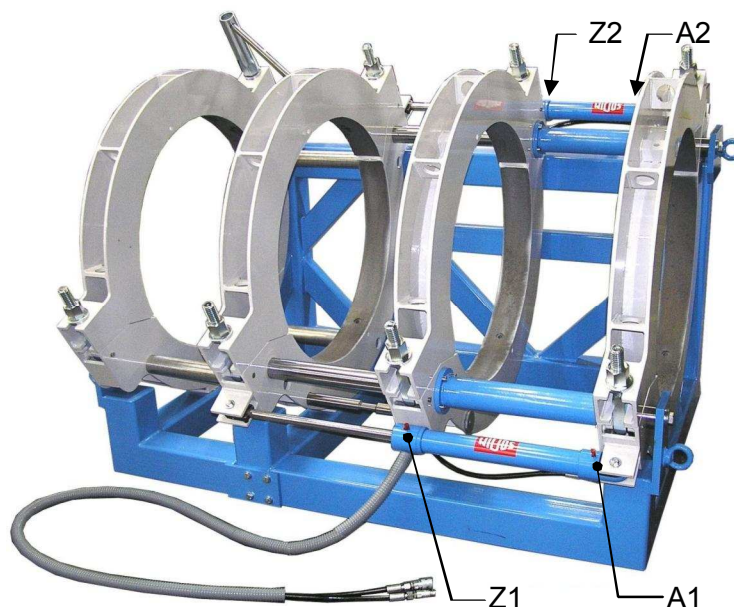
7.4. Clamping elements

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

7.5. Checking the hydraulic oil level

- To avoid damages check the oil level of the control unit before each starting.
- Unscrew the cover of the tank groove (with integrated oil level bar).
- Clean the oil bar with a non-fibring cloth and insert it again in the tank groove.
- Remove the oil bar again and check the oil level by means of the two marks on it (the oil level should be between both marks).
- If the oil level is under the lower mark, then hydraulic oil of the quality HLPD 32 should be added.
- The oil level should not be over the upper mark because otherwise there is a risk of inondation.
- After completion of the works, close the tank cover again.
- Do not cant the hydraulic, since the cover of the hydraulic tank does not close totally and oil can run out.

7.6. Venting 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.
- 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).

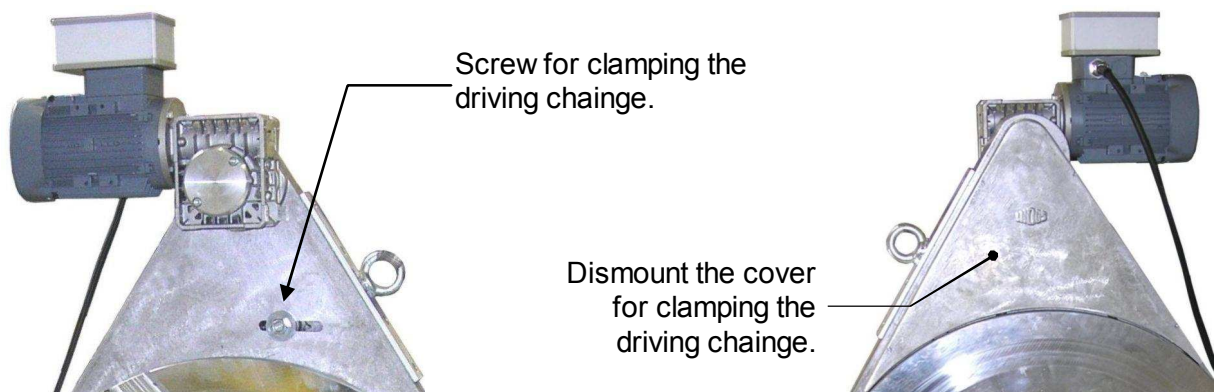


The lower vent screws always have to be vented at first because there is a direct connection between the upper and the lower cylinders.

- If air remains in the lower cylinder, it will ascend in the upper cylinder when pressure is applied.

7.7. Planhobel

- 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 !).



7.8. 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 hydraulic hoses at the basic machine should not be unscrewed (air penetration). Make sure that they are not squeezed.
- The sensore integrated in the machine are sensitive high precision devices which need to be carefully handled in order to guaranty a longer live.
- Do not cant control unit (Hydraulic oil can run out).
- Prevent from heavy chocs.
- Be always carreful while using automatic handling and carrying machines.



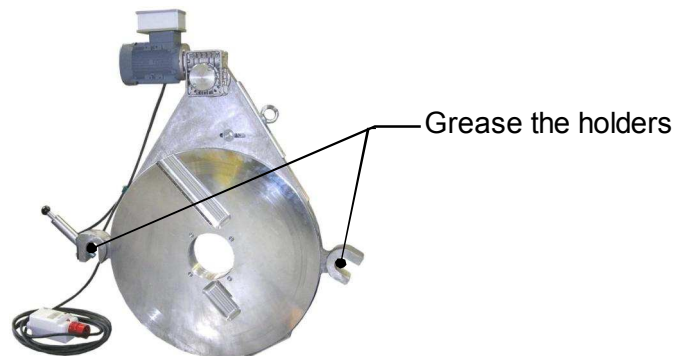
Transport the planer in the reception box.

If the planer is transported in the basic machine grease the holders with PTFE-spray because otherwise damages at the drag rod may occur.

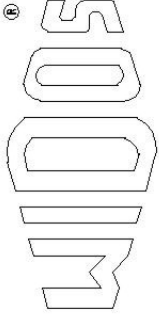


Transport the planer in the reception box.

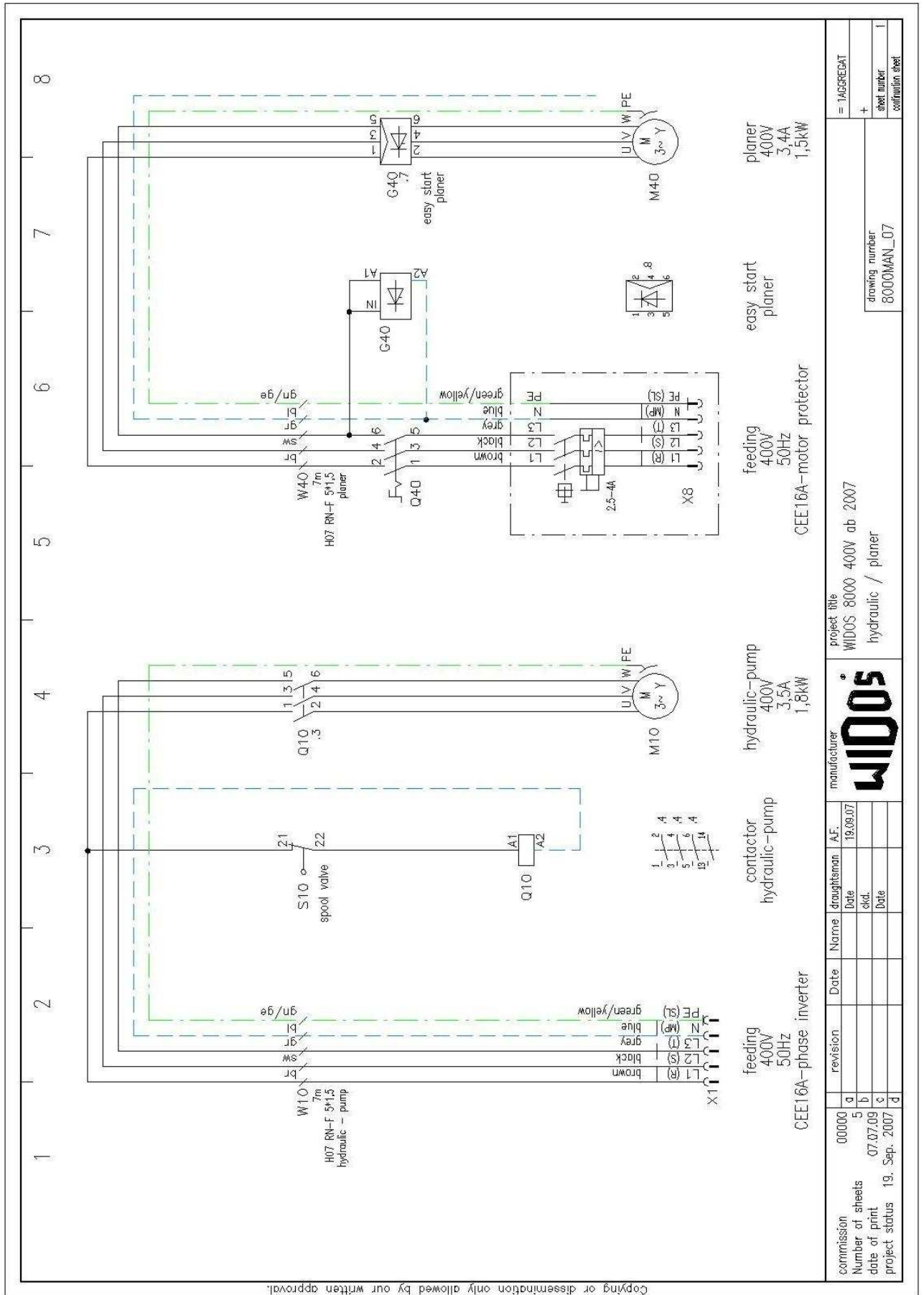
If the planer is transported in the basic machine grease the holders with PTFE-spray because otherwise damages at the drag rod may occur.



9. Hydraulic and electric diagrams

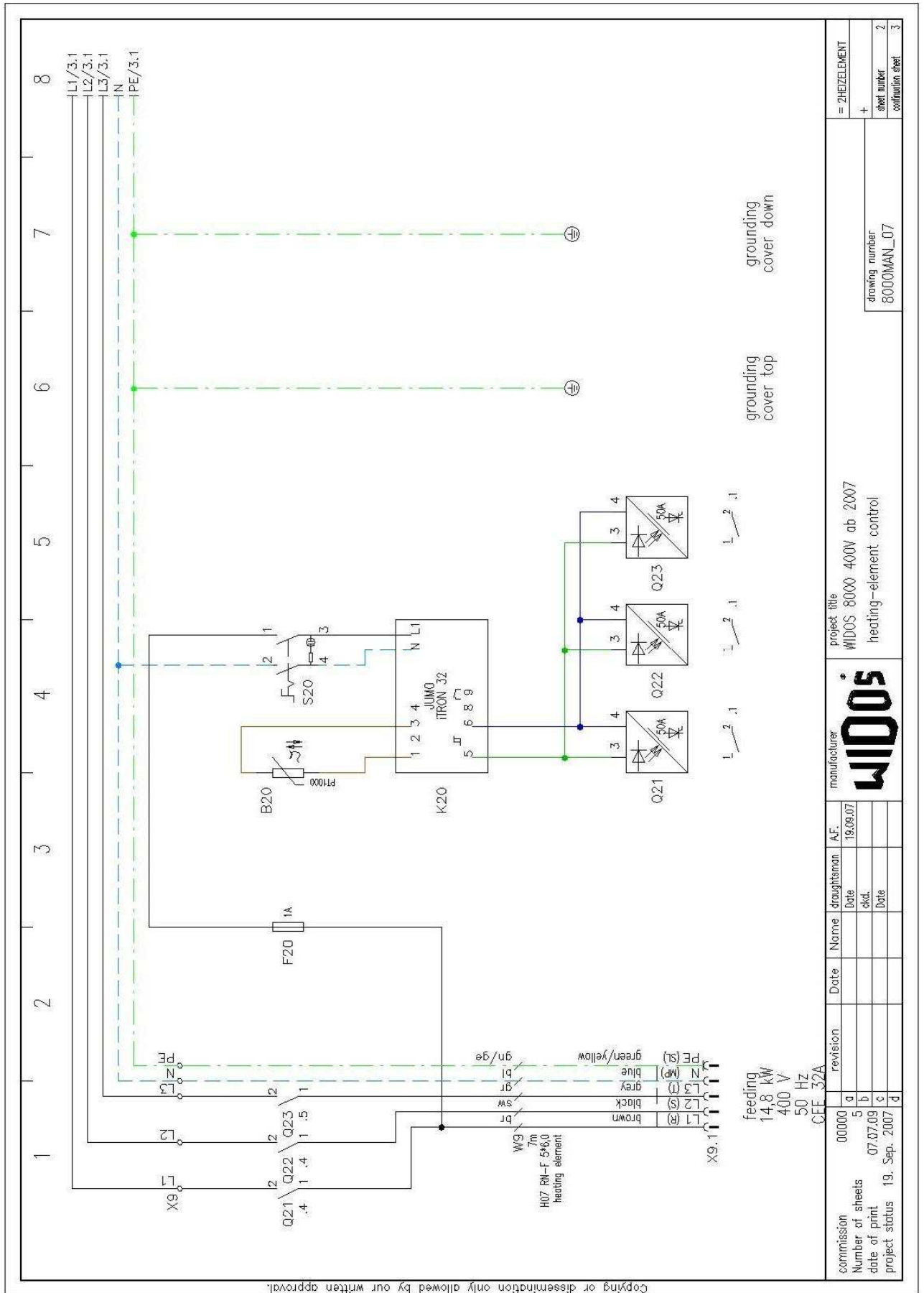
	<p>WIDOS GmbH Kunststoffschweißtechnik Plastic Welding Technology</p>	<p>Einsteinstrasse 5 D-71254 Ditzingen Tel.: +49 (0) 7152 / 9939-0 Fax: +49 (0) 7152 / 9939-40 http://www.widos.de</p>	<h1 style="font-size: 2em;">Circuit diagram</h1> <p>project title WIDOS 8000 400V ab 2007</p> <p>machine type welding machine WIDOS 8000</p> <p>Number of sheets 5</p> <p>Date 19.09.07</p>	<p>manufacturer WIDOS</p> <p>project title WIDOS 8000 400V ab 2007</p> <p>Job number 00000</p> <p>drawing number 8000MAN_07</p>	<p>= DOCUMENTATION + sheet number 0 configuration sheet Number of sheets 5</p>
<p>commission 00000</p> <p>Number of sheets 5</p> <p>date of print 07.07.09</p> <p>project status 19. Sep. 2007</p>	<p>Date 19.09.07</p> <p>draughtsman A.F.</p> <p>Date 07.07.09</p> <p>chkd. 19. Sep. 2007</p>	<p>welding machine WIDOS 8000 cover sheet</p>			

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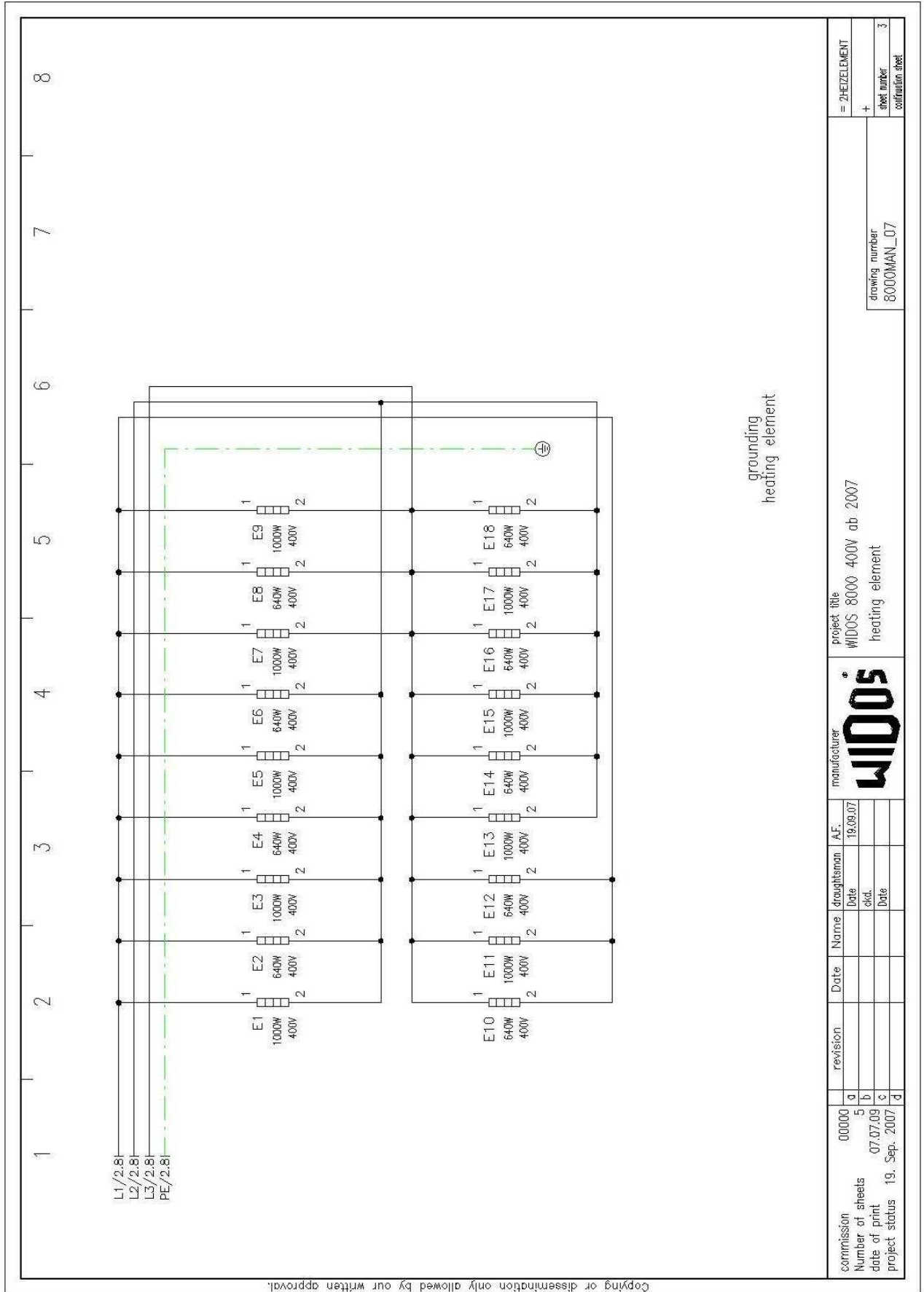


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commission	00000	revision		Name	draughtsman	A.F.	project title	WIDOS 8000 400V ab 2007
Number of sheets	5	Date	19.09.07				hydraulic / planer	
date of print	07.07.09	ekd.						drawing number
project status	19. Sep. 2007	Date						8000MAN_07
								sheet number
								1
								contractual sheet



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strip terminal = HEIZELEMENT - X9

Note	No. model cross-section length	conductor marking	from		cross-reference	jumper	terminal-no.	to		No. model cross-section length	conductor marking	Note
			= installation + location - BMK:connection					= installation + location - BMK:connection				
	W9 H07 RN-F 5*6mm 7m											
cover down												
conductor relay heating element L3			X9.1:PE		2.2 3.6	●	PE		PE heating element			heating element cover top
heating element cartridge 11+12			PE cover down		2.7 2.6	●	PE		PE cover top			
heating element cartridge 9+10			X9.1:N		2.2		N		S2			
heating element cartridge 7+8			V3:2		2.1	●	L3					
heating element relay heating element L2			E11 + E12		3.2 3.5	●	L3		E17 + E18			heating element cartridge 17+18
heating element cartridge 5+6			E9 + E10		3.5 3.4	●	L3		E15 + E16			heating element cartridge 15+16
heating element cartridge 3+4			E7 + E8		3.4 3.3	●	L3		E13 + E14			heating element cartridge 13+14
conductor relay heating element L2			V2:2		2.1	●	L2					
heating element cartridge 5+6			E5 + E6		3.4 3.5	●	L2		E17 + E18			heating element cartridge 17+18
heating element cartridge 3+4			E3 + E4		3.3 3.4	●	L2		E15 + E16			heating element cartridge 15+16
conductor relay heating element L1			E1 + E2		3.2 3.3	●	L2		E13 + E14			heating element cartridge 13+14
heating element cartridge 1+2			V1:2		2.1	●	L1					
heating element cartridge 5+6			E5 + E6		3.4 3.2	●	L1		E11 + E12			heating element cartridge 11+12
heating element cartridge 3+4			E3 + E4		3.3 3.5	●	L1		E9 + E10			heating element cartridge 9+10
heating element cartridge 1+2			E1 + E2		3.2 3.4	●	L1		E7 + E8			heating element cartridge 7+8

commission 00000

Number of sheets 5

date of print 07.07.09

project status 19. Sep. 2007

revision

a	
b	
c	
d	

Name draughtsman A.F.

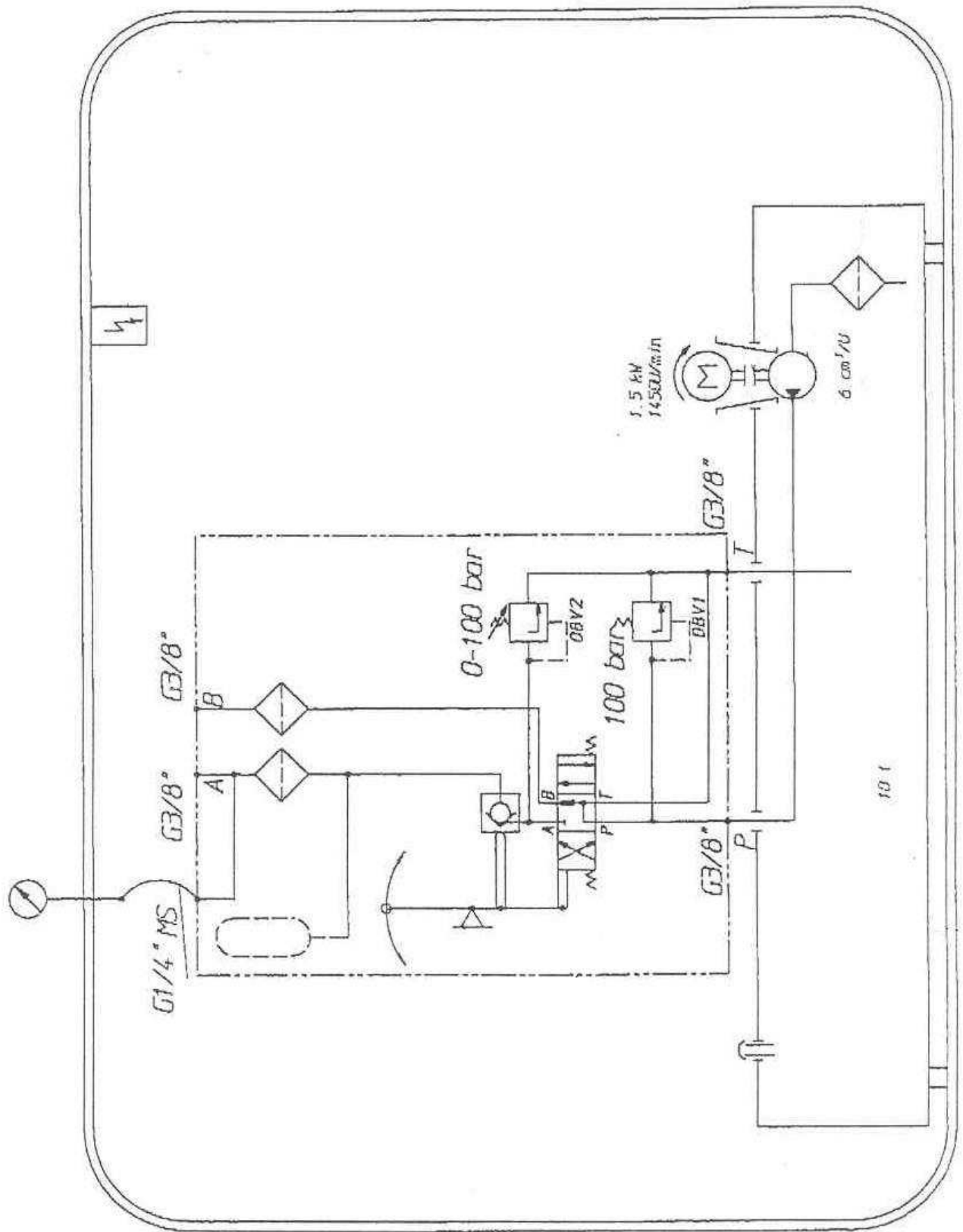
Date	19.09.07
skd.	
Date	

manufacturer **WIDOS**

project title
WIDOS 8000 400V ab 2007
=HEIZELEMENT - X9 - 400V heating element

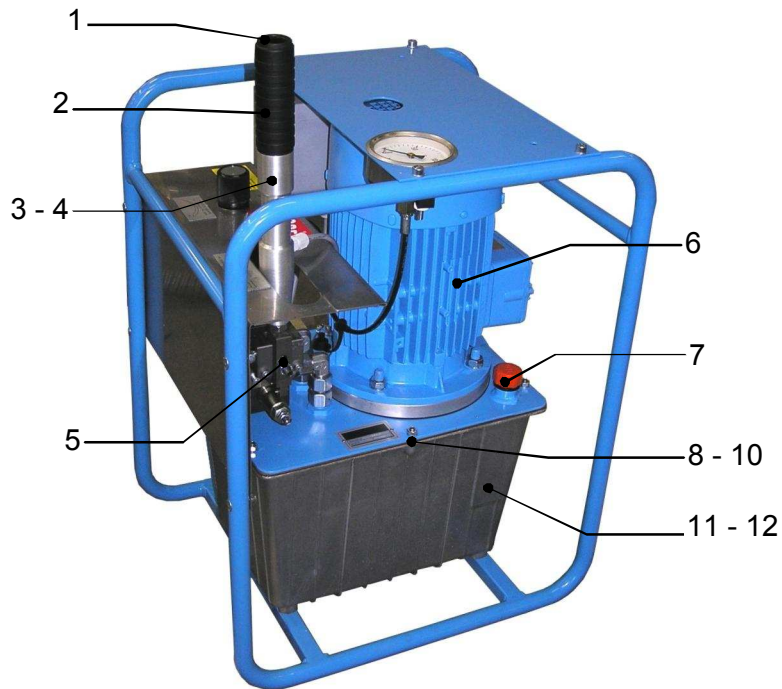
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8000MAN_07

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+
sheet number 100
continuation sheet



10. Spare parts list

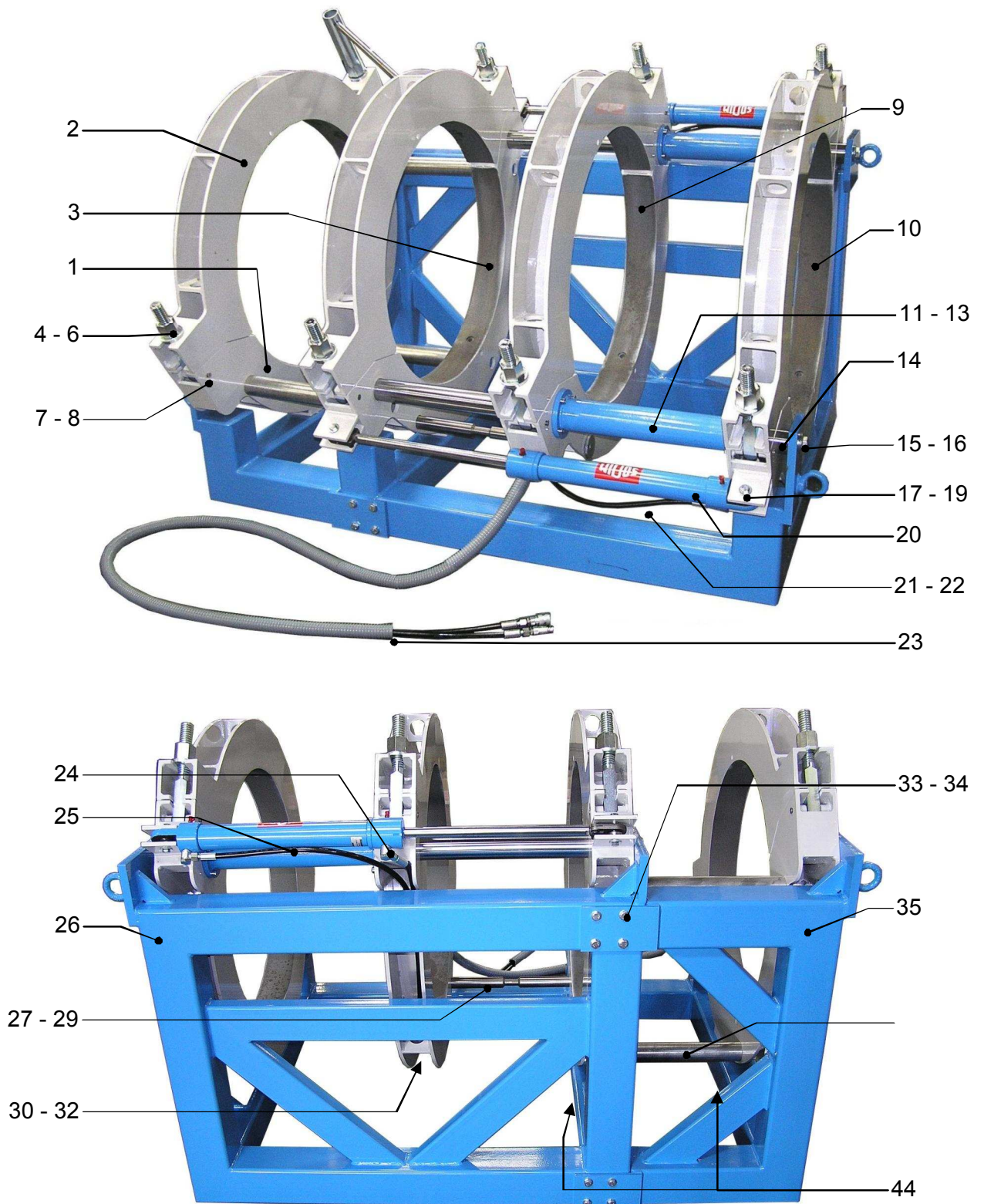
10.1. Hydraulic aggregat



Hydraulic Aggregate WIDOS 8000

<i>Pos.</i>	<i>Name</i>	<i>Piece</i>	<i>Order no.</i>
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	Valve box	1	on request
6	Three-phase motor 1,5/2,0 kW (Type FE90L-2/4)	1	on request
7	Oil dipstick	1	1010212
8	Hexagon nut M 5 DIN 934	6	0934E
9	Washer M 5 DIN 125	6	0125E
10	Tank cover	1	233236
11	Oil tank 10 l	1	on request
12	Hydraulic pump	1	on request
13	Pan-head screw M 6x10 DIN 912	4	0912F010
14	Washer M 6 DIN 125	4	0125F
15	Sheet metal cover for protective mounting	1	233232
16	Protective mounting for hydraulic aggregate	1	233221
17	Connecting cable 5x1,5 mm ² , 7 m	1	EL02515
18	Plug 16 A	1	EST0316
19	Pressure gauge 0-250 bar	1	023004
20	Screwed connection for pressure gauge	1	V042314
21	Mini hose	1	V0400140
22	Covering for distributor valve	1	233233
23	Flat-head screw M 6 x 30 DIN 7991	4	7991F030
24	Hexagon nut M 6 DIN 934	4	0934F
25	Washer M 6 DIN 125	4	0125F
26	Plate "Release pressure"	1	SCHD-L
27	Button for pressure setting	1	101022
28	Plate "Manometer setting up"	1	SCHM6100
29	Coupling sleeve, flat packed	2	VMU14
30	Coupling plug, flat packed	2	VST14
31	Oil drain screw	1	on request

10.2. Basic machine



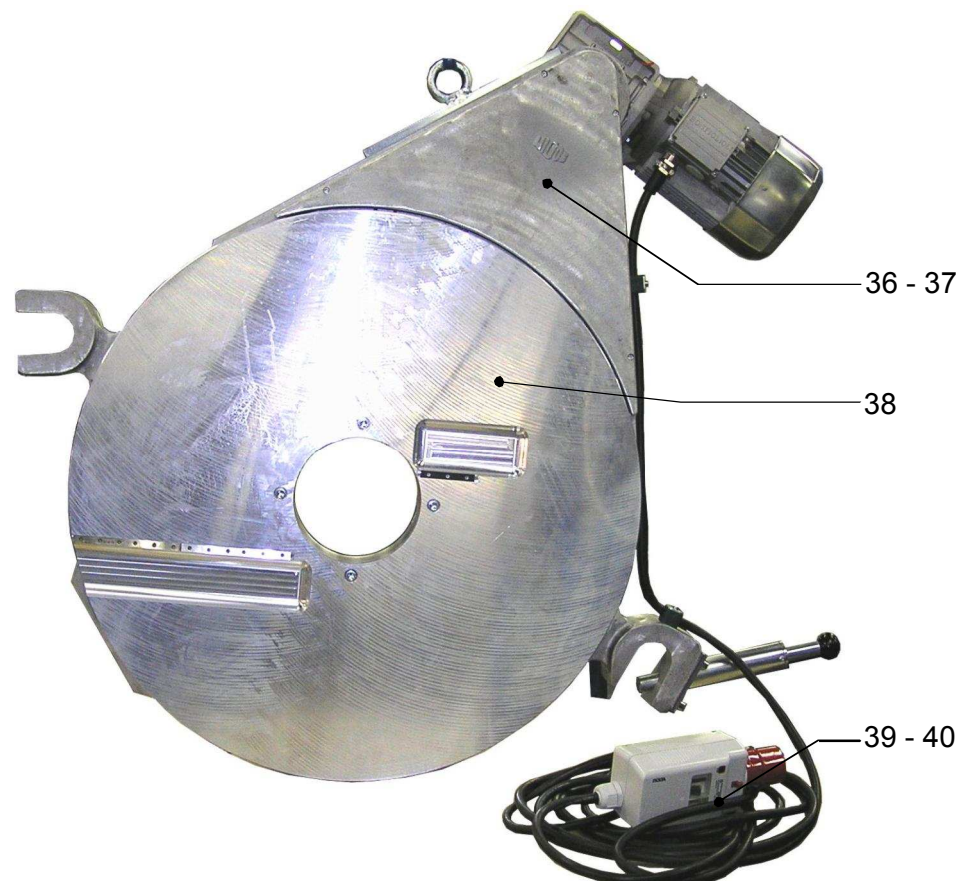
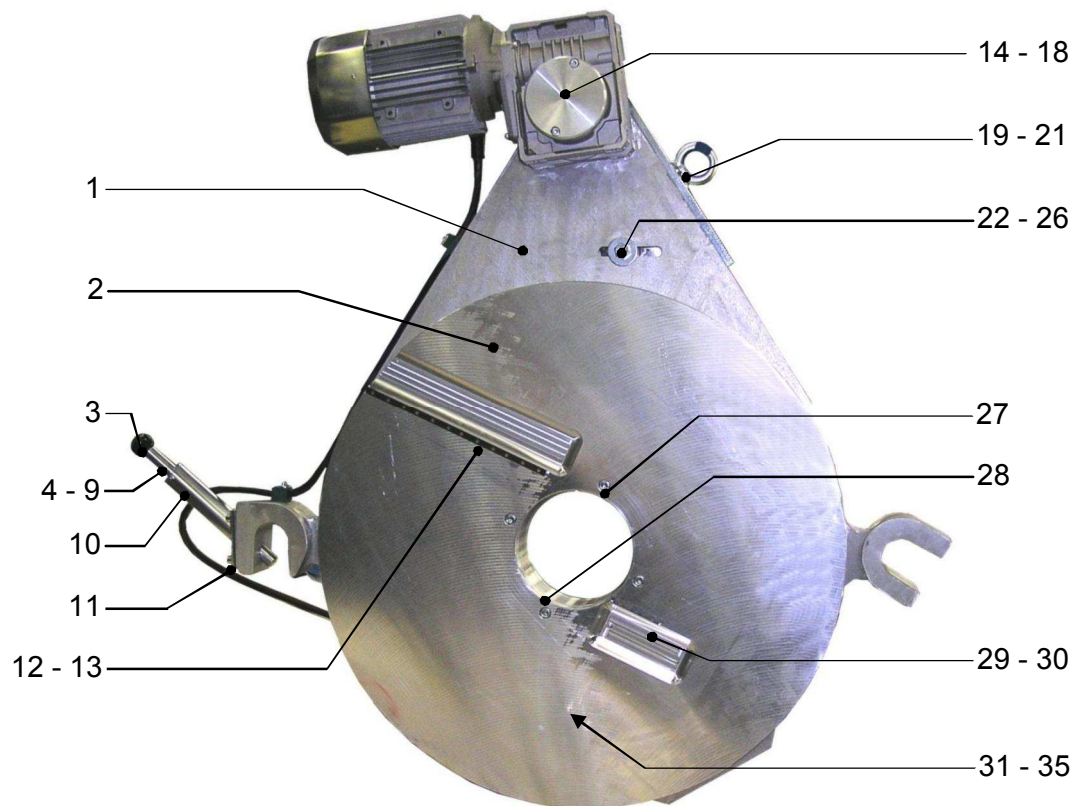
Basic machine WIDOS 8000

Pos.	Name	Piece	Article no.
1	Outer clamping tool, fixed	1	2311201
2	Upper clamping tool	4	2311205
3	Inner clamping tool, fixed	1	2311202
4	Thread spindle	8	253111193
5	Disc M 30 DIN 6340	8	6340Z
6	Spindle nut TR 30x6	8	220111
7	Axis for spindle	8	220110
8	Retaining rings for shafts 20 DIN 471	16	0471T
9	Inner clamping tool, movable	1	2311203
10	Outer clamping tool, movable	1	2311204
11	Guide tube	2	2511113
12	Pan-head screw M 10 x 20 DIN 912	16	0912J020
13	Floating bearing ID60 x OD72 x L70 DIN 1850	4	on request
14	Guide shaft	2	2511112
15	Hexagon-head screw M 20x40 DIN 933	2	0933T040
16	Washer M 20 DIN 125	2	0125T
17	Bolt for rod end bearing	4	23111092
18	Bushing for rod end bearing	2	23111091
19	Retaining rings for shafts 20 DIN 471	8	0471T
20	Hydraulic cylinder	2	2311206
	Gasket for cylinder	2	0841206D
21	Hydraulic hose, below short (appr.660 mm)	1	on request
22	Hydraulic hose, below long (appr.820 mm)	1	on request
23	Protection hose complete	1	on request
	Hydraulic hose (5 m)	2	VSCHL97
	Casing	1	EA0801
	Coupling box, flatpacking	1	VMU14
	Coupling plug, flatpacking	1	VST14
	Bolting	2	VXGE12L14
	Compressed bushing	4	on request
	Sealing nipple	2	on request
	Bow-shaped nipple	2	VP3810R11
24	Hydraulic hose, above short (appr.1900 mm)	1	on request
25	Hydraulic hose, above long (appr.2050 mm)	1	on request
26	Basic frame	1	2311226
27	Tear off bar for heating element	1	2311118
28	Disc for tear off bar	2	251118
29	Flat-head screw M 20x20 DIN 7991	2	7991L020
30	Outer distributor block	1	2211081
31	Inner distributor block	1	2211082
32	Cylinder-head screw M6x90 DIN 912	2	0912F090
33	Hexagon-head screw M 12x20 DIN 933	16	0933L020
34	Washer M 12 DIN 125	18	0125L

Basic machine WIDOS 8000

Pos.	Name	Piece	Article no.
35	Support in front	1	2311227
36	Pan-head screw M20x50 DIN 912	6	0912T050
37	Distance shaft	3	230123
38	Pan-head screw M 12x 20 DIN 912	6	0912L020
--	Reducer insert OD 710 in OD 800	1 set	22180710
--	Reducer insert OD 630 in OD 710	1set	22180630
--	Reducer insert OD 560 in OD 630	1 set	2208560
--	Reducer insert OD 500 in OD 630	1 set	2208500
--	Reducer insert OD 450 in OD 630	1 set	2208450
--	Pan-head screw M 16x60 DIN 912 (for OD 710)	8	0912P060
--	Pan-head screw M 16x100 DIN 912 (for OD 630)	8	0912P100
--	Pan-head screw M 16x140 DIN 912 (for OD 560)	8	0912P140
--	Pan-head screw M 16x170 DIN 912 (for OD 500)	8	0912P170
--	Pan-head screw M 16x190 DIN 912 (for OD 450)	8	0912P190
--	Tool bag complete	1	ZWR8000
	Tool bag	1	ZWR
	Socket spanner hexagonal size 46	1	ZRS46
	Allan key with T-grip size 8	1	ZIT08
	Allan key with angeled size 8	1	ZIG08
	Ring fork wrench SW 19	1	ZRG19
	Ring fork wrench SW 24	1	ZRG24
	Torx screw driver TX10	1	ZT10

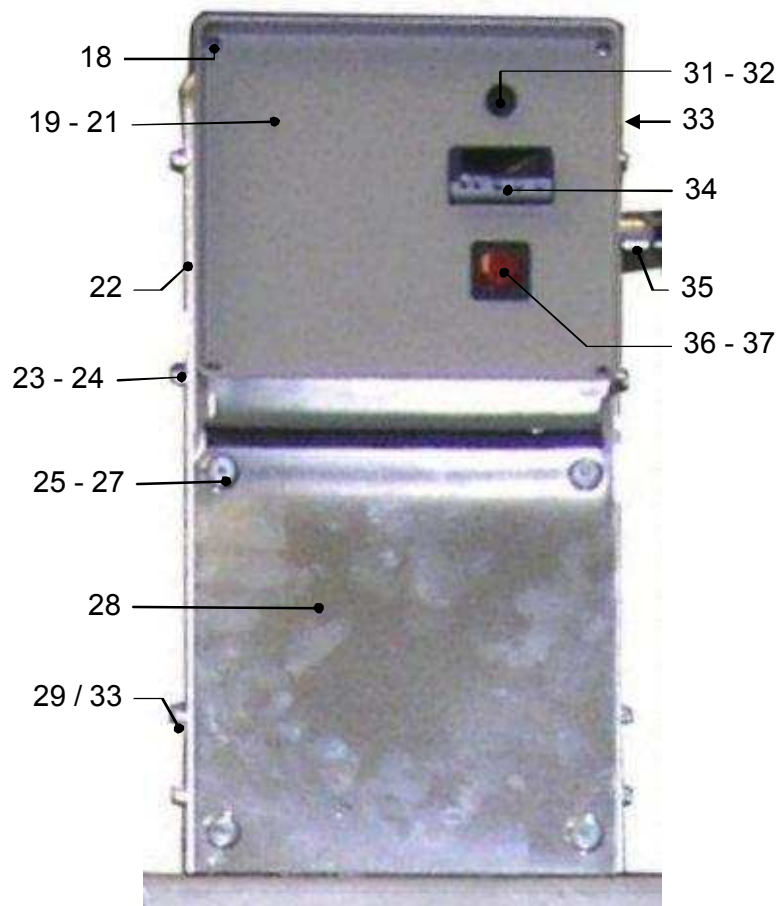
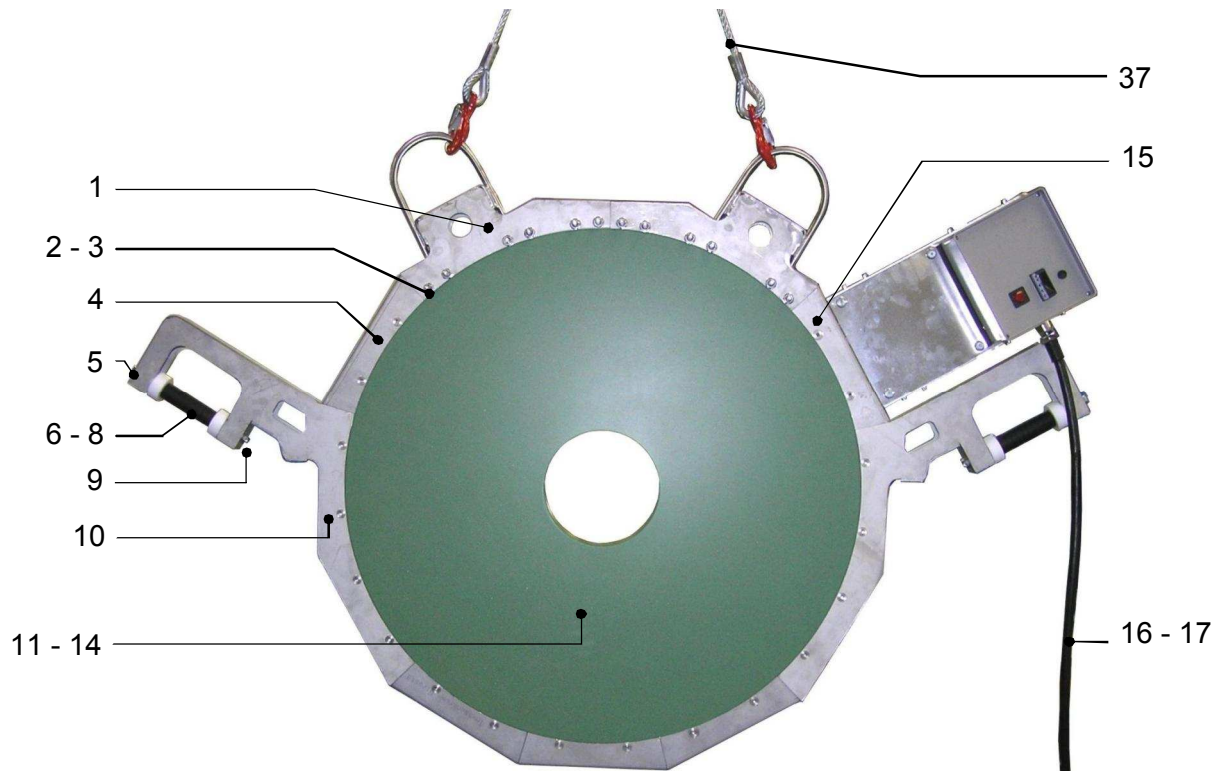
10.3. Planer



Planer WIDOS 8000

<i>Pos.</i>	<i>Name</i>	<i>Piece</i>	<i>Order no.</i>
1	Fastener for planer	1	231401
2	Planer disc, right-hand	1	2304021
3	Ball button C 40 DIN 319	1	0319C40
4	Bolt	1	231412
5	Cover for planer locking	1	251413
6	Set collar for planer locking	1	251414
7	Pan-head screw M 4 x 10 DIN 912	2	0912D010
8	Spring 2,5x32x110	1	FE037
9	Grub screw M 6x16 DIN 913	2	0914F006
10	Guidance for planer locking	1	251411
11	Hexagon-head screw M 10x30 DIN 933	4	0933J030
12	Blade	4	MES170
13	Flat-head screw M 8x35 DIN 965	20	0965C008
14	Geared motor (1,5 kW, 400 V, 15:1)	1	ADG23380
15	Driveshaft	1	1474510
16	Cylinder-head screw M 8x30 DIN 912	4	0912H030
17	Cover	1	231409
18	Pan-head screw M 8 x 20 DIN 912	2	0912H020
19	Reinforcing plate, external	1	230421
20	Flat-head screw M 8x35 DIN 7991	4	7991H035
21	Hexagon-head screw M 8 DIN 934	4	0934H
22	Bolt for chain tensioner	1	230425
23	Tension wheel (3/4", 12 teeth)	1	230424
24	Ball bearing	2	L6003Z
25	Washer M 16 DIN 125	5	0125P
26	Hexagon nut M 16 DIN 934	1	0934P
27	Pan-head screw M 12x40 DIN 912	8	0912L040
28	Bearing carrier	1	2304032
29	Blade	2	MES085
30	Flat-head screw M 8x35 DIN 965	6	0965C008
31	Ball bearing	1	L61856
32	Chain wheel (3/4", 95 teeth)	1	230426
33	Chain without joint (3/4", 133 links)	1	K34135
34	Chain joint (3/4")	1	KSCH34
35	Flat-head screw M 10x25 DIN 7991	4	7991J025
36	Cover	1	230404
37	Cylinder head screw M 4x10 DIN 912	4	0912D010
38	Planer disc, left-hand	1	2304031
39	Connecting cable	1	EL02515
40	Phase converter plug	1	EST03161

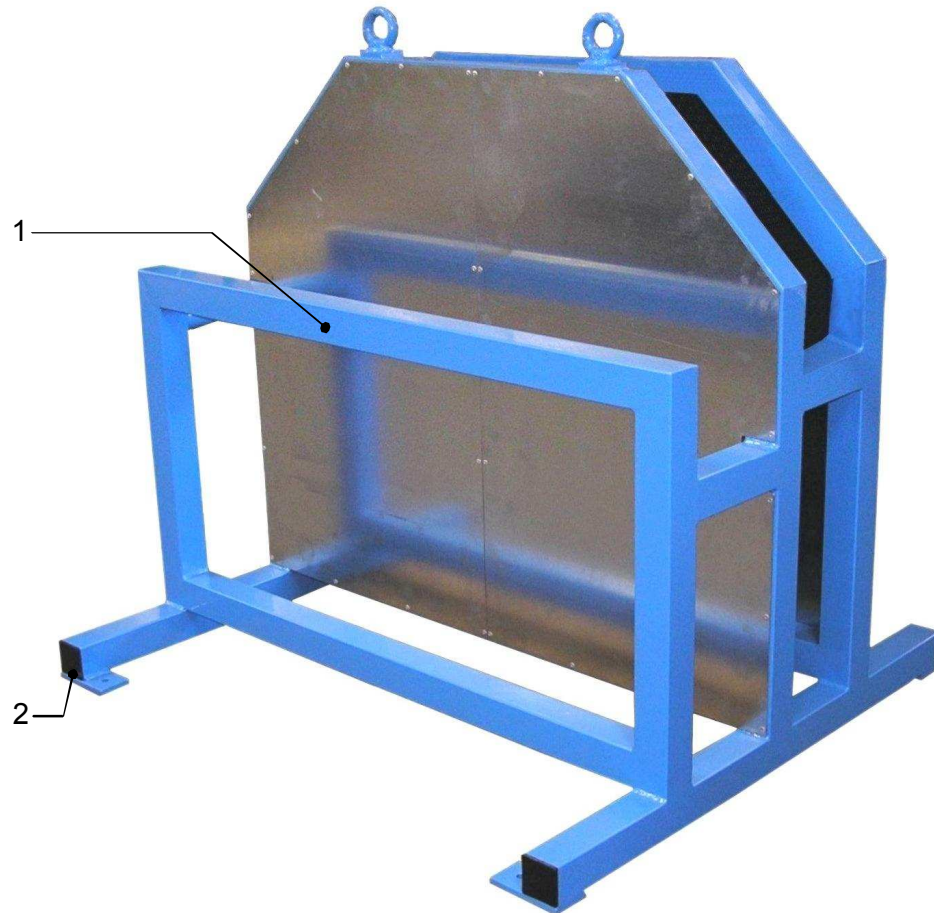
10.4. Heating element



Heating element WIDOS 8000

Pos.	Name	Piece	Order no.
1	Frame segment straight for suspension	2	2345231
2	Flat head screw M 8 x 30	30	7991H030
3	Cap nut M 8 x 15	30	on request
4	Frame segment straight	7	234522
5	Pan-head screw M 10x204 DIN 912	2	0912J240
6	Disc with collar	2	2235133
7	Grip	2	071508
8	Disc without collar	2	2235134
9	Hexagon nut M 10 DIN 934	2	0933J
10	Frame segment straight for grip	2	2345232
11	Heating element twelve-sided (400 V)	1	H8000E1
	Heating plate twelve-sided new	1	HP8000E1
	Heating plate twelve-sided for change	1	HPT8000E1
12	Temperature probe PT 1000	1	H09082
13	Heating cartridge compl., Ø16x350 / 1000 W / 400	9	on request
14	Heating cartridge compl., Ø16x200 / 700 W / 400 V	9	H2212
15	Frame segment straight for terminal box	1	234525
16	Connecting cable 5x4 mm ² , 7m	1	EL05540
17	Plug 32 A	1	EST0132
18	Pan-head screw M 4 x 18 DIN 84	8	0084D018
19	Cover for terminal box	1	251504
20	Terminal box	1	251507
21	Semiconductor relais	1	ES2001
22	Mounting for terminal box	1	2235106
23	Pan-head screw M 6 x 20 DIN 84	4	0912F020
24	Washer M 6 DIN 125	4	0125F
25	Spacer hexagonal M 6x25	4	0974625
26	Flat-head screw M6x15 DIN 7991	8	7991F015
27	Rosette M6	8	ROSM6
28	Cap for frame	2	2235107
29	Pan-head screw M 6 x 12 DIN 912	4	0912F012
30	Hexagon nut M 6 DIN 934	4	0934F
31	Holder for fuse	1	ESI003
32	Fuse	1	ESI001
33	Heat sink	1	251516
34	Governor	1	H6204
35	Bolting HKL	1	EVH21322925
36	Switch on / off, red	1	H0903
37	Wire rope 0,5 m	1	J9994

10.5. Protection box



Reception Box WIDOS 8000

<i>Pos.</i>	<i>Name</i>	<i>Piece</i>	<i>Order no.</i>
1	Reception box, double	1	231521
2	Protective cap	4	J0228

11. Declaration of conformity

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

Corporation

WIDOS GmbH
Einsteinstr.5
D- 71254 Ditzingen-Heimerdingen

declares under own responsibility that the product

Plastic Welding Machine
WIDOS 8000

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

1. DIN EN ISO 12100 – 1 and 2 (replacement for DIN EN 292 part 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 4413
Safety specifications for fluid technical installations and components
4. EN 60555, EN 50082, 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, 07.10.2011

Martin Dommer (Technical director)