

Working Instructions Translation

Heating element butt welding machine

WIDOS WELD IT 315 Steel



Keep for further use!

Version: Ditch machine
Type: WIDOS WELD IT 315 Steel
Serial number / year of construction: see type lable

Customer's entries

Inventory- No.:
Place of working:

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 advisers in the factory or in our subsidiary companies.

We will help you with pleasure.

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

Thank you.

Structure of the working instructions

This manual is arranged in chapters, which belong to the different using phases of the machine.

Therefore the searched information can be easily found.



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Any changes prior to technical innovations.

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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. Application and prescribed use

The WIDOS WELD IT 315 Steel is made for heating element butt welding of pipes and fittings with a diameter range of $\varnothing = 90 - 315$ mm.

It is a building site machine and is designed especially for the use on site as well as in the workshop.

For this reason, the frame is kept small such that it can also be used in constrained positions (e.g. building ditches).

All use going beyond is not prescribed.

The manufacturer is not responsible for damages caused by misuse.

The risk is held only by the user.

Prescribed use also means:

taking notice of all remarks in this manual
performing of repair works.

1.2. Machine overview



1	Planer
2	WI HEAT [®] Heating element
3	Protective box
4	WI PRECISION [®] Basic machine with clamping tools
5	WI FORCE [®] Hydraulic aggregate

1.3. Safety measures

In case of wrong use, wrong operation or wrong maintenance the machine itself or products being in the surrounding 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 advices must be necessary adhered to.

1.4. Conformity

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

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

1.5. Designation of product

The product is designated by two signs at the frame.

The type-labels are fixed on the control unit and on the basic machine.

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

1.5.1 Technical Data

1.5.1.1 WIDOS WELD IT 315 Steel General data

Material:	PP, PE 80, PVDF, PE 100
Pipe diameter range:	OD 90 – 315 mm
Transport box (l x w x h): weight:	approx. 1230 x 820 x 560 mm approx. 50 kg
Total weight in set (without packing, without, reduction inserts):	approx. 127 kg
Protection:	16 A
Wire cross section:	1,5 mm ²
Environment:	<ul style="list-style-type: none"> - keep the workshop clean (especially the welding area must be clean) - 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 put up a tent - avoid strong sun beams - if it is windy shut the pipe endings.
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 / 500 °F no toxicant damp arises.

1.5.1.2 Planer

Motor:	monophase-alternating current-motor
Power:	0,95 kW
Voltage:	230 V ($\pm 10 \%$)
Current:	4,1 A
Frequency:	50 Hz ($\pm 10 \%$)
RPM n2 of planer	approx. 137 rpm
Elements:	Switch on / off Connecting cable and plug with earthing contact
Weight:	approx. 12,8 kg

1.5.1.3 WI HEAT[®] Heating element

Power:	2,1 kW
Voltage:	230 V ($\pm 10 \%$)
Current:	10 A ($\pm 10 \%$)
Frequency:	50 Hz
Outside-Ø:	350 mm
Surface:	antistick-coated
Elements:	Thermostatic temperature control Control lamps, Connecting cable with plug
Weight:	approx. 6,0 kg

1.5.1.4 WI FORCE[®] Hydraulic aggregate

Power:	0,3 kW
Voltage:	230 V ($\pm 10 \%$)
Current:	2,7 A
Frequency:	50 Hz
Hydraulic oil tank:	approx. 1 l
Electromotor and pump:	
RPM:	1380 (revs/min.)
max. pressure of pump:	approx. 120 bar
Working pressure:	100 bar
Weight:	approx. 25,5 kg

1.5.1.5 WI PRECISION® Basic frame

Dimensions (L x W x H):	830 x 580 x 440 mm (height, closed) 880 mm (height, open)
Reduction insert :	Dimensions can be selected
Material frame:	Machine steel
Material reduction inserts:	Steel
Weight:	approx. 83 kg
Cylinder-Ø:	40 mm
Piston rod-Ø:	35 mm
Length of stroke of cylinder:	215 mm
max. force: (F=P*A)	1167 daN at 200 bar (1 bar on manometer = 59 N)

Stock numbers for component parts see spare parts list.

1.6. Equipment and accessories:

The following accessories are part of the first delivery:

1	Open-end wrench, size 19
1	Allan key angulate size 10
1	Torx-screw driver T10
optional	Reduction inserts, roller brackets for the pipes

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.

The security notices of this chapter represent the general part.

Particular information is listed directly before the corresponding actions.

These working instructions provide you with the most important information to run the machine safely.

The safety information must be read by all persons who work on the machine.

2.1. Explanation of the different symbols

The working instructions contain the following signs for certain situations:



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

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



This symbol means a possible dangerous situation.

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



This symbol means a possible dangerous situation due to hot surfaces.

- The disrespect of these indications may conduct to heavy burns, respectively to self-ignition or even fire.



This symbol 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 risk of injury by noises exceeding 80 dB (A).

- Ear protection is obligatory



This symbol gives important information 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 work 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 on the machine, who

- know about basic safety and accident prevention rules and are instructed in the handling of the machine.
- The workers also must have read and understood the safety chapter of this manual and certify this with their signature.

The safety-conscious working of the staff should 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 take care of the basic safety and accident protection rules.
- To have read and understood the safety chapter and the warnings in this manual and to certify this with their signature.
- To inform themselves about the functions of the machine before using it.

2.4. Organizational measures

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

2.5. Informal security measures

- The manual has to be permanently kept at the place of use of the machine. It is to be at the operator's disposal at any time and without effort.
- As a supplement to the working instructions, the generally valid and also the local regulations for the prevention of accidents and the protection of the environment are to be provided and adhered to.
- All security and danger notices on the machine have to be kept in a readable state.
- Every time the machine changes hands or is being rented to third persons, the working instructions are to be sent along with and their importance is to be emphasized.

2.6. Instruction of the staff

- Only skilled and instructed persons are allowed to work at the machine.
- The responsibilities of the staff are to be determined clearly concerning transport, mounting and dismounting, starting, adjusting and tooling, operating, maintenance and inspection, repairs.
- Workers who are to be trained are only allowed to work at the machine under control of an experienced worker.

2.7. Dangers while handling the machine

The machine WIDOS WELD IT 315 Steel is constructed according to the actual technical standard and the acknowledged technical safety rules.

However, dangers for the operator or other persons standing nearby may occur.

Also damages to the machine itself or to other things 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 eliminated immediately.

2.8. 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.

2.9. Dangers caused by electric energy



Only skilled workers 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



There is the danger of cutting yourself or even breaking bones!

- Wear only tight clothes.
- Do not wear rings or jewellery during work.
- If necessary wear a hair-net.
- Always put the planer back into the reception case after and before each use.
- Only transport the planer at the handle.
- Do not touch the planer surfaces.
- Switch on the planer only for use.

2.11.2 Danger of burning at WI HEAT[®] heating element, heat protective box and welding area



You can burn yourself, inflammable materials can be ignited!
The heating element is heated up to more than **200° C** !

- Do not touch the surface of the WI HEAT[®] heating element.
- Do not leave the WI HEAT[®] heating element unattended.
- Take enough safety distance to materials which might be ignited.
- Wear safety gloves.
- Insert the WI HEAT[®] heating element into the heat protective box after use.
- Only transport the heating element at the handle.

2.11.3 Danger of stumbling over hydraulic and electric wires

- Make sure that no person has to step over the wires.
- Make sure that the cables lie in such a way that the danger is maintained at 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 tool and guideways



There is a possibility of serious injury:

On the one hand between the inner clamping tools and on the other hand between the outside clamping tool and the end of the guideway.

- Do not put hands or foot between clamped pipe ends.
- Do not step or grab between the inner clamping tools with not yet clamped pipes.
- Do not block opening and closing of the machine.

2.12. Structural modifications on the machine

- No modifications, extensions or reconstructions may be performed on the machine without permission of the manufacturer.
- Machine parts that are not in perfect condition are to be replaced immediately.
- Only use original **WIDOS** spare and wear parts.
- In case of purchase orders please always note the machine and version number.

2.13. Cleaning the machine

- The used materials and cloths are to be handled properly and to be disposed of, especially
 - during cleaning with solvents
 - when lubricating with oil and grease

2.14. Guarantee and liability

Fundamentally our "general sales and delivery conditions" are in force.

They are at the buyer's disposal latest before making the contract.

Guarantee and liability demands referring to damages of persons or things are excluded if they are caused by one or several of the following reasons:

- Not using the machine according to the prescription.
- Unprofessional transport, building-up, starting , operating and maintenance of the machine.
- Running the machine with defective or not properly mounted safety equipment.
- Ignoring the information given in this manual.
- Structural changes on the machine without permission.
- Unsatisfactory checkings of parts of the machine, which are worn out.
- Unprofessionally performed repairs.
- In case of catastrophes and acts of God.

3. Functional description

Basically the international and national standard specifications are to be fulfilled.

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

Then the foreparts are planed parallel by means of the **planer**, and mismatch is checked.

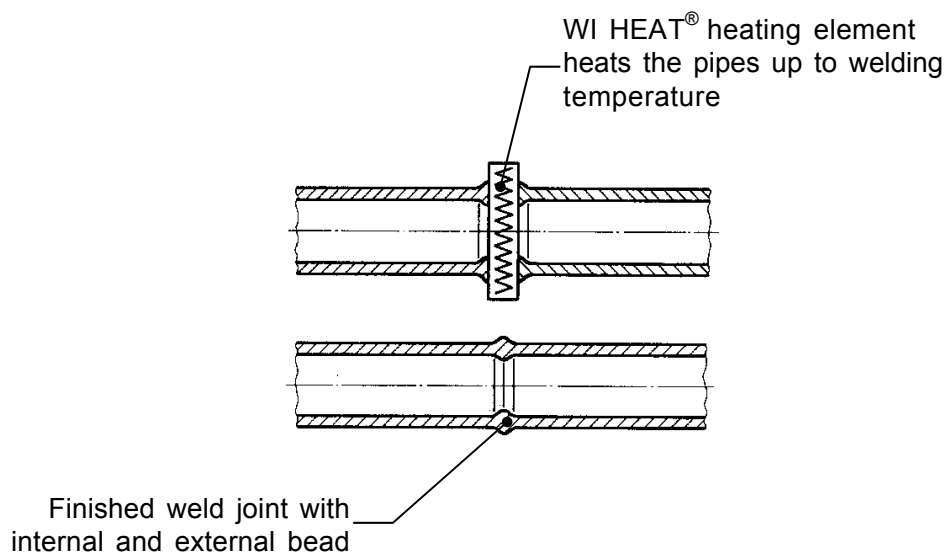
Now the WI HEAT[®] heating element is inserted and the pipes are pressed against the WI HEAT[®] heating element with the defined adjusting pressure. This operation is called "**adjusting**".

After the prescribed bead height is reached, the pressure is relieved and the **heat-up time** is starting. Now the pipes are heated up to welding temperature.

After expiration of the heat-up time, the slide has to be opened, the WI HEAT[®] heating element is removed quickly and the pipes are rejoined. The time between removing the WI HEAT[®] heating element and rejoining the pipes is called **change-over time**.

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

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



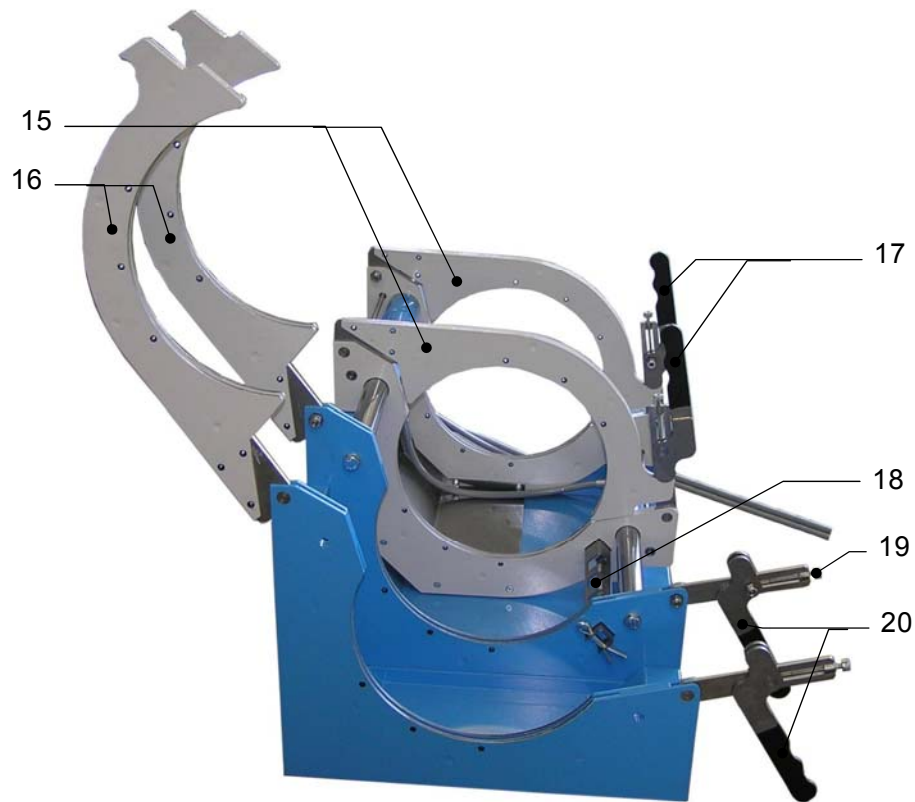
4. Operating and indicating elements

4.1. Elements on the WI FORCE[®] hydraulic aggregate



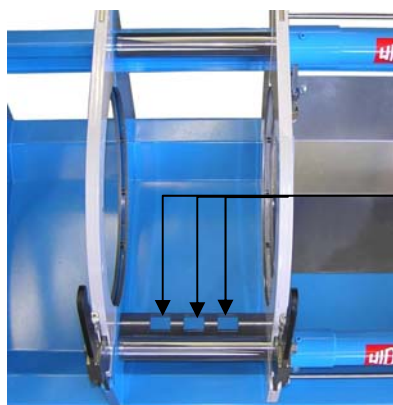
No.	Denomination	Function
6	Button: <--><-->	For closing the slide
7	Button: <---->	For opening the slide
8	Coonectin cable	Connection with local power supply (230V / 16 A)
9	Adjusting screw for pressure relief valve	- For the limitation of the hydraulic pressure to the desired value
10	Hydraulic connection for closing	- Non-dropping quick-action hose coupling
11	Screw with oil level stick	- Checking the oil-level - Filling in oil
12	Hydraulic connection for opening	- Non-dropping quick-action hose coupling
13	Pressure gauge	Display of the hydraulic pressure
14	Clamping lever	- clamped, for building up pressure - unclamped, to releasing a pressure

4.2. Basic machine



No.	Denomination	Function
15	Clamping rings movable, closed	Insertion of pipes
16	Clamping rings fixed, open	Insertion of pipes
17	Clamping levers closed, clamped	To clamp pipes
18	Pull off bar	To separate the heated pipes and heating element
19	Adjusting screw	Adjusting the clamping pressure
20	Clamping levers released and open	To clamp pipes

4.2.1 Separating device for WI HEAT® heating element



There is a pull-off bar mounted between the movable and the fixed clamping shells on the WI PRECISION® basic machine. It prevents the WI HEAT® heating element from sticking to the heated-up pipe ends. When inserting the WI HEAT® heating element take care that it lies in a cut-out of the pull-off bar (see arrows).

4.3. Elements at the WI HEAT[®] heating element



No.	Denomination	Function
21	On/off-switch with red lamp	- As soon as the heating element is switched on, the red control lamp lightens
22	Setting screw	- For regulating the temperature of the heating element
23	Control lamp green	- There are two different states: <ul style="list-style-type: none"> • off: signalizes that the heating element is not heated up at the moment or that it cools down • on: signalizes that the heating element is heated up at the moment. It has not yet reached the desired temperature
24	Connecting cable	<ul style="list-style-type: none"> • Current supply for heating element 230V / 50Hz

4.4. Elements at the planer



No.	Denomination	Function
25	Switch on / off for planer	- to switch on the planer. - the planer has to be switched off before and after use.
26	Chain tightening bolt	- in order to tighten the chain, disassemble the cap at the rear of the planer, then tighten the chain sturdily
27	Locking lever	For locking the planer in basic machine / reception box, pull the planer locking in arrow device for unlocking

5. Starting and operating

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

This includes:

- the safe operation of the machine
- using all the possibilities
- running the machine economically

5.1. Starting



The machine should only be operated by trained and authorized people.

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

In case of danger unplug the machine immediately.

In case of power failure, the hydraulic system can still be under pressure.

For this reason, release pressure when required.

After completion of the welding work and during breaks the machine has to be switched off. Further be sure that no unauthorized persons have access.

Protect the machine from wetness and moisture!

Operating the machine on construction sites is only allowed with an in-coming power distributor with a FI safety switch according to VDE 0100.



Check the oil level of the hydraulic system before each starting in order to avoid damages on the pump.

The oil-level must be between the two markers.

Connect the power line plug of the WI FORCE[®] hydraulic aggregate, the WI HEAT[®] heating element and the planer to the mains, and be sure to have a correct mains voltage (230 V / 50 Hz / 16 A). or on construction sites to the current distributor with FI safety switch.

Connect the hydraulic hoses of the WI PRECISION[®] basic machine to the WI FORCE[®] hydraulic aggregate.

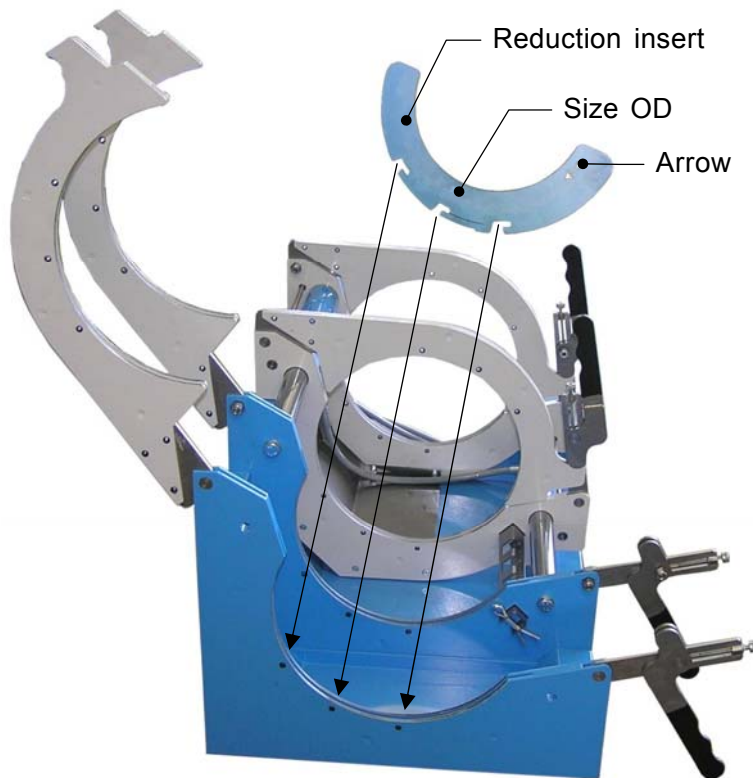


Lay hydraulic and electric lines carefully (danger of stumbling) !

Take into consideration the environmental conditions:

- Welding should not be carried out in direct sunlight.
- If necessary put up a welding tent.
- In case of ambient temperatures below 5°C the following measures have to be taken:
If need be, put up a welding tent and heat up the pipe ends.
- Take measures against rain, wind and dust.

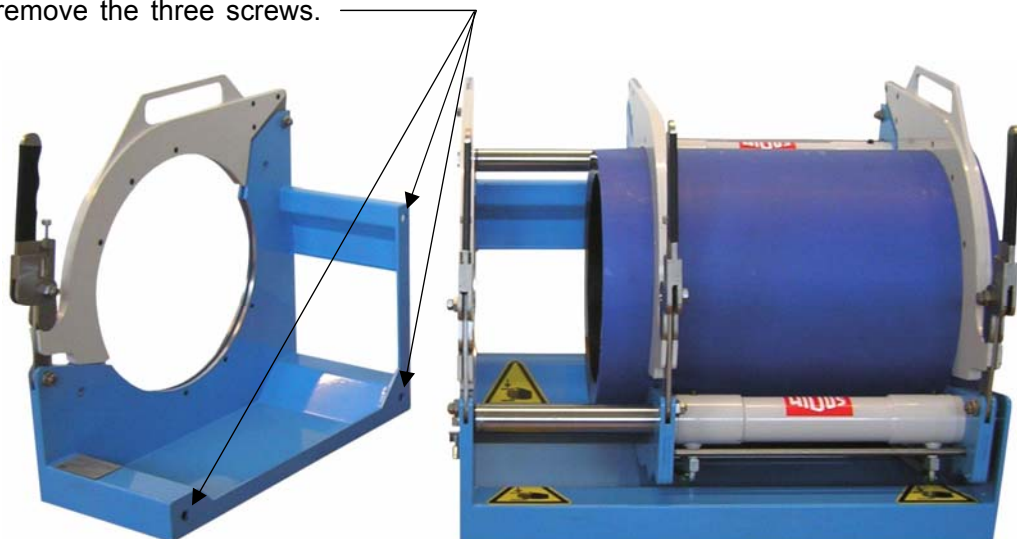
5.1.1 Insertion of reduction inserts



- Insert the reduction inserts on the bolts into the clamping rings and then slide the reduction inserts in the arrow direction until it stops. Thereby, the clamping inserts are fixed.
- For removing the reduction inserts slide the inserts in opposite direction of arrow, then you can lift out the inserts.

5.1.2 Using small and large reduction inserts

If you want to weld a T-piece, you can remove the outer fixed clamping ring. For this remove the three screws.



5.2. 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 tools, on the other hand between the outer clamping tool and the end of the guide bar.

- Do wear safety gloves as a protection against burning!
- A stop-watch should be available for recording the actual times for the heating and cooling.
- In the same way a table should be available from which the parameters for the pipe dimensions to be welded prescribed by the welding prescriptions may be taken from.
- The WI HEAT[®] heating element surfaces are to be clean and, above all, free from grease. Therefore they are to be cleaned with non-fraying paper and detergent (e.g. PE - cleaner) before every welding or if they are dirty.
- Take care that the anti-adhesive coating of the WI HEAT[®] heating element has to remain undamaged in the working area.
- Switch on the WI HEAT[®] heating element and adjust the required welding temperature at the adjusting screw.
 - The adjusted temperature is obtained when the control light is blinking.
- Insert the reduction inserts into clamping rings, according to the outside diameter of the pipes to be welded (chapter: 5.1.1).
- Put the workpieces into the clamping ring lower parts. Close the upper parts and align the workpieces with respect to one another. Then clamp the pipes with the clamping levers. In case of long pipe ends, use WIDOS rollerstands for alignment.
- Check the clamping lever (chapter: 4.1, no: 14) on the hydraulic aggregate if it is loose, tighten it.
- Close the workpieces with button <--><-->, 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 slide with button <--->> such that the planer fits therebetween.
- Put the planer between the pipe ends, allow handle to lock into basic machine. Switch on the on/off-switch (chapter: 4.4, no. 25).



There is the danger that the planer pulls in clothes, in case planer is switched on it will run immediately.

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



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

- Move the pipe ends towards one another with button <--><--> and plane same with a planing pressure between 1 and 15 bar above the movement pressure.

Planing must be carried out until a revolving cutting has been formed on both sides.

- Open the slide again with button <←--->, then switch off planer motor. Unlock planer take it out of machine and put it into the heat protective box.
- Remove the produced cuttings without contacting the worked surfaces.
- Move pipe ends to each other with button <---<--->.
- Check pipe mismatch and gap on the joining pipe ends.
According to DVS 2207, the mismatch on the pipe outer side must not exceed 0.1 x pipe wall thickness, the admissible gap must not exceed 0.5 mm.
The mismatch compensation is carried out via further tightening or releasing of the clamping nuts. In case of a mismatch compensation, planing must be carried out again afterwards.
- Open slide again slightly with button <←--->.
- The adjustment pressure for the pipe dimension to be welded can be gathered from the table. Add the movement pressure.
Set the resulting pressure value at the adjusting screw (no. 9) and check by actuating the button <---<--->.
- Open slide again slightly with button <←--->.
- Take heating up time, maximum change-over time, cooling down time and bead height for the pipe dimension to be welded from the table.
- Move the WI HEAT® heating element, which has been cleaned and brought to nominal temperature, by means of the handle upwards between the pipes, if necessary wait until the control lamp on the WI HEAT® heating element flashes in regular intervals.
Take care that it lies in a cut-out of the pull-off bar (chapter: 4.2.1).
- Move the workpieces smoothly with the set adjustment pressure to WI HEAT® heating element, therefore press button <---<--->.
When the prescribed revolving bead height has been reached, reduce pressure. For this purpose, release the clamping lever (14).
- The heating up time starts now. Press the stop watch and compare the actual time with the nominal time taken from the table.
- After releasing the adjustment pressure tighten the clamping lever (14) again.
- After expiration of the heating up time, open the slides with button <←--->, remove the heating element as quickly as possible, put it into the heat protective box and move the workpieces together shock-free with button <---<--->.
The maximum time frame for this process is predetermined by the value for the change-over time taken from the table.
- When the welding pressure has been built up, press the stop-watch and keep button <---<---> pressed for approximately 10s, so that the hydraulic accumulator can be filled.
During the cooling down period re-adjust pressure, if necessary (the pressure for cooling down is the same as the set adjustment pressure).
- After expiration of the cooling down period, release pressure therefore loosen clamping lever (14) on.
- Open the clamping rings and remove the welded part.
- Afterwards open the slides with button <←--->.

6. Welding logs and tables

Report for heated plate welding of tubular components																									
Employer	Contracting company				Material		Sheet of																		
					<input type="checkbox"/> Laid above ground <input type="checkbox"/> Laid underground		Weather conditions	Protective measures																	
Order title	Name of the welder	Identity no.	Welding machine:		1 = sunny	In the case of multiple designations follow the figures as above: (e.g. 34 = rain and wind)																			
Order no.	Name a. company of the welding inspector		Make:	Type:	2 = dry																				
			Machine no.:	Year of manufacture:	3 = rain or snowfall																				
Weld no.	Date	Pipe size Ø d x s	Heating element temperature 1)	°C min / max	Movement pressure	bar	Joining pressure	bar	adjusted heat-up	bar	heat-up time 3)	s	time to complete joining pressure 3)	s	Change-over time 3)	s	Cooling time under joining pressure 3)	s	Ambient temperature	°C	Weather	Code no. protect measures	Remarks		
Signature of welder:																				Date and signature of the welder inspector:					
1) From normal internal, frequency according to 4.2.																									
2) The settings are the sum of the movement pressure and the indications of the manufacturer of the welding machine concerning equalization and joining pressure.																									
3) The measured values must be entered.																									

Table for PE

Foundation: 2207, 2208 DIN 16932 German association for welding

Use for: **4900**

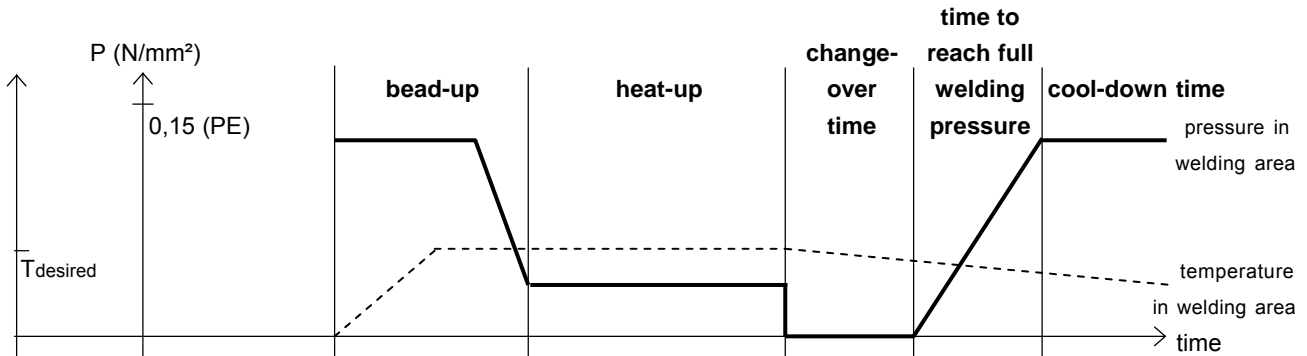
WELD IT 315 / WELD IT 315 Steel
HRG 0315

1 bar on manometer: **59 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 full welding pressure [s]	welding pressure [bar]	cool-down time [min]
90	2,2	41,0	2	0,5	22	4	4	2	2
	2,8	33,0	2	0,5	28	4	4	2	3
	3,5	26,0	3	0,5	35	5	5	3	4
	4,3	21,0	3	0,5	43	5	5	3	6
	5,1	17,6	4	1,0	51	5	5	4	7
	5,4	17,0	4	1,0	54	5	5	4	7
	6,7	13,6	5	1,0	67	6	6	5	10
	8,2	11,0	6	1,5	82	6	6	6	11
	10,1	9,0	7	1,5	101	7	7	7	14
12,3	7,4	8	2,0	123	8	8	8	16	
110	2,7	41,0	3	0,5	27	4	4	3	3
	3,4	33,0	3	0,5	34	5	5	3	4
	4,2	26,0	4	0,5	42	5	5	4	6
	5,3	21,0	5	1,0	53	5	5	5	7
	6,3	17,6	6	1,0	63	6	6	6	9
	6,6	17,0	6	1,0	66	6	6	6	9
	8,1	13,6	7	1,5	81	6	6	7	11
	10,0	11,0	8	1,5	100	7	7	8	14
	12,3	9,0	10	2,0	123	8	8	10	16
	15,1	7,4	12	2,0	151	9	9	12	20

Table for PE

Foundation: 2207, 2208 DIN 16932 German association for welding

Use for: **4900**

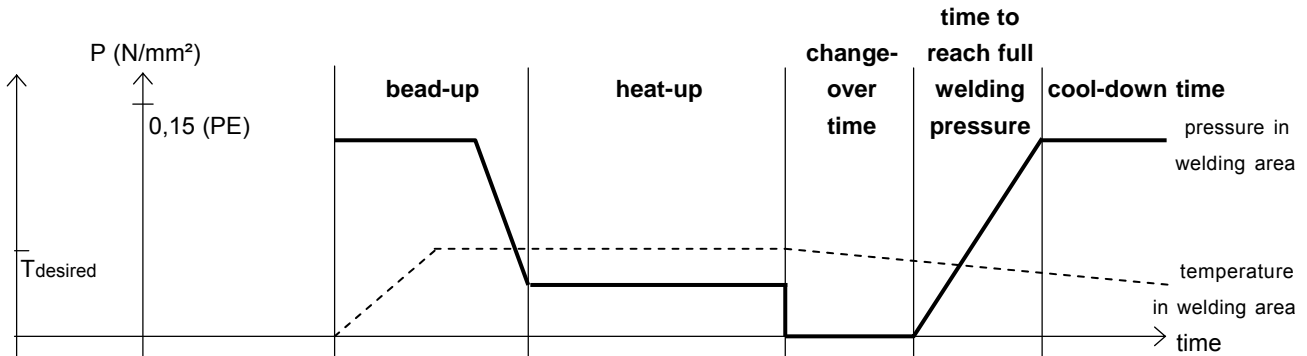
**WELD IT 315 / WELD IT 315 Steel
HRG 0315**

1 bar on manometer: **59 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 full welding pressure [s]	welding pressure [bar]	cool-down time [min]
125	3,1	41,0	4	0,5	31	4	4	4	4
	3,9	33,0	4	0,5	39	5	5	4	5
	4,8	26,0	5	1,0	48	5	5	5	6
	6,0	21,0	6	1,0	60	6	6	6	8
	7,1	17,6	7	1,5	71	6	6	7	10
	7,4	17,0	7	1,5	74	6	6	7	10
	9,2	13,6	9	1,5	92	7	7	9	13
	11,4	11,0	11	1,5	114	8	8	11	15
	14,0	9,0	13	2,0	140	9	9	13	18
17,1	7,4	15	2,0	171	9	10	15	22	
140	3,5	41,0	4	0,5	35	5	5	4	4
	4,3	33,0	5	0,5	43	5	5	5	6
	5,4	26,0	6	1,0	54	5	5	6	7
	6,7	21,0	8	1,0	67	6	6	8	10
	8,0	17,6	9	1,5	80	6	6	9	11
	8,3	17,0	9	1,5	83	7	7	9	12
	10,3	13,6	11	1,5	103	7	7	11	14
	12,7	11,0	13	2,0	127	8	8	13	17
	15,7	9,0	16	2,0	157	9	10	16	20
	19,2	7,4	19	2,5	192	10	11	19	24

Table for PE

Foundation: 2207, 2208 DIN 16932 German association for welding

Use for: **4900**

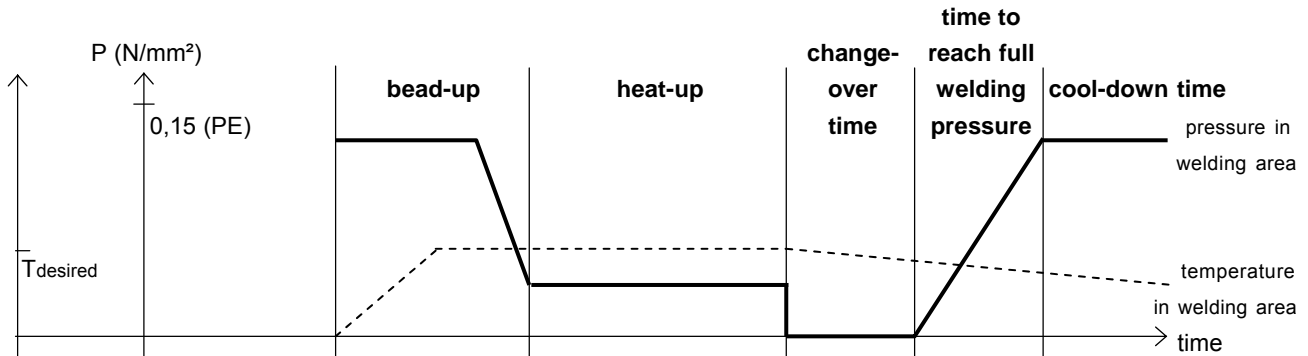
**WELD IT 315 / WELD IT 315 Steel
HRG 0315**

1 bar on manometer: **59 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 full welding pressure [s]	welding pressure [bar]	cool-down time [min]
160	4,0	41,0	5	0,5	40	5	5	5	5
	4,9	33,0	7	1,0	49	5	5	7	7
	6,2	26,0	8	1,0	62	6	6	8	9
	7,7	21,0	10	1,5	77	6	6	10	11
	9,1	17,6	11	1,5	91	7	7	11	13
	9,5	17,0	12	1,5	95	7	7	12	13
	11,8	13,6	14	1,5	118	8	8	14	16
	14,6	11,0	17	2,0	146	9	9	17	19
	17,9	9,0	21	2,0	179	10	11	21	23
21,9	7,4	25	2,5	219	11	12	25	27	
180	4,4	41,0	7	0,5	44	5	5	7	6
	5,5	33,0	8	1,0	55	5	5	8	8
	6,9	26,0	10	1,0	69	6	6	10	10
	8,6	21,0	12	1,5	86	7	7	12	12
	10,2	17,6	14	1,5	102	7	7	14	14
	10,7	17,0	15	1,5	107	7	7	15	14
	13,3	13,6	18	2,0	133	8	9	18	17
	16,4	11,0	22	2,0	164	9	10	22	21
	20,1	9,0	26	2,5	201	10	11	26	25
	24,6	7,4	31	2,5	246	12	13	31	30

Table for PE

Foundation: 2207, 2208 DIN 16932 German association for welding

Use for: **4900**

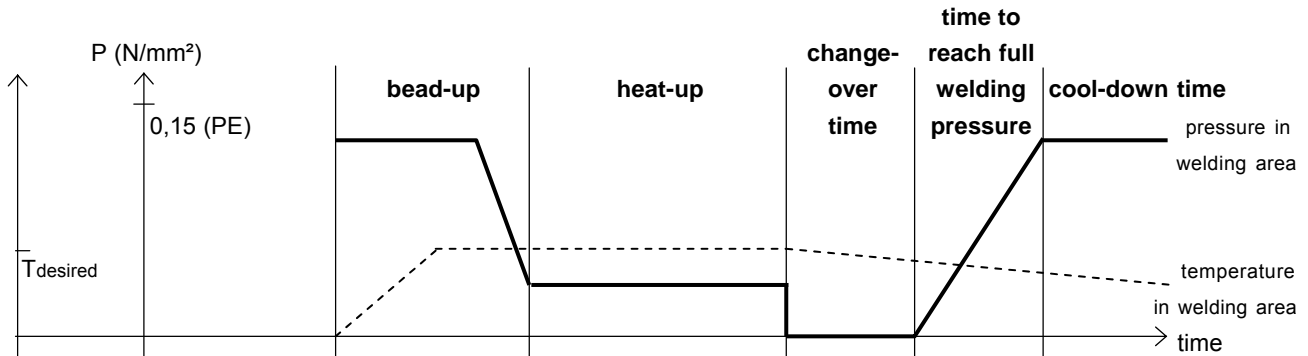
WELD IT 315 / WELD IT 315 Steel
HRG 0315

1 bar on manometer: **59 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 full welding pressure [s]	welding pressure [bar]	cool-down time [min]
200	4,9	41,0	8	1,0	49	5	5	8	7
	6,2	33,0	10	1,0	62	6	6	10	9
	7,7	26,0	12	1,5	77	6	6	12	11
	9,6	21,0	15	1,5	96	7	7	15	13
	11,4	17,6	18	1,5	114	8	8	18	15
	11,9	17,0	18	1,5	119	8	8	18	16
	14,7	13,6	22	2,0	147	9	9	22	19
	18,2	11,0	27	2,0	182	10	11	27	23
	22,4	9,0	32	2,5	224	11	12	32	28
27,4	7,4	38	3,0	274	13	15	38	34	
225	5,5	41,0	10	1,0	55	5	5	10	8
	6,9	33,0	13	1,0	69	6	6	13	10
	8,6	26,0	15	1,5	86	7	7	15	12
	10,8	21,0	19	1,5	108	8	8	19	15
	12,8	17,6	22	2,0	128	8	8	22	17
	13,4	17,0	23	2,0	134	8	9	23	18
	16,6	13,6	28	2,0	166	9	10	28	21
	20,5	11,0	34	2,5	205	10	12	34	26
	25,2	9,0	41	2,5	252	12	14	41	31
	30,8	7,4	48	3,0	308	14	16	48	38

Table for PE

Foundation: 2207, 2208 DIN 16932 German association for welding

Use for: **4900**

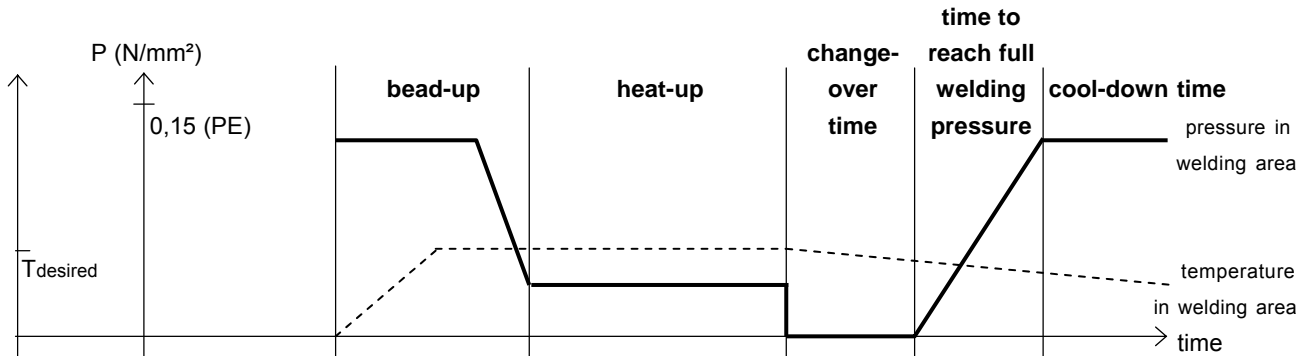
WELD IT 315 / WELD IT 315 Steel
HRG 0315

1 bar on manometer: **59 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 full welding pressure [s]	welding pressure [bar]	cool-down time [min]
250	6,2	41,0	13	1,0	62	6	6	13	9
	7,7	33,0	15	1,5	77	6	6	15	11
	9,6	26,0	19	1,5	96	7	7	19	13
	11,9	21,0	23	1,5	119	8	8	23	16
	14,2	17,6	27	2,0	142	9	9	27	19
	14,8	17,0	28	2,0	148	9	9	28	19
	18,4	13,6	35	2,0	184	10	11	35	23
	22,7	11,0	42	2,5	227	11	13	42	28
	27,9	9,0	50	3,0	279	13	15	50	34
34,2	7,4	59	3,0	342	15	18	59	42	
280	6,9	41,0	16	1,0	69	6	6	16	10
	8,6	33,0	19	1,5	86	7	7	19	12
	10,7	26,0	24	1,5	107	7	7	24	14
	13,4	21,0	29	2,0	134	8	9	29	18
	15,9	17,6	34	2,0	159	9	10	34	20
	16,6	17,0	35	2,0	166	9	10	35	21
	20,6	13,6	43	2,5	206	10	12	43	26
	25,4	11,0	52	2,5	254	12	14	52	31
	31,3	9,0	63	3,0	313	14	16	63	38
	38,3	7,4	74	3,5	383	16	20	74	47

Table for PE

Foundation: 2207, 2208 DIN 16932 German association for welding

Use for: **4900**

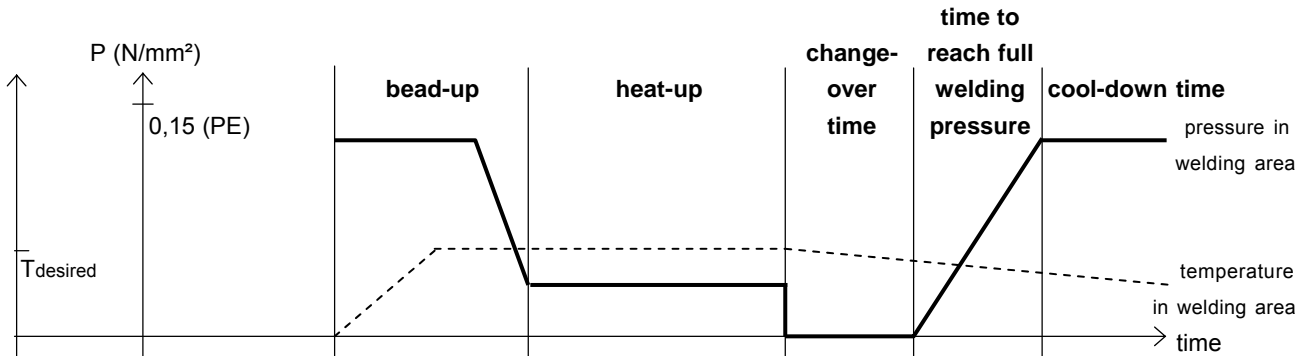
WELD IT 315 / WELD IT 315 Steel
HRG 0315

1 bar on manometer: **59 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 full welding pressure [s]	welding pressure [bar]	cool-down time [min]
315	7,7	41,0	19	1,5	77	6	6	19	11
	9,7	33,0	24	1,5	97	7	7	24	13
	12,1	26,0	30	2,0	121	8	8	30	16
	15,0	21,0	36	2,0	150	9	9	36	19
	17,9	17,6	43	2,0	179	10	11	43	23
	18,7	17,0	45	2,0	187	10	11	45	24
	23,2	13,6	55	2,5	232	11	13	55	29
	28,6	11,0	66	3,0	286	13	15	66	35
	35,2	9,0	79	3,0	352	15	18	79	43
43,1	7,4	94	3,5	431	18	22	94	52	

- ① Remaining under the cool-down time for up to 50% is allowed under the following conditions:
- prefabrication under workshop conditions
 - low additional pressure at unclamping
 - no additional pressure during further cooling down
 - load onto the workpieces only after being completely cooled down
 - Join parts with wall thickness ≥ 15 mm

Table for PP

Foundation: 2207, 2208 DIN 16932 German association for welding

Use for: **4900**

WELD IT 315 / WELD IT 315 Steel

HRG 0315

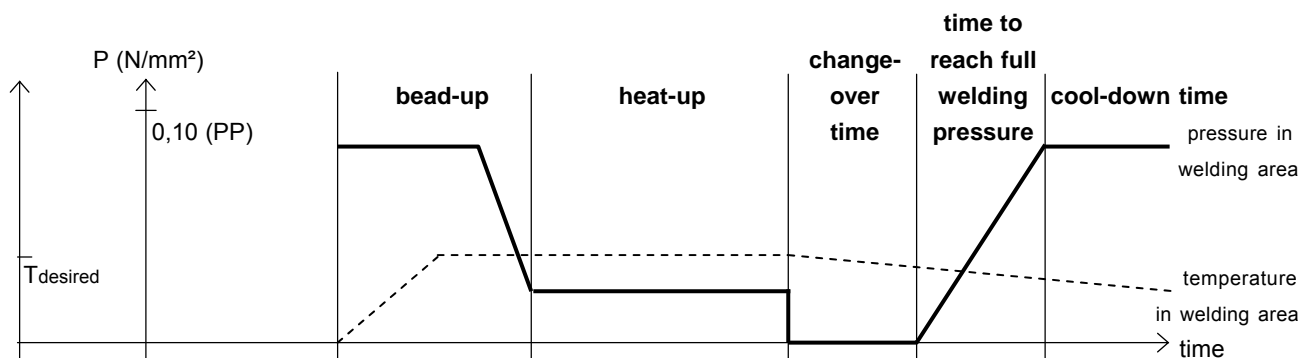
The data in the colored, labeled arrays are interpolated, no guarantee, based on DVS 2207 part 11

1 bar on manometer: **59 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]
90	2,2	41	2	0,5	94	4	5	2	2
	2,8	33	2	0,5	104	4	5	2	3
	3,5	26	2	0,5	117	5	6	2	4
	5,1	17,6	3	0,5	145	5	6	3	7
	8,2	11	4	1,0	192	6	8	4	14
	12,3	7,4	6	1,0	249	7	11	6	20
	15,0	6	6	1,0	281	8	14	6	24
110	2,7	41	2	0,5	103	4	5	2	3
	3,4	33	2	0,5	115	5	6	2	4
	4,2	26	3	0,5	130	5	6	3	6
	6,3	17,6	4	0,5	164	6	7	4	10
	10,0	11	6	1,0	217	7	9	6	17
	15,1	7,4	8	1,0	283	8	14	8	24
	18,3	6	9	1,0	322	9	16	9	29
125	3,1	41	3	0,5	110	4	5	3	4
	3,9	33	3	0,5	124	5	6	3	5
	4,8	26	4	0,5	140	5	6	4	7
	7,1	17,6	5	1,0	176	6	7	5	12
	11,4	11	7	1,0	237	7	11	7	19
	17,1	7,4	10	1,0	307	8	15	10	27
	20,8	6	12	1,5	348	10	18	12	33

Table for PP

Foundation: 2207, 2208 DIN 16932 German association for welding

Use for: **4900**

WELD IT 315 / WELD IT 315 Steel

HRG 0315

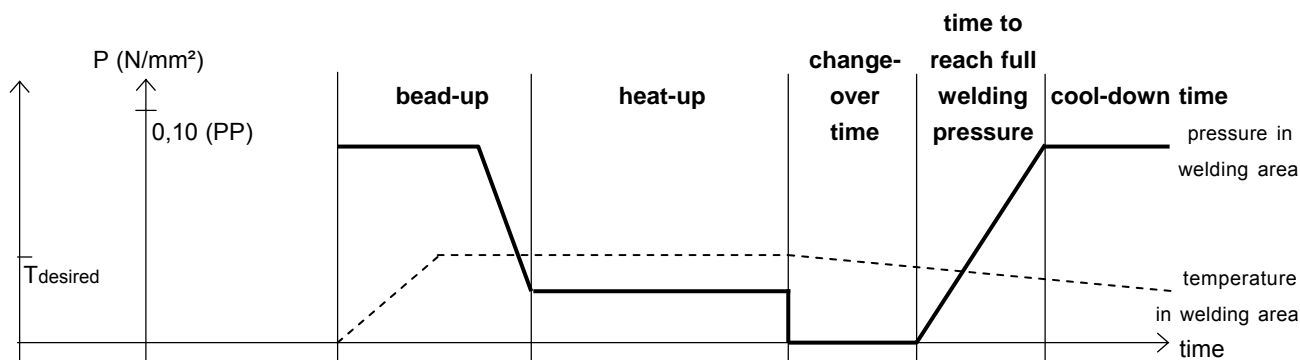
The data in the colored, labeled arrays are interpolated, no guarantee, based on DVS 2207 part 11

1 bar on manometer: **59 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]
140	3,5	41	3	0,5	117	5	6	3	4
	4,3	33	4	0,5	131	5	6	4	6
	5,4	26	4	0,5	149	5	6	4	8
	8,0	17,6	6	1,0	189	6	8	6	14
	12,7	11	9	1,0	254	7	12	9	21
	19,2	7,4	13	1,5	332	9	17	13	30
	23,3	6	15	1,5	373	10	20	15	36
160	4,0	41	4	0,5	126	5	6	4	5
	4,9	33	5	0,5	141	5	6	5	7
	6,2	26	6	0,5	162	6	7	6	10
	9,1	17,6	8	1,0	204	6	9	8	15
	14,6	11	12	1,0	277	8	13	12	24
	21,9	7,4	17	1,5	359	10	19	17	34
	26,6	6	19	2,0	405	11	23	19	41
180	4,4	41	5	0,5	133	5	6	5	6
	5,5	33	6	0,5	151	5	6	6	8
	6,9	26	7	0,5	173	6	7	7	12
	10,2	17,6	10	1,0	220	7	10	10	17
	16,4	11	15	1,0	298	8	15	15	26
	24,6	7,4	21	1,5	386	11	21	21	38
	29,0	6	24	2,0	423	12	25	24	44

Table for PP

Foundation: 2207, 2208 DIN 16932 German association for welding

Use for: **4900**

WELD IT 315 / WELD IT 315 Steel

HRG 0315

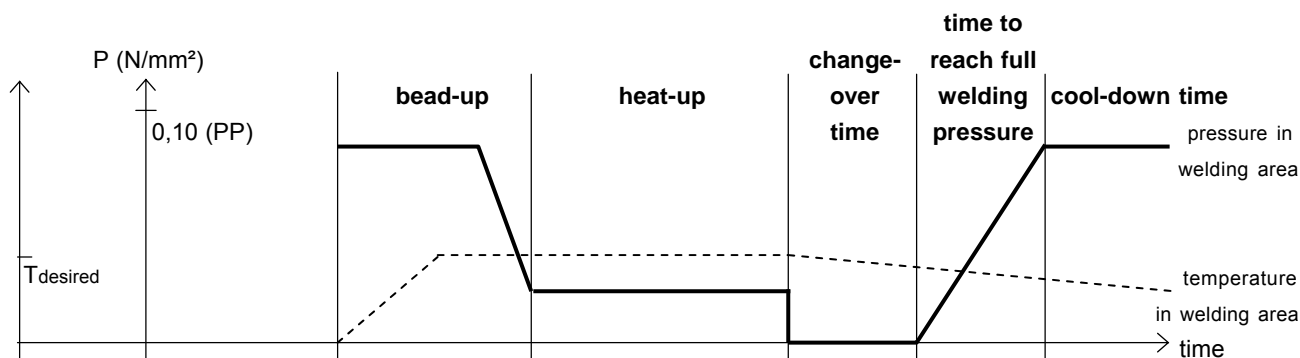
The data in the colored, labeled arrays are interpolated, no guarantee, based on DVS 2207 part 11

1 bar on manometer: **59 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]
200	4,9	41	6	0,5	141	5	6	6	7
	6,2	33	7	0,5	162	6	7	7	10
	7,7	26	8	1,0	185	6	8	8	13
	11,4	17,6	12	1,0	237	7	11	12	19
	18,2	11	18	1,0	320	9	16	18	29
	27,4	7,4	26	2,0	411	11	23	26	42
	33,2	6	30	2,0	456	13	29	30	50
225	5,5	41	7	0,5	151	5	6	7	8
	6,9	33	9	0,5	173	6	7	9	12
	8,6	26	10	1,0	197	6	8	10	15
	12,8	17,6	15	1,0	255	7	12	15	21
	20,5	11	23	1,5	345	9	18	23	32
	30,8	7,4	32	2,0	437	12	26	32	47
	37,4	6	38	2,5	487	14	32	38	55
250	6,2	41	9	0,5	162	6	7	9	10
	7,7	33	10	1,0	185	6	8	10	13
	9,6	26	13	1,0	211	7	9	13	16
	14,2	17,6	18	1,0	272	8	13	18	23
	22,7	11	28	1,5	367	10	20	28	35
	34,2	7,4	40	2,0	463	13	29	40	51

Table for PP

Foundation: 2207, 2208 DIN 16932 German association for welding

Use for: **4900**

WELD IT 315 / WELD IT 315 Steel

HRG 0315

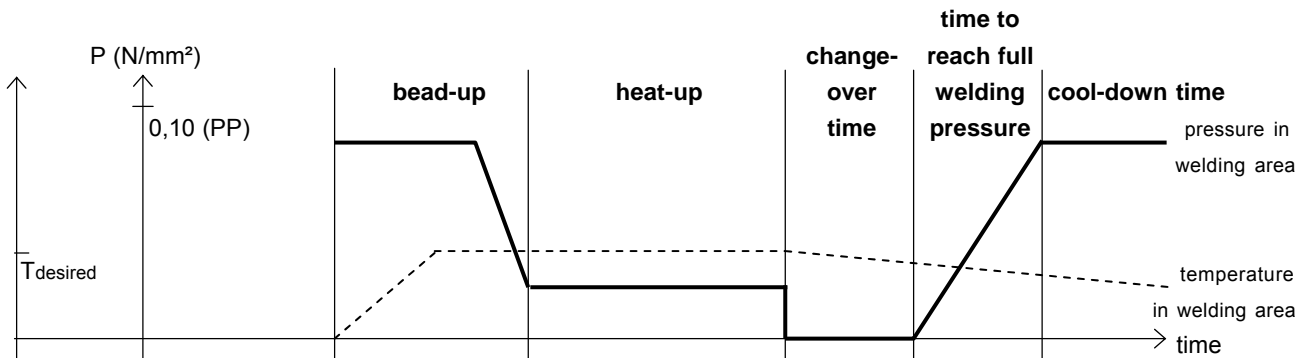
The data in the colored, labeled arrays are interpolated, no guarantee, based on DVS 2207 part 11

1 bar on manometer: **59 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
280	6,9	41	11	0,5	173	6	7	11	12
	8,6	33	13	1,0	197	6	8	13	15
	10,7	26	16	1,0	227	7	10	16	18
	15,9	17,6	23	1,0	292	8	14	23	26
	25,4	11	35	1,5	394	11	22	35	39
	38,3	7,4	50	2,5	493	14	33	50	57
315	7,7	41	13	1,0	185	6	8	13	13
	9,7	33	16	1,0	213	7	9	16	16
	12,1	26	20	1,0	246	7	11	20	20
	17,9	17,6	29	1,0	317	9	16	29	28
	28,6	11	44	2,0	420	12	24	44	44
	42,6	7,4	62	2,5	517	15	37	62	61

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

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

Table for PVDF

Foundation: 2208, 2207 Part 15 German association for welding

Use for: **4900**

WELD IT 315 / WELD IT 315 Steel

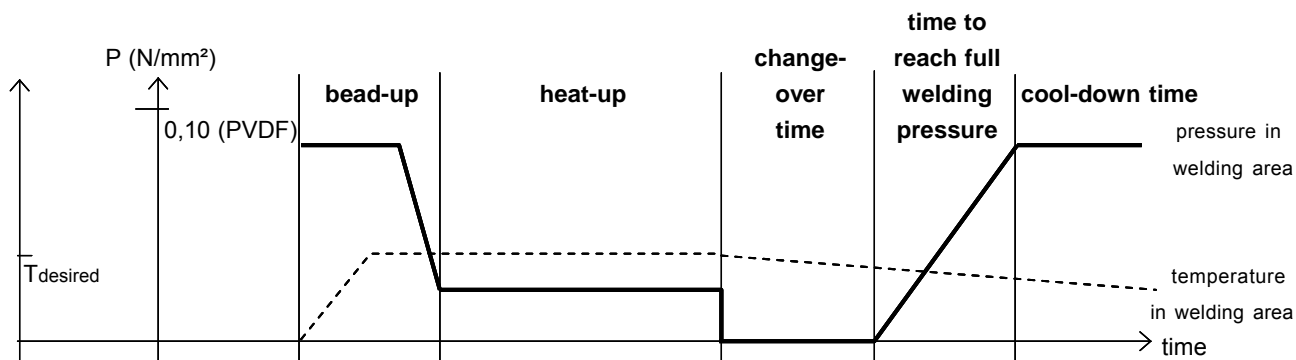
HRG 0315

1 bar on manometer: **59 N**

The standard value for heating element temperature is 240° C +/- 8° 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]	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]
90	2,8	2	0,5	68	3	4	2	5,5
	4,3	2	0,5	83	3	4	2	7,0
	5,4	3	0,5	94	3	5	3	8,5
110	3,4	2	0,5	74	3	4	2	6,0
	5,3	3	0,5	93	3	5	3	8,5
	6,6	4	0,6	106	4	5	4	10,0
125	3,9	3	0,5	79	3	4	3	6,5
	6,0	4	0,6	100	4	5	4	9,0
140	4,3	4	0,5	83	3	4	4	7,0
	6,7	5	0,6	107	4	6	5	10,0
160	4,9	5	0,5	89	3	5	5	8,0
	7,7	7	0,7	117	4	6	7	11,0
180	5,5	6	0,5	95	4	5	6	8,5
	8,6	8	0,8	126	4	6	8	12,5
200	6,2	7	0,6	102	4	5	7	9,5
	9,6	10	1,0	136	4	7	10	13,5
225	6,9	9	0,7	109	4	6	9	10,5
	10,8	13	1,0	148	4	7	13	15,0
250	7,7	10	0,7	117	4	6	10	11,0
	11,9	16	1,1	159	4	8	16	16,5
280	8,6	13	0,8	126	4	6	13	12,5
315	9,7	16	1,0	137	4	7	16	13,5

7. Maintenance and repair

Goal of the chapter is:

- Keeping of the nominal state and the operation capacity of the machine.
- Increasing of 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. Dismount the cover for that purpose.
- Do not lay the planer on its blades.
- The blades of the planer must be checked for sharpness. Wrong blades must be either turned over (double sided) or replaced (max. thickness of the shavings: 0.2 mm !).

7.4. Storing

- 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 machine 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.

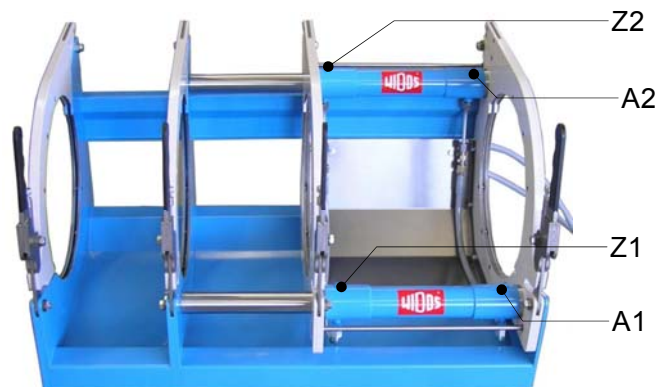


The hydraulic oil has to be handled properly and to be disposed of.

7.6. Checking the hydraulic oil level

- Remove the red screw at the top of the aggregate.
- Take out the oil dip rod, clean it and insert it again.
- Take out the oil dip rod again and check the oil-level. It must be between the two markers.
- If the oil level is below the lower mark, then you need to refill the hydraulic oil HLPD 32.

7.7. Venting the hydraulic cylinders



Venting the hydraulic cylinder is not required, if

- the hoses have been disconnected from the connection at the control unit because the remaining oil in the hose is being kept by valves and for this reason no air can enter.

Venting of the hydraulic cylinder is necessary, if

- there has been too little oil in the tank and air has been attracted.
- there were leaky parts in the hoses or connections.
- the hoses were unscrewed from the WI PRECISION® basic machine.
- Eliminate the cause of the air entrance.
- Open the machine completely therefore press button <←--->.
- First loosen the lower venting screw (Z1) for closing (lefthand side).
- Connect the transparent venting hose and insert into tank of WI FORCE® hydraulic aggregate or into the collecting vessel.
- Close until there is no air in the venting hose with button <--->←>.
- Then screw on the venting screw (Z1).
- Than loosen lower venting screw (A1) for opening (righthand side).

- Connect the transparent venting hose and insert into tank of WI FORCE® hydraulic aggregate or into the collecting vessel.
- Open machine there is no air in the venting hose therefore press button <←---→>.
- Then screw on the venting screw (A1).
- Repeat the same process at the both upper venting screws (Z2) and (A2).



The lower venting screws have always to be vented in the first position because there is a direct link between the upper and the lower cylinder.

- If there is still air in the lower cylinder this will ascent in the upper cylinder under pressure.

7.8. Disposal



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

8. Transport

The machine can be transported in a transport box.

- In one box is the WI-PRECISION ® basic machine, the WI-FORCE ® hydraulic unit and the protection box with planer and WI-Heat ® heating element, in the other the reduction inserts.
- In the box there are partitions in which the component elements of the machine fit in such a way that they cannot be moved.
- Put the elements into the box in such a way that they are fitting in the holders.
- The hydraulic hoses at the WI-PRECISION ® basic machine should **not** be unscrewed (air penetration).
- Make sure that they are not being squeezed.
- Handle the machine with care.
- Do not tilt the WI-FORCE ® hydraulic aggregate because oil may come out.
- Protect from heavy shocks and impacts.
- Make sure that the box cover is well closed.
- Care was taken to build the transport boxes according to lightweight construction.
- Be always careful while using automatic handling and carrying machines.

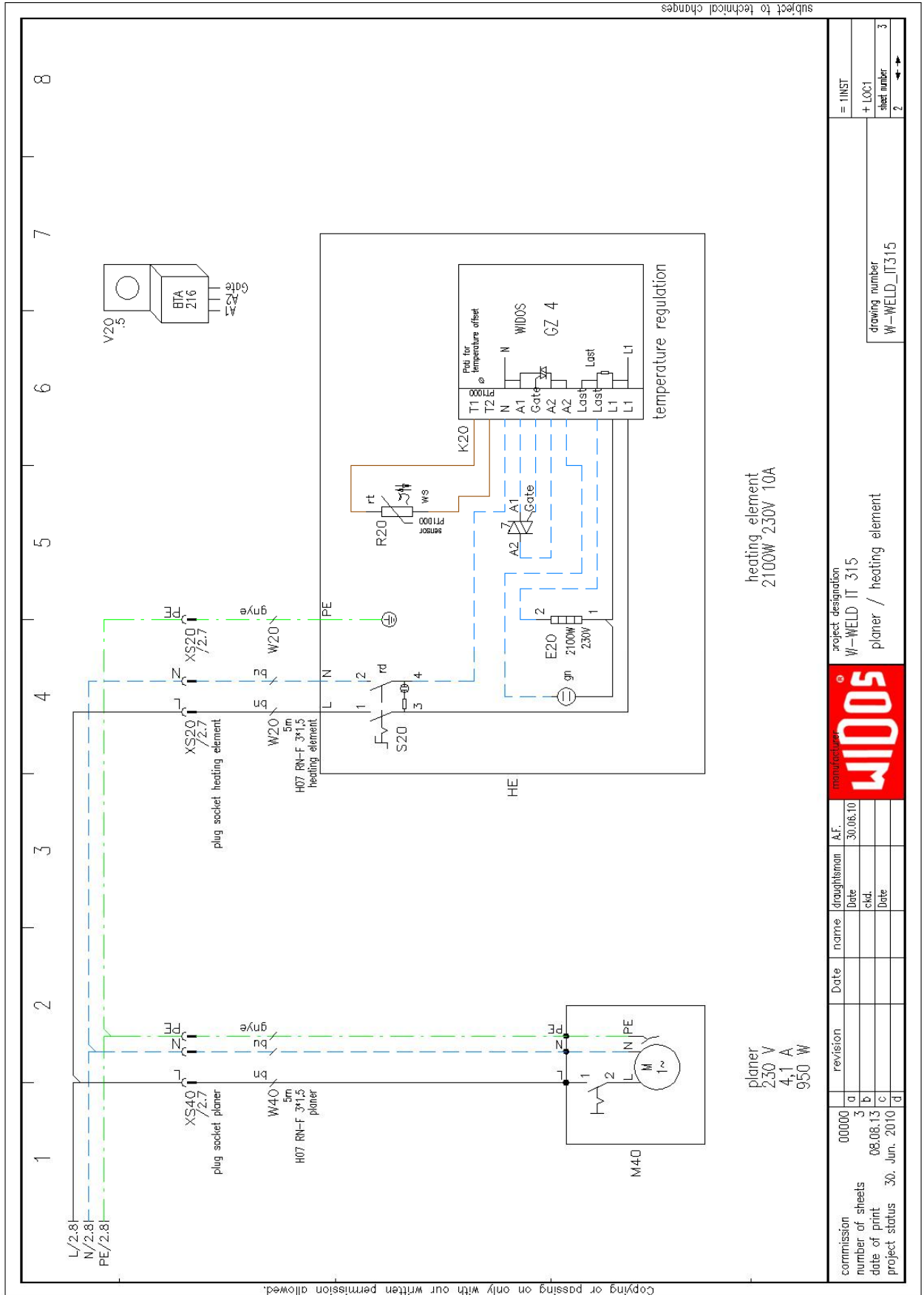


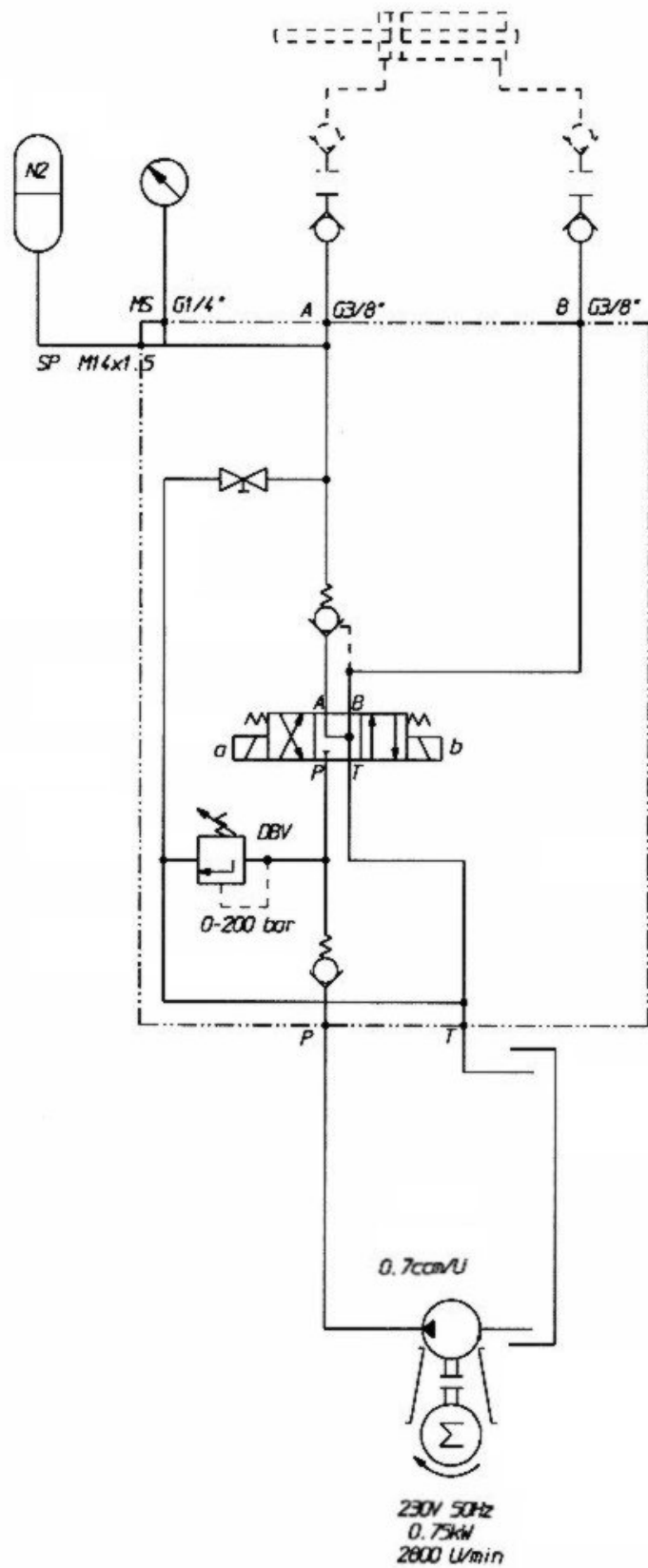
During the transport of the machine there may be cold weldings between the piston rod and the eyes of the planer shell. These spots on the piston rod may damage the sealing.



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

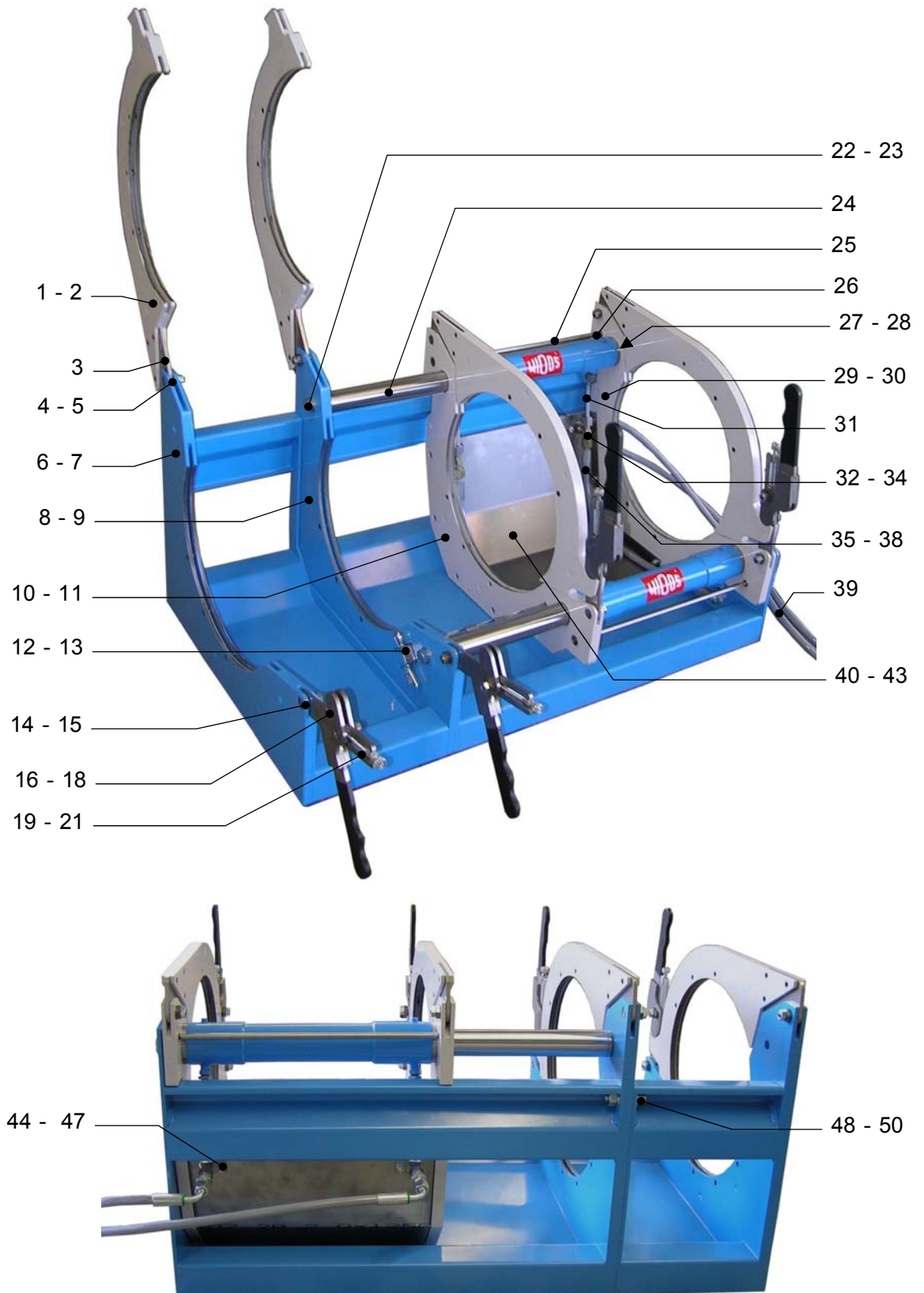
9. Electric and hydraulik diagrams





10. Spare parts list

10.1. WI-PRECISION® Basic machine



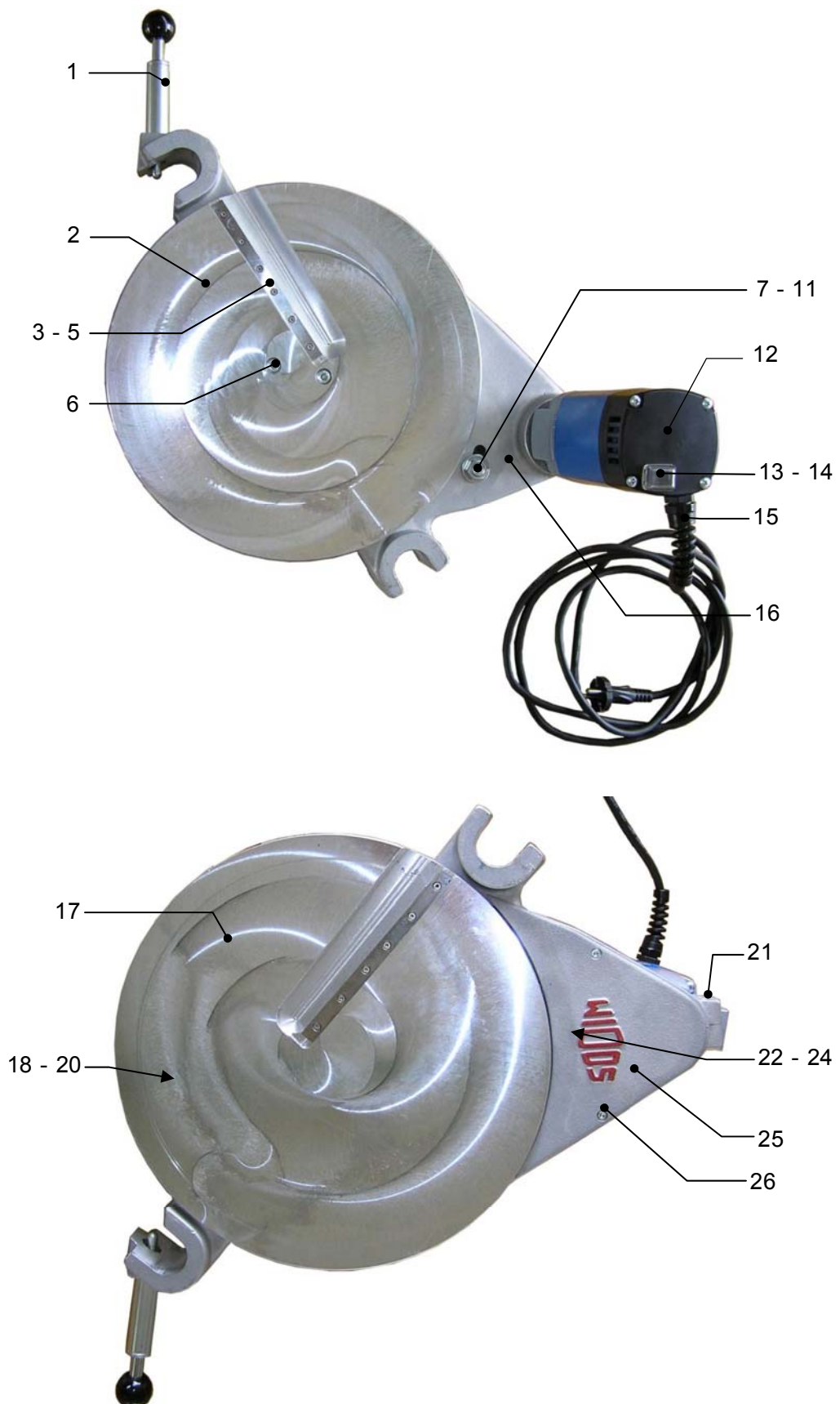
WI-PRECISION® WIDOS WELD IT 315

Pos.	Name	Piece	Art.-No.
1	Clamping ring upper part	4	2161B105
2	Spiral pin 8 x 16 DIN 7343	24	7343H016
3	Hinge plate	4	2161B107
4	Joint part 1	4	2161B1081
5	Joint part 2	4	2181408
6	Basic frame short	1	2161B101
7	Spiral pin 8 x 16 DIN 7343	3	7343H016
8	Basic frame clamping ring inside fix	1	2161B102
9	Spiral pin 8 x 16 DIN 7343	3	7343H016
10	Clamping ring lower part inside	1	2161B103
11	Spiral pin 8 x 16 DIN 7343	3	7343H016
12	Pull-off bar	1	2181414
13	Split pins 10 x 56 DIN 94	2	0094J056
14	Joint part 1	4	2161B1081
15	Joint part 2	4	2181408
16	Excenter	4	2161B110
17	Screw for toggle clamp	4	2161B1111
18	Bush for toggle clamp	4	2161B1112
19	Clamping strap	4	2161B109
20	Grub screw for knurled nut	4	2161B112
21	Knurled nut	4	S0113
22	Hexagon-head screw M 12 x 35 DIN 933	2	0933L035
23	Washer M 12 DIN 125	2	0125L
24	Hydraulic cylinder	2	2181420WA
25	Tension rod	2	2181412
26	Clamping sleeve	4	2181411
27	Hexagon-head screw M 16 x 30 DIN 933	2	0933P030
28	Washer M 16 DIN 125	2	0125P
29	Clamping ring lower part outside	1	2161B104
30	Spiral pin 8 x 16 DIN 7343	3	7343H016
31	Hydraulic hose, 100 mm long	2	391113
32	T piece T8L	2	XVT8LR
33	Screwing straight	2	VG8L
34	Hydraulic hose 8 x 40 mm	2	on request
35	Hydraulic hose 6,3 mm x 860 mm	2	on request
36	Bow-shaped nipple	2	VB386
37	Seal cone	2	DKOL14
38	Compressed bushing	4	VP256
39	Hose bunch on one side shorter	1	VSCHL5100
40	Reinforcement	1	2161B113
41	Pan-head screw M 6 x 20 DIN 7984	8	7984F020
42	Hexagon nut M 6 DIN 934	8	0934F
43	Washer M 6 DIN 125	8	0125F

WI-PRECISION® WIDOS WELD IT 315

Pos.	Name	Piece	Art.-No.
44	Holder for screwing	2	2161B114
45	Hexagon-head screw M 6 x 16 DIN 933	2	0933F016
46	Washer M 6 DIN 125	4	0125F
47	Hexagon nut M 6 DIN 934	2	0934F
48	Pan-head screw M 12 x 40 DIN 912	3	0912L040
49	Washer M 12 DIN 125	6	0125L
50	Hexagon nut M 12 DIN 934	3	0934L
--	Reduction insert OD 90 up to OD 280 mm	8	2168B101...*
	* For ordering necessarily give the dimensions !		

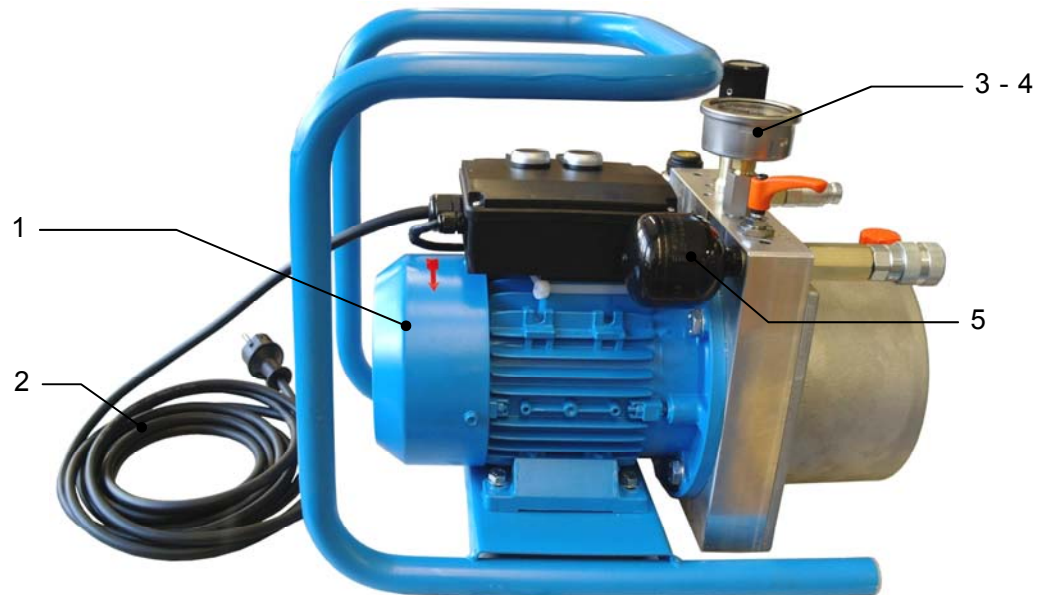
10.2. Planer



Planer WIDOS WELD IT 315

Pos.	Name	Piece	Art.-No.
1	Locking complete	1	091422
2	Disc planer, righthand	1	216402
3	Knife	2	MES170
4	Flat-head screw M 3x8 with Torx-drive	12	0965C008TX
5	Spacer	2	MU170
6	Pan-head screw M 8x30 DIN 912	2	0912H030
7	Ball bearing	2	L6001Z
8	Chain tensioner screw	1	0914101
9	Hexagon nut M 12 DIN 934	1	0934L
10	Washer M 12 DIN 125	3	0125L
11	Washer M 12 DIN 134	1	0134L
12	Driving motor	1	AMBF13
13	Motor switch	1	ESMBF13
14	Collector carbon	1 set	on request
15	Connecting cable with plug	1	EK3220
16	Fastener for planer	1	216441
17	Disc planer, lefthand	1	216403
18	Ball bearing	1	L6013
19	Flat-head screw M 6x12 DIN 7991	4	7991F012
20	Chain wheel, large 3/8" x 7/32"	1	091406
21	Pan-head screw M 8x30 DIN 912	2	0912H030
22	Chain wheel, small (11 teeth)	1	K38011
23	Chain 3/8" (103 links)	1	K38103
24	Chain joint	1	KSCH38I
25	Cover	1	214404
26	Pan-head screw M 4x16 DIN 912	2	0912D016
--	Torx-screw driver T10	1	ZT10

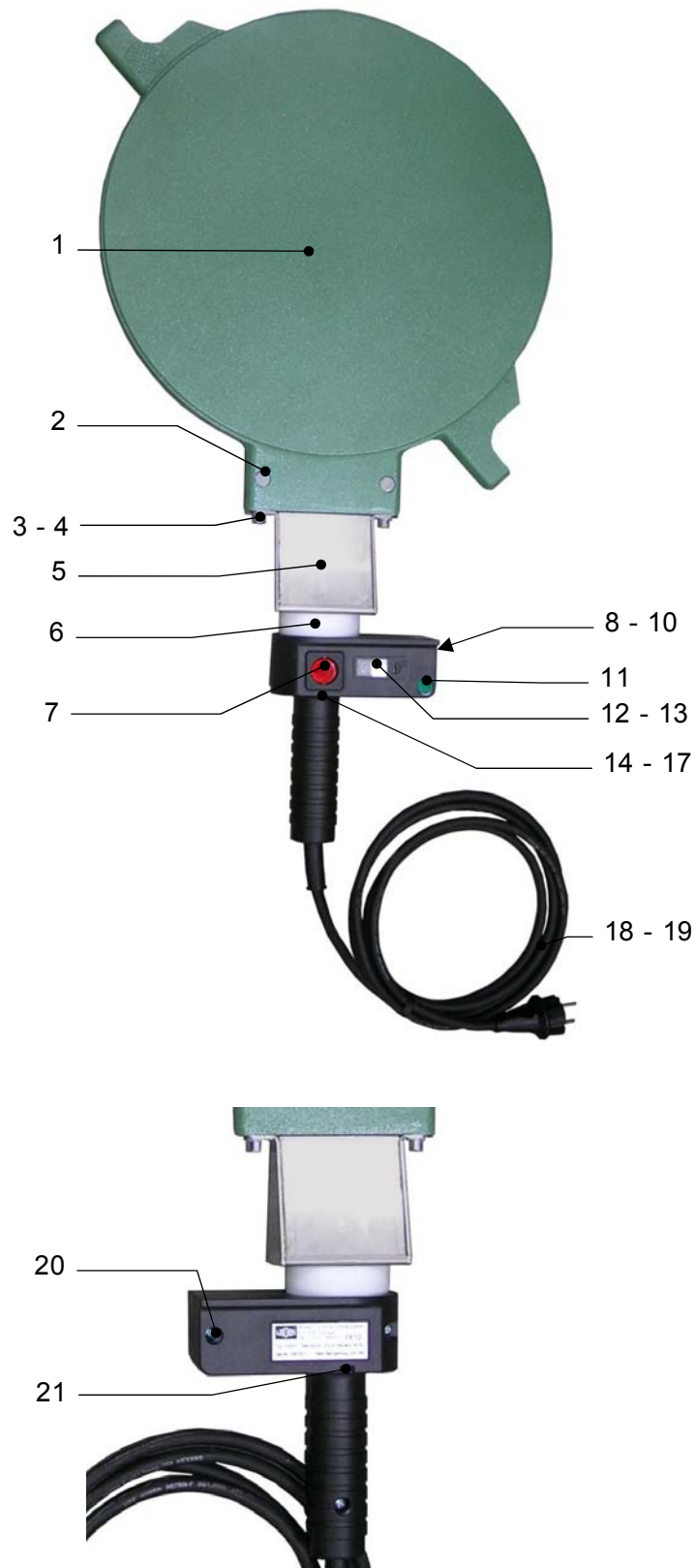
10.3. WI-FORCE® Hydraulic aggregate



WI-FORCE® WIDOS WELD IT 315 Steel

Pos.	Name	Piece	Order no.
1	Alternating current motor 0,75 kW, 230 V (B35)	1	on request
2	Connecting cable with plug	1	on request
3	Pressure gauge NG 63 - 0 - 250 bar	1	on request
4	Screwed connection of pressure gauge	1	on request
5	Accumulator	1	101006
6	Connction plug FIRG 1/4" BSP 141101-B	1	VKM14
7	Adjusting knob GN 626-35-B10-N	1	on request
8	Venting screw GN 552-31-R 3/8-B-2	1	on request
9	Coupling box, FIRG 1/4" BSP 141201-B	1	VMU14
10	Clamping lever	1	on request
11	Frame compl.	1	on request

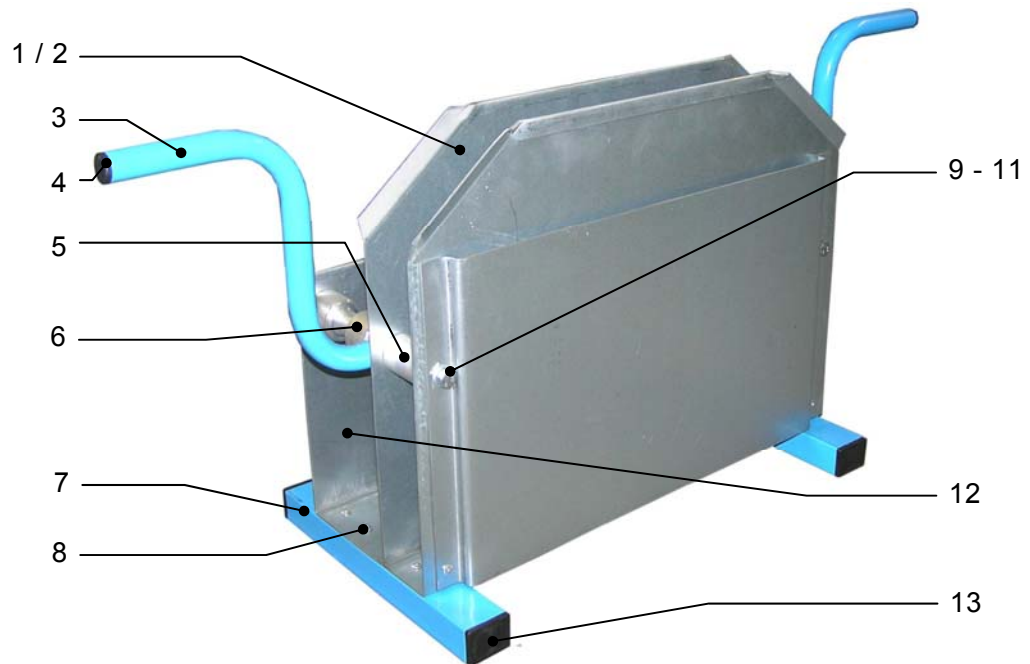
10.4. WI-HEAT® Heating element



WI-HEAT® WIDOS WELD IT 315 Steel

Pos.	Name	Piece	Art.-No.
1	Heating element H 4900, 230 V	1	H4900T
	Heating plate new	1	HP4900T
	Heating plate for change	1	HPT4900T
2	Tapped bushing	2	HGEW-M6
3	Spring washer M6 DIN 127F	2	0127F
4	Pan-head screw M 6x25 DIN 912	2	0912F025
5	Grip joining piece	1	092506
6	Teflon-conical nipple for heating element	1	H09091
7	Rocker switch, red lightet	1	H0903
8	Toothedlock washer M4 DIN 6797	2	6797D
9	Oval-head screw M 4x6 DIN 7985	2	7985D006
10	Thermostat	1	H0904
11	Control lamp, green	1	H2105
12	Window for grip case	2	H09071
13	Knob with slot	1	H09075
14	Handle case	1	H0907
15	Lustre terminal 4 pole	1	EA1009
16	Oval-head screw 2,9x13 DIN 7981	2	7981B013
17	Strain relief	1	H09076
18	Connecting cable with plug	1	EK3220
19	Antikink grommet	1	EKT08
20	Oval-head screw C4,2x19 DIN 7981	3	7981E013
21	Pan-head screw M 4x70 DIN 912	3	0912D070

10.5. Reception box



Reception box WIDOS WELD IT 315 Steel

Pos.	Name	Piece	Art.-No.
1	Heat absorbing steel sheet	1	214528
2	Insertion for heating element	1	214523
3	Stirrup	1	214527
4	Fitting cab Ø20x2	2	J5401
5	Spacing bolt for heating element	2	214525
6	Spacing bolt for planer	2	216524
7	Foot-mounting	2	214521
8	Blind rivet 4x10 DIN 7337	8	7337D010
9	Hexagon bolt M 8x160 DIN 933	2	0933H180
10	Hexagon domed cap nuts 6AU M 8 DIN 1587	2	1587H
11	Washer M 8 DIN 125	2	0125H
12	Insertion for planer	1	214522
13	Fitting cap 40x30x2	4	J0203

11. Declaration of conformity

in the sense of the guideline, EC Machinery Directive 2006/42/EC

Corporation

WIDOS GmbH
Einsteinstr.5
D- 71254 Ditzingen- Heimerdingen

declares under own responsibility that the product

Plastic welding machine
WIDOS **WELD IT 315 Steel**

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

1. DIN EN ISO 12100 – 1 und 2 (replacement for DIN EN 292 part 1 and 2)
Safety of machines, basic terminology, gen. design guidelines
2. DIN EN 60204.1
Electric equipment of industrial machines
3. DIN EN ISO 4413
Safety technology requirements at fluid technical devices and components
4. DIN EN 60555, DIN EN 50082, DIN EN 55014
Electro-magnetic resistance

The technical documentation is completely available.

The above-mentioned company will provide the following technical documentation for inspection:

- test certificate
- other technical documentation

Ditzingen - Heimerdingen, the 23.07.14

Martin Dommer (Technical director)