

# Working Instructions Translation

## WIDOS ESI 4000



Keep for further use!

Type: **WIDOS ESI 4000**  
Serial no.: / year of construction: see type label

**Customer's entries**

Inventory no.:  
Location:

**Order of spare parts and sales service:**

**Manufacturer's address**

**WIDOS**  
W. Dommer Söhne GmbH  
Einsteinstr. 5  
D-71254 Ditzingen-Heimerdingen  
Telephone: +49 (0) 71 52 / 99 39 - 0  
Telefax: +49 (0) 71 52 / 99 39 - 40  
E-mail: info@widos.de

Subsidiaries

WIDOS GmbH  
An der Wiesenmühle 15  
D-09224 Grüna / Sachsen  
Phone: +49 (0) 3 71 / 8 15 73 - 0  
Fax: +49 (0) 3 71 / 8 15 73 - 20

**WIDOS**  
W. Dommer AG  
St. Gallerstr. 93  
CH-9201 Gossau  
Phone: +41 (0) 79 432 5737

### **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.

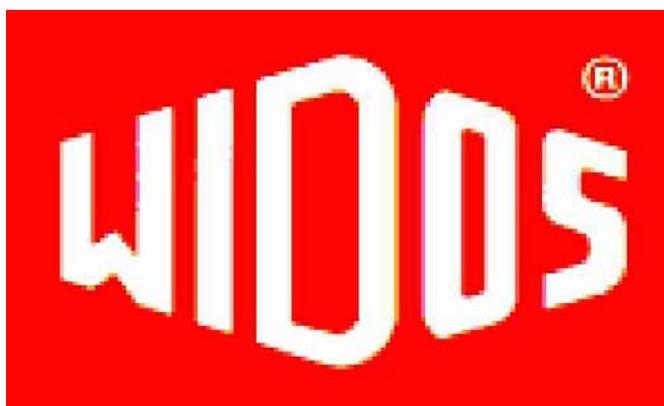
We will help you with pleasure.

According to our interest to continuously improve our products and working instructions, we kindly ask you to inform us about problems and defects which might appear in practical experience.

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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W. Dommer Söhne GmbH

Einsteinstraße 5

D-71254 Ditzingen-Heimerdingen

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Any changes subject to technical innovations.

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# 1. Product description

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 intended use

The **WIDOS ESI 4000** was especially designed for the use on building sites in order to weld PE and PP pipes with all common socket types on the spot.

Any other use exceeding this is to be considered non-intended.

For damages resulting from it, the manufacturer cannot be held liable.

The risk is exclusively on the user's side.

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 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.

## 1.3. 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.

## 1.4. 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. Technical data

Weight:	12 kg
Voltage:	230 V
Power:	3.2 kW
Current:	16 A
Frequency:	50 Hz
Size: (WxHxD)	370 x 370 x 260 mm
Length connecting cable:	4 m
Length welding cable:	4 m
Material of base frame:	Niro
Packing crate (wood, optional):	
Size: (WxHxD)	410 x 450 x 330 mm
Weight:	6.4 kg
Packing case (aluminium, optional):	
Size: (WxHxD)	400 x 400 x 300 mm
Weight:	4,5 kg

## 1.6. Equipment

<i>Piece</i>	<i>Denomination / Function</i>
1	General authorization card
1	User authorization card
1	Initialization card (optional)
1	Bar code reading pen
2 each	Adaptor for Ø 4.7
2 each	Adaptor flat (optional)
1	SD-card
1	USB card reader

## 1.7. Wear parts

<i>Piece</i>	<i>Denomination</i>	<i>Part-no.</i>
2	Adaptor for Ø 4.7	HWAR001
2	Adaptor flat (optional)	HWAF001

Order numbers and individual parts can be inquired from company WIDOS.

## 2. Safety rules

A basic premise for working safely and without disturbances is the knowledge of the basic safety signs and rules.

These working instructions provide you with the most important information to safely run the device and the safety information has to be respected by all persons working with the device.

### 2.1. Explication of the different symbols

The working instructions contain the following signs for certain situations:



This symbol indicates a possibly dangerous situation.

- The disrespect of it may result in injuries or damages on device parts.



This symbol gives important indications for the proper use of the device.

- The disrespect of this indication may lead to malfunctions and damages on the machine or on parts in the surrounding.



This symbol indicates a possibly dangerous situation due to hot surfaces.

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



This symbol indicates a possible danger due to toxic vapors.

- The disrespect of it may lead to hygienic damages.



This symbol means a possible danger of injury by spillings.

- It is obligatory to wear safety glasses"

**The regulations for the prevention of accidents are valid (UVV).**

### 2.2. Obligations of the operator

The owner is obliged to only let persons work at the device who

- know about basic safety and accident prevention rules and who are instructed in the handling of the device
- the worker also must have read and understood the safety chapter of this manual and certify this by his signature.

***The safety-conscious working of the staff has to be checked in regular intervals.***

### 2.3. Obligations of the worker

Before working at the machine, all persons in charge of it oblige themselves:

- 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 understood well.
- to inform themselves about the functions of the device before using it.

## 2.4. Structural modifications on the device

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

## 2.5. Dangers by electrical energy



Only skilled persons are allowed to work at electric appliances.

- The electric equipment of the machine has to be regularly checked. Loose connections and damaged cables have to be immediately replaced.
- The device has to be protected against humidity.
- Only qualified WIDOS personnel resp. authorized service partners are allowed to open the device.

## 2.6. Danger of stumbling over the connecting line

Pay attention that nobody has to step over the connecting lines (230 V).

## 2.7. Danger of combustion at the socket



You may burn parts of your body, inflammable materials may ignite! The socket may get hot!



- Do not leave the device unattended.
- Do not touch the welded socket before the cooling time has elapsed.
- Wear protective gloves.
- Wear safety glasses.
- Keep sufficient safety distance to inflammable materials.

## 2.8. Danger by toxic vapors



In unfavorable circumstances, toxic vapors may escape during the welding process.

- Care for good ventilation during welding in closed locations.
- Keep sufficient space between machine and the welded joint.

## 2.9. Warranty and liability

Our „General Sales and Delivery Conditions“ are principally valid.

They are at the owner's disposal at the latest when signing the contract.

Warranty and liability demands referring to damages of persons or objects are suspended if they are caused by one or several of the following reasons:

- not using the machine according to the prescriptions
- improper transport, building-up, starting and operating the machine and maintenance
- operating the machine with defective or improperly installed safety measures
- ignoring the information given in this manual
- structural changes at the machine without permission
- unsatisfactory checking of machine parts which are worn out
- repairs performed in an inexpert way
- catastrophes by external influence and Acts of God.

### 3. Functional description

The socket welding machine **ESI 4000** carries out an electric socket welding process in which pipes are welded to a fitting.

The prepared pipes are fed into the socket and then aligned and clamped in the clamping tool.

The contacts are plugged to the socket.

The sockets are furnished with a bar code, it will be read in with the bar code reading pen or manually entered at the machine.

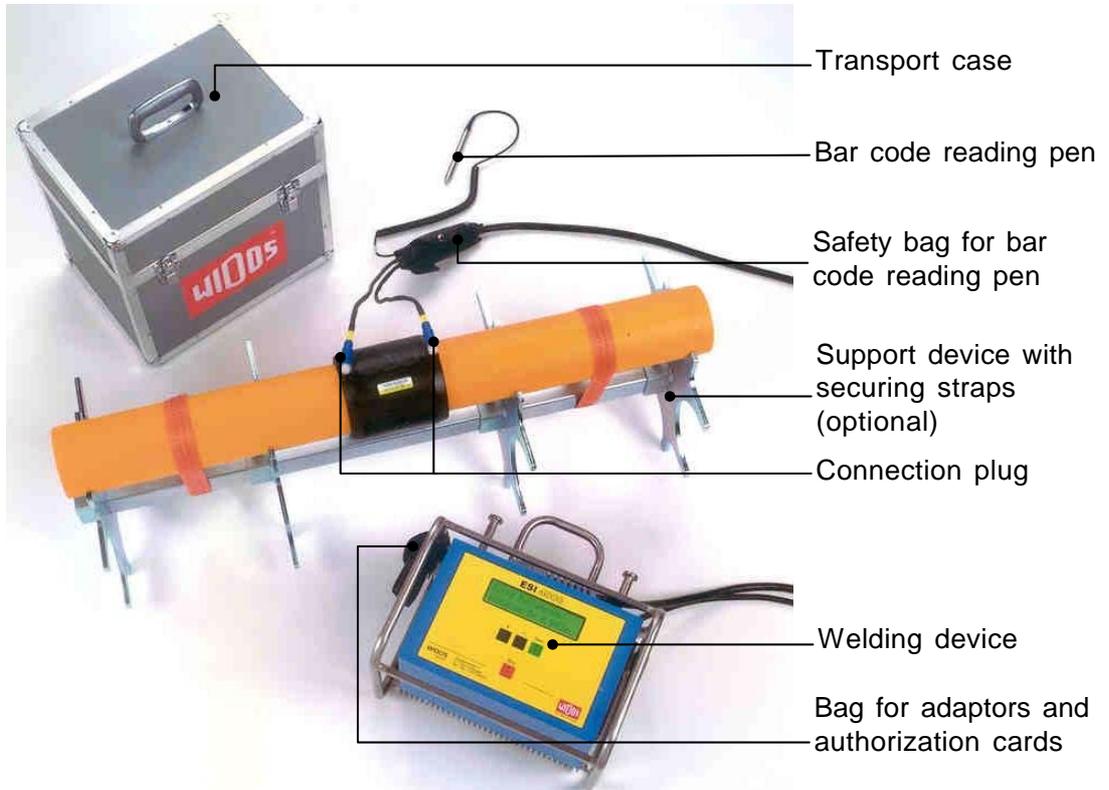
The welding process is started, the welding joint is heated (**Heating up**), and afterwards the machine automatically shifts.

The welded pipe cools down without tension. (**Cooling down**)

The welded pipe can be unclamped, the welding process is completed.

## 4. Indicating and operating elements

### 4.1. Overview device

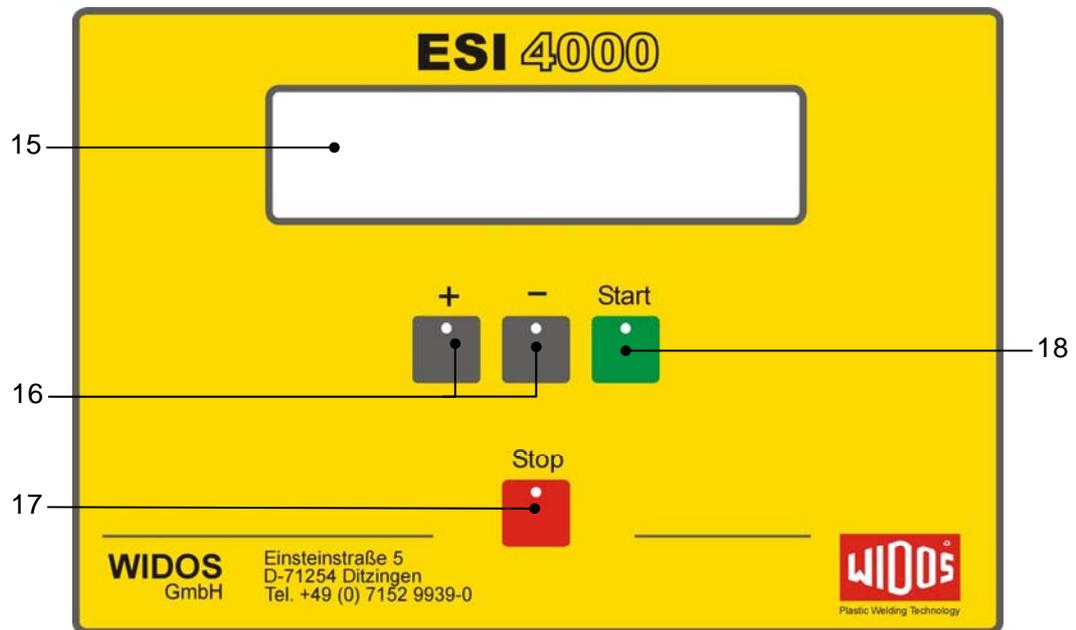


## 4.2. Welding device



<b>No.</b>	<b>Denomination / Function</b>
1	Device holder with handle
2	Control panel with display and buttons (chapter 4.3)
3	Bar code reading pen to authorize and read in the socket codes (here pouched in the safety bag)
4	Plug with connector for adaptors, connection to socket
5	Holder for coiling the cables
6	ON/OFF switch
7	SD-card drive
8	Adaptor, for fitting connection Ø 4,8 mm
9	Adaptor, for fitting connection flat (optional)

### 4.3. Control panel



<b>No.</b>	<b>Denomination / Function</b>
15	Display, indicates working steps and status messages, several values can be indicated at once.
16	<+> / <-> - buttons, for manually entering socket code number / parameter
17	<Stop> - button, aborts the welding process
18	<Start> - button: starts the welding process - Confirms the entered parameters

## 5. Starting and operating

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

This includes:

- the safe operation of the machine;
- using all possible options of the machine;
- economic operation of the machine.

### 5.1. Security advice

- The machine only has to be introduced and used by skilled persons. For their qualification they can pass an exam of plastic welding according to DVS and DVGW.
- In cases of danger for man and machine, immediately press the emergency switch, turn off the main plug or pull the power plug.
- Having finished the welding work and during intervals you have to turn off the machine. Furthermore you have to control that no unauthorized person can use the machine.
- The operation on building sites is only allowed via power distributor with FI security switch according to VDE 0100.
- Observe the environmental conditions:  
The welding must not be carried out with direct solar radiation, if necessary erect welding shield.
- With temperatures below 5° C, measurements have to be taken:  
If necessary erect welding tent or heat pipe ends.

The device ESI 4000 is connected to the local mains supply 230 V / 16 A / 50 Hz resp. to a generator (Chapter: 5.1.1.).

#### 5.1.1. How to work while using a generator

The nominal capacity of the generator is depending upon the size of the sockets, the connecting circumstances, the environmental conditions, the generator type and the adjustment traits. The nominal capacity of the generator is single-phase, 220 – 240 V / 50 – 60 Hz.

<b>Socket size:</b>	<b>Generator type:</b>
< d 160 mm	3,2 kW mechanically controlled
> d 160 mm	4,0 kW mechanically controlled 5,0 kW electronically controlled

Always start the generator first, connect the device ESI 4000 with a idling voltage being adjusted up to 230 V.

After the welding always detach the ESI 4000 first, afterwards switch off the generator.



During welding do not connect any other consumer to the generator at the same time

### 5.1.2. How to work with an extension cable

Only use extension cables that are admitted and marked with the following conductor cross-sections:

- Up to 20 m: 1,5 mm<sup>2</sup> ; Type H07RN-F
- Beyond 20 m: 2,5 mm<sup>2</sup> ; Type H07RN-F



The extension cable may only be used in an unfolded and straight condition!

## 5.2. Accessories for data read in / out

### 5.2.3. Authorization card

Each supplied machine normally includes a **general authorization card**. It authorizes to carry out all functions (including special functions).

Moreover, a **user authorization card** is included. It entitles to carry out all functions except modifications of date, time and authorization.

Optionally, an **initialization card** can be purchased by which the welding is started independently from the device (e.g. in the trench).

- Keep card dry and clean.
- Do not fold card or expose to strong magnetic fields.
- The card is not transferable.

### 5.2.4. Bar code reading pen

- In order to read in the bar codes, equally draw the reading pen over the bar code (hold pen vertically), the scanning is acoustically confirmed.
- The reading pen is ready when the red lamp at the pen top illuminates.
- Always store the pen in the bag after its use.

### 5.2.5. SD – card and reading device

The ESI 4000 is equipped with a drive for a SD card.

The drive memorizes the welding data in the internal memory as well as on the SD card as soon as a card is in the drive.

Data of appr. 32000 weldings can be stored on a card with a memory of 64 MB.

- The SD card has to be formatted by „FAT 16“ before use.
- Insert the card with the marking to the top and **cautiously** into the reading device with minor efforts.
- The card can be read out with a WICON program.
- Do not fold, open, overheat and wet the card!



Please only use SD cards purchased from WIDOS. We will not be liable for any cards from other manufactures!

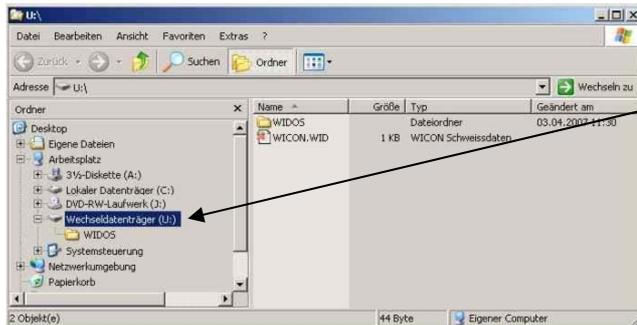
### 5.2.6. USB card reader

You may read out the welding data onto a PC by the USB card reader.  
Remove the card from the SD card drive of the ESI 4000.



Remove the rear cap and plug card according to the image into the USB card reader.

Remove the front cap and plug USB card reader into the USB interface in your PC.



As soon as the USB card reader has been plugged, it appears as removable medium in the drive list.

Open the WIDOS folder, there you will find:

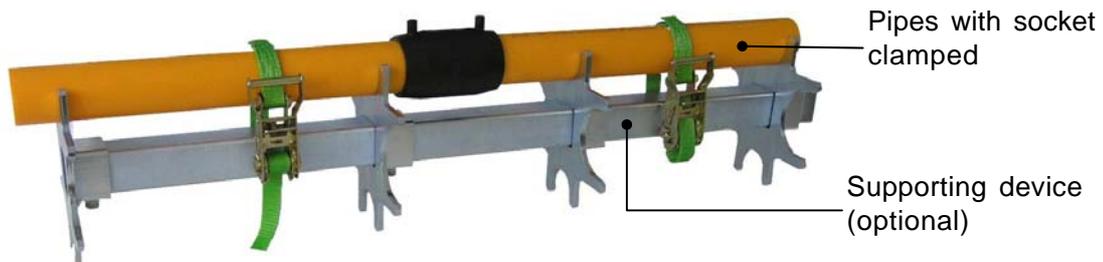
- WICON2000 viewer for considering and printing the welding data,
- working instructions for WICON2000 viewer as PDF file.

### 5.3. Pipes and sockets



The prepared pipes are fed into the socket on both sides in a flush manner, the connection has to be tension-free.

The pipes being plugged into the socket e. g. are inserted in optional supporting devices and firmly clamped.



## 5.4. How to switch on the machine

The device ESI 4000 is connected to the local mains supply resp. distributor 230 V / 16 A / 50 Hz, completely roll out cable.

Activate <Main switch>

As soon as the power plug of the **ESI 4000** is connected and the main switch activated, the display will get bright (the processor is initialized).

Display: **WIDOS GmbH**  
2nd line: **Germany**

After a few seconds the display changes to

Display: **Version 0.00.00**      Number of software version  
2nd line: **Serial no. 0000000**      Serial number of device

After a few seconds the display changes to

Display: **000 Weldings free**      Number of free disc space in memory (RAM)  
2nd line: **0000 SD-card**      Number of free disc space on SD-card

After a few seconds the display changes to

Display: **WIDOS ESI 4000**      Indication of machine type  
2nd line: **Please authorize**

Read in the code from the general or user or ISO-welding authorization card via the bar code reading pen, this is confirmed by a signal.

After a few seconds the display changes to

Display: **WIDOS ESI 4000**      Indication of machine type  
2nd line: **Welcome XXXX**      Indication of general or user name

After a few seconds the display changes to

Display: **WIDOS ESI 4000**      Indication of machine type  
2nd line: **10.10.2011 10:10**      Current date and time

„**Basic menu**“

## 5.5. How to weld with the ESI 4000

Basically, the respectively valid welding guidelines have to be respected (ISO / CEN / DVS ...).

Entirely roll out welding cable, plug ESI 4000 to the sockets if necessary use adaptor.

- Wear safety gloves to prevent burnings.



You may be injured by spillings.

Wear safety glasses during welding.



Only insert prepared pipes (peeled) into the socket!

Only use connecting contacts that fit the socket type.

Observe a tight fit of these contacts!

Display:  
2nd line:

```
no.0000 read in socket
R=0.000hm
```

Current joint number is indicated.  
Current resistor is indicated.

Read in code of the socket via the bar code reading pen, this is confirmed by a signal.

Display:  
2nd line:

```
Error: Socket does
not fit to code
```

Appears if socket and pipes do not match, or if socket still is too warm after aborting the welding process. => This occurs unless the wires inside the fittings have cooled down inbetween two welding processes, and thus the actual resistance does not match the required value.

Delete error and confirm error message with <Start> - button

Display:  
2nd line:

```
Manu Type Diam Time
XXXX XXX 000 000
```

Indicates the manufacturer, socket type, socket diameter [mm] and heating [sec]

If the bar code is to be entered manually:

Keep button <+> pressed for 4 s

Display:  
2nd line:

```
Manually enter code
0
```

Manually enter the socket bar code via the buttons <+ / - / Start>, at the end of the code number press start several times until following indication appears

Display:  
2nd line:

```
Manu Type Diam Time
XXXX XXX 000 000
```

Indicates the manufacturer, socket type, socket diameter [mm] and heating [sec]

Press <Start> - button

In case traceability has been confirmed with "yes", (chapter: 5.12) the display indicates:

Display: **Please read**  
2nd line: **trac.Code (fitting)**

Either: Read in traceability 1 of the fitting via the bar code reading pen  
Or: Keep button <+> pressed for 4 s, then manually enter the socket bar code via the buttons <+ / - / Start>

Display: **Traceability 1:**  
2nd line: **FR PE100 50 4.5**

*After a few seconds the display changes to*

Display: **Please read addit.**  
2nd line: **trac.Code 2nd pipe**

Either: Read in traceability 2 of lefthand pipe with barcode reader  
Or: Keep button <+> pressed for 4 s, then manually enter the 2nd socket bar code via the buttons <+ / - / Start>  
Or: skip with <Start>

Display: **Traceability 2:**  
2nd line: **FR PE100 50 4.5**

*After a few seconds the display changes to*

Display: **Please read addit.**  
2nd line: **trac. Code 3rd pipe**

Either: Read in traceability 3 of righthand pipe with barcode reader  
Or: Keep button <+> pressed for 4 s, then manually enter the 3rd socket bar code via the buttons <+ / - / Start>  
Or: skip with <Start>

Display: **Traceability 3:**  
2nd line: **FR PE100 50 4.5**

*After a few seconds the display changes to*

If pipe length has been selected with „yes“ (chapter: 5.12), the display shows:

Display: **Dist. Joint/Code 1**  
 2nd line: **0000.00m**

Enter first pipe length with <+ / - / Start>

Display: **Dist. Joint/Code 2**  
 2nd line: **0000.00m**

Enter second pipe length with <+ / - / Start>

If „ask for project name“ has been selected with „yes“ (chapter: 5.13), the display shows:

Display: **Edit project name**  
 2nd line: **Widos-----**

Current project name is indicated

Change indicated project name if necessary with <+ / -> (then the name of the last project is overwritten)

Press <Start> to jump to the next figure,

or: keep <Start> pressed to go to the end of the figures

or: read in barcode of a project name with the barcode reading pen (barcode may be created with WICON2000)

Display: **Pipe prepared?**  
 2nd line: **and start**

Query if pipes and socket are ok (check visually)

Either: Press <Start> - button to confirm prepared pipes and simultaneously start the welding process.

Or: Read in the barcode from the pipe with reading pen

The welding process can be aborted with <Stop> at any time

Display: **Welding t= 000s**  
 2nd line: **25°C 40V 14A 9 kJ**

Elapsed welding time is indicated  
 Welding parameters are indicated



**Special attention:**

- vapors may escape during heating
- in unfavorable circumstances material may laterally squirt



3 signals confirm the end of the welding process

Display:	<b>Parameter 0K 000s</b>	Welding time is indicated * Elapsed cooling time in min : sec is indicated
2nd line:	<b>Cooling time 00:00</b>	

\* Display changes:

- R = 0.40Ohm (resistance at the end of the welding)
- No = 0000 (joint number)
- WIDOS----- (project name)
- OD = 160 mm (outer pipe diameter)
- Type: I FR (type of fitting)

Either: The cooling can be aborted by <Start> e.g. for a further welding

Or: Read in start code from the cable with the barcode reading pen in order to abort cooling.



The aborting may only be carried out if the welding connection remains tightly clamped during the cooling time!



**Caution danger of combustion! Welding connection is very hot!**

At the end of the cooling time, the welding connection is unclamped, the welding process is completed.

## 5.6. How to weld without fitting bar code

In general, the respective valid welding regulations have to be complied with (ISO/CEN/DVS...).

Completely roll out welding cable, connect ESI 4000 plug into the fitting, if necessary use adaptor.

- Wear safety gloves to prevent burnings.



You may be injured by spillings.  
Wear safety glasses during welding.



Only insert prepared (peeled) pipes into fitting!  
Only use connections suiting the fitting type, care for a tight fit of the connections!

Display:	<b>no. 0000 Read in</b>	Actual joint number is indicated. Actual resistance is indicated.
2nd line:	<b>fitting R=0.000hm</b>	

Read in the bar code from the **general** authorization card by the bar code reading pen

Display:	<b>Voltage Heating</b>
2nd line:	<b>00 V</b>

Enter voltage indicated on/at the fitting (by manufacturer) via buttons  
<+ / - / Start>

Display: **Voltage Heating**  
2nd line: **0000 S**

Enter heating time indicated on/at the fitting (by manufacturer) via buttons  
<+ / - / Start>.  
Start welding process by pressing <Start>.

Display: **Pipe prepared?  
and start**

Query if pipe and fitting are ok (check visually)

Confirm prepared pipes by pressing <Start> and simultaneously start the  
welding process.

The welding process can be aborted by <Stop> at any time.

Display: **Welding t= 000s**  
2nd line: **25°C 40V 14A 9 kJ**

Elapsed welding time is indicated  
Welding parameters are indicated



**Special attention:**

- vapors may escape during heating
- in unfavorable condition material may laterally spurt



3 signals confirm the end of the welding process

Display: **Parameter OK 000s**  
2nd line: **Cooling 00:00**

Welding time is indicated.

\* Elapsed cooling time is indicated in min:sec.

\* Display changes: R = 0.40Ohm (resistance at the end of the welding)  
No = 0000 (joint number)  
WIDOS----- (project name)  
OD = 160 mm (outer pipe diameter)  
Type: I FR (type of fitting)

The cooling time may be aborted by <Start> e.g. for another welding



The abortion may only be carried out if the welding connection remains tightly  
clamped during all of the cooling down!



**Attention, danger of combustion! Welding connection is very hot!**

The welding connection is unclamped at the end of the cooling down, the  
welding process is completed.

## 5.7. Error messages

In case that the following happens during working with the ESI 4000:

- The rules according to DVS have not been observed,
- The socket shows a defect,
- The plug was unintentionally separated from the socket,
- Certain measuring facilities do not work, one of the following error messages appears on the display:

**W** Error welding time  
**U** Error voltage  
**I** Error socket current  
**c** Error cooling down  
**T** Error heat sink too hot  
**S** Error current failure  
**B** user's abort

All error messages are logged.

## 5.8. Enter parameters

Display: **WIDOS ESI 4000** Basic menu  
 2nd line: **10.10.2011 10:10** Current date and time

Simultaneously press <+> and <-> - buttons

Display: **last project**  
 2nd line: **WIDOS-----** Last project is indicated,

Select one of the last 4 projects by <+> or <->  
 Confirm by <Start>

Display: **Name of project**  
 2nd line: **WIDOS-----** Current project name is indicated

<+ / -> - buttons, change project name if necessary (then the name of the last project is overwritten)  
 Confirm by <Start>

or: keep <Start> pressed to go to the end of the figures  
 or: read in barcode of a project name with the barcode reading pen (barcode may be created with WICON2000)

Display: **Number of joint**  
 2nd line: **0000** Current joint number of last project

<+ / -> - buttons, change joint number if necessary, the number automatically increases with each welding without error.

Press <Start> - button

Display:  
2nd line:

<b>Weather</b>	<b>Protect</b>
<b>34</b>	<b>31</b>

Weather conditions and applied safety measures (according to DVS rules).

Weather	Safety measures
1 = sunny	1 = none
2 = dry	2 = shield
3 = rain or snowfall	3 = tent
4 = wind	4 = heating
In case of multiple nominations, order of digits as above (e. g.: 34 = rain and wind)	

Adjusting meteorological data: confirm digits by pressing <+> and <-> one position to the right by pressing <Start>  
confirm data by <Start> - button

Display:  
2nd line:

<b>copy</b>
<b>-</b>

Store data on SD card

In case the SD card is inserted, an automatic storage is carried out.

If no SD card was inserted, it can be done now and storing of the data can be started by <+> from RAM to SD card.

Repeatedly press <Start> or wait for basic menu to appear.

Display:  
2nd line:

<b>WIDOS ESI 4000</b>
<b>10.10.2011 10:10</b>

Basic menu  
Current date and time

## 5.9. How to change the language

Display:  
2nd line:

<b>WIDOS ESI 4000</b>
<b>10.10.2011 10:10</b>

Basic menu  
Current date and time

Simultaneously press buttons <+ and - > for next menu item

Display:  
2nd line:

<b>last project</b>
<b>WIDOS-----</b>

Last project is indicated,

Confirm by <Start>

Display: **Name of project**  
2nd line: **WIDOS-----** Current project name is indicated

Confirm by <Start>

Display: **Number of joint**  
2nd line: **0000** Current joint number of last project

Confirm by <Start>

Display: **Weather      Protect**  
2nd line: **34              31** Weather conditions and applied safety measures (according to DVS rules).

Confirm by <Start>

Display: **copy**  
2nd line: **-** Store data on SD card

Confirm by <Start>

Display: **Language English?**  
2nd line: **-** Language selectable

Select language by <+ / ->

Repeatedly press <Start> or wait for basic menu to appear.

Display: **WIDOS ESI 4000**  
2nd line: **10.10.2011 10:10** Basic menu  
Current date and time

## 5.10. How to change date and time

Display: **WIDOS ESI 4000**  
 2nd line: **10.10.2011 10:10** Basic menu  
 Current date and time

Simultaneously press <- and Start> for next menu item

Display: **WIDOS ESI 4000**  
 2nd line: **Please authorize** Only possible with **general** authorization card

Authorize by bar code reading pen and **general** authorization card

Display: **WIDOS ESI 4000**  
 2nd line: **10.10.2011** Current date is indicated

Change date by <+ / ->  
 Press <Start>

Display: **WIDOS ESI 4000**  
 2nd line: **10:10** Current time is indicated

Change time by <+ / ->  
 Repeatedly press <Start> or wait for basic menu to appear.

Display: **WIDOS ESI 4000**  
 2nd line: **10.10.2011 10:10** Basic menu  
 Current date and time

### 5.11. How to change authorization

Display: **WIDOS ESI 4000**  
 2nd line: **10.10.2011 10:10** Basic menu  
 Current date and time

Simultaneously press <- and Start> for next menu item

Display: **WIDOS ESI 4000**  
 2nd line: **Please authorize** Only possible with **general** authorization card

Authorize by bar code reading pen and **general** authorization card

Display: **WIDOS ESI 4000**  
 2nd line: **10.10.2011 10:10** Current date and time is indicated

Press <Start>

Display: **Authorization**  
 2nd line: **yes** Welding with or without authorization can be selected.

By selecting: "NO" welding is always possible, even after switching the machine on and off.

Instead of the authorization number the welding protocol indicates => XXXX

In case of selection „1x a day“, authorizing is only required once a day  
 Select authorizing with <+ / ->

Repeatedly press <Start> or wait for basic menu to appear.

Display: **WIDOS ESI 4000**  
 2nd line: **10.10.2011 10:10** Basic menu  
 Current date and time

## 5.12. Traceability–how to activate information and pipe length

Display: **WIDOS ESI 4000**  
 2nd line: **10.10.2011 10:10**

Basic menu  
 Current date and time

Simultaneously press <- and Start> for next menu item

Display: **WIDOS ESI 4000**  
 2nd line: **Please authorize**

Only possible with **general** authorization card

Authorize by bar code reading pen and **general** authorization card

Display: **WIDOS ESI 4000**  
 2nd line: **10.10.2011 10:10**

Current date and time is indicated

Press <Start>

Display: **Authorization**  
 2nd line: **yes**

Press <Start>

Display: **Name of project**  
 2nd line: **WIDOS-----**

Current project name is indicated

Confirm by <Start>

Display: **Traceability**  
 2nd line: **no**

You may select traceability yes / no

Select "YES" with <+> if you require traceability

Only appears if traceability has been selected with yes.

Display: **pipe length**  
 2nd line: **yes**

You may select pipe length yes / no

Select pipe length yes by <+>

Repeatedly press <Start> or wait for basic menu to appear.

Display:	WIDOS ESI 4000	Basic menu
2nd line:	10.10.2011 10:10	Current date and time

### 5.13. How to ask for project name prior to each welding

Display:	WIDOS ESI 4000	Basic menu
2nd line:	10.10.2011 10:10	Current date and time

Simultaneously press <- and Start> for next menu item

Display:	WIDOS ESI 4000	Only possible with <b>general</b> authorization card
2nd line:	Please authorize	

Authorize by bar code reading pen and **general** authorization card

Display:	WIDOS ESI 4000	Current date and time is indicated
2nd line:	10.10.2011 10:10	

Press <Start>

Display:	Authorization
2nd line:	<u>yes</u>

Press <Start>

Display:	ask for project name
2nd line:	WIDOS-----

Select yes with <+> if you wish to be ask for the project name prior to each welding.

Repeatedly press <Start> or wait for basic menu to appear.

Display:	WIDOS ESI 4000	Basic menu
2nd line:	10.10.2011 10:10	Current date and time

### 5.14. How to delete the memory

Display: **WIDOS ESI 4000**  
 2nd line: **10.10.2011 10:10** Basic menu  
 Current date and time

Simultaneously press <- and Start> for next menu item

Display: **WIDOS ESI 4000**  
 2nd line: **Please authorize** Only possible with **general** authorization card

Authorize by bar code reading pen and **general** authorization card

Display: **WIDOS ESI 4000**  
 2nd line: **10.10.2011 10:10** Current date and time is indicated

Press <Start>

Display: **Authorization**  
 2nd line: **yes**

Press <Start>

Display: **ask for project name**  
 2nd line: **WIDOS-----** The current project name is indicated

Press <Start>

Display: **Traceability**  
 2nd line: **yes** You may select traceability yes / no

Press <Start>

Display: **delete memory**  
 2nd line: **-**

Select with <+ > if memory is desired

Display: **delete memory**  
 2nd line: **yes** You may select „delete memory yes / no“

Select YES with <+ > if memory is desired, or NO with <-> if it isn't desired.

Display: Delete CNC memory?  
2nd line:



**Attention!** The CNC memory is deleted with <+>.

Display: WIDOS ESI 4000  
2nd line: 10.10.2011 10:10

Basic menu  
Current date and time

### 5.15. Welding data management



The battery buffered CNC memory (RAM) can store appr. 350 weldings. Make sure that this figure is not exceeded (error message „memory full“ appears on the display) otherwise the first stored welding is overwritten. If necessary read out welding data in time.

### 5.16. Possible defects and their elimination

<i>Defect</i>	<i>Possible Cause</i>	<i>Identification and Elimination</i>
Welding breaks off	- Soiled or damaged contact	- Change the contact
Barcode does not work	- Barcode soiled - Reading pen defective	- Clean barcode, repeat read in - Manually enter digits of the barcode: simultaneously press all three buttons <+ / - / Enter>, afterwards manually enter the digits.

### 5.17. Short instruction

## 6. Maintenance / Storing / Transport

### Goal of the chapter is:

- Keeping of the nominal state and the operation capacity of the device.
- Increasing of the efficiency by avoiding non-planned outage.
- Efficient planning of the maintenance works and the maintenance tools.
- Immediately replace damaged parts.
- Only use WIDOS spare parts for reparation works.



Prescribed maintenance and inspection works are to be carried out in due time. It is recommended to execute inspection works every year.

These works are to be carried out by company WIDOS GmbH or by a contractual partner.

- Handle the device with care.
- The housing may only be opened by qualified WIDOS personnel or by authorized service partners.
- Regularly check the contact plugs on their tight fit, always observe matching connecting contacts.0
- Always remove plug from power socket not using the cable.

### 6.1. Cleaning and care

The device ESI 4000 is to be cleaned with a humid and soft cloth. Never put the device under water or hose down with water.

### 6.2. Transport and storing



The device ESI 4000 should be carried and stored in the supplied transport case or transport crate in order to protect against dirt and humidity.



In case of a welding the device should be carried at the intended carrying handle, never lift it up at the cables

### 6.3. Waste management



The device is to be disposed of in an appropriate and environmentally sound manner after its service life has elapsed, respecting customary waste management laws.

## 7. Spare parts list



## Accessoires (option):



**WIDOS ESI - 4000**

Pos.	Name	Piece	Order no.
1	Sealing cap	1	J0214
2	Supporting frame ESI Niro	1	410111
3	Accessory bag	1	TAHW2
4	SD drive W7D	1	EG0612
5	SD card 1 GB	1	EPR0610
6	Front insertion, splash-water proof	1	EST0602
7	Support plate for card reader CNC 3.0	1	105107
8	Cap for SD slot	1	105115
9	Heat sink ESI 4000	1	4101022
10	Tapped bushing M6 10 x 16	4	HGEW-M61
11	Pan head screw M 6x22 DIN 7984	4	7984F022
12	Tooth lock washer M 6 DIN 6797	4	6797F
13	Spax button-head screw d 3,5x15	2	SPR3.5x15
14	Lens-head screw M 4 x 10 DIN 84	8	7380D010
15	Lower housing element ESI 4000	1	4101211
16	Seal for housing ESI 4000	2,7m	DHW10
17	LCD display	1	EG01143
18	Plastic film keyboard ESI 4000	1	EF0641
19	Housing cap ESI 4000	1	4101212
20	Ambient temperature sensor	1	EE04042
21	Accessory bag ambient temperature sensor	1	TAHW1
22	Silicone hose without inner fabric 10 x 0,7	1,5m	EA09ISHW1
23	Cable screw connection, plastic M 25 x 1,5	1	EVS25G
24	Angle screw connection, plastic M 25 x 1,5	1	EVWK25G
25	Counter nut M 25 x 1,5	1	EV2225
26	Connecting cable with isolated plug	1	EK5230
27	Cable screw connection, plastic M 16 x 1,5	1	EVS16G
28	Angle screw connection, plastic M 16 x 1,5	1	EVWK16G
29	Counter nut M 16 x 1,5	1	EV2216
30	Welding cable ESI 4000 complete	1	EKHW05
31	On - Off switch 2-pole	1	ES1040
32	Barcode reading pen	1	EG0600
33	Circular plug 103 connector plug	1	ESTHWRS2
34	Circular plug 103 strain relief	1	ESTHWRE2
35	Set of contacts 4 mm	1 set	HWAF003
36	Set of shrink hoses blue yellow	1 set	EA09SBG
37	Plastic sleeve with drill hole 5 mm	2	EHWKP
38	Retainer for wire spring bushing 4 mm	2	EHWKM
39	Card reader SD / MMC USB 2.0	1	EPR0611
40	Start code card	1	HWBA003
41	General card electro socket welding device	1	HWBA001
42	User card electro socket welding device	1	HWBA002
43	Electro socket round adaptor	1	HWAR001
44	Electro socket flat adaptor (optional)	1	HWAF001
45	Transportcase	1	TKESIA
46	Transport crate	1	TKESIH

## 8. Declaration of conformity

In sense of the EC guideline EC Machinery Directive 2006/42/EC

Company

WIDOS GmbH  
Einsteinstr. 5  
D-71254 Ditzingen-Heimerdingen

declares under own responsibility that the product

**WIDOS ESI 4000**

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

1. DIN EN ISO 12100 – 1 and 2 (substitute for DIN EN 292 part 1 and 2)  
Safety of machines, basic terminology, general design guidelines
2. DIN EN 60204.1  
Electric equipment of industrial machines
3. DIN EN 60555, DIN EN 50082, DIN EN 55014,  
Electro-magnetic compatibility
4. DIN EN 60950  
Safety of facilities of information technology

The technical documentation is completely available.

The working instructions are available in the user's language.

Ditzingen-Heimerdingen, 18.07.2013

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Martin Dommer (Technical director)