CSE PLUS

SW : V 5.0.40

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CE

The technical data and information contained on this manual can be changed without any notice

Table of contents

1. Safety rules according to Directives CEE

IMPORTANT- Keep the maximum care reading and following the above Warning - Rules -Obligations the I.T.S. S.r.l. declines all responsibilities if are not followed totally

Warning – Rules – Obligations

The use of machines composed by electrical components and movable parts, it is always a potential danger. In order to avoid any kind of accident caused by electrical or mechanical sources it' strongly suggested to read and follow carefully the following safety rules before operating the machine.

- The welding machine must be supervised by an operator during the welding cycle
- Carefully check the welding machine before use, if some parts are broken or defective and must be substituted, use only original spare parts.
- Without any previous written authorization by the producer any modification can be effected on the machine.

TRANSPORT / STORAGE / SHIPMENT

Weight Kg.52. Keep the maximum care while moving the machine. It's strongly suggested to utilize the supplied handles frame. The machine can be supplied with an apposite wooden transport box (optional). Store the machine in a dry and safe place avoiding squashing the hydraulic hoses

ELECTRIC CONNECTIONS

The machine is operated by 230 Volts therefore be sure that the power supply plug is supplied with the safety devices according to the standard requirements, also check that the power supply will be on the range of maximum 20% of the machine's nominal tension.
Protect the cables from sharp blades or any sharpened body that can cut or damage them.
In case of damage immediately contact I.T.S. Ital trade services srl to purchase original spare parts.
Before connecting the CSE to the Heating Mirror **carefully check that the heating mirror plug is disconnected.**
Check regularly the cables and the plug and in case substitute by qualify personnel.
Before carry out a reparation or maintenance all the plugs must with plug out from the power supply

ENVIRONMENTAL CONDITIONS

The working area must be clean and duly lighted. It's very dangerous to utilize the machine in case of rain or in wheat conditions or even close to flammable liquids.

CORRECT MACHINE'S OPERATION

Remember to check and read carefully the operating manual before utilizing the machine and the accessories.

Danger


Danger

Facing tool
The facing phase can start only after the correct insertion of the facing tool in the machine. Move the facing tool only using the supplied handles and do not move the facing tool by pulling the electrical cable. Do not remove the scraps while the facing tool is rotating. Carefully check that any person is too closet o the machine during the welding cycle.


Danger

Heating mirror
Due to the high temperature of the heating mirror (over 200°C) avoid any contact with the metallic part. Grasp the heating mirror only by the rubber handles! It is compulsory the use of protective gloves. After switching off the heating mirror is still hot for some minutes.


Danger

Squashing danger
To avoid any injury or squashing to operator's limb take the maximum care in opening or closing the machine clamps as well as during the pipe's loading.


Danger

MDD
The automation of the MDD (automatic disconnecting device of the heating mirror) it is generated by a gas spring. The movement could be sudden and unexpected, therefore take the maximum care to avoid the work area of the MDD.


Info

ID number
A label in the back part of the unit identifies each welder. On the label the following data are available: model, series number and producer.

CSE PLUS

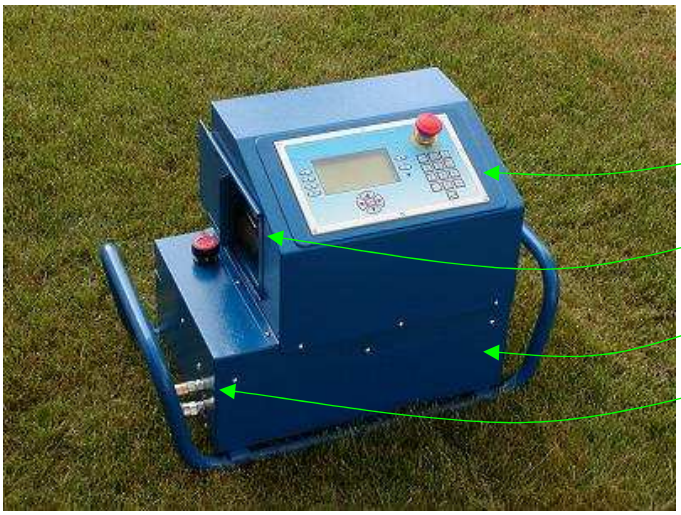
The CSE unit has been designed and constructed for controlling the Tecnodue field machine up to d. 500mm. The CSE unit can measure and record the data of welding cycle of PE 80,PE 100 and PP pipes and fittings.
Beside the control function, the printing data machine give a help to the operator during all the working phases showing on the display and advising by acoustic signal the pressure and time to be achieved during all the cycle welding phases.
The computer according to the material and the wall thickness, once the operator has set up all the pipe's parameters, controls the heating mirror temperature, the welding pressure and times.
At the end of the welding the printing of a final report of the welding cycle will allow the operator to check if the welding cycle has been done correctly.

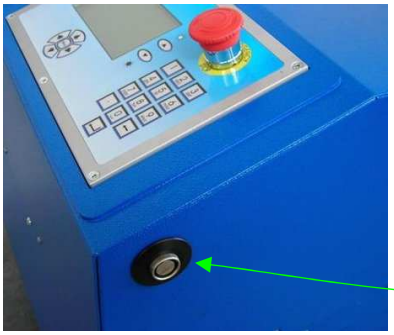
CSE can:

- Can be connected to the new ITS-Tecnodue machines from the model PT160 to PT500 with small modifications
- Survey the heating mirror temperature
- Survey and control step by step the welding cycle
- Calculate the welding parameters accordingly with a welding norm (pressure, times and temperatures)
- Print the final report of the welding cycle
- Store 2000 records concerning 2000 different welding cycles
- Access to welding cycle database
- Upload the welding cycle database to a pc

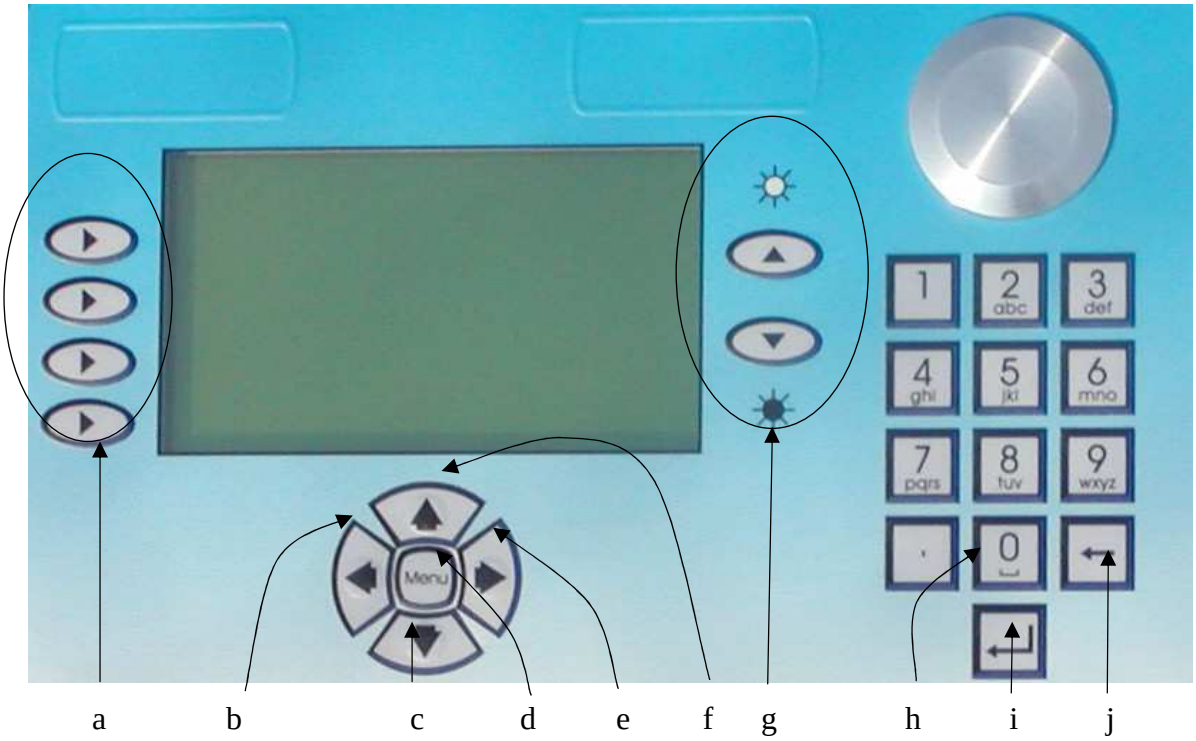
2. Hydraulic unit main parts

- Front panel
- Back panel





Front panel description



Keys description and symbol used in this manual

a. **Soft Keys** = [▶]

b. **Left arrow** = [◀]

c. Down arrow = [▼]

d. **MENU** key

e. **Right** arrow = [▶]

f. **Up** arrow = [▲]

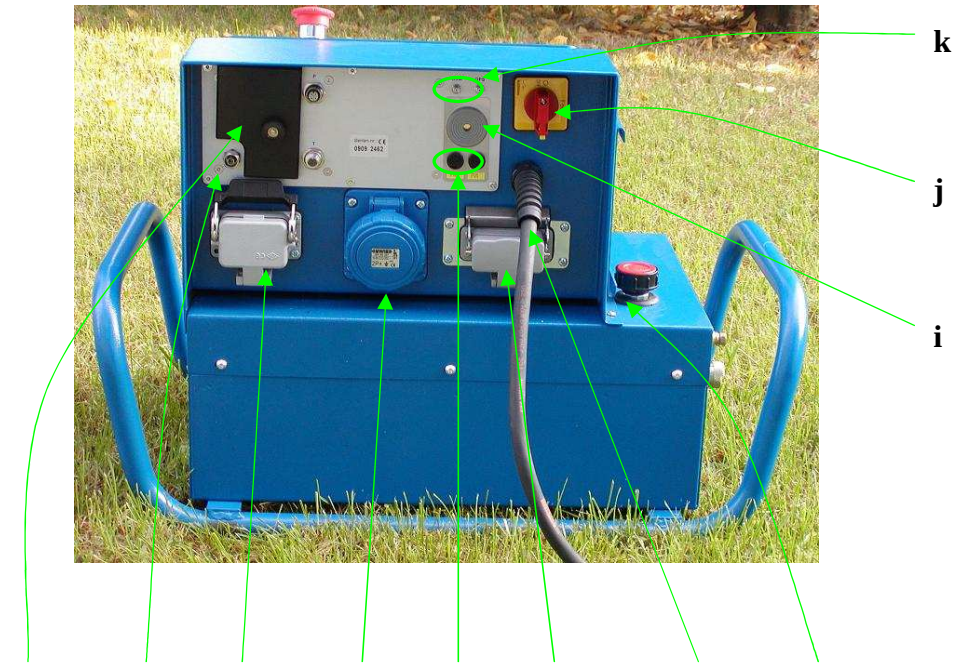
g. Brightness display control

h. Key **0** or **SPACE (during characters insert)**

i. **Enter** = [↵]

j. **BACKSPACE (to delete the last digit)**

Back panel description

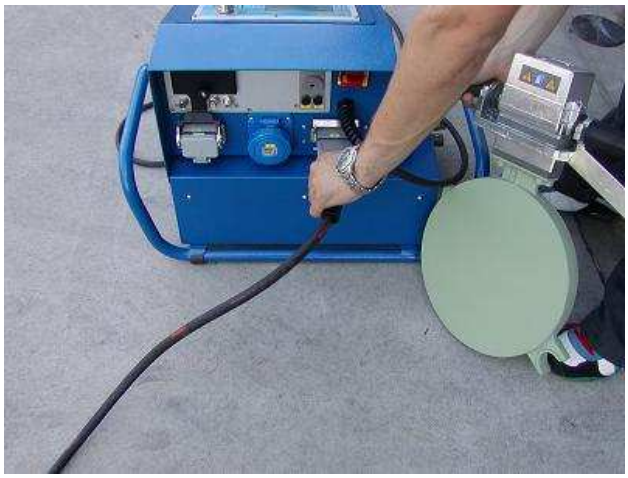


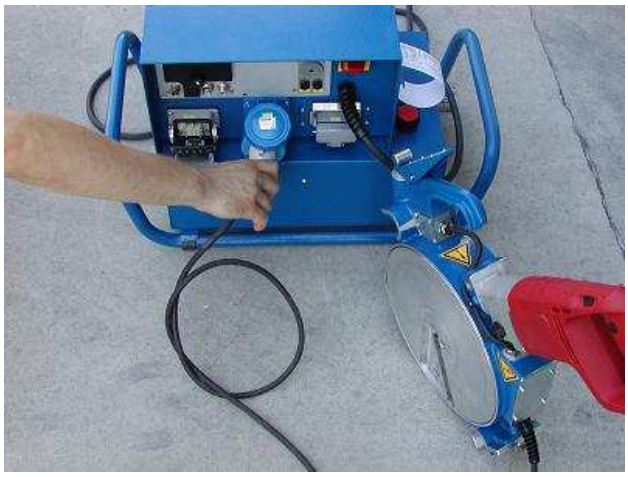
a. Plastic cover protecting the USB host/serial ports
b. Ambient temperature probe
c. Basic machine connector
d. Facing tool connector
e. Fuses
f. Heating mirror connector
g. Supply cable
h. Oil tank
i. Buzzer
j. Main switch
k. GPS / GSM antennas connector

3. Technical data

Power	230 ± 10% V Max 7,7 KW 32 A
Frequency	50 Hz
Consumption PT500 CSE PT355 CSE PT315 CSE PT250 CSE PT200 CSE PT160 CSE	 7,7 KW 32 A 5,1 KW 23 A 5,1 KW 23 A 3,7 KW 16 A 2,8 KW 12 A 2,4 KW 10 A
Weight	52 Kg
Dimensions	630 x 310 x 435
Maximum working pressure	120 bar
Pump's Capacity	3,4 l/min 2800 rpm
Oil Tank	1 l
Hydraulic Oil	ISO 46
Operating temperature range	-20 … +60°C
Storage temperature range	-40 … +85°C
Humidity (without condensation)	95%

4. Cables connection





Facing tool and heating mirror connections

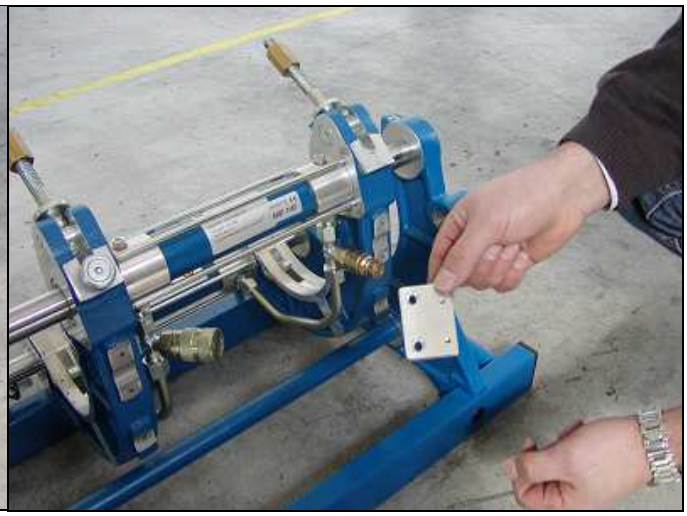
Basic machine connection

Quick couplings connection

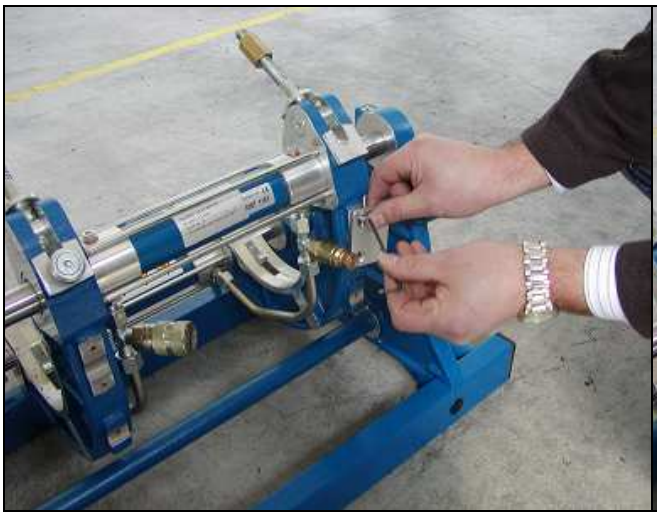
How to install the micro switch on the basic machine

Place the cable with the micro switch by fixing the micro switch support on the basic machine with the supplied screws as shown in pictures below

Back view of basic machine

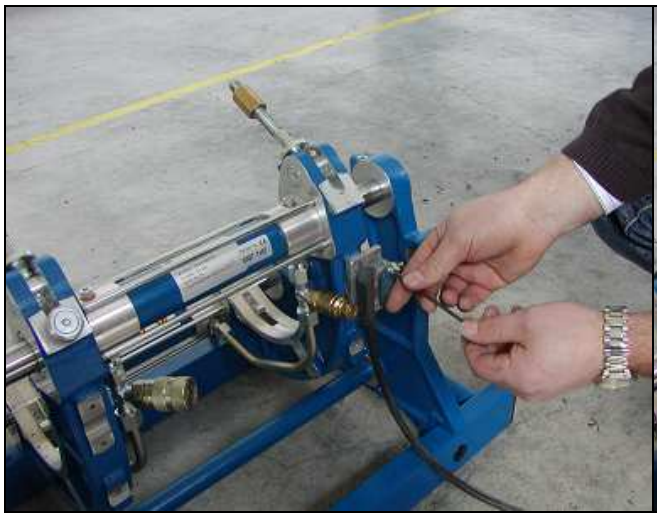


Fix the microswitch support

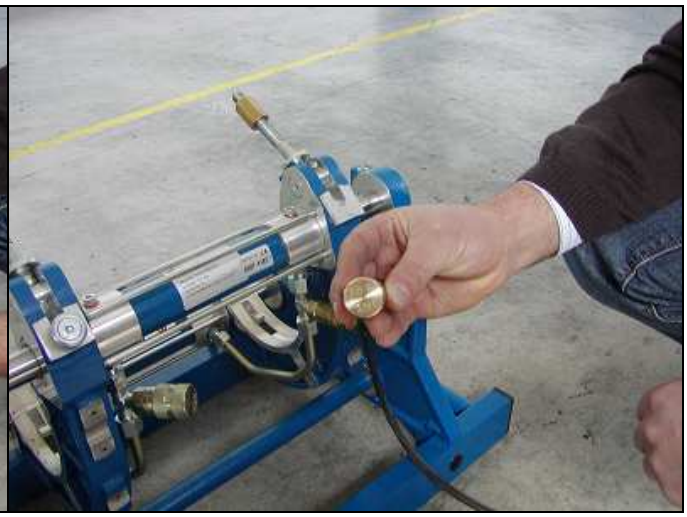


By screwing the 2 M5 screws

With the appropriate screws fix the microswitch



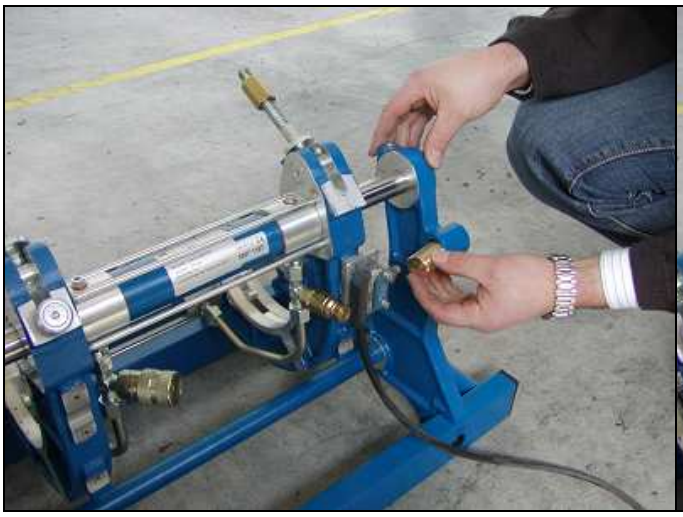
Use an Allen key



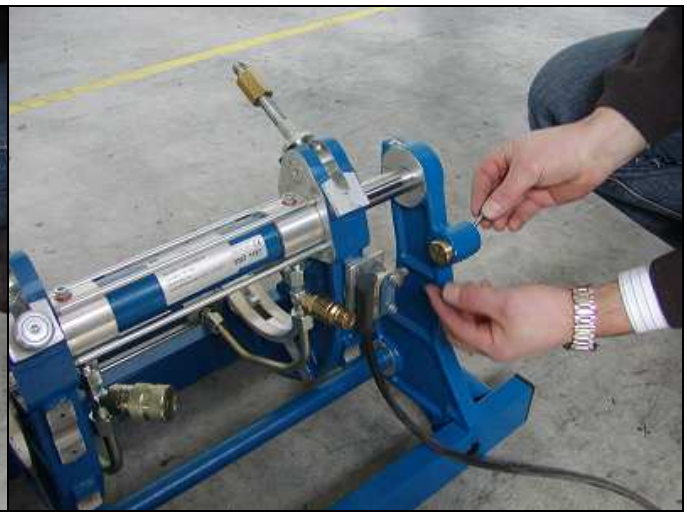
Select the appropriate striker

Warning!!!

Take the maximum care when you insert the striker in the hollow cave of the basic machine. The cave must be clean and the striker must be inserted at the bottom of the cave!!!
If, by chance, the striker is not properly inserted the microswitch could be damaged when completely open the trolleys because the button could be pushed more than its nominal resistance.



Insert the striker in the basic machine hollow cave. The trolleys must be not completely open



Fix the striker with the appropriate screw

Use an Allen key

Now the machine is ready to be used with the CSE control unit

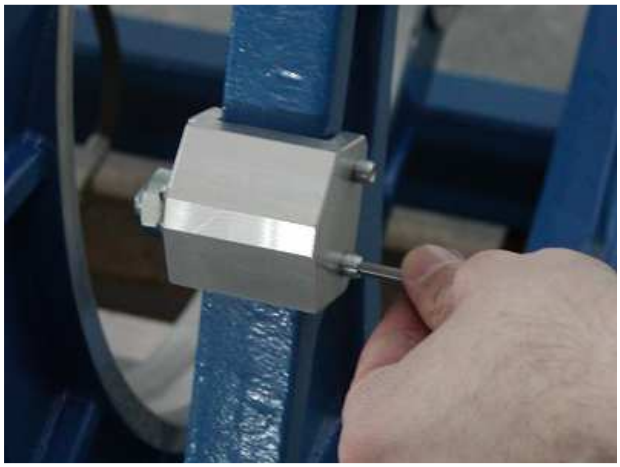
Installing the brass striker on the basic machine (Models 160-200-250-315-355-500)

On the striker has been punched the model of the machine for which has been built.
Each PT machine has its striker, except PT160 and PT250 that use the same striker (shown in picture)

For the PT500 the striker is totally different and must be assembled and adjusted on the machine as follows

PT 500 striker

Place the striker on the PT500 basic machine considering the position of the microswitch



Fix the striker with the supplied screws by an Allen key

Adjust the projection of the striker by acting on the nut shown above

5. Passwords

There are 7 passwords that let the operator access to seven levels of set up.
The password for level 1st to level 4th are available only for the programmer of the machine and will be not supplied to the users. The low level (7th) is 4321.
You will find the other password in a separate file. Keep the passwords with the maximum care.

6. Start up

To switch on the machine connect the power supply cable and act on the main switch.
You can control the brightness of the display acting on the appropriate key on the front panel of the CSE.
To start to operate with the machine you must enter 7th level password **(4321)** and push the Enter key **[↵].**

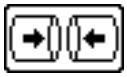
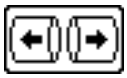
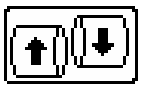
If date and time does not correspond to your local datetime, you can simply update this data following the procedure shown in chapter . Sometimes the battery could be low, in this case the display show date and time equal to 0. To charge the battery plug and switch on the CSE unit. For a complete charge the machine takes at least 8 hours.

Once connected the welding machine to CSE unit you can, if you need, calibrate the heating mirror (please check the reference paragraph)

7. What the icons mean

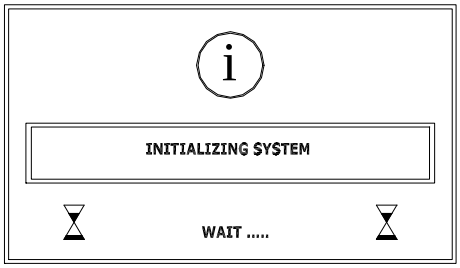
During the welding cycle on the left side of the screen some icons will be displayed.

By pushing the related key **[▶]** you can obtain the results shown by the following table:

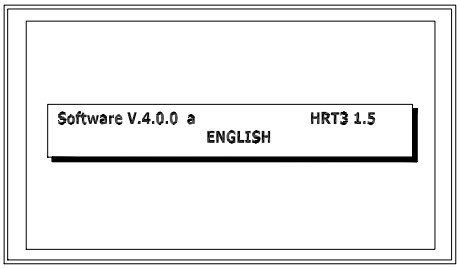
Icon	Results obtained
	The machine closes the trolleys
	The machine opens the trolleys
	The machine starts the facing tool
	The machine stops the facing tool
	The machine starts the procedure to check the pipe's alignment and sliding
	The machine stop the procedure to check the pipe's alignment and sliding

8. Parameters setup

As soon as the machine has been switched on, wait for few second



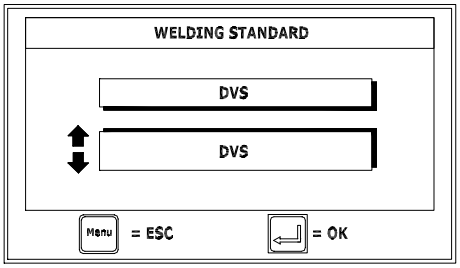
For 2 seconds you can see, on the display, the software release number.



Select the welding standard to be used

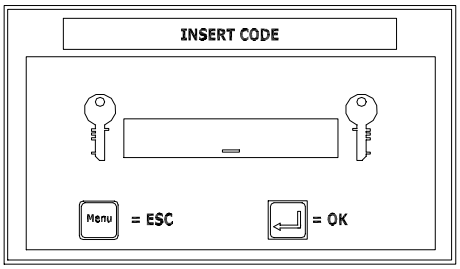
If by chance, you have selected the ISO standard it is compulsory the use of I-BUTTON (containing the operator's data).

And push the **enter key** [↵]



After few seconds the MACHINE asks for the level 7 password
You must Digit the 7th level password (**4321**)

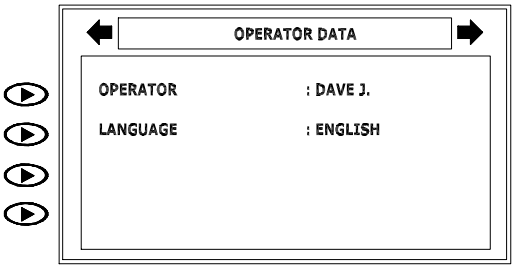
And push the **enter key** [↵]



If required, you can modify the following parameters:

- Operator's Name
- Language

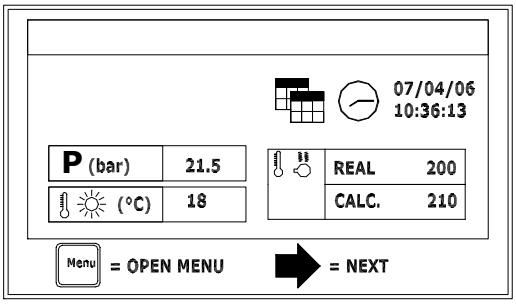
And push the **enter key** [↵]



Now the display shows the following values:

- Pressure and relative measurement unit
- Ambient temperature and relative measurement unit
- Real heating mirror temperature and the temperature calculated from the welding norm
- date and time

  - The upper field has used by the MACHINE to show message or alarm notification to the operator
  - **The right arrow key** [▶] let the operator to insert the data concerning the welding cycle and following the start of the welding cycle
  - With the MENU key you can access to the set up menu of the MACHINE



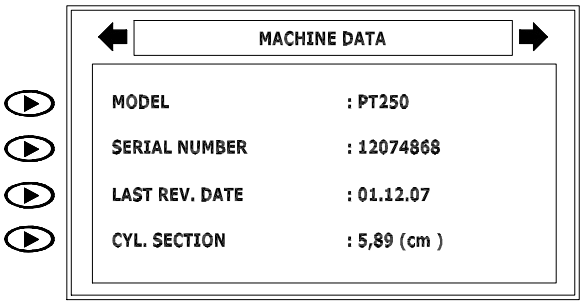
Welding machine data

If necessary you can set up the following parameters:

- Serial number
- Cylinder section

To modify a parameter you must push the correspondent **soft key** [▶] and you must digit the new value. To confirm the new value push the key enter [↵]. (For more details check the chapter: modifying the parameters)

Push the **right arrow key** [⏵] to proceed



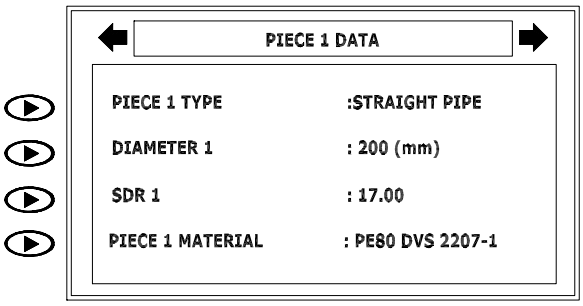
Pipe data

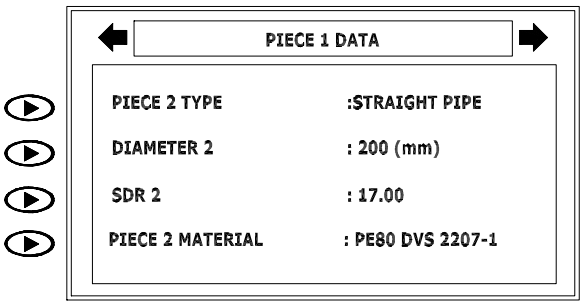
If required you can modify the parameters concerning the piece no. 1 and piece no. 2 to be welded:

- Piece 1 type
- Diameter
- SDR
- Material and welding standard

Note: the MACHINE calculates the welding parameters on the date related to piece no. 1

To continue push the **right arrow key** [⏵]



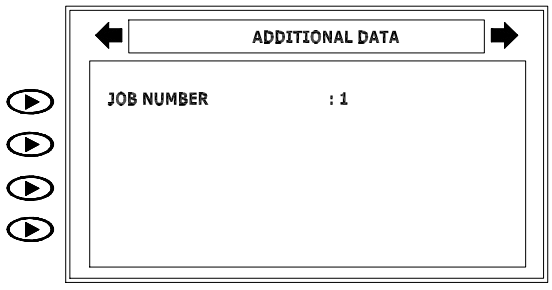


Additional Data

If required you can modify the following parameter:

- Job number

To continue push the **right arrow key** [▶]



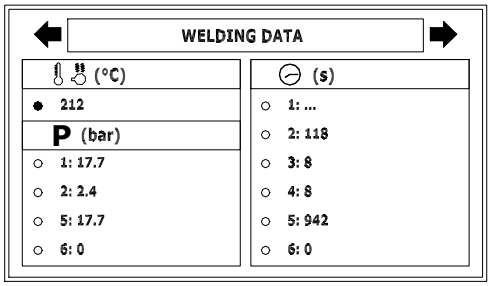
Welding data

The operator could change each parameter.
You can select all the parameter shown in the right figure by using the **Up and down arrow key.** [▲ / ▼]

The parameter selected shown a little black circle on his left. (To change these parameters check the chapter welding data)

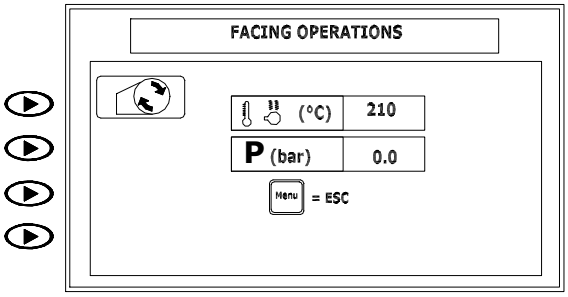
To continue push the **right arrow key** [▶]

The machine will enter into the movements control screen

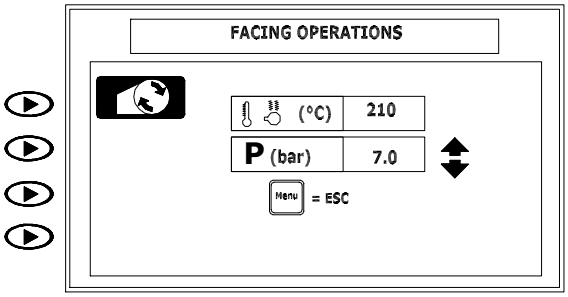


Facing phase

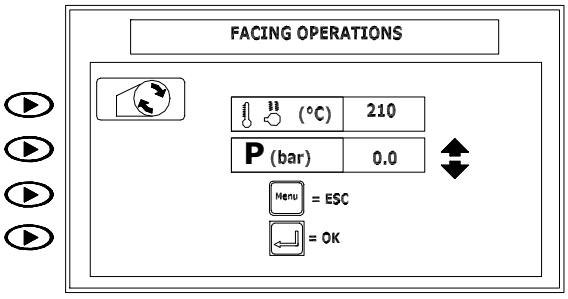
- Insert the facing tool between the trolleys taking care to correctly hook the facing tool safety microswitch



- Push the arrow key on the left side of screen [▶] corresponding to the icon  . The icon starts blinking 
- The trolleys will be completely opened
- The trolleys will be closet and the pipe's end will be in contact with the facing tool with a pressure equal to the drag pressure more 5 bars
- You can increase or decrease the facing pressure by acting on the arrow keys [▲/▼].
- Push the arrow key [▶] corresponding to the icon  to end the facing phase
- The machine opens the trolleys

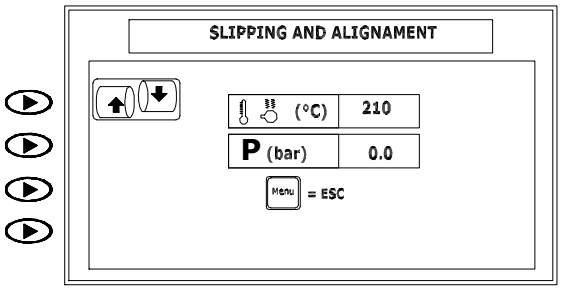


- Remove the facing tool
- Remove the scraps
- If the results of the facing phase is satisfactory you can push the Enter key [↵] to proceed with the next phase
- To repeat again the facing phase push the arrow key on the left side of screen [▶] corresponding to the icon 

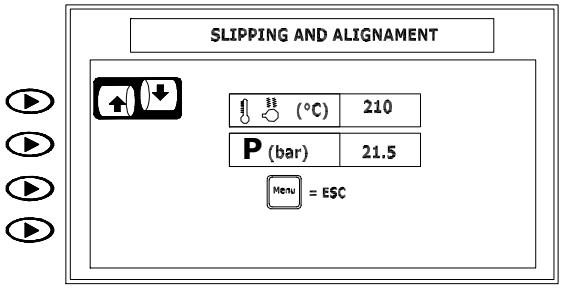


Pipe's alignment and sliding phase

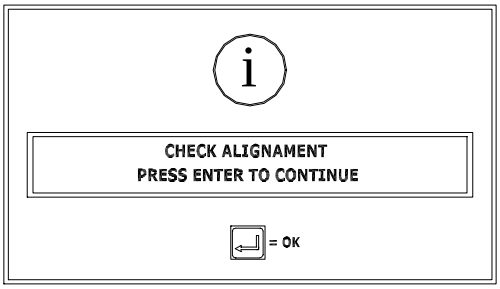
- Push the arrow key on the left side of screen [▶] corresponding to the icon  , the icon starts blinking 



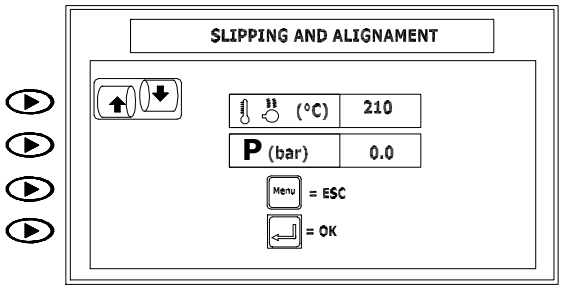
- The machine completely opens trolleys
- When the trolley starts closing the machine notes the drag pressure
- When the pipe's end will be in contact the pressure increase for 5 seconds to reach a pressure just a little bit over the welding pressure



- After 5 seconds to pressure decrease to 0 bar
- The operator must check if the pipes are slid and he must execute the alignment operation by acting on the nut of the tie rods.
- Executed the verifications push the Enter key [↵].
- The machine completely opens the trolleys and after closes the trolleys for few centimetres (this is necessary for the use of MDD)

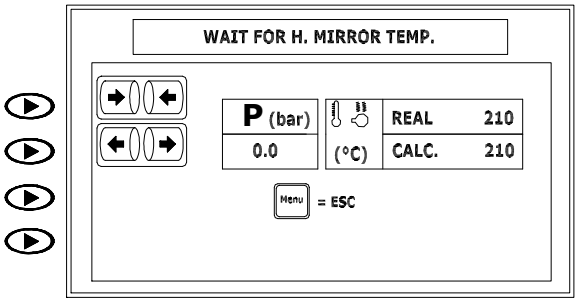


- Push the Enter key [↵] to proceed with the next phase
- To repeat again this phase push the arrow key on the left side of screen [▶] corresponding to the icon 

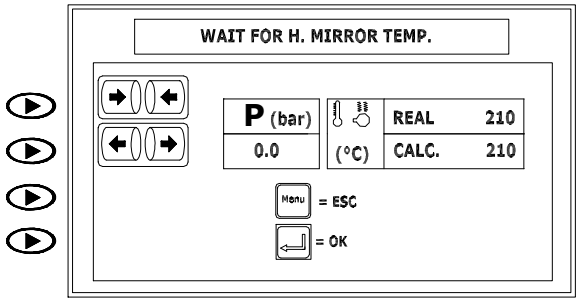


Welding temperature achievement

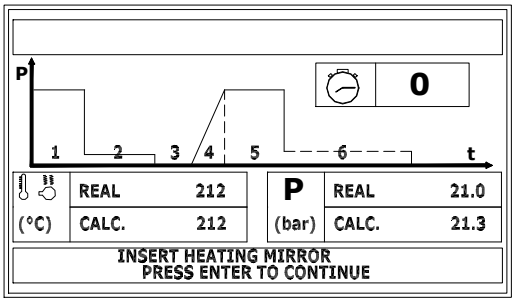
- It is compulsory wait until the heating mirror reaches the required temperature
- At this moment you can only move the trolleys by acting on the keys on left of the screen [▶] corresponding to the required movement



- When the heating mirror reaches the required temperature on the screen it is visible the symbol of Enter key [↵]
- Push the enter key to proceed with the next phase



- Now, the machine enters in the starting screen of the welding cycle.



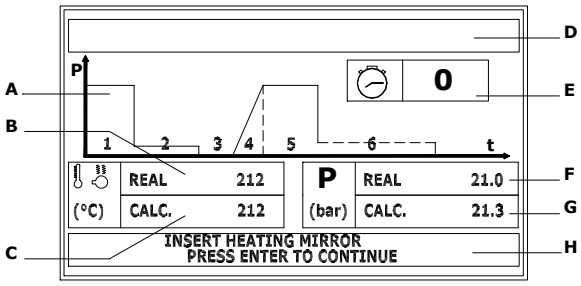
9. Welding cycle

Welding cycle screen

During the welding cycle the display will show:

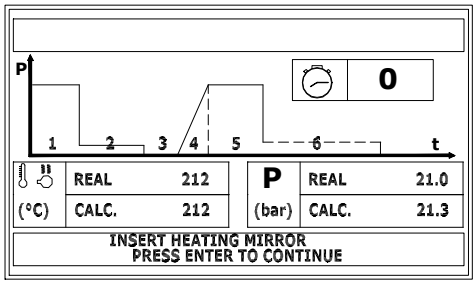
A. Welding cycle graph
B. Heating mirror temperature
C. Calculated temperature
D. Warning/alarm field
E. Chronometer
F. Real pressure
G. Pressure calculated
H. Messages

The menu key let the operator suspend or end the record of welding cycle



Start of the welding cycle

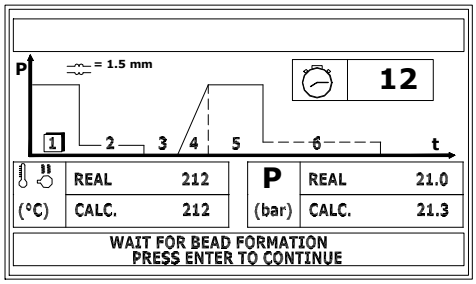
- Insert the heating mirror between the trolleys
- Push the key **Enter** [↵]
- The machine close the trolley and when the pipes get in touch with the heating mirror, the pressure reach the calculated value
- After 30 seconds the CSE switch off the engine of the hydraulic unit engine



Bead formation phase

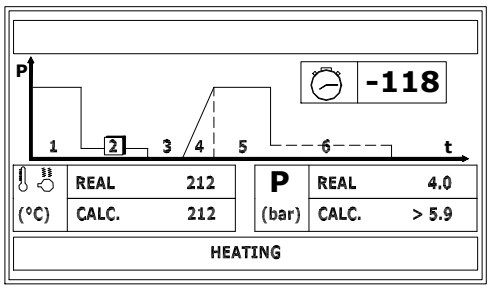
- On the welding graph the number 1 is now blinking
- The chronometer starts
- On the upper left corner of the screen you can see the value of the bead height
- Once the bead height has been achieved,

  immediately Push the **Enter key** [↵]



Heating phase

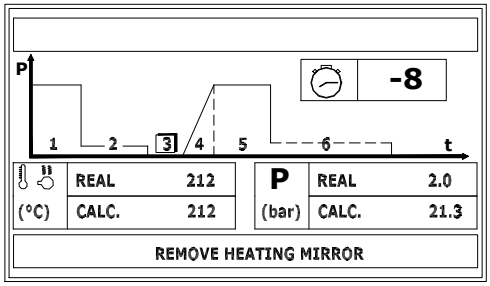
- The pressure decrease under the maximum calculated value, the CSE switch off the hydraulic unit engine after 10 seconds
- The chronometer start the countdown
- The lower row show that we are in the heating phase



Change over phase

Within 4 seconds from the end of the phase 2 the machine emits a acoustic warning

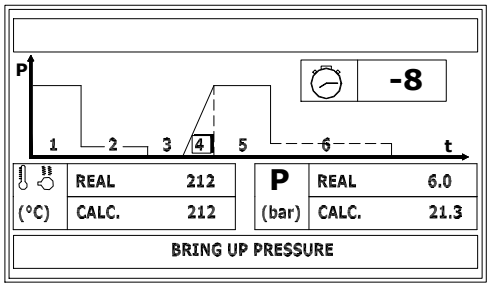
- The changeover time countdown begin on the chronometer
- The CSE unit opens the trolley
- If the machine has not any MDD device, manually remove the heating mirror in the fastest way possible
- The machine completely opens the trolley and close it again



Ramp phase

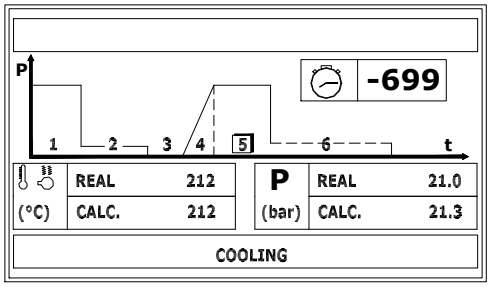
As soon as the changeover phase ends, the machine immediately begins the ramp phase countdown. On the welding graph the number 4 starts blinking

- The pressure increases to the calculated value



Cooling phase

At the end of the ramp phase automatically start the countdown for the cooling phase (phase 5)
After 10 seconds the CSE unit switch off the hydraulic unit engine maintaining the welding pressure and eventually restoring in case of pressure decrease

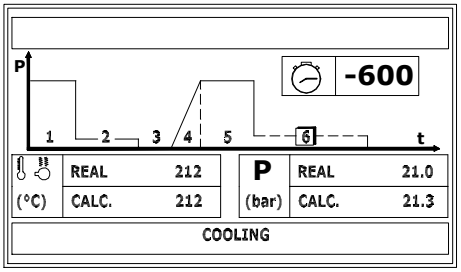


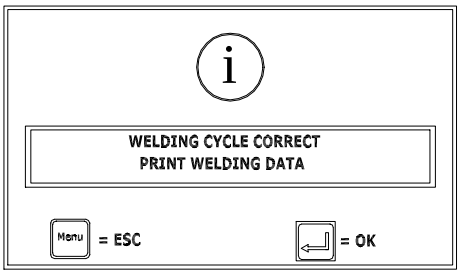
Welding cycle and printing

At the end of the cycle the CSE ask for printing the final report of the welding cycle.

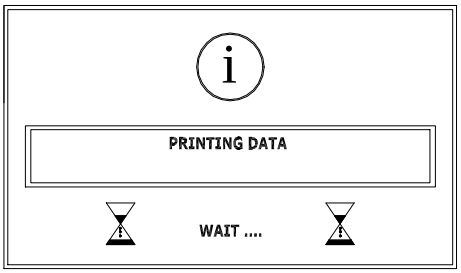
Push the **Menu key** (Esc) to cancel the printing

Push Enter [↵] to confirm the printing





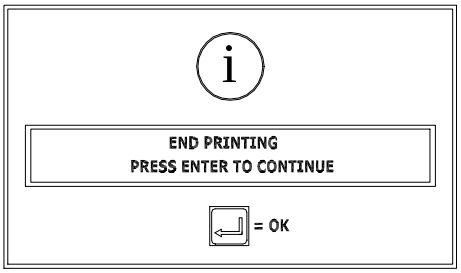
If you confirm the display advise that the machine is printing.



At the end of the printing phase the display show a message asking if you want to continue.

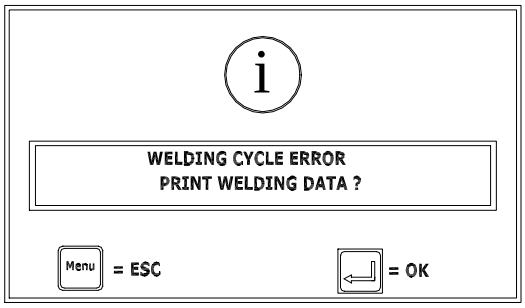
Push the **enter key** [↵] to begin a new welding cycle.

(the display will show again the first screen containing all the values relieved by the machine)



10. Welding cycle errors

During the welding cycle all welding cycle errors will be shown in the upper row of the screen. The CSE emits an acoustic warning!

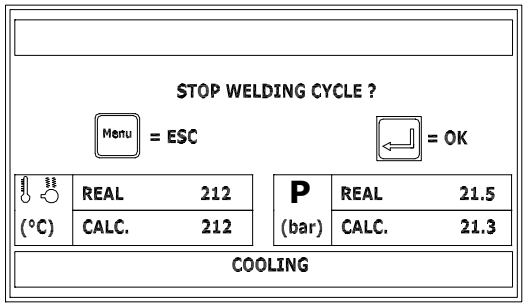


The errors compromise the recording of the welding cycle only in the case that the warning messages last over the allowed limit. In this case the welding cycle will be immediately stopped

The CSE records the following errors:

- **Errors concerning the pressure value**. If these errors last more than 20 seconds.
- **Errors concerning the temperature of the heating mirror**. If these errors last more than 20 seconds.
- **Errors concerning the time of the different phases**. The limit of these errors depends on welding norm chosen for the welding cycle

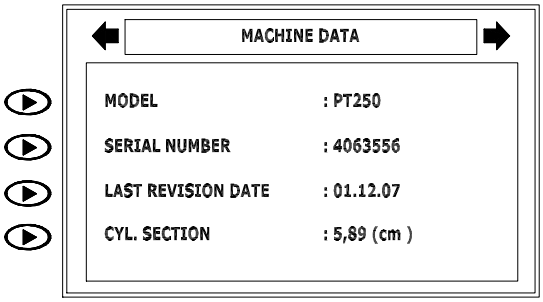
If you want to suspend or end the recording activity on the welding cycle you must first push the menu key and after the enter key [↵] to confirm. If you push the menu key twice the recording is suspended between the first and the second pushing



11. Welding machine data

From the 1st screen push twice the **right arrow key** [▶] The display will show the screen concerning the machine data (as per figure aside)

To modify a parameter you must push the relative soft key [▶] and insert the desired parameter.



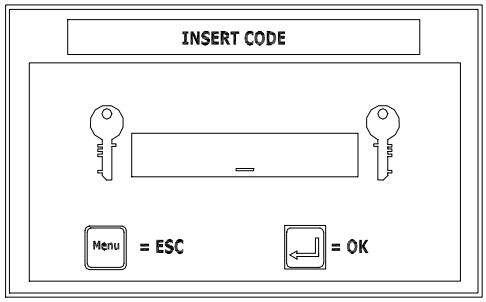
Model

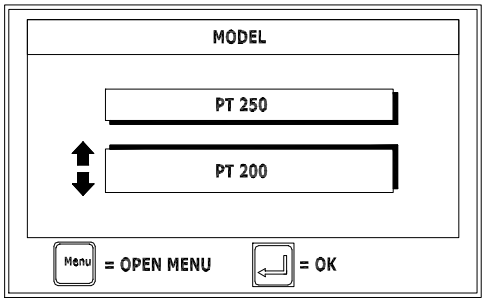
If you push the first upper soft key [▶], you can select between the different preset model of welding machine
This parameter has been protected, therefore you must digit the **SUPERVISOR** password and push the **enter key** [↵]

You must select the appropriate model of the machine by acting on the **up and down arrow key** [▲/▼].

Once selected the appropriated model push the key enter [↵].

The display will show again the previous screen



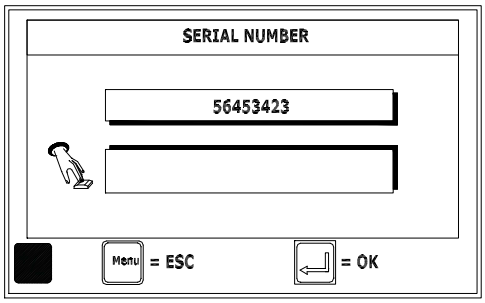


Serial number of the machine

If you push the second upper soft key [▶], you can access to the screen for entering the serial number of the machine.

The upper row shows the actual serial number stored by the CSE.
Digit the serial number of the machine by acting on the numeric keyboard. The second row shows the number that you are entering.

To store the new serial number push thee **enter key** [↵] or push the **Menu key** to return to the previous screen

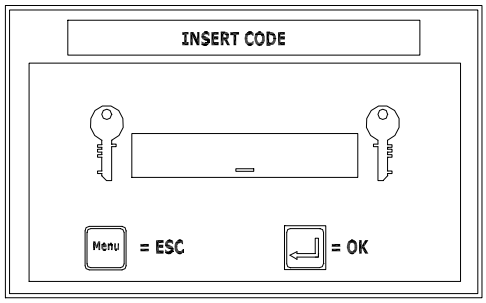


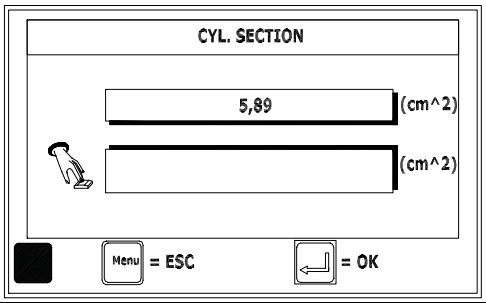
Last revision date

Shows the last revision date. This parameter can be modified only by the distributor

After acting on the appropriate soft key, you can modify the cylinder section. This parameter has been protected, therefore you must digit the **SUPERVISOR** password and push the **enter key** [↵]

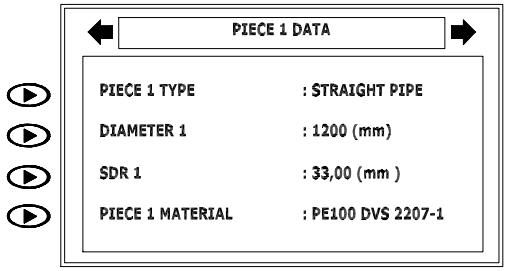
Enter the new section by acting on the keyboard and confirm the data pushing enter [↵]. You can push the **menu key** to return to the previous screen without saving the change.
The key +/- does not affect the entered data.





12. Pipe data PIECE 1 – PIECE 2

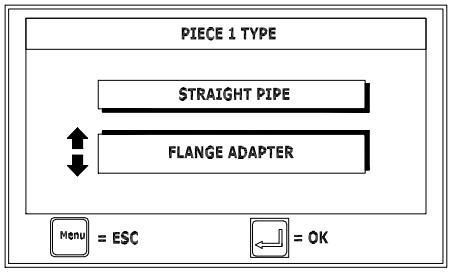
From the 1st screen push three times the **right arrow key [⏵]**
To modify one of the shown parameters you must push the appropriate soft key. **[▶]**



Piece 1 Type

To modify the piece 1 type you must push the appropriate soft key. **[▶]**

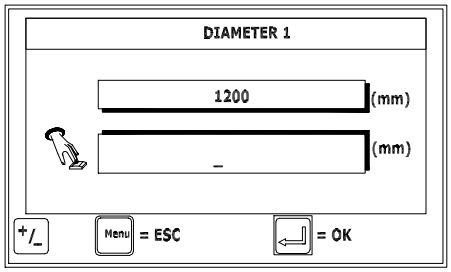
To modify the piece use the **UP and DOWN arrow key [▲/▼]**. Once you reach the required value please confirm by pushing the enter key **[↵]**.



Piece 1 Diameter

To modify the Piece 1 Diameter you must push the appropriate soft key **[▶]**
The upper row shows the actual stored value.

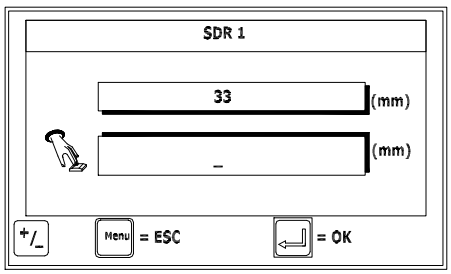
Enter the new Piece 1 diameter by acting on the keyboard and confirm the data pushing enter **[↵]**. You can push the **menu key** to return to the previous screen without saving the change.



Sdr 1

To modify the PIECE 1 SDR you must push the appropriate soft key **[▶]**
The upper row shows the actual stored value.

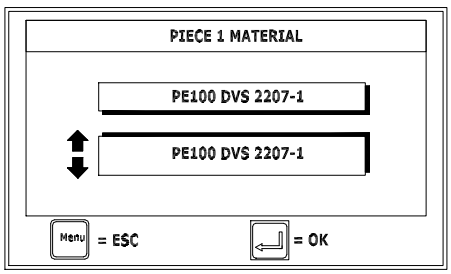
Enter the new Piece 1 Sdr by acting on the keyboard and confirm the data pushing enter **[↵]**. You can push the **menu key** to return to the previous screen without saving the change.



Piece 1 Material

To modify the Piece 1 Material you must push the appropriate soft key. **[▶]**

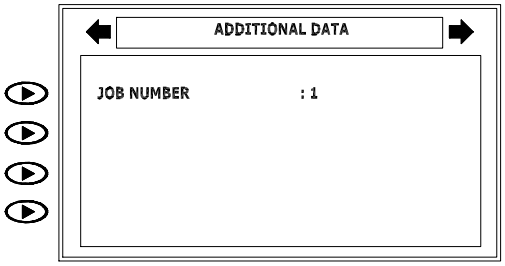
To modify the Piece 1 Material use the **UP and DOWN arrow key [▲/▼]**. Once you reach the required value please confirm by pushing the enter key **[↵]**.



13. Additional Data

From the 1st screen push four times the **right arrow key** [▶]

In this screen you can modify the data concerning the job number



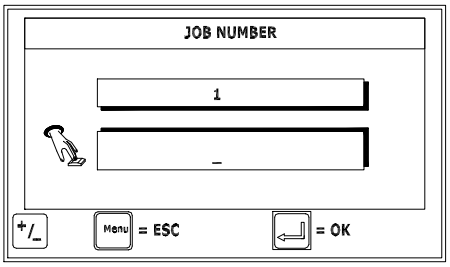
Job number

To modify the operator's name you must push the appropriate soft key [▶]

The upper row shows the actual stored value.

Digit the number of the job and push the **enter key** [↵]

You can push the **menu key** to return to the previous screen without saving the change.



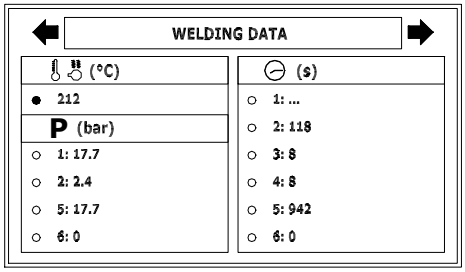
14. Welding data

From the 1st screen push five times the **right arrow key** **[▶]**

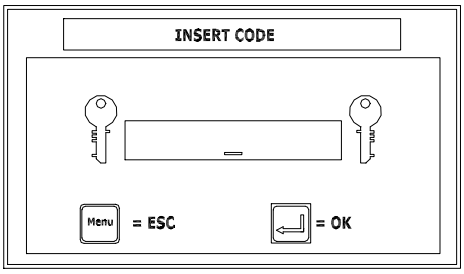
In this screen you can modify the welding parameter calculated by the CSE (all the values are protected by a password):

To modify a parameter:

- Move the selector (black dot) on the parameter to modify by acting on the keys **[▲/▼]**
- Push the **enter key [↵]**



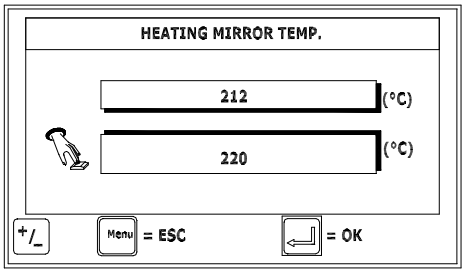
- The CSE ask to digit the password:
- Digit the **SUPERVISOR –OPERATOR password** for the and push **enter key [↵]**



The upper row shows the actual stored value.

- If, for example, you have chosen to modify the temperature, you must digit the new value by acting on the keyboard
- Push the **enter key [↵]** to confirm

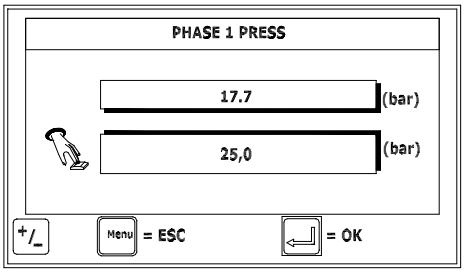
You can push the **menu key** to return to the previous screen without saving the change.



The upper row shows the actual stored value.

- If, for example, you have chosen to modify one of the pressure, you must digit the new value by acting on the keyboard
- Push the **enter key [↵]** to confirm

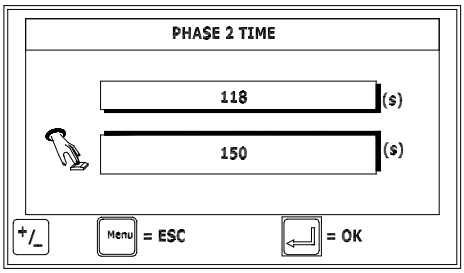
You can push the **menu key** to return to the previous screen without saving the change.



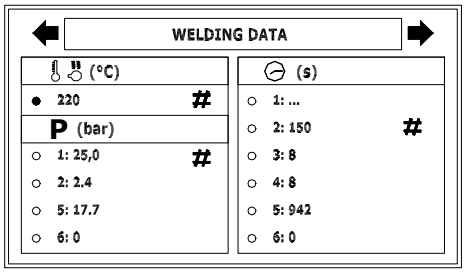
The upper row shows the actual stored value.

- If, for example, you have chosen to modify one of the phase time, you must digit the new value by acting on the keyboard
- Push the **enter key [↵]** to confirm

You can push the **menu key** to return to the previous screen without saving the change.



All the modified data will be marked with the symbol **#.** In the next welding, if the data related to the pipe will be not modified again, the CSE will ask to confirm if you want to maintain the modifications

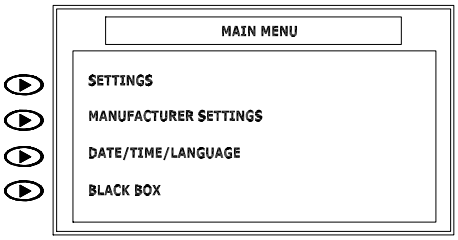


15. Calibrating the heating mirror temperature probe

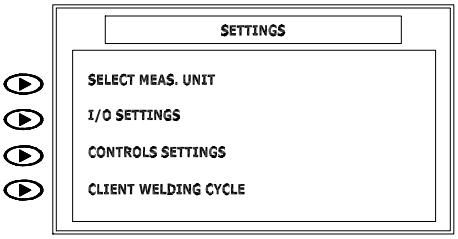
To operate this operation kindly follows the below steps:
1. When the heating mirror reaches the welding temperature wait even 10 minuts
2. Follow the procedure here below

From the 1st screen push the **menu key** to access to the **MAIN MENU** screen. From the main menu screen push the **soft key [▶]** related to the **SETTINGS** voice.

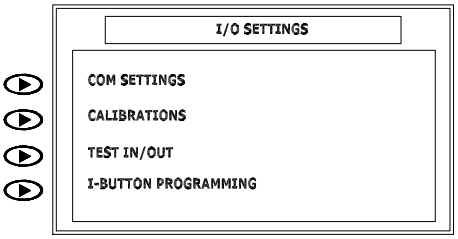
Now push the **soft key [▶]** related to the **I/O SETTINGS** voice



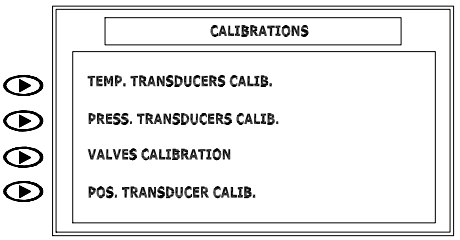
Select the voice **CALIBRATIONS** by acting on the appropriate **soft key [▶]**

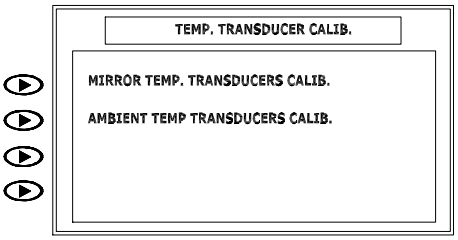


Select the voice **TEMP. TRANSDUCERS CALIB.** by acting on the appropriate **soft key [▶]**



Select the voice **MIRROR TEMP. TRANSDUCERS CALIB.** by acting on the appropriate **soft key [▶]**



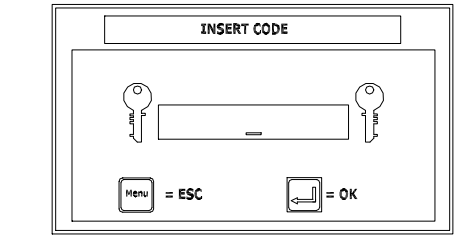


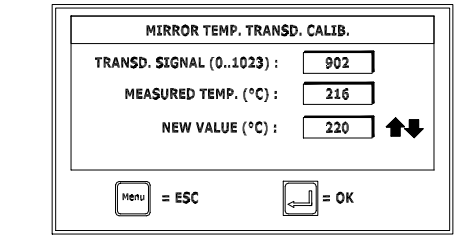
Digit the **SUPERVISOR** password and push the **enter key [↵]**

By acting on the **UP and Down arrow key [▲/▼]** You can increase or decrease the value.

Once you reach the desired value push the **enter key [↵]** to confirm

You can push the **menu key** to return to the previous screen without saving the change.



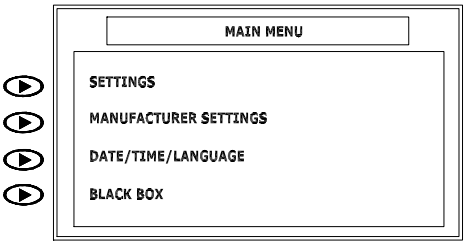


16. Calibrating the ambient temperature probe

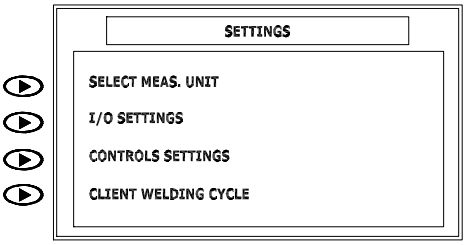
To operate this operation kindly follows the below procedure:

From the 1st screen push the **menu key** to access to the **MAIN MENU** screen. From the main menu screen push the **soft key [▶]** related to the **SETTINGS** voice.

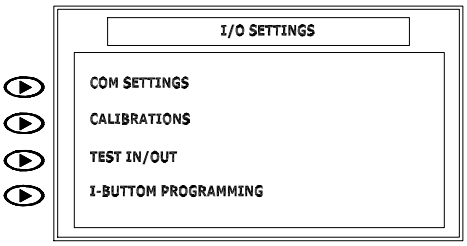
Now push the **soft key [▶]** related to the **I/O SETTINGS** voice



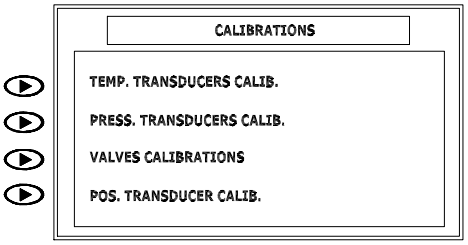
Select the voice **CALIBRATIONS** by acting on the appropriate **soft key [▶]**



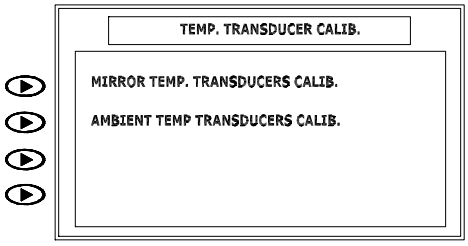
Select the voice **TEMP. TRANSDUCERS CALIB.** by acting on the appropriate **soft key [▶]**

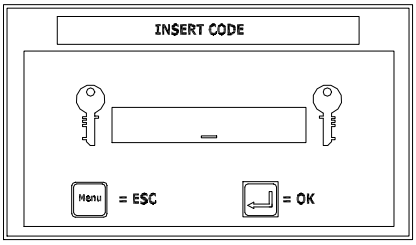


Select the voice **AMBIENT TEMP. TRANSDUCERS CALIB.** by acting on the appropriate **soft key [▶]**



Digit the **SUPERVISOR** password and push the **enter key [↵]**

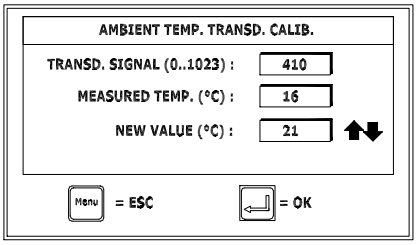




By acting on the **UP and Down arrow key [▲/▼]** You can increase or decrease the value.

Once you reach the desired value push the **enter key [↵]** to confirm

You can push the **menu key** to return to the previous screen without saving the change.

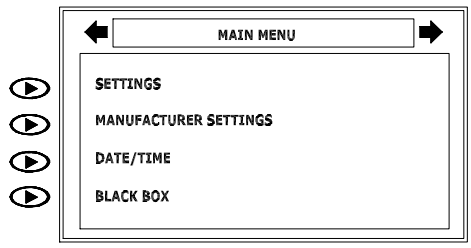


17. Calibrating the pressure transducer

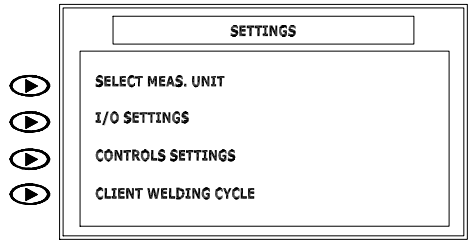
When change the pressure transducer might be necessary calibrate the pressure value. To operate this operation kindly follows the below procedure:

From the 1st screen push the **menu key** to access to the **MAIN MENU** screen. From the main menu screen push the **soft key** [▶] related to the **SETTINGS** voice.

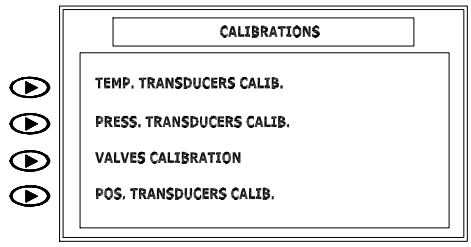
Now push the **soft key** [▶] related to the **I/O SETTINGS** voice



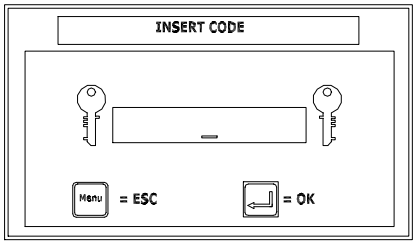
Select the voice **CALIBRATIONS** by acting on the appropriate **soft key** [▶]



Select the voice **PRESS. TRANSDUCERS CALIB.** by acting on the appropriate **soft key** [▶]

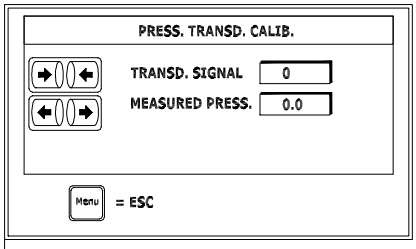


Digit the **SUPERVISOR** password and push the **enter key** [↵]



Now push the **soft key** [▶] related to the close trolleys icon.

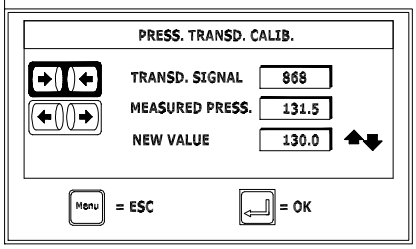
The machine closes the trolleys and the pressure increases to the maximum value



By acting on the **UP and Down arrow key** [▲/▼] You can increase or decrease the value.

Once you reach the desired value push the **enter key** [↵] to confirm

You can push the **menu key** to return to the previous screen without saving the change.

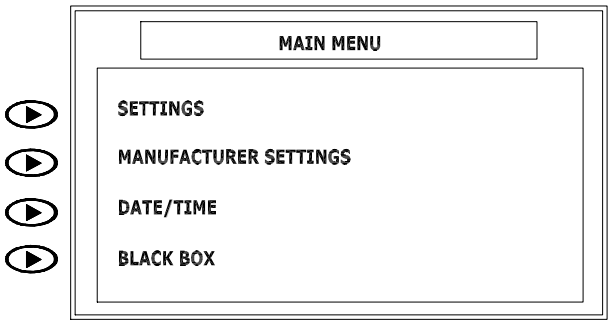


18. Heating mirror temperature survey during the welding cycle

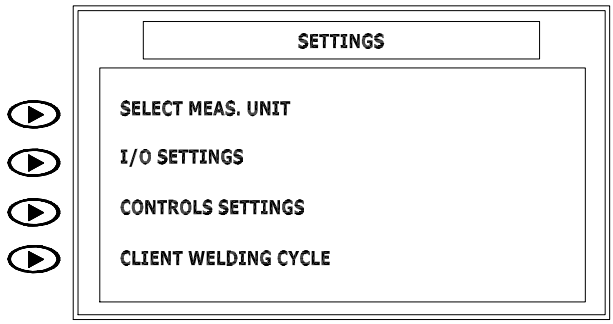
From the 1st screen push the **menu key** you will access to the **main menu screen**

It is possible to switch off the heating mirror temperature survey during the welding cycle. In this case the value concerning the heating mirror will be not saved in the weld database

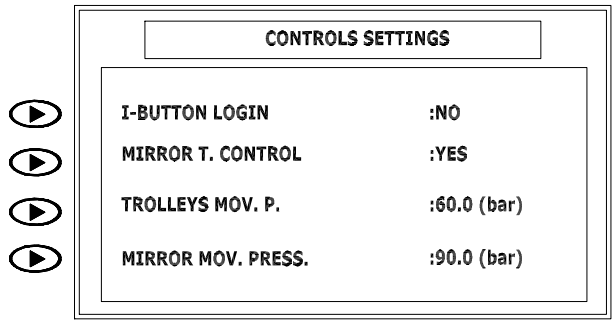
From the main menu select the **SETTINGS** voice by acting on the appropriate soft key [▶]



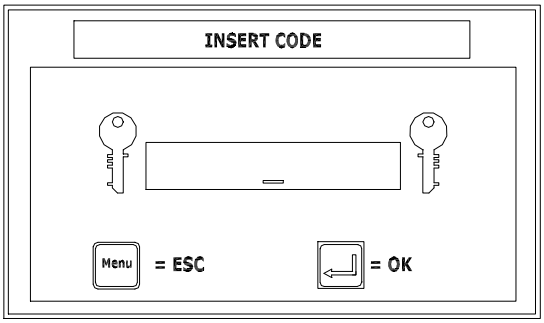
Select the voice **CONTROLS SETTINGS by** acting on the appropriate **soft key** [▶]



Push the key [▶] related to the voice **MIRROR T. CONTROL**



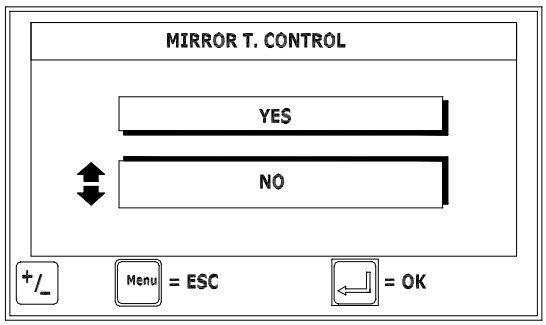
Digit the **SUPERVISOR** password and push the **enter key** [↵]



By acting on the **UP and Down arrow key** [▲/▼] You can include or not the heating mirror survey during the welding cycle.

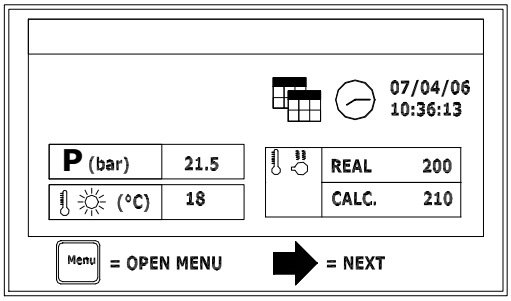
Push the **enter key** [↵] to confirm

You can push the **menu key** to return to the previous screen without saving the change.



19. Black box (Welds database)

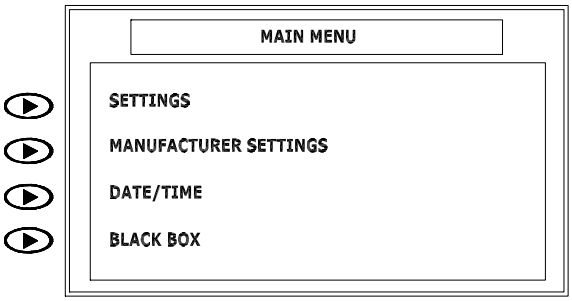
From the 1st screen push the **Menu key**



The display shows the **MAIN MENU.** From the **main menu** you can access to the following parameters:

- **SETTINGS**
- **MANUFACTURER SETTINGS**
- **DATE/TIME/LANGUAGE**
- **BLACK BOX**

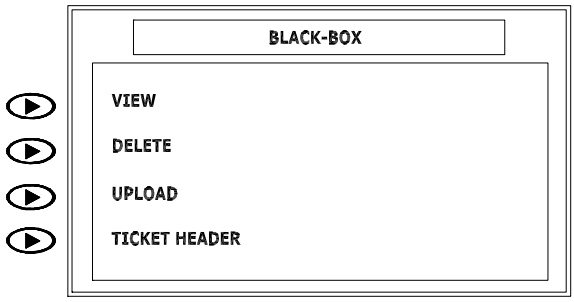
By Acting on the related **soft key** [▶] you can access to the **BLACK BOX menu**



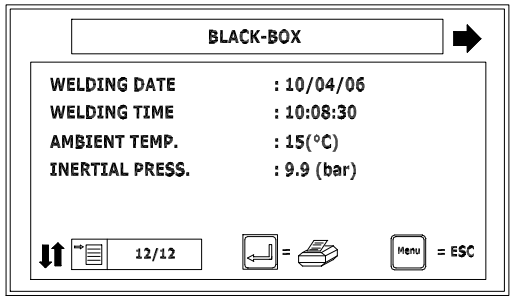
The **BLACK BOX menu** shows the following voices:

- **VIEW**
- **DELETE**
- **UPLOAD**
- **TICKET HEADER**

To check the welds contained in the database act on the **soft key** [▶] related to **VIEW**

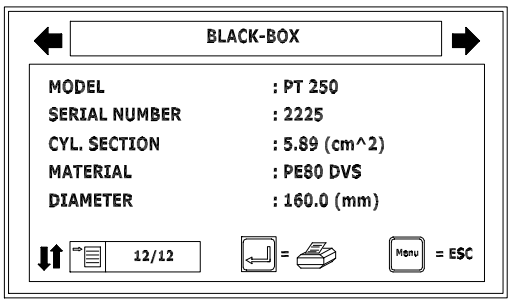


You can view all the data concerning a single welding by acting on the **Right arrow key** [▶] You can select the other welds by acting on the **Up and Down arrow key** [▲/▼]. In the right lower corner of the screen you can find the total numbers of records/welding stored at the moment by the MACHINE. As well as the reference number of the welding record selected.



From any screen concerning the database you can push the following keys:

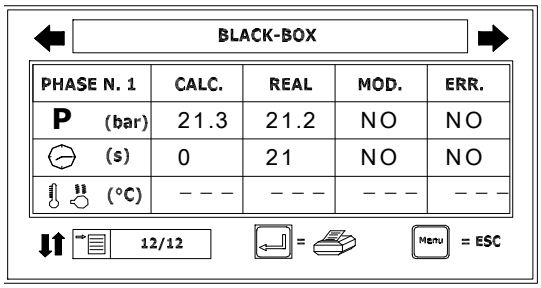
- By pushing the **enter key** the MACHINE will print the ticket concerning the selected welding
- By pushing the **menu key (ESC)** you will return to the black box menu



By acting on the **Right and left arrow key** [⇕] you can browse the data concerning each phase of the welding

Phase 1 (Bead formation phase)

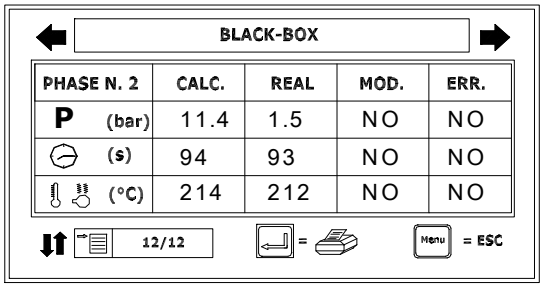
As you can easily note the display shows if some parameters has been modified (MOD.) or if the machine has recorded some error (ERR.) concerning the welding



By acting on the **Right and left arrow key** [⇕] you can browse the data concerning each phase of the welding

Phase 2 (Heating phase)

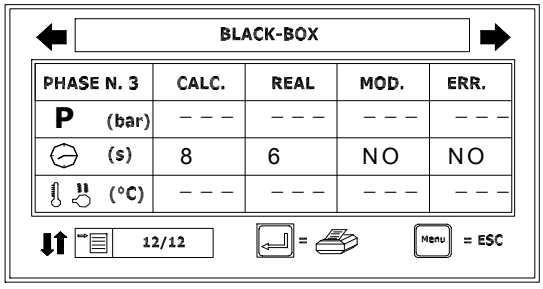
In this phase the MACHINE records data concerning the pressure, time and temperature



By acting on the **Right and left arrow key** [⇕] you can browse the data concerning each phase of the welding

Phase 3 (Changeover phase)

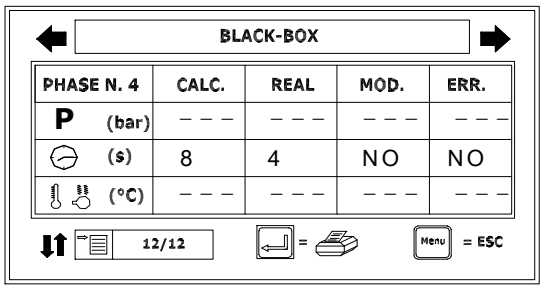
In this phase the MACHINE records data concerning the time.



By acting on the **Right and left arrow key** [⇕] you can browse the data concerning each phase of the welding

Phase 4 (Ramp phase)

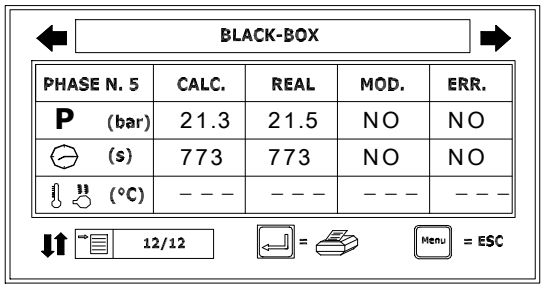
In this phase the MACHINE records data concerning the time.



By acting on the **Right and left arrow key** [⇕] you can browse the data concerning each phase of the welding

Phase 5 (Cooling phase)

In this phase the MACHINE records data concerning the pressure and time.

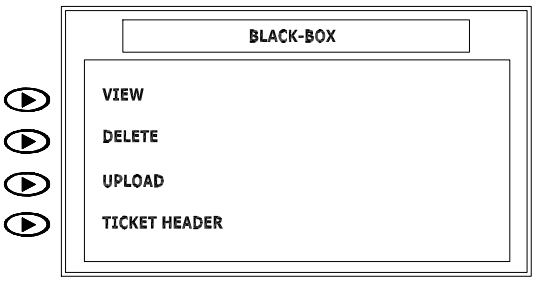


20. Deleting the black-box

Before deleting data contained in the black box double check that a safety copy has been done (on external source like a PC or USB flash memory stick)!!!

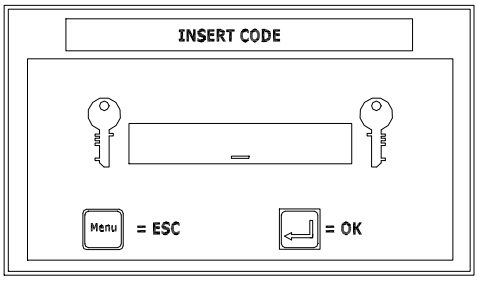
From the **MAIN MENU** select the voice **BLACK BOX** by acting on the appropriate **soft keys** [▶]

From the **BLACK BOX** menu select the voice **DELETE** by acting on the appropriate soft key [▶].



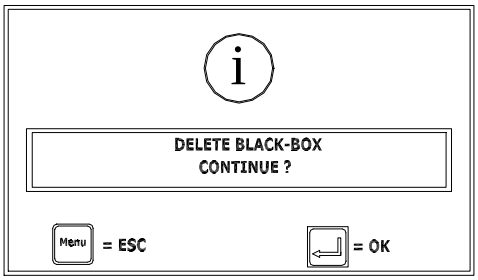
To delete the content of the black box you must digit the **SUPERVISOR** password and push the **enter key** [↵]

You can push the **menu key** to return to the previous screen



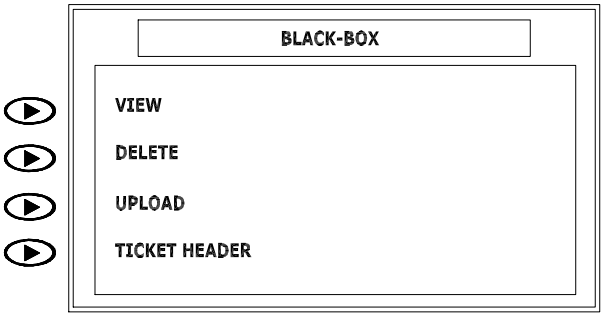
The machine asks to continue or not to delete the black box

Push the **enter key** [↵] **to** confirm or push the **Menu key** to return to the **BLACK BOX menu**

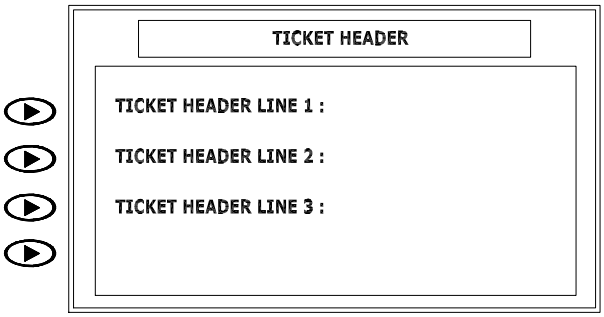


21. Header printed on the final report of the welding

From the 1st screen select the **BLACK BOX menu** by acting on the related **soft key [▶]**
From the **BLACK BOX Menu** select **TICKET HEADER** by acting on the appropriate soft key **[▶]**

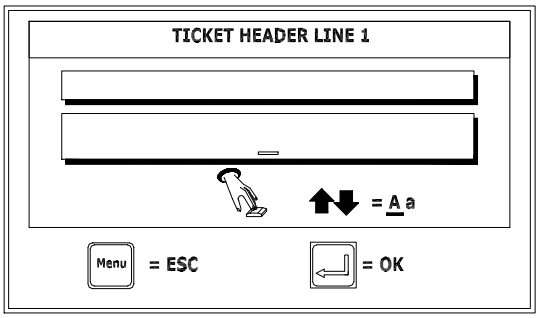


There are 3 lines available for the ticked header.
Each line can contain maximum 16 characters
To insert data in the line, push the appropriate soft key **[▶]**



The upper row shows the actual stored value

You can insert data by acting on the keyboard. With the **UP and DOWN arrow key [▲/▼]** you can select between the upper and lower case. The keyboard use the same system used by the mobile phone SMS system. Therefore if you want to select the letter C, you must quickly push 3 times the key of the number 2. To cancel you can use the backspace key. For a blank space use the key of the number 0

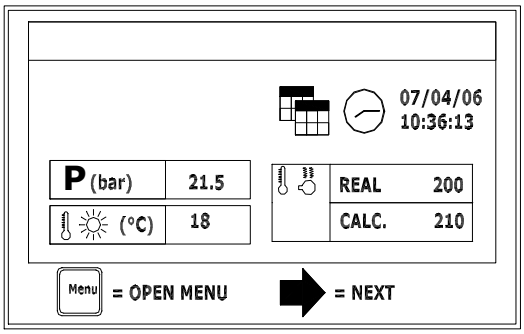


Confirm the inserted data by pushing the enter key

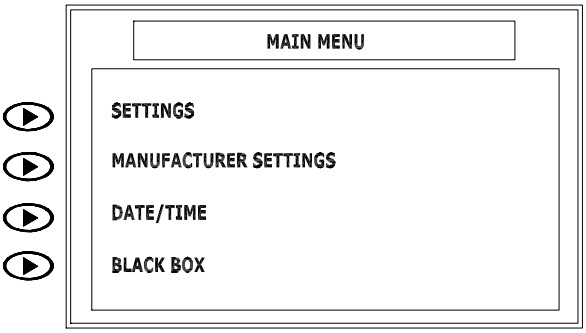
You can push the **menu key** to return to the previous screen without saving the change.

22. Date and time set up

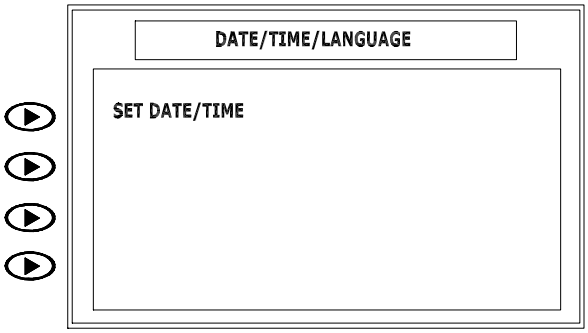
From the 1st screen push the **menu key**



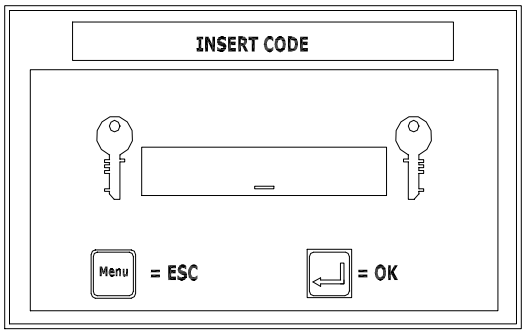
Push the **soft key** [▶] referred to **DATE/TIME**



In the menu **DATE/TIME/LANGUAGE** [▶] by acting on the appropriate soft key select **SET DATE/TIME**



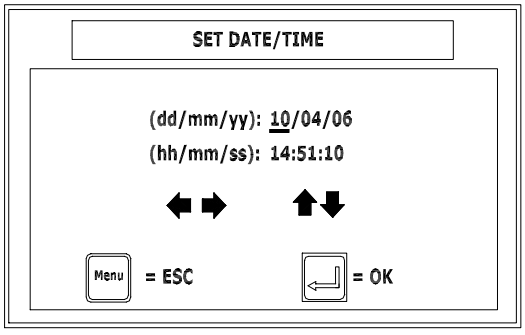
Digit the **SUPERVISOR** password and push the **enter key** [↵]



You can modify the date and time acting on the **UP and DOWN – RIGHT and LEFT arrow key** [▲▼◀▶].

You can confirm pushing on the **enter key** [↵]

You can push the **menu key** to return to the previous screen without saving the changes.



23. Language set up

From the 1st screen push the **LEFT arrow key** [◀].

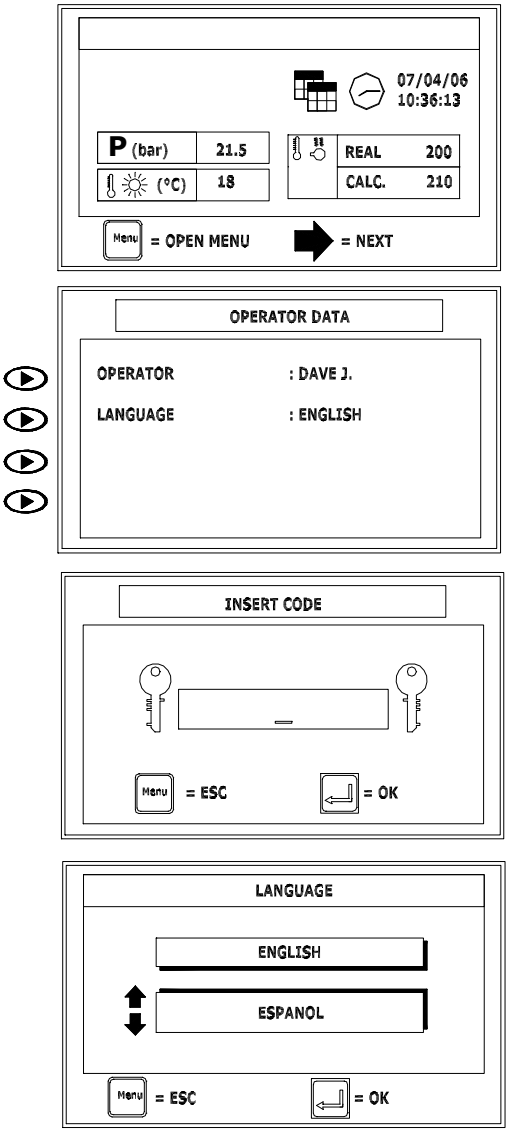
Push the **soft key** [▶] referred to **LANGUAGE**

Digit the **SUPERVISOR** password and push the **enter key** [↵]

By acting on the **UP and DOWN key** [▲/▼] select the required language

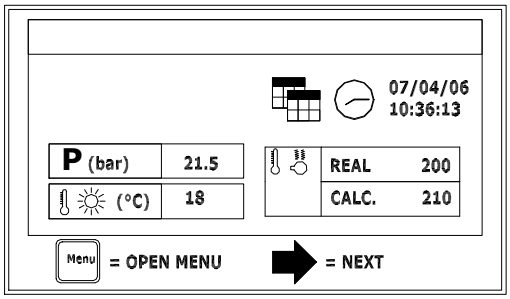
Confirm by pushing on the **enter key** [↵]

You can push the **menu key** to return to the previous screen without saving the change.

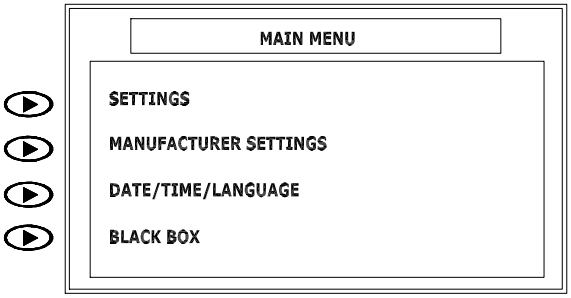


24. Measurements unit set up

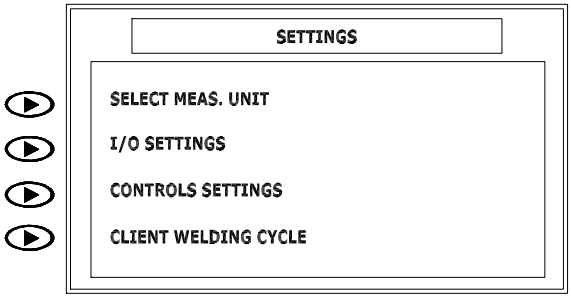
From the 1st screen push the **menu key**



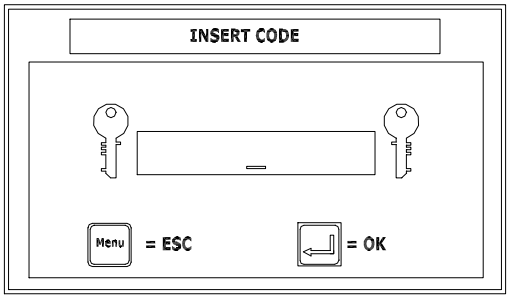
Push the **soft key** [▶] referred to **SETTINGS**



In the menu **SETTINGS** [▶] by acting on the appropriate soft key select **SELECT MEAS. UNIT**



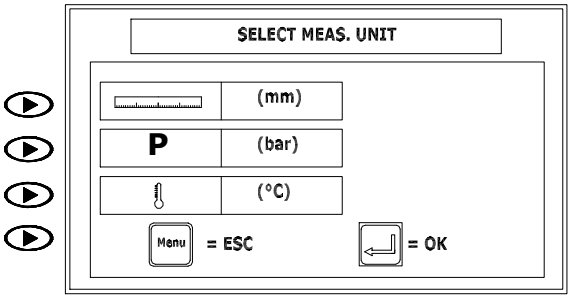
Digit the **SUPERVISOR** password and push the **enter key** [↵]



You can modify the measurement unit by pushing on the appropriate soft key [▶].

Length: mm, inch
Pressure: bar, psi, kN
Temperature:°C,°F

To confirm the changes push the **enter key** [↵]
You can push the **menu key** to return to the previous screen without saving the changes.

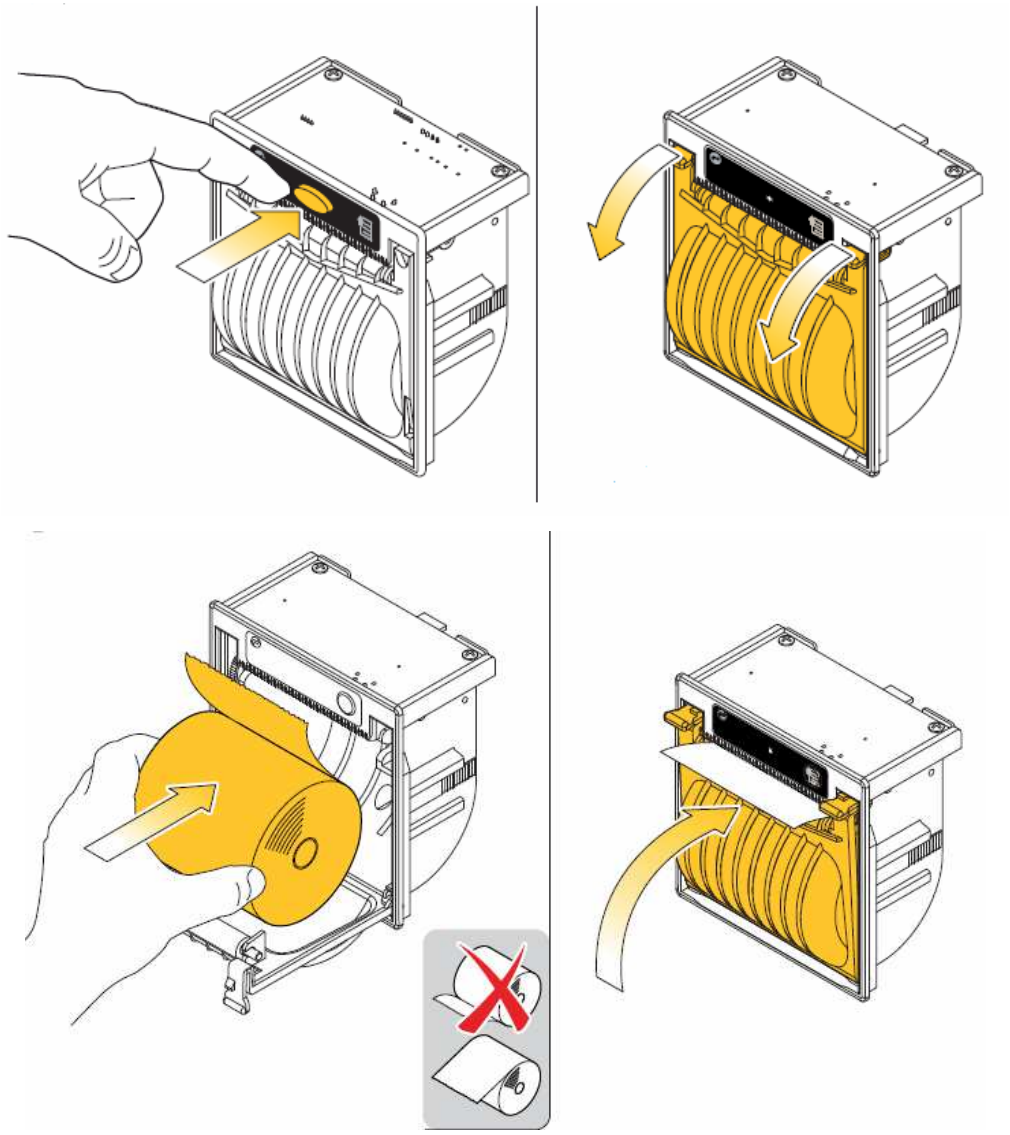


25. Printer

Thermal printer CUSTOM

How to change the roll paper

- Push the button open and place the new printer roll
- Close the door



26. How to upload the content of the black box to a PC

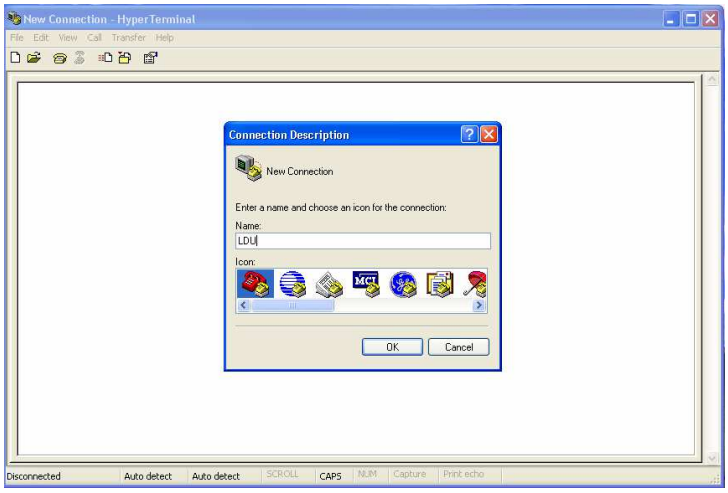
You can upload the content of the black box to PC in three different ways:

- By serial cable with Ms HyperTerminal™
- By USB cable with Memoplan
- By serial cable with Memoplan
- By Pen drive with Memoplan

27. Serial Upload - Hyperterminal

You can transfer the data contained by the black box to a personal computer. Herewith below you will find the procedure to download data to a PC with **Windows XP** OS. In any case you can acquire data from the LDU by using other operating systems (**UNIX, LINUX, OS X and many others**) with a terminal emulation program able to read from the Serial port of you PC.

Windows procedure:



Step 1. Load HyperTerminal:

- Click Start > Run
- In the box which appears type in: **HYPERTRM**
- Click OK.

If you are using a different version of ms Windows OS (for example win 2000) maybe you might see the error message 'Cannot find HYPERTRM'.
You will need to install HyperTerminal:

- Click Start > Settings > Control Panel > Add / Remove Programs.
- In Add / Remove Programs select Properties and then click the Windows Setup tab.
- Double-click Communications
- Check the box for HyperTerminal
- Click OK, and then OK again to install.
- **Note:** You may be asked for your Windows installation disk for this procedure.

Step 2. When HyperTerminal starts you will be presented with a '**Connection Description**' dialogue box:

- Insert a name and click '**Ok**' to continue.

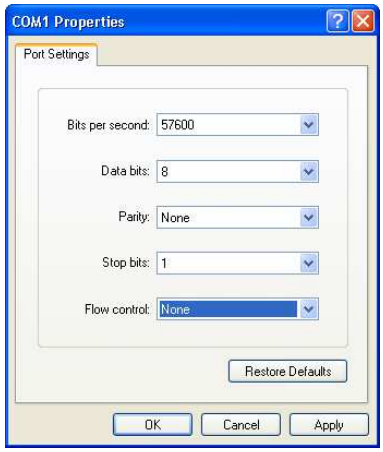
Step 3. This dialog then appears. Click the selection arrow on the "Connect using" list box, and select the COM port your modem is connected to - ***not*** the modem name.

- When you select the COM port, the phone number to dial boxes are greyed.
- Click OK

Step 4. The COM port properties box comes up. For the connection with machine, make sure that you set the Bits per second to 57600.

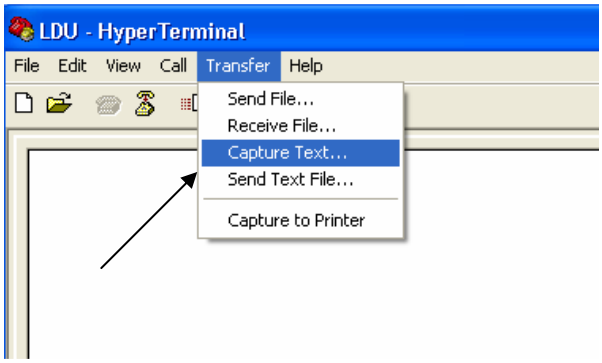
- Make sure that all the parameters have been set as follows

Bits per second	**57600**
Data bits	**8**
Parity	**None**
Stop bits	**1**
Flow control	**None**

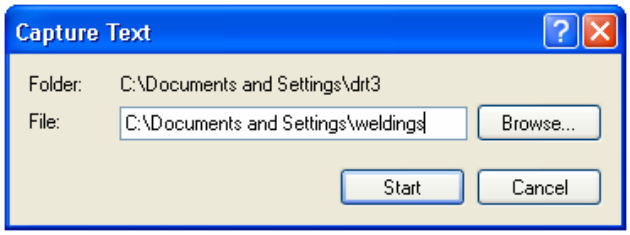


Clicks apply and after click OK.

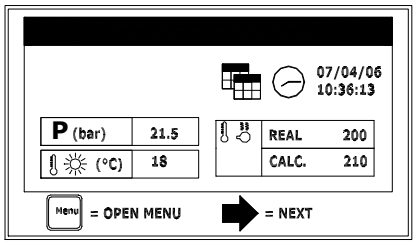
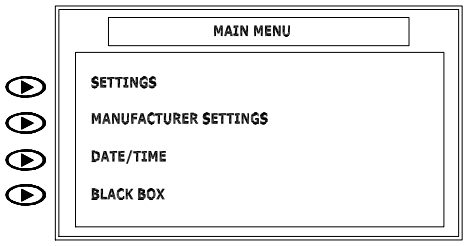
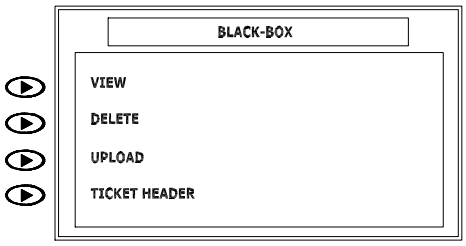
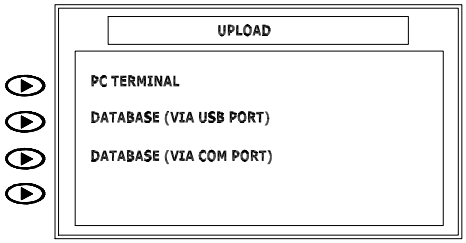
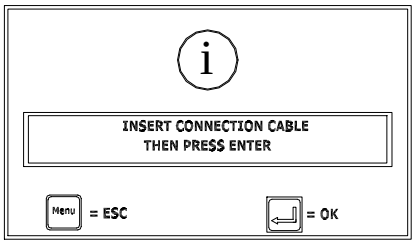
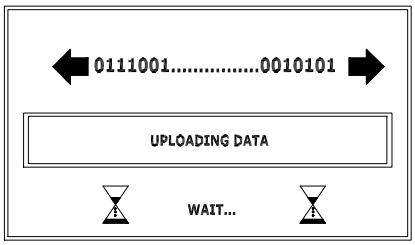
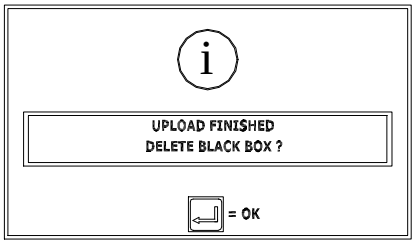
From the Hyper terminal window click Transfer > Capture Text



Enter the file name and the folder where the data has to be saved and click the button Start



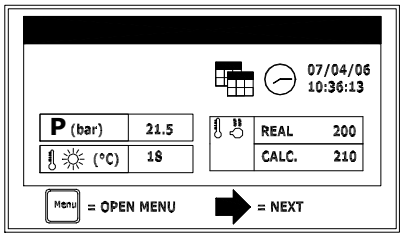
Remove the plastic cover by unscrewing the fixing screw. Connect the machine using the serial cable (can be supplied as an accessory of the LDU) to the COM2 port as shown in the picture

From the 1st screen push the **Menu key**	
From the **MAIN MENU** select the voice **BLACK BOX** by acting on the appropriate **soft keys [▶]**	
From the **BLACK BOX** menu select the voice **UPLOAD** by acting on the appropriate soft key [▶].	
From the **UPLOAD** menu select the voice **PC_TERMINAL** by acting on the appropriate soft key [▶].	
If the database is not empty (it must contain at least 1 record of welding). The LDU ask to insert the serial cable to **UPLOAD** the **BLACK-BOX.** To confirm the changes push the **enter key [↵]** You can push the **menu key** to return to the previous screen without saving the change.	
The machine starts to transfer the data.	
As soon as the machine has finished to upload the data the display shows the message aside You can push the **enter key** to delete the black box content or the Menu button to return to the **Main menu** screen .	

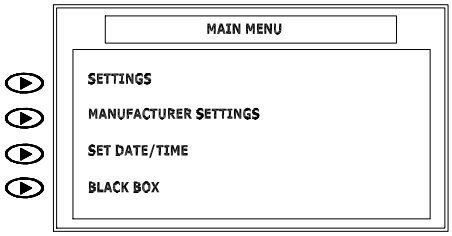
The file created before now contains all data stored in the black box. You can view the file contents by opening with a common ASCII editor (for example you can use notepad.exe)

28. USB CABLE Upload - Memoplan

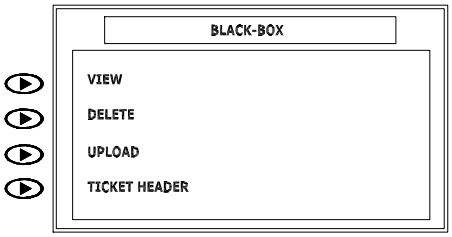
From the 1st screen push the **Menu key**



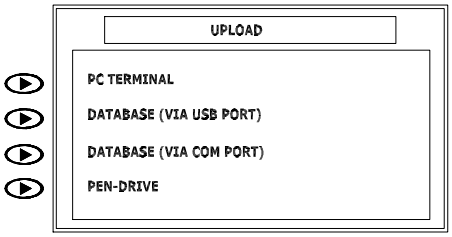
From the **MAIN MENU** select the voice **BLACK BOX** by acting on the appropriate **soft keys** [▶]



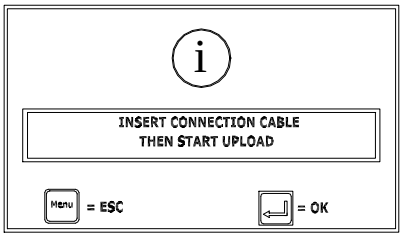
From the **BLACK BOX** menu select the voice **UPLOAD** by acting on the appropriate soft key [▶].



From the **UPLOAD** menu select the voice **DATABASE (VIA USB CABLE)** by acting on the appropriate soft key [▶].

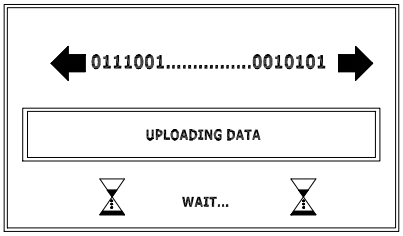


If the database is not empty (it must contain at least 1 record of welding). The LDU asks to insert the USB cable.

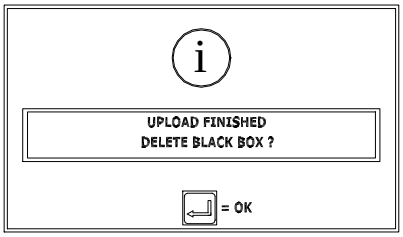


To start the downloading the data to a PC please refer to **MEMOPLAN user's manual**
You can push the **menu key** to return to the previous screen without saving the change.

The machine starts to transfer the data.



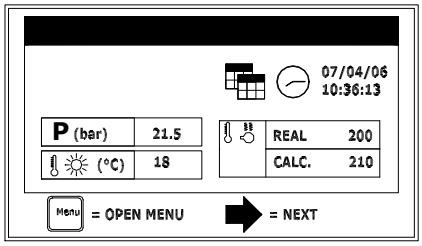
As soon as the machine has finished to upload the data the display shows the message aside



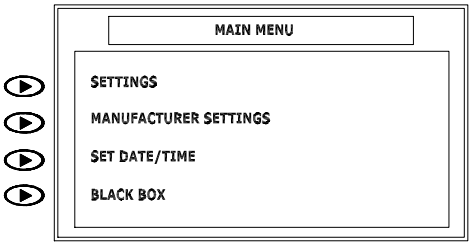
You can push the **enter key** to delete the black box content or the Menu button to return to the **Main menu** screen .

29. PEN DRIVE - Memoplan

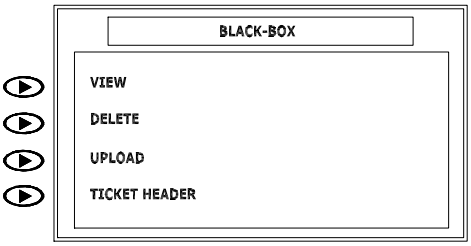
From the 1st screen push the **Menu key**



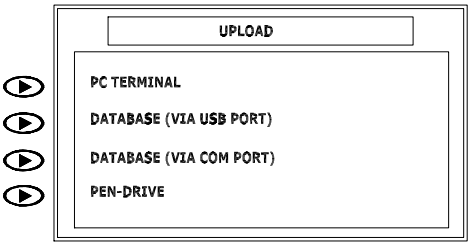
From the **MAIN MENU** select the voice **BLACK BOX** by acting on the appropriate **soft keys** [▶]



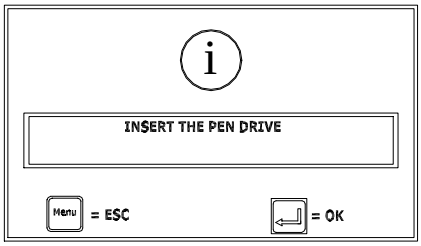
From the **BLACK BOX** menu select the voice **UPLOAD** by acting on the appropriate soft key [▶].



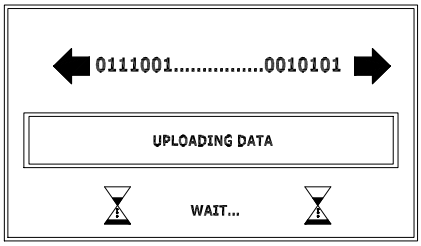
From the **UPLOAD** menu select the voice **PEN-DRIVE** by acting on the appropriate soft key [▶].



If the database is not empty (it must contain at least 1 record of welding). The LDU asks to insert the PEN-DRIVE on the USB/H port. **Attention: kindly check that PEN-DRIVE file system is FAT. Other file systems are not supported!**

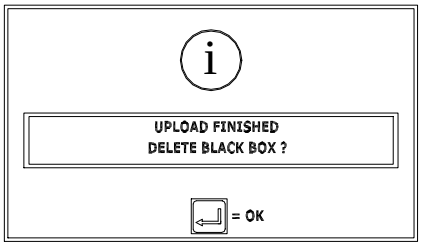


To start the downloading the data to a PC please refer to **MEMOPLAN user's manual**
You can push the **menu key** to return to the previous screen without saving the change



The machine starts to transfer the data.

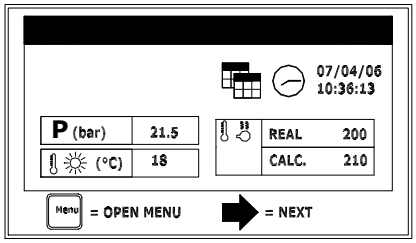
As soon as the machine has finished to upload the data the display shows the message aside



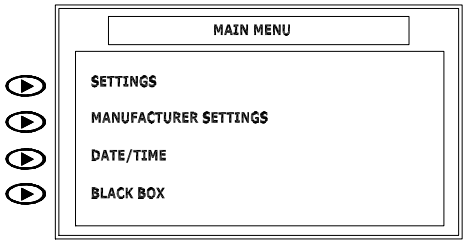
You can push the **enter key** to delete the black box content (**double check that the content of black box has been properly transferred before deleting!**) or the Menu button to return to the **Main menu** screen.

30. SERIAL Upload - Memoplan

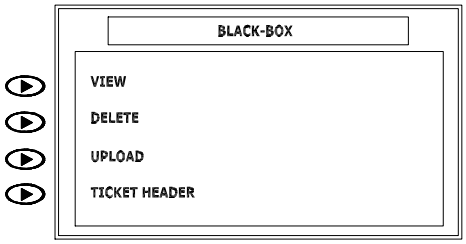
From the 1st screen push the **Menu key**



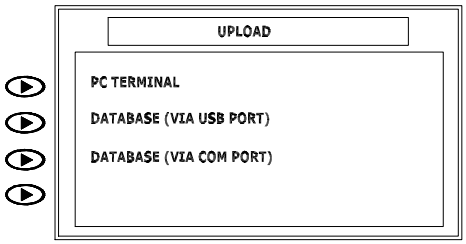
From the **MAIN MENU** select the voice **BLACK BOX** by acting on the appropriate **soft keys** [▶]



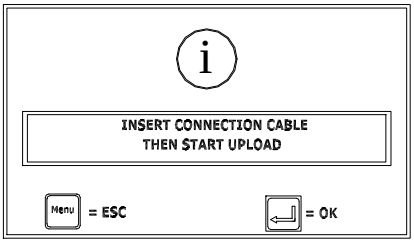
From the **BLACK BOX** menu select the voice **UPLOAD** by acting on the appropriate soft key [▶].



From the **UPLOAD** menu select the voice **DATABASE (VIA COM PORT)** by acting on the appropriate soft key [▶].

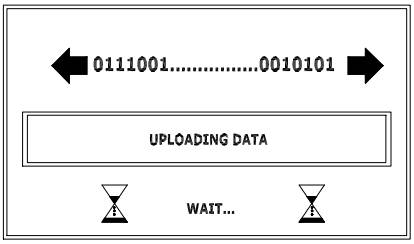


If the database is not empty (it must contain at least 1 record of welding). The Machine asks to insert the Serial cable.



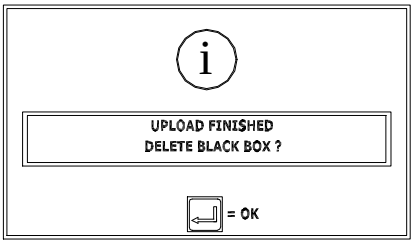
To start downloading the data to a PC please refer to **MEMOPLAN user's manual**
You can push the **menu key** to return to the previous screen without saving the change.

The machine starts to transfer the data.



As soon as the machine has finished to upload the data the display shows the message aside

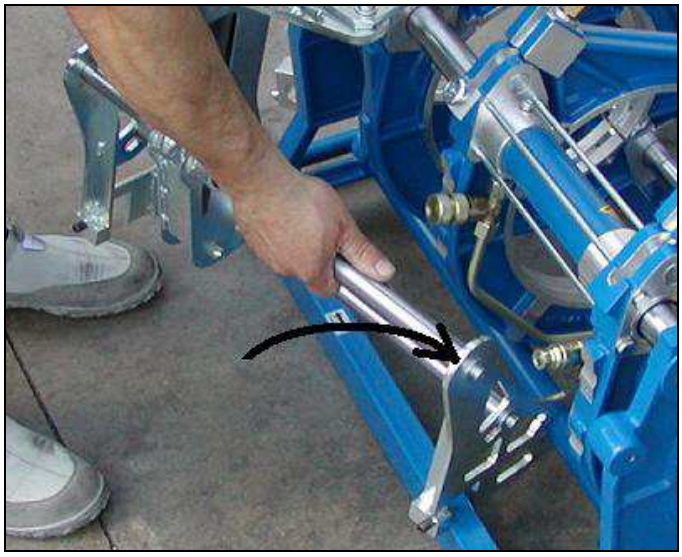
You can push the **enter key** to delete the black box content or the Menu button to return to the **Main menu** screen.



Addendum A Heating mirror automatic disconnecting device (MDD) for PT315

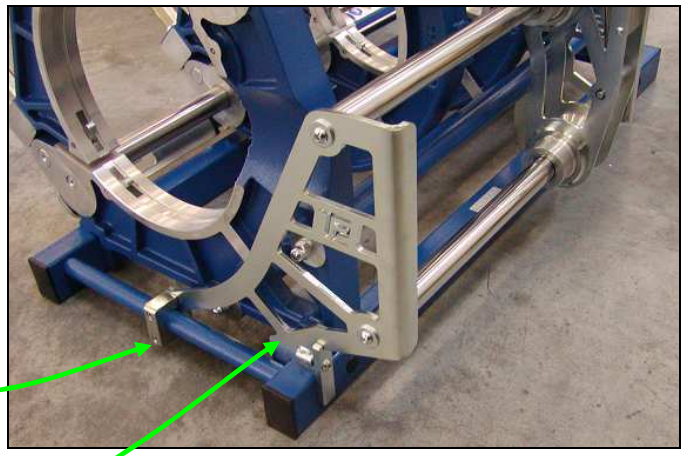
Together with CSE we can supply as optional the MDD system (accessory for the automatic disconnecting device for heating mirror).

Place the MDD on the frame of the basic machine as per figure aside.

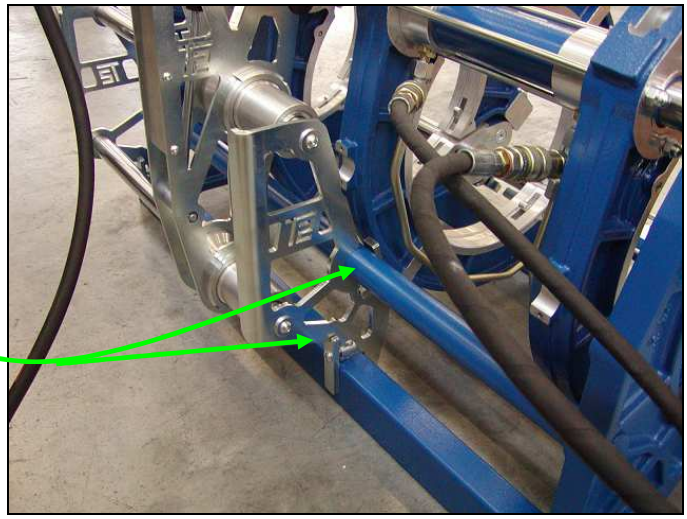


The left part of the MDD must be placed between the side support and the bar of the frame as per picture aside.

Fix the holdfast by screwing the supplied screws

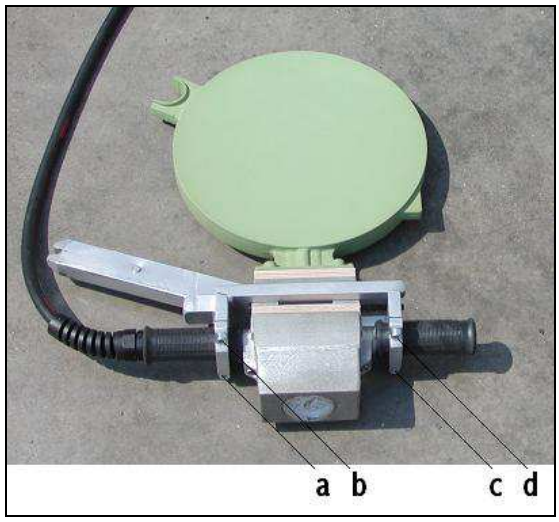


Fix the MDD with the supplied screws



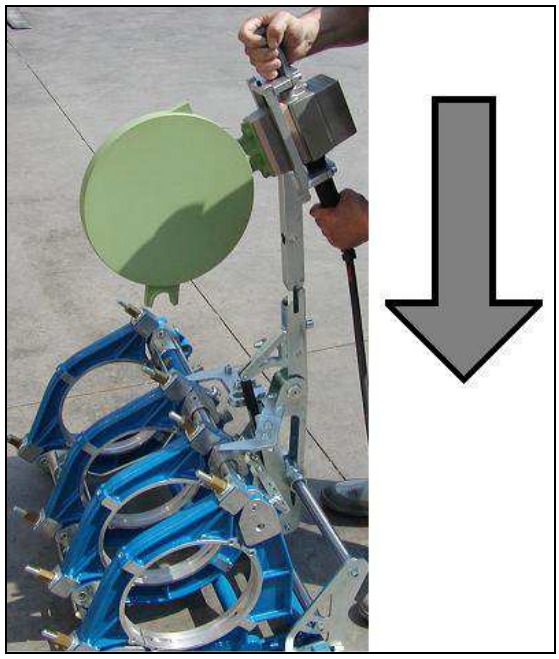
Set up of the MDD arm

You must fix the heating mirror on the appropriate holes by the 4 screws (a,b,c,d) as per figure aside



Fix the MDD arm on the same side of the heating mirror cable

How to insert the heating mirror



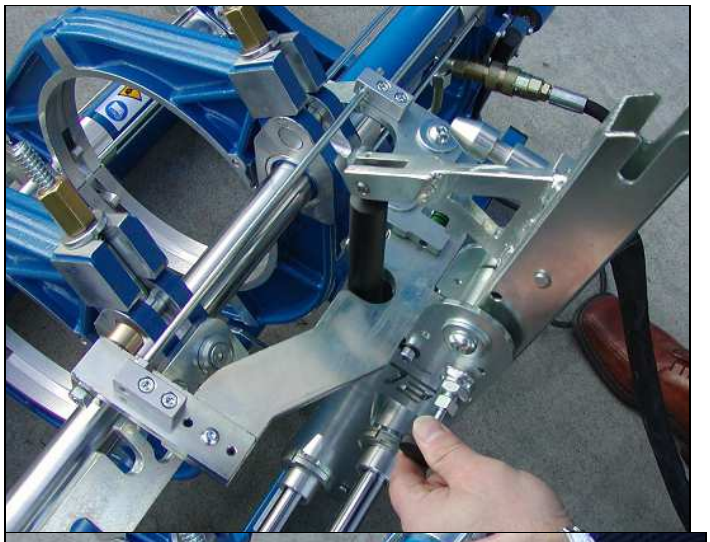
At the beginning of the welding cycle push down until you hear a sort of click.
Once the heating mirror has been hooked between the clamps you can proceed with the welding cycle.

Warning!
Kindly check that the trolleys are not completely open (you can close the trolley for 2-3 cm) otherwise the heating mirror will be not hooked in.

When the basic machine has a configuration with 3 moveable clamps you must change the MDD position.

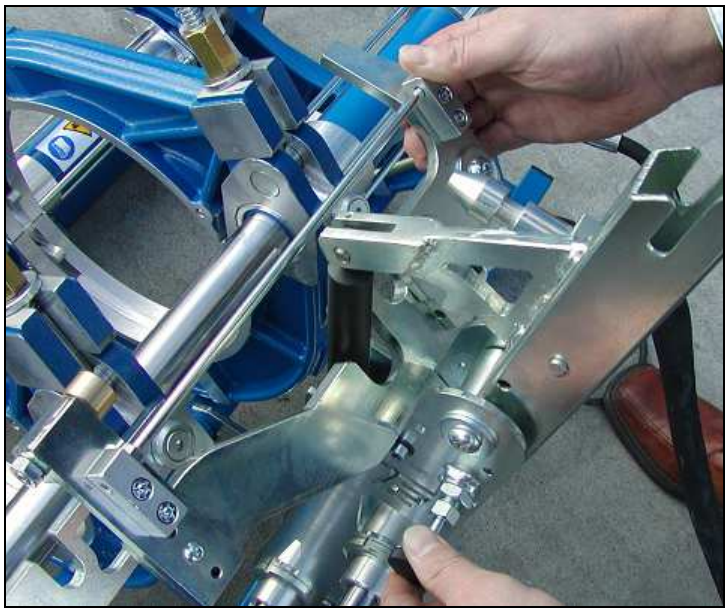
To change the MDD position, follow the procedure here below:

1.Pull the knob as per side figure

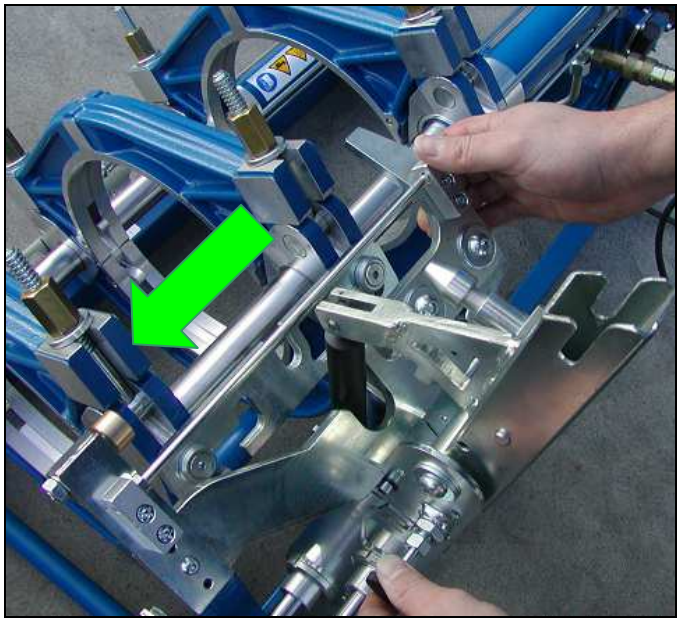


2. While pulling the knob lift the double hooking lever

3. Complete the lifting of the double hooking lever



4. Move the frame to left and hook the double hooking lever



Addendum B How to adapt the heating mirror and facing tool for the new CSE control

(models PT160-200-250-315-355-500)

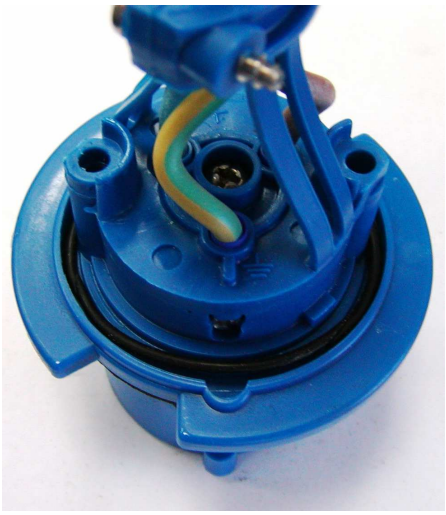
How to adapt the heating mirror and facing tool with the new CSE control (models PT160-200-250-315-355-500)

To use the facing tool and heating mirror with the CSE unit it is necessary modify the following parts:

- The facing tool cable
- The heating mirror cable

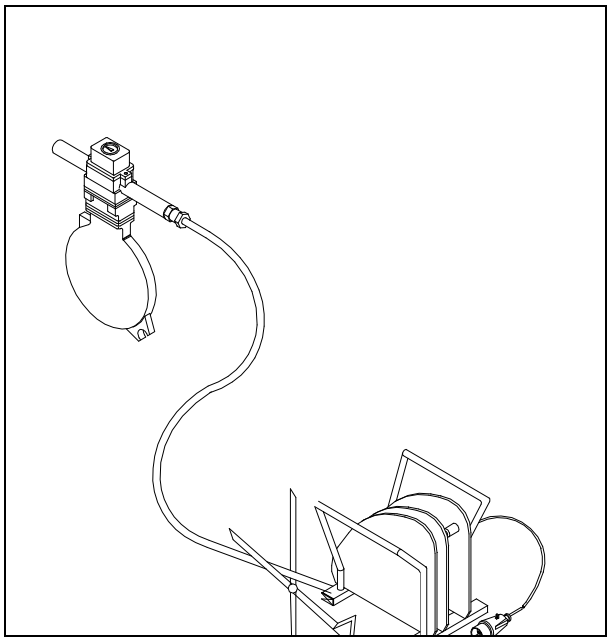
Warning!!! Proceed with the following operations only with the machine switched off and unplugged!

a.1 Facing tool cable
The facing tool must be connected to the CSE control unit by using a 3 poles plug like the one shown in picture.



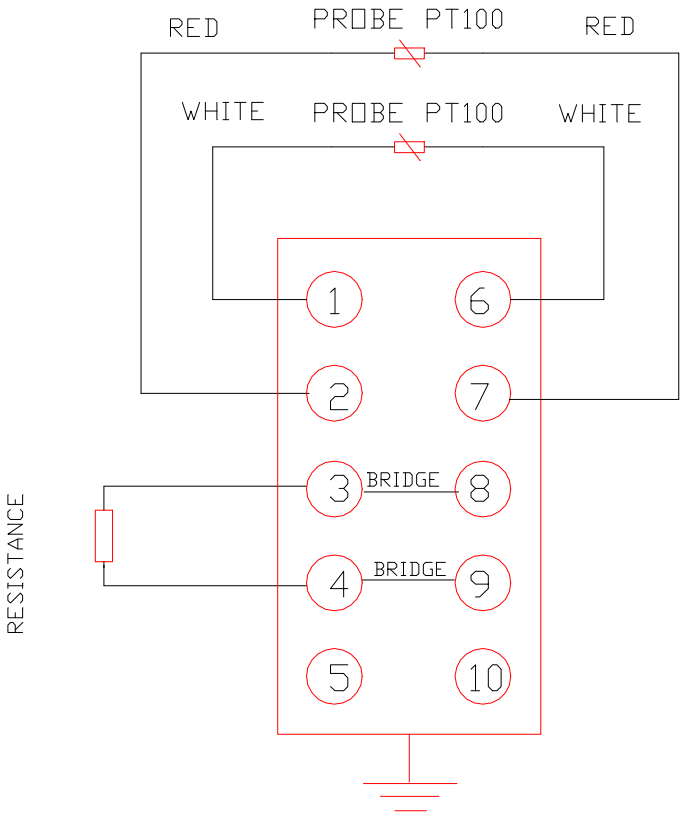
Connect the Y/G cable to the connector marked by the symbol ⏚ ; the other two wires must be connected indifferently to the other two connectors.

a.2 Heating mirror cable



Cut the cable close to the thermostat.

<u>Connect the cables to the 10 pins connector as per scheme below</u>



Addendum C I-button

I-button: Hardware device to identify the users of LDU /CSE.

The I-button must to be connected to the I-button probe of your LDU or CSE to immediately identify the user of the unit.

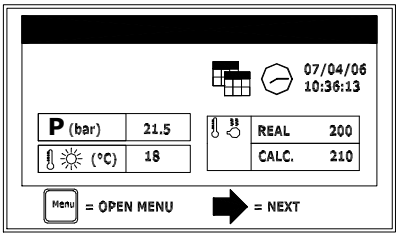
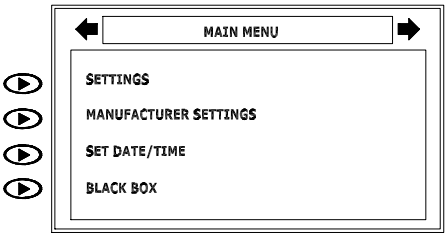
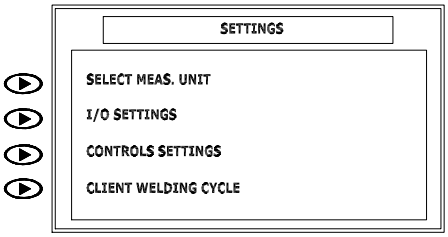
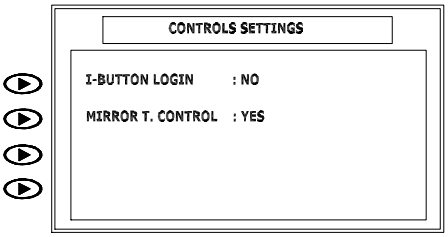
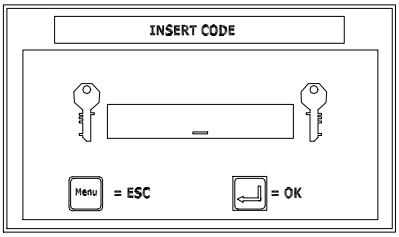
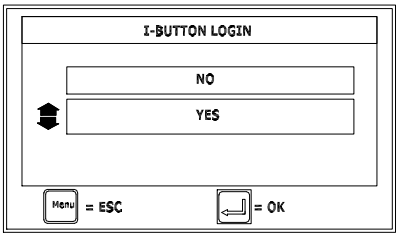
If the LDU or CSE unit has been configured for the use of I-button, only operator or users provided by an I-button can access to the unit

Each I-button must be programmed with the name of the user.

I-button

Configuring CSE KIT for I-button use

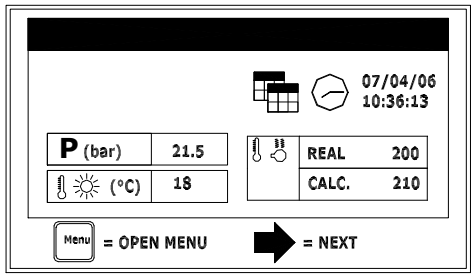
You can configure your CSE unit for an access with or without the I-button.
To login by I-button you must select the appropriate parameter in configuration menu. Check the following procedure.

From the main screen push the button **MENU**	
The screen shows the main menu. Push the soft key [▶] corresponding to **SETTINGS**	
In the settings menu push the key [▶] corresponding to **CONTROLS SETTINGS**	
By acting on the soft key[▶] select **I-BUTTON LOGIN**	
The CSE ask to enter a code. Digit the **supervisor password (6)** and push the **ENTER** key [↵]	
Push the up and down arrow key [▲/▼] to select the value **YES** and push the **ENTER** key [↵]. Push repeatedly the **ESC** key to reach the main menu.	

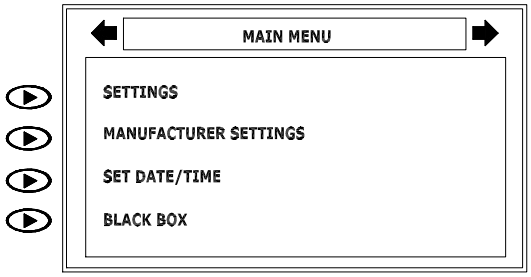
How to program the I-button

To Program an I-BUTTON means to save the operator/user name on the I-button memory. In case you need to change the stored name you can use the same procedure below. You can write and rewrite the I-button memory each time you need without any problem.

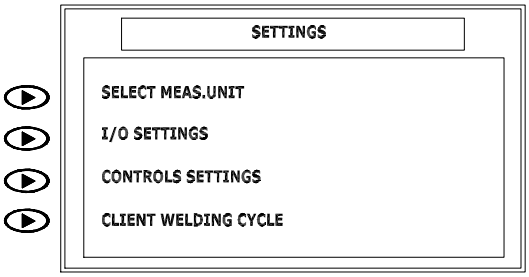
From the main screen push the button MENU



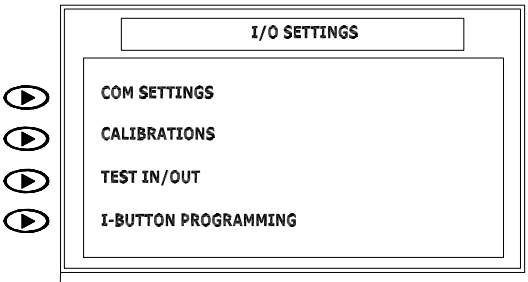
The screen shows the **MAIN MENU**. By acting on the soft key [▶] select **SETTINGS**



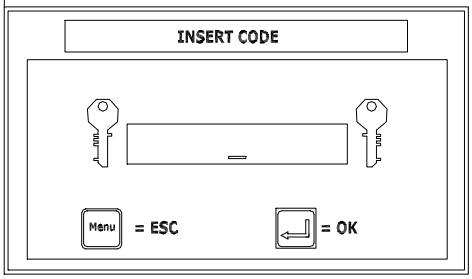
In the **SETTINGS MENU** act on the soft key [▶] referred to **I/O SETTINGS**



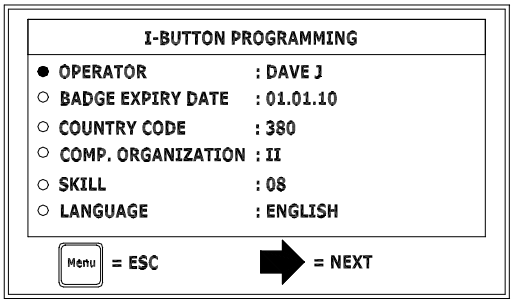
Now push the soft key [▶] referred to **I-BUTTON PROGRAMMING**



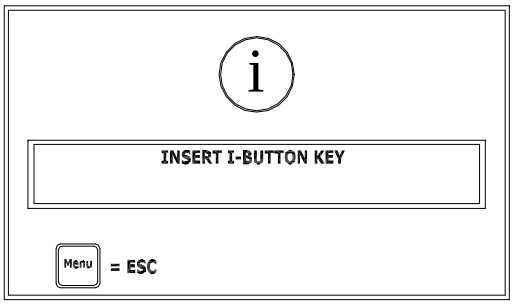
The CSE ask to enter a code. Digit the **supervisor password (6)** and push the **ENTER** key [↵]



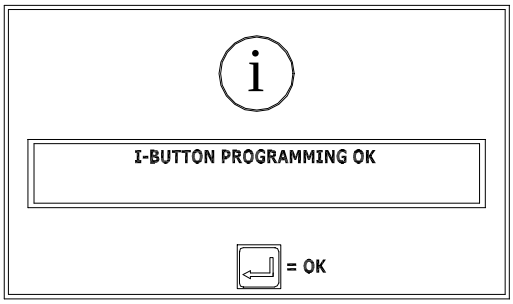
Push the up and down arrow key [▲ / ▼] to select the value to change and push the **ENTER** key [↵].
Repeat the procedure for each parameter to be changed
Push the right arrow key [▶].



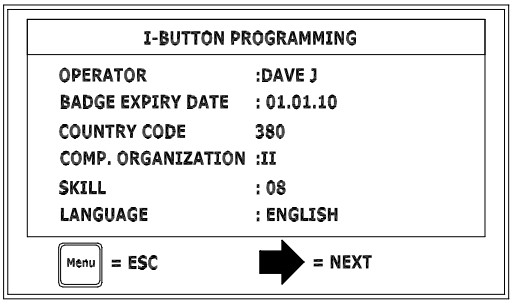
If the I-button is still not connected to the unit, the CSE asks to insert the I-button on the I-button probe.



Now the LDU confirms that the I-button has been successfully programmed.
Push the ENTER key [↵] to proceed.



You can push the Menu **key** to return to the **Main menu** screen.



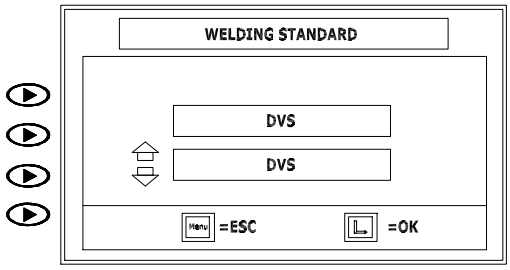
How to use the I-button

After configuring the LDU/CSE for the I-button use, you must always switch on the LDU with the I-button inserted in the I-button probe.

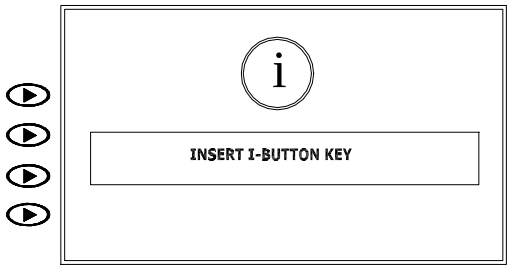
Switch on the CSE

Select the welding standard to be used

And push the **enter key** [↵]

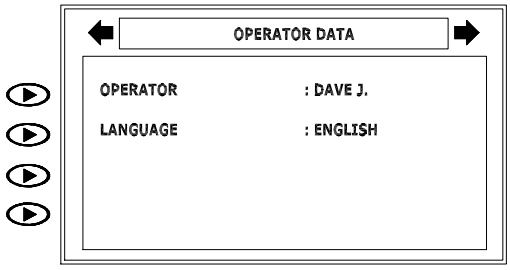


Insert the I-button KEY on the I-button probe

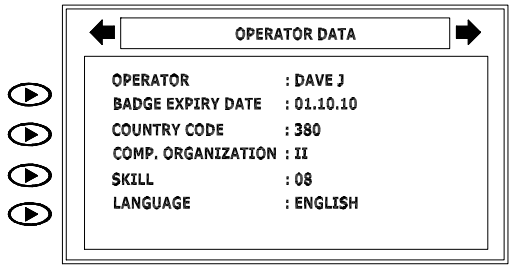


The operator and the language will be immediately recognized.

Push the enter key [↵] to proceed to use the machine.



If the selected welding standard is ISO, each time you switch on the CSE do not forget the compulsory I-BUTTON. The machine will show all the parameters contained inside the I-BUTTON memory.

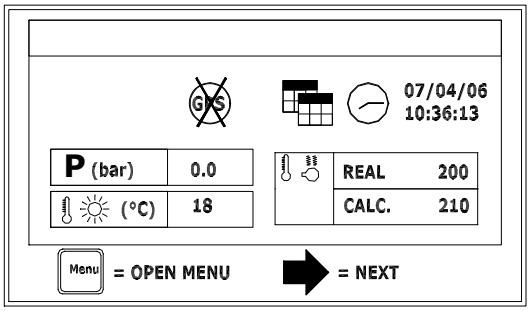


Addendum D GPS module

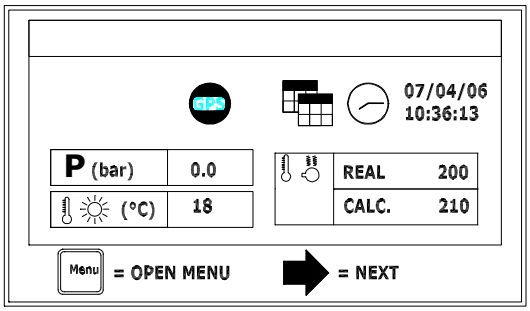
A GPS module is an available accessory for CSE plus model. This module can be supplied together with a front panel or as a separate board but in this case only qualified personnel must achieve the operation related to the installation of this board.

In case you have installed a GPS module on your CSE, the GPS icon will be displayed on the main screen. This icon can change depending on the status of the GPS board:

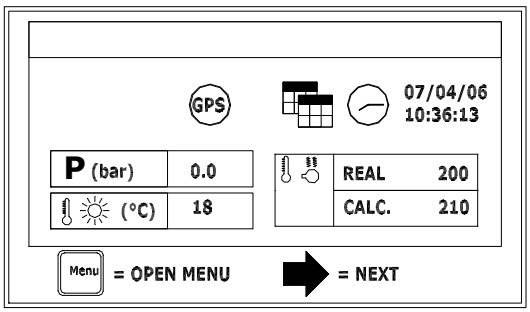
- Crossed icon: The GPS module is not communicating with front panel. If this status persist for more than few seconds means that the GPS board is not working properly or is not connected. At the end of each welding display will show: GPS position undetectable. By pushing the enter key you will proceed but on the print report will be printed the same message.



- Blinking crossed icon: The GPS module is looking for available GPS satellites. Usually this phase does not last for a long time but it is possible, that at the first use of the GPS board, the system needs several minutes for fixing the satellites positions. If, at the end of the welding the GPS has not still captured any satellite signal, the display will show: GPS position undetectable. By pushing the enter key you will proceed but on the print report will be printed the same message.



- Normal icon: The GPS is working perfectly and is communicating the position to the front panel. In this case on the print report will be available the following parameters with the value get from GPS board: **LONGITUDE, LATITUDE, and ALTITUDE**.



You can always survey the GPS status and the value of each parameter by selecting GPS data from Test In/Out menu (please check the previous Appendix on how to reach TEST IN/OUT menu)

With the supervisor password you can disable the GPS module by disabling the COM4 port: from the main menu select SETTINGS->I/O SETTINGS->COM SETTINGS-> GPS COM after entering the supervisor password you must select the value ---.

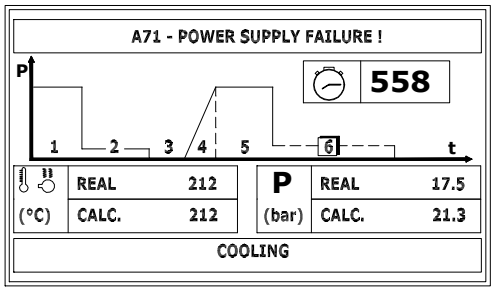
If the CSE is equipped with a GPS module you can start using GPS only by connecting the supplied antenna.	
Connect the antenna to the connector on the back panel.	
Place the Antenna on the upper part of CSE. The Antenna is equipped with a magnet to let it be firmly fixed	
Now you can start your CSE	

Addendum E Battery kit

If the LDU/CSE is equipped with a battery kit, in case of power failure, beside the advise on the warning area of the display, the machine will emit loud wobbling sound to advise the operator about the current supply problem.

The operator must immediately take all necessary actions to restore the appropriate current supply conditions of the machine.

In case of power supply failure the CSE KIT is not able to supply power to the hydraulic engine and heating mirror but can only survey the data related to the welding cycle.



WARNING – ONLY FOR CSE KIT
If before the power supply restoration, the pressure and/ or heating mirror temperature will decrease to a value under the threshold indicated by the welding norm, the welding cycle will be interrupted!

WARNING – ONLY FOR LDU
If before the power supply restoration, the pressure and/ or heating mirror temperature will decrease to a value under the threshold indicated by the welding norm, the printing report will show the error!

Addendum F Alarm codes and possible remedies

CODE	Description	Possible remedies
A01	Alarm Reseted	
A02	Black-Box Deleted	- The black box has been deleted
A03	DCU-M 1 Failure	- Restart the machine - Check the fuse of the TCU feeder - Check the TCU-CAN connections to the front panel - Change the TCU
A04	DCU-M 2 Failure	- Check the CAN connections between TCU1 and TCU2 - Change the TCU
A05	Phase 1 Pressure Error	- Check the oil level - Change the proportional solenoid valve
A06	Phase 2 Pressure Error	- Check the oil level - Change the proportional solenoid valve
A07	Phase 5 Pressure Error	- Check the oil level - Change the proportional solenoid valve
A08	Phase 6 Pressure Error	- Check the oil level - Change the proportional solenoid valve
A09	Average Pressure 1 Error	- Check the oil level - Bead formation phase too short - Change the proportional solenoid valve
A10	Average Pressure 2 Error	- Check the oil level - Change the proportional solenoid valve
A11	Average Pressure 5 Error	- Check the oil level - Change the proportional solenoid valve
A12	Average Pressure 6 Error	- Check the oil level - Change the proportional solenoid valve
A13	Phase 1 Time Error	Not related to PL machines or CSE kits
A14	Phase 2 Time Error	Not related to PL machines or CSE kits
A15	Phase 3 Time Error	Not related to PL machines or CSE kits
A16	Phase 4 Time Error	Not related to PL machines or CSE kits
A17	Phase 5 Time Error	Not related to PL machines or CSE kits
A18	Phase 6 Time Error	Not related to PL machines or CSE kits
A19	Heating Mirror Temp. Error	- Check the power supply of heating mirror - Check the connections of the heating mirror probe - Change the probe of heating mirror
A20	Average H. Mirror Temp. Error	- Check the power supply of heating mirror - Check the connections of the heating mirror probe - Protect the heating mirror against the atmospheric agents (wind)

CODE	Description	Possible remedies
A21	Pressure Undetectable	- Check the connections of the pressure transducer - Change the pressure transducer - Change the front panel
A22	Ambient Temp. Undetectable	- Check the connections of the ambient temperature probe connected on the back panel - Change the ambient temperature - Change the front panel - Change the back panel
A23	Heating Mirror Temp. Undetect.	- Check the connections of the heating mirror probe - Change the probe of heating mirror - Change the front panel
A24	Pressure Sensor Not Calib.	- Proceed with the pressure sensor (transducer) calibration
A25	Mirror Temp. Sensor Not Calib.	- Proceed with the heating mirror temperature probe calibration
A26	Ambient Temp. Sensor Not Calib.	- Proceed with the ambient temperature probe calibration
A27	Ambient Temp. Out Of Range	- Proceed with the ambient temperature probe calibration
A28	Proportional Valve Not Calib.	- Proceed with proportional sol. valve calibration
A29	Emergency Stop	- Reset the emergency push button - Check the reset button - Check the fuse of the feeder - Check all the connections related to the emergency push button - Check all the connections related to the reset button - Check all the connections related to the emergency circuit
A30	Motor Overloading	- Reset the temperature relay (PL) - Wait until the cooling off period of the engine is end (PT) - Use less pressure during the facing phase - Change the engine
A31	Checkout Suggested	- Periodical overhaul must be achieved
A32	Trolleys Open Sensor Failure (during closing phase)	- Check if the trolleys open sensor is working properly by testing I/O - During a working phase the trolleys do not close enough to go out from the trolleys open position (for example during the facing phase the pipes are leaning too much from the clamps) - Change the sensor
A33	Trolleys Open Sensor Failure (during opening phase)	- Check if the open trolleys open sensor is working properly by testing I/O - Check the connections of the trolleys open sensor - Check the position of the trolleys open sensor - Change the sensor

CODE	Description	Possible remedies
A34	Mirror High Switch Failure	- Check if the mirror high position sensor is working properly by testing I/O - Check the connections of the mirror high position sensor - Check the position of the mirror high position sensor - Change the sensor
A35	Restart System	- Message advising that the system will be restart shown after deleting the Black Box
A36	Operator Badge Expired	- The expiring date of the I-button has passed, renew the expiring date
A37	Invalid Skill	- The skill of the operator are not valid or recognized, check the operator skill
A38	Black-Box Nearly Full	- Delete the black box or wait until the black box is full and after delete the Black Box content
A39	Black-Box Full	- Delete the Black Box
A40	Trolleys Pos. Sensor Not Calib.	- Achieve the trolleys position sensor calibration
A41	Mirror Pos. Sensor Not Calib.	Not related to PL machines or CSE kits
A42	Trolleys Pos. Sensor Failure	- Check the connections of the digital encoder - Change the digital encoder
A43	Mirror Pos. Sensor Failure	Not related to PL machines or CSE kits
A44	Slipping Error	- Check that pipes are properly clamped - Check if there are oil leakage from the clamps cylinders - Check the pressure level of the clamps cylinders
A45	Mirror-In Sensor Failure	- Check if the mirror in sensor is working properly by testing I/O - Check the connections of the mirror in sensor - Check the position of the mirror in sensor - Change the sensor
A46	Facing-Tool Out Sensor Failure	- Check if the facing tool out sensor is working properly by testing I/O - Check the connections of the facing tool out sensor - Check the position of the facing tool out sensor - Change the sensor
A47	Facing-Tool In Sensor Failure	- Check if the facing tool in sensor is working properly by testing I/O - Check the connections of the facing tool in sensor - Check the position of the facing tool in sensor - Change the sensor
A48	Bench Left Sensor Failure	- Check if the left bench sensor is working properly by testing I/O - Check the connections of the left bench sensor - Check the position of the left bench sensor - Change the sensor
A49	Bench Right Sensor Failure	- Check if the right bench sensor is working properly by testing I/O - Check the connections of the right bench sensor - Check the position of the right bench sensor - Change the sensor

CODE	Description	Possible remedies
A50	Mirror Lock.Cyl.Out Sensor Fail.	- Check if the mirror lock out sensor is working properly by testing I/O - Check the connections of the the mirror lock out sensor - Check the position of the the mirror lock out sensor - Change the sensor
A51	Mirror Lock.Cyl.In Sensor Fail.	- Check if the mirror lock in sensor is working properly by testing I/O - Check the connections of the the mirror lock in sensor - Check the position of the the mirror lock in sensor - Change the sensor
A52	Top Cyl. Lock Sensor Failure	- Check if the top cylinder lock sensor is working properly by testing I/O - Check the connections of the the top cylinder lock sensor - Check the position of the the top cylinder lock sensor - Change the sensor
A53	Top Cyl. Idle Sensor Failure	- Check if the top cylinder idle sensor is working properly by testing I/O - Check the connections of the top cylinder idle sensor - Check the position of the top cylinder idle sensor - Change the sensor
A54	GPS Position Undetectable	- Wait a couple of minutes after switching the machine to let the machine detects the GPS signal - Check the antenna connections - No GPS signal - Change antenna - Change the GPS module
A55	Overpressure	- The machine has not been designed to weld this kind of pipe, contact our distributor
A56	I-Button Port Error	- Check which port has been set up for I-Button use
A57	Unknown I-Button Key	- Damaged or incompatible I-Button
A58	I-Button Reading Error	- Try to read once more the I-Button - Damaged I-button probe - Check the I-button probe connections - Change the front panel
A59	I-Button Writing Error	- Try to write once more the I-Button - Check the I-button probe connections - Change the I-button probe - Change the front panel
A60	I-Button Programming Error	- Try to write once more the I-Button - Check the I-button probe connections - Change the I-button probe - Change the front panel
A61	Unsupported Language	- Check the language set in the I-button
A62	Pen-Drive Full	- Use a new USB drive - Remove old and/or unused files on USB drive for free space
A63	No Response From Pen-Drive	- Use an other USB drive
A64	Pen-Drive Error	- Use an other USB drive

CODE	Description	Possible remedies
A65	Calibration Failed	- Proceed again with the same calibration
A66	Pressure Too Low!	- Check the pressure of the max pressure valve
A67	DCU-M 1 Failure	- Restart the machine - Check the fuse of the TCU feeder - Check the TCU-CAN connections to the front panel - Change the TCU
A68	DCU-M 2 Failure	- Check the CAN connections between TCU1 and TCU2 - Change the TCU
A69	No Response From USB	- Check that the USB cable between the CNC control and computer are properly connected - The correct drivers have not been installed in your PC - The instructions related the connection to a PC have not been followed - Try with an other PC
A70	USB Error	- Check that the USB cable between the CNC control and computer are properly connected - The correct drivers have not been installed in your PC - The instructions related the connection to a PC have not been followed
A71	Power supply failure!	- Check the power source

This manual has been printed on January 2016