All available functions and controls are displayed on the LCD display (1).

Items in Menu

Languages – change of the device language
- Czech
- English
- German

By selecting the item language is immediately switched over which appears in the navigation description.

Units – change of degrees of C and F
- Degree C
- Degree F

After the change, the selected unit is confirmed by a short flashing of the sign with selected unit and return to the main menu.

Presets – change of preset temperatures
- T1 – factory setting of 270 °C
- T2 – factory setting of 300 °C
- T3 – factory setting of 350 °C
- T4 – factory setting of 400 °C

Range: 50 ÷ 450 °C.

Locks – lock the device control. You can enter this function after entering a password. Factory setting of the password is 50 – 50 – 50. We recommend changing the password immediately.
- Lock - after activating this function, the set temperature cannot be changed and it is impossible to enter Menu without the password. It is only possible to control the display brightness and turn the device on/off. After selecting this function and leaving Menu for the basic mode, any device control is blocked and the information line (10) of the LCD display (1) shows the notice Unlock. Unlocking is possible by pressing the button ● on the multifunction control element (3) and entering the password. The password is created by the trio of two digits ranging from 0 ÷ 99 and each digit is entered by the hand wheel on the multifunction control element (3) and confirmed by the button ● on the multifunction control element (3). When the last two digits are correctly entered, all functions of the device are unlocked and Menu appears on the information line (10) of the LCD display.
- Set password – is used for changing the password of this function. Password change is done after selecting this function. The password is created by the trio of two digits ranging from 0 ÷ 99 and each digit is entered by the hand wheel on the multifunction control element (3) and confirmed by the button ● on the multifunction control element (3). When the last two digits are entered, the confirmation of Change password? is required by Yes/No. The arrow ▶ on the multifunction control element (3) will save the new password; any other arrow cancels the change.

Energy saving – decreases the temperature of the soldering pen tip to 50% of the set value or turn the device off when it is inactive for a long period of time.

- Sleep – sets time after which the temperature of the soldering pen tip should be decreased down to 50% of the set value from the moment of the soldering pen inactivity. The function can be used without the activation of the function "Turn off". Range: 0 (function OFF) ÷ 240 minutes. When the device is in the basic mode and the state of "Sleep", Signalling of energy saving (8) is flashing on the LCD display (1) and brightness is reduced to minimum. The device can be woken up from "Sleep" mode by pressing any button on the multifunction control element (3).
- Turn off – sets the period after which the device should be off. This period is calculated from the end of sleeping mode. The function can be used without the necessity to activate "Sleep" function. Range: 0 (function off) ÷ 240 minutes.
  - Example 1 – "Sleep" is set to 5 minutes, „Turn off" is set to 6 minutes. If there is no action during this period, the soldering pen temperature is decreased to 50% of the set value and if there is still no action, the device is turned off after next 6 minutes.
  - Example 2 – "Sleep" is set to 0 minute (function forbidden) and "Turn off" is set to 8 minutes. If there is no action during 8 minutes, the device is turned off.
- Sensitivity – if energy-saving function does not work properly, it is necessary to set the different sensitivity of evaluation. Factory setting of sensitivity is 50 points, range of 5 ÷ 200 points.
  - Energy-saving function does not start after the set period of inactivity - increase sensitivity by several points.
  - Energy-saving function starts even during work - decrease sensitivity by several points.

Calibration – enables to calibrate temperature on the soldering pen tip and current temperature (11) on the LCD display (1) in case that these temperatures differ. Initial temperature is 0 and should be changed only in extreme case. Range of –50 °C ÷ 50 °C.

- Use a thermometer suitable for measuring the temperature on the soldering pen tip.
- Place the thermometer on the soldering pen tip and measure temperature.
- Write down actual temperature (11) on the LCD display (1).
- Deduct written temperature from actual temperature on the soldering pen tip (11).
- Enter a result in Calibration menu and confirm. Calibration is ready.

Replacement of Soldering Tip

It is possible to use different types of soldering tips. Their actual list is on www.diametral.cz. Replacement of the soldering tip is very simple.

- Turn the device off by the master switch (6) and wait until the soldering pen and the tip are cold.
- Unscrew the securing cap nut of the soldering pen tip.
- Take out the soldering tip.
- Attach a soldering tip you have chosen.
- Tighten the cap nut. Then continue according to chapter "Work with Micro Soldering Iron".

⚠ **WARNING**

Always replace the soldering tip when the device is turned off by the master switch (6) and the soldering pen is cold. Otherwise there is risk of burning!

⚠ **WARNING**

It is necessary to be aware that stronger soldering tips will be heated for a longer period of time compared to the tip delivered in the basic package.

⚠ **WARNING**

Never clean soldering tips with abrasive instruments as a knife, sandpaper, file, etc. Breach of this rule will result in permanent damage to the tip!

Replacement of Fuse

- Before replacing a fuse, unplug the power supply cable from the outlet and disconnect the supply connector with fuse (5) exactly in this order.
- Eject the holder of the device fuse from the supply connector with fuse (5) and remove the fuse.
- Insert in its place a new fuse which corresponds with data on the device plate.
- Insert the holder of the device fuse back to the supply connector with fuse (5).
- Insert the supply cable to the supply connector with fuse (5).
- Check the master switch (6) for its position 0 and plug the supply cable in power network. The replacement is ready.

⚠ **WARNING**

Always use such value and type of a fuse which is given on the production plate of the device! Breach of this rule might result in damage to property and/or electrical injury!

⚠ **WARNING**

Do not replace the fuse or do not repair it with a wire or other metallic subjects! Breach of this rule might result in damage to property and/or electrical injury!

Change of Display Brightness

The change of display brightness is done in basic mode of the device by the arrow ▶ placed on the multifunction control element (3). Setting is performed so that the brightness is increased to the maximum value and after achieving the maximum value, the display goes off in the following step. Pressing repeatedly the arrow ▶ on the multifunction control element (3) the brightness is increased again.

Use of TURBO Function

The device is equipped with TURBO function. This function is not designated for standard operation but only if it is necessary to heat a soldered part with higher energy. This function will switch over the device to the mode of maximum output and temperature without regard to the set value. In this case the maximum temperature of the soldering pen tip moves to 530°C.

- The TURBO function is called up by pressing and holding the arrow ◀ on the multifunction control element (3). Without regard to the set temperature tip heating is taking place for the period of holding the arrow ◀ on the multifunction control element. TURBO mode is indicated by the flashing sign "TURBO" on the line of temperature (12) set on the LCD display (1). After achieving the temperature of 530°C, soldering pen output is reduced to prevent further increase of temperature.
- After releasing the arrow ◀ on the multifunction control element (3), the device switches over to the standard mode again.

⚠ **WARNING**

TURBO mode should be used in special cases only and should not be used for frequent heating of parts being soldered. Each use of this function stresses all device components more than in normal use.

⚠ **WARNING**

TURBO mode is not available, when the device is locked with the function Lock.

Description of Individual Items of Menu and Their Change

You enter Menu from the basic mode by pressing the button ● on the multifunction control element (3). Movement through Menu is provided by arrows ◀▶▲▼, the button ● and the hand wheel on the multifunction control element (3). Available ways of control in Menu are always described on the LCD display (1). After 1 minute of inactivity in Menu, the LCD display (1) will return back to the basic mode of the device.

⚠ **WARNING**

Be careful, when working. Danger of burning!

⚠ **WARNING**

If the soldering pen is not used, it must be placed in the pen holder!

Change of Temperature

Change of temperature might be done in two ways:

1) By turning the hand wheel on the multifunction control element (3). By turning to the right, temperature increases and by turning to the left it decreases. The change of the set temperature (12) is displayed on the LCD display (1).

2) Using arrows ▲ and ▼ placed on the multifunction control element (3) you can select one of four user-adjusted temperatures. If the temperature is adjusted in this way, the up and down arrows are displayed before the value of set temperature (12) and Tx reading appears where "x" means the serial number of set temperature. Find more about the change of user-temperatures in chapter "Description of Individual Items of Menu and Their Change" in part "Presets".

⚠ **WARNING**

If the soldering pen is not connected to the connector for its connecting (4), the notice "Pen not connected" will appear on the display instead of the set temperature (12). It is impossible to set the temperature for some time when the soldering pen is not connected with the connector for its connection (4). It is only possible to enter Menu by the multifunction control element (3).

⚠ **WARNING**

If the function of the device control locking is active, it is impossible to change temperature without entering a password. This function is designated for controlled production. Find more in chapter "Description of Individual Items of Menu and Their Change".

⚠ **WARNING**

If the fuse repeatedly blows, send the product for repair.

Problems and Their Elimination

If there are any problems, try to eliminate them on your own first according to the instructions given below. If you cannot eliminate a problem in this way, you can get more information in the service department of the manufacturer on the following e-mail address: service@diametral.cz.

LCD display (1) and indicator lamp on the Stand-by button (2) do not emit light and the soldering pen does not heat.	Check connection of the supply cable or voltage in the outlet. Turn on the master switch (6) to position I and push the Stand-by button (2).
Even though the connection of the supply cable and voltage in the outlet is correct and the master switch is in position I (6), it is impossible to turn the device on.	Check the fuse placed in the supply connector with fuse (5) and if damaged, continue according to chapter "Replacement of Fuse".
Even though the fuse in the supply connector with fuse (5), connection of the supply cable and voltage in the outlet is correct and the master switch (6) is in position I, it is impossible to turn the device on.	Send the whole product, including all accessories to the manufacturer for check. The procedure is described in chapter "Warranty Terms, Warranty and Post-Warranty Service".
The soldering pen heats, indicator lamp on the Stand-by (2) button emits light but there is no information on the LCD display (1).	Send the whole product, including all accessories to the manufacturer for check. The procedure is described in chapter "Warranty Terms, Warranty and Post-Warranty Service".
The soldering pen does not heat, indicator lamp on the Stand-by (2) button emits light but the LCD display (1) shows room temperature instead of actual temperature (11).	The soldering pen is damaged. It is necessary to buy a new one and replace it. Send your order to: sales@diametral.cz.
The LCD display (1) shows "Pen not connected".	Connect the connector of the soldering pen to the connector for its connecting (4) according to the instructions given in chapter "Installation and First Turning On".

Even though the connector of the soldering pen is connected with the connector for its connecting (4), the LCD display (1) shows "Pen not connected".

The LCD display (1) shows "Wake", actual temperature (11) does not correspond with set temperature (12) and the energy saving symbol (8) is flashing.

The LCD display (1) shows "Unlock", it is impossible to set temperature and enter Menu.

The soldering pen is damaged. It is necessary to buy a new one and replace it. You can send your order to: sales@diametral.cz.

The device is in energy saving mode. Wake the device by pressing any button on the multifunction control element.

Device control is blocked except for turning on/off and brightness setting. Unblock the device using the procedure described in chapter "Description of Individual Items of Menu and Their Change", art. "Locks".

⚠ **WARNING**

Do not disassemble the product on your own, do not repair it or modify! It might result in damage to property and/or electrical injury!

Warranty Terms, Warranty and Post-Warranty Service

The device was manufactured for you with the best care. We are sure that you will use it without any problems for many years when observing the Instructions for Use. However, there might appear any defect on the device which we could not reveal during manufacturing process. Before you send the product to service for repair, try to remove defect on your own according to the instructions given in chapter "Problems and Their Elimination". If you cannot remove defect even after using the information from the service department, send it to the address given on website: www.diametral.cz. **Before sending the product for repair/claim, please, complete the Repair Sheet** which you can find on the next-to-last page of these Instructions for Use; pack it thoroughly together with the product to avoid damage caused by transport. Damage caused by transport will not be taken into consideration as warranty defect.

⚠ **WARNING**

The soldering pen with the tip is considered consumables. Their durability is mostly affected by the method of use.

The product is provided with 24-month warranty from the date of sale. Warranty does not apply to defect occurred by improper handling or using, excessive stress, mechanical damage (impact, fall, exposition to inadequate temperature, water, dust, etc.), or if the product was

Description of the Main Screen

- Soldering pen symbol (7) – symbolizes current heating of the soldering tip. If it emits light, the soldering tip is being currently warmed up. After achieving the required temperature, the symbol starts flashing in the rhythm of the soldering tip heating.
- Energy-saving symbol (8) „crescent" – symbolizes energy-saving function being ON
  - Symbol emits light – one of the energy-saving functions is ON.
  - Symbol is flashing – temperature of the soldering pen tip is reduced to 60% of the set value.

Control lock symbol (9) – if this symbol emits light, device control, except for display brightness control is forbidden for a user and can be renewed after entering a password only. The function designated for controlled production. See more in chapter "Description of Individual Items of Menu and Their Change" in part "Energy Saving".
- Information line (10) – information needed for control is displayed here.
- Current temperature (11) – achieved temperature is displayed.
- Set temperature (12) – displays required temperature.

Turning ON and OFF

The device is equipped with the master switch (6) and the Stand-by button (2). To turn on/off the device for a short period of time you can use the Stand-by button (2) when the master switch is ON (6). To put the device out of operation for a long period of time, you always need to turn off the master switch (6). If the energy-saving function is active - device turned off, the device is always turned off to the same status as in case of using the Stand-by button (2). Find more in chapter "Description of Individual Items of Menu and Their Change" in part "Energy Saving".

Work with Micro Soldering Iron

- Moisten the sponge in the holder with distilled water. The sponge must be damp not wet.
- In case that you turned off the device by the master switch before (6), turn it on to the position I.
- Push the Stand-by (2) button on the front panel of the device.
  The LCD display goes on (1) with the logo of DIAMETRAL and the device starts up. After starting the device, the LCD display (1) switches over to the operating mode.
- After turning the device on, the temperature stabilizes and the tip warms up to operating temperature in several minutes. This shows with the overshoot of the displayed current temperature (11) which is a usual phenomenon.

Installation and First Turning ON

After unwrapping, check the device for damage and all accessories. Do not use the device in case of damage.

⚠️ **WARNING**

Wrapping materials can be hazardous to children. That is why all wrapping materials (plastic bags, polystyrene, etc.) must be removed out of reach of children.

- When working, the device warms up and heat radiates to the surroundings. When placing the device on the working surface, make sure that there is a gap of at least 5 cm between side walls, rear and upper part.
- Possible penetration of fluids in the device could damage it and cause electrical injury. So do not place it near water taps or other liquid sources.
- Do not place the device in the direct sunshine, damp or dusty environment, near heat source.
- Place the power supply cable so that it is not damaged by sharp edges and does not touch hot surfaces; prevent it from contacting with the soldering pen.
- Place the soldering pen with a tip on a holder. Insert the soldering pen connector in the connector for its connecting (4) and screw the cap nut on the soldering pen connector in the connector for the soldering pen connecting (4). Screw the nut on carefully!
- Moisten the sponge in the holder with distilled water. The sponge must be damp not wet.
- Insert the power supply cable in the power supply connector with a fuse (5). Check the master switch (6) for the position 0. Connect the power supply cable plug to power network.
- Turn on the master switch (6) to the position I.
- Push the Stand-by (2) button on the device front panel.
- LCD display goes on (1) with the logo of DIAMETRAL and the device starts up. After starting the device, the LCD display (1) switches over to the operating mode. The installation is finished.

⚠️ **WARNING**

Before dispatching, the device was tested by the manufacturer in full output over a long period of time. That is why it is quite normal when the soldering pen will show the signs of thermal stress. However, the manufacturer guarantees that the device is new.

used contrary to the instructions of this manual. When filing a complaint, it is necessary to enclose the properly completed original copy of the certificate of guarantee or a sales receipt. The claim cannot be accepted without these documents.

Maintenance and Cleaning

The product does not require any specific maintenance. In case of its damage, put the product out of operation and send for repair. You can clean the product with a soft moistened cloth or with detergent or soap when it is turned off and the power supply cable is unplugged from the outlet.

⚠️ **WARNING**

Never use for cleaning different diluents, petrol, sand or other aggressive or abrasive agents!

Waste Disposal

This symbol placed on the product and its accessories means that this product or its parts must not be disposed of together with household waste and should not be mixed with other commercial waste designated for disposal.

Wrap is made of paperboard and 100% recycled plastic filling. Hand paper to waste paper collection and plastic filling for recycling to the specialized company, or hand it to sorted waste. After the end of product life hand it for recycling to the specialize company.

Technical Data

Supply voltage:	230 V / 50 Hz
Output:	50 W
Input in Stand-by mode	> 1 W
Range of adjustable temperature:	80 ÷ 450 °C
Maximum accessible temperature in TURMO mode:	530 °C
Measurement accuracy:	± 10 °C
Temperature stability:	± 5 °C
User-calibration:	ANO
Weight of soldering pen:	40 g
Length of soldering pen conductor:	980 mm
Sleep mode:	YES
Auto-off mode:	YES
Controlled production mode:	YES

Change of display brightness: YES
ESD design: YES
Dimensions (L x H x W):   106 x 120 x 137 mm
Weight: 1670 g
Weight of packaging: 2750 g

Conclusion

Company Diametral a.s. has been permanently improving properties of the given product. The change of technical parameters is reserved without a prior notice.
We believe that you will be satisfied with our product. You can send your comments and suggestions to: sales@diametral.cz.

Display

1 -   LCD display
2 -   Stand-by button
3 -   Multifunction control element
4 -   Connector of the soldering pen connection
5 -   Power supply connector with a fuse
6 -   Master switch
7 -   Soldering pen heating indication
8 -   Indication of turning on energy-saving function
9 -   Indication of locking the device control
10 -   Information line
11 -   Actual temperature display
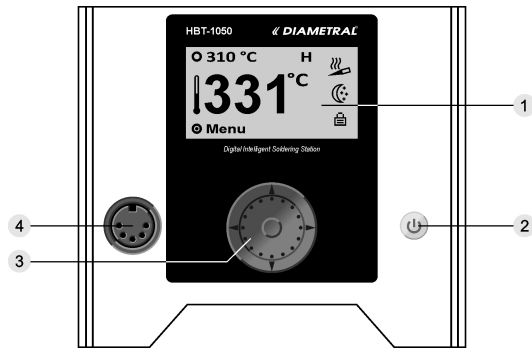12 -   Adjusted temperature display

Meaning of individual symbols used for control

Use the hand wheel on the multifunction control element (3)

Use the central button Enter on the control element (3) for selection

Use the button with arrow to the left on the multifunction control element (3) for selection

Use the button with arrow to the right on the multifunction control element (3) for selection

Use one of the buttons up/down on the multifunction control element (3) for selection

Symbol of the soldering pen heating (7).

Energy saving symbol (8)
- emits light – any type of energy saving is ON.
- is flashing– device in sleeping mode, pen heating is blocked
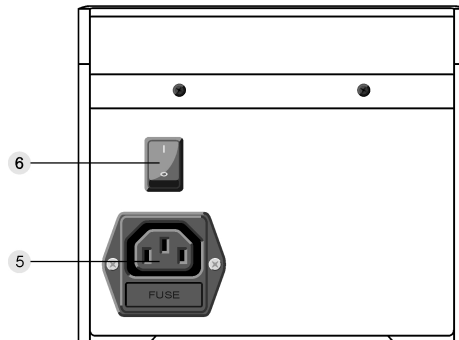Control lock symbol – mode for controlled production (9) - emits light – control is forbidden.

13. When working, use the tools designated for this purpose only!
14. If the device or accessories show fault or damage, put them out of operation and have them repaired in the given repair shop!
15. Immediately disconnect the faulty power supply cable from the outlet and replace it! It is forbidden to use the device with the faulty power supply cable!
16. Do not use appliances different from the ones delivered with the device or which are not approved by the manufacturer. If needed, ask the manufacturer for replacing the faulty part.
17. Do not use the device in the explosive environment.

Device Description

Front panel

Rear panel

Put down your password

Date of password change	Set password

![DIAMETRAL logo]

CE

Introduction

Dear customer, thank you for buying our product of the Diametral brand. You have obtained the quality product which reflects tens of years of professional experience and innovations. This product will become your capable helper for your work and fun. Please, read carefully these instructions and keep them for further use to secure long-term use of the product.

Packing Content

1x Micro soldering iron station
1x Soldering pen with a tip
1x Pen holder
1x Power supply cable
1x These Instructions for Use

Safety Information

Safety information and warnings given in these Instructions do not present the thorough description of all conditions and situations which might occur. It depends only on your reasonable, careful and thorough behaviour when using, maintaining and storing the device.

1. Use the device for purposes for which it is designed and which are stated in these Instructions only.
2. The device is equipped with a separable power supply cable and can be connected only in the outlet equipped with protective grounding! Outlet voltage must comply with the values given on the device production plate!
3. This device must not be used by little children and persons with reduced physical, sensory or mental abilities or who do not have sufficient experience and knowledge without secured permanent supervision of using the device by a responsible person!
4. At schools and in other workplaces, the device can be operated under the supervision of trained persons only!
5. The device is not designated for games!
6. Do not operate the device and connected appliances without supervision!
7. Do not use the device on people and animals!
8. All repairs must be carried out by the manufacturer in the stated repair shops only!
9. Never use a fuse different from the one stated in these Instructions!
10. When working with the device, do not wear jewelleries, bracelets and other conductive subjects!
11. Never turn the device on right after you brought it from the cold to warm environment. Leave it off to accommodate it to the ambient temperature!
12. Do not cover possible ventilation slots! When breaching this, damage to the device might occur!