

**T-HotBox 3650**

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## **OPERATING AND MAINTENANCE INSTRUCTIONS**

### **3650 INDUCTION HEATING SYSTEM T-HOTBOX MODEL HTR-02 (Patent pending)**

**Read this manual carefully before using T-HotBox HTR-02**

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# T-HotBox 3650

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## TABLE OF CONTENTS

WARNINGS AND SAFETY MEASURES.....	3, 4
GENERAL INFORMATION / START GUIDE .....	4, 5
KEY TECHNICAL PARAMETERS.....	6, 7
PACKING.....	8
UNPACKING.....	8
STORAGE CONDITIONS.....	8
COMMISSIONING, SAFETY MEASURES AND ELECTRICAL CONNECTIONS.....	8, 9
OPERATION AND CONTROL OF THE EQUIPMENT.....	10
TERMINATION OF EQUIPMENT OPERATION.....	11
USE OF INDIVIDUAL WORKING TOOLS.....	11, 12, 13
APPLICATION LIMITATIONS.....	14
OPERATIONAL ENVIRONMENT.....	14
HANDLING.....	14
MAINTENANCE.....	14
PREVENTIVE MAINTENANCE.....	15
ERROR MESSAGES/PROTECTIVE SYSTEM.....	15
SPECIAL MAINTENANCE.....	16
EMERGENCY.....	16
WARRANTY.....	16
CLAIMS - DISASSEMBLY – WASTE DISPOSAL.....	17
TROUBLESHOOTING.....	18, 19
TOOL HEADS – VOLTAGE CONVERSION .....	19, 20
OPTIONAL ACCESSORIES.....	21
COPYRIGHT.....	21
DECLARATION OF COMPLIANCE.....	21

# T-HotBox 3650

## WARNINGS AND SAFETY MEASURES

### **WARNING!**

Electric shock hazard!

T-HotBox HTR-02 is designed for professional use in the car repair industry. It is not intended for home use. It can be used in both vehicle repair shops and garages. Any other use or use of the equipment contrary to the operating and maintenance instructions may result in an injury to the operator and/or damage or destruction of the equipment.

Only qualified personnel may carry out the electrical connection of the T-HotBox with mains supplies in compliance with applicable regulations.

Any personnel operating the equipment must possess thorough knowledge of and practical experience in the use of an induction heater, as well as in methods of heating metal vehicle components without damaging nearby parts. Operators must acquaint themselves with and understand these operating and maintenance instructions prior to using the induction heater.

Unauthorized persons shall not be allowed to enter the area where metal vehicle parts are heated. Only one authorized person may operate the induction heater at any one time.

### **WARNING!**

Always use protective goggles with side shields or protective facial shields. Use dry, thermally resistant gloves and dry working clothes. Metal heats up very quickly with a risk of burns to fingers and palms when removing objects from hot metal surface.

Do not touch working parts of the equipment during heating.

Allow cooling period before handling parts or equipment.

The induction heater heats nearby metal objects very quickly and can cause serious burns or even ignite clothing. Bear that in mind and make sure that the operator's clothing is free of any metal objects, such as wristwatches, jewelry, necklaces, keys, belt buckles, coins, metal buttons, zippers, etc.

Do not use the induction heater in an environment containing conductive dust, high ambient humidity, high levels of moisture and/or in an explosive environment.

Do not place the equipment on flammable surfaces or in their vicinity.

Always make sure to have a filled fire extinguisher nearby. Always use a type of fire extinguisher suitable for extinguishing materials that may be present in the working area.

Flammable objects and materials must be placed at a sufficient distance from the working area where the induction heater is used

Do not use the equipment near degreasing, cleaning and/or painting facilities.

Corresponding respiratory protection must be chosen and used to protect the operator against the effects of dangerous gases, fumes and/or particles released by melting adhesive under heat. Respiratory masks provide protection against respiratory risks: fumes or gases, aerosols and airborne

## T-HotBox 3650

dust. A suitable mask and a filter are to be used in accordance with the specific toxic product and its concentrations. Filters must be replaced frequently.

Always have a trained watch person nearby. Fumes and gases released by heating of materials can lower oxygen level and cause an injury or death.

When heating, especially in cases when heating galvanized, cadmium plated, varnished or blackened sheet metal, fumes may be generated. Ensure adequate ventilation and extraction of heating fumes from the working area. Use a suitable respirator in case of insufficient extraction.

It is very dangerous to heat containers and tanks, in which liquids and gases were stored before the heating. Do not heat aerosol containers or paint containers. The heat generated by the induction heater may cause the containers to explode.

Do not use the induction heater near airbags. The heat generated by the induction heater may ignite the airbag propellant and unexpected airbag activation. Ascertain the accurate location of any airbag in the repaired vehicle using the corresponding vehicle manual.

When installing, checking or maintaining the equipment, always disconnect it from the main supply.

Do not use cables with damaged insulation, insufficient cross-section or loose connectors. Avoid placing cables near heat sources, oils and grease, or sharp edges. Replace all cables with damaged insulation for new ones.

The induction heater contains parts with movable power supply. Always consider uneven weight distribution of the induction heater. Always follow safety procedures preventing the occurrence of hazardous situations.

Keep proper footing and balance at all times.

Allow cooling period

The equipment must always be placed in a way ensuring sufficient air supply to the built-in fan. Ventilation apertures must be kept clean.

The working area must be clean and well lit.

The equipment is fitted with overheating protection. Working tools do not have this protection.

The equipment also contains several additional protection systems.

Do not leave the equipment unattended if switched on.

Unplug induction heater from the power supply outlet or cord when not in use.

### **WARNING!**

**Persons using a cardiac pacemaker or any other kind of electronic or metallic surgical implant, or persons with a heart condition must not operate the mobile induction heater or come near the induction heater when operated.**

## T-HotBox 3650

### HOTBOX QUICK START GUIDE

1. The T-HotBox will beep twice every five seconds after power-up to let you know that it is ready. You can disable the beeping by turning on the machine with the dial set to 4 seconds. You can change the setting after that.
2. Hold the VS-Pen with the V-groove facing towards you so you can see through the V. This allows you to see the PDR light and identify the low. Lightly rest the tool head on the panel surface. Do NOT apply downward force.
3. For **TIMED** settings use the numbered detent positions on the **LEFT** side of the switch. These are at 100% power and will automatically stop after the selected time. For **PERCENTAGE** of power settings use the numbered detent settings on the **RIGHT** side of the switch. These settings will give you the selected power as long as you hold the tool head button down. The right side power selection **WILL NOT** automatically shut off power to the tool head. You must remove your finger from the button on the tool head.
4. The .5 and 1.0 second timed settings are the most common, and .5 is the safest setting to prevent burning the paint. More than 3 back to back cycles with the T-HotBox on .5 second setting will likely burn the paint
5. The 40% and 60% settings on the power side (RIGHT SIDE) work well because you can gradually increase heat as you need it. Be cautious not to hold the power on too long using the power side settings to prevent burning the paint.
6. When using the 1 second setting wait 5 seconds between cycles and perform no more than 2 cycles to prevent burning the paint.
7. Be cautious around bracing and glue areas under the panel. These areas can tend to sink-in instead of lifting up the low. In this case, apply heat 3-4" outside of the low area, then move to the center.
8. For large dents, work from the outside in as illustrated in the instruction diagram on Page 14 of this manual.
9. If you see a trace of smoke on the surface when using the T-Hotbox **STOP!** Wait at least 30 seconds for the metal to cool before cycling again to prevent burning the paint.
10. Use caution after heating an area – the metal can get very hot and could cause burns to your hands or arms.
11. Most dents will need to be tapped down, because the dent will end up slightly high. Some soft dents will end up perfectly flat after panel has cooled. The metal will contract and level out as it cools.

# T-HotBox 3650

## GENERAL INFORMATION ON T-HOTBOX HTR-02

The microprocessor-controlled T-HotBox HTR-02 is designed for heating of metal parts of vehicles without damaging adjacent components. It is easily portable, powered by a single-phase 120v/ 50-60Hz or 240v/ 50-60Hz net. It is highly versatile and suitable for a broad range of applications depending on accessories attached.

- Paintless dent repair (PDR)
- Heating of rusted bolts and nuts
- Heating of rusted bolts and nuts on the suspension or steering
- Removing striping, emblems, decals and foils
- and other applications

T-HotBox HTR-02 is designed to heat up all magnetic conductive materials using concentrated magnetic field at the end of the inductor. The magnetic field alternates at a frequency of approx. 60 kHz. The magnetic field creates eddy currents in the material with electric resistance causing the material to heat up. Generally, it applies that the more easily magnetized a substance is, the greater the heat developed in it. That is why induction heater heats ferrous metals and their alloys readily, but has no effect on glass, plastics, wood, cloth and other non-conductive materials. **It is not recommended to apply the device to aluminum.** The induction heater heats up brass, aluminum and its alloys considerably less than steel.

This equipment is manufactured in accordance with the following regulations and guidelines:

2006/95/EC	Low voltage Directive
2004/108/EC	Electromagnetic Compatibility Directive
93/68/EEC	CE Marking Directive
98/37/EEC	Machinery Directive
EN 55 011 class B	Radiated E-field emissions
EN 55 011 class B	Conducted emissions

EN61000-6-2	Electromagnetic compatibility (EMC) – Part 6: Generic standards – Part 6-2: Immunity standard for industrial environments
EN61000-6-4	Electromagnetic compatibility (EMC) – Part 6: Generic standards – Part 6-4: Emission standard for industrial environments
EN 61000-4-2	Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Part 4-2: Electrostatic discharge immunity test
EN 61000-4-3	Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Part 4-3: Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-4	Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Part 4-4: Electrical fast transient/burst immunity test
EN 61000-4-5	Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Part 4-5: Surge immunity test Reference
EN 61000-4-6	Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Part 4-6: Immunity to conducted disturbances, induced by radio-frequency fields

## T-HotBox 3650

EN 61000-4-11	Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Part 4-11: Voltage dips, short interruptions and voltage variations immunity tests
EN 61000-3-2	Electromagnetic compatibility (EMC) – Part 3: Limits – Part 3-2: Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
ČSN 33 2000-1	Electrical installations in buildings – Part 1: Scope, purpose and basic frame of reference
IEC 60364-1	Low-voltage electrical installations – Part 1: Fundamental principles, assessment of general characteristics, definitions
EN 61140	Protection against electric shock - Common aspects for installation and equipment
EN 175	Personal protection - Equipment for eye and face protection during welding and allied processes
EN 60204-1	Safety of machinery - Electrical equipment of machines – Part 1: General requirements

### KEY TECHNICAL PARAMETERS

#### 120VOLT USE

#### 230VOLT USE

	120VOLT USE	230VOLT USE
<b><u>INPUT:</u></b>		
Voltage	120V ~ ±10%	230V ~ ±10%
Frequency	50/60 Hz	50/60 Hz
Fuse	T 6,3 A	T 6,3 A
Power	max. 550 VA	max. 1100 VA
Power Factor	> 0,95	> 0,95
<b><u>OUTPUT:</u></b>		
Voltage	max. 130 V rms	max. 250V rms
Frequency	50 kHz	50 kHz
Power	max. 500 W	max. 1000 W
<b><u>UNIT:</u></b>		
Dimensions	210×110×115 mm (with handle)	Same
Weight	1.3 kg (unit only)	Same
Ambient temperature	5-40 °C	Same
Relative air humidity	< 90 %	Same

Note: Information in this manual is not binding reflecting the continuous development of the product, its technical parameters, dimensions and weight.

# T-HotBox 3650

## PACKAGING

The induction heater itself is packaged in a plastic case. Individual working tools are packaged separately in paper boxes.

When requested it is possible to pack the device and tools in a plastic foil and wooden overseas crate, including strapping (if the crate is to be shipped in a container).

The equipment must be packaged and secured for transportation in a manner ensuring protection from moisture and vibrations during transport. It is recommended to use an inner polyethylene packaging with a welded seam for longer transport routes or extended storage of the equipment. The outer packaging must be rigid enough and labelled with shipment signs and marks "Fragile", "Avoid moisture" etc. If packed in this manner and secured against shifting, the equipment can be transported using all common enclosed means of transport. Vibrations during transport must not exceed values prescribed by relevant shipping tests.

## UNPACKING

- Remove individual parts of the wooden crate (if used)
- Remove the strapping
- Remove the device from the plastic case
- Remove individual tools from their paper boxes
- Check the delivery for completeness according to the delivery bill
- Visually check the device and tools for any signs of damage incurred during transport
- If the delivery is not complete or if any of the components is damaged, contact the equipment supplier
- When returning the equipment to the supplier for repairs, it must be placed in the original packaging

## WARNING!

Keep the packaging materials – wood, nails, plastic parts, paper packaging, etc. – out of the reach of children, as it may be a source of risk.

Separate packaging materials and dispose of it in accordance with relevant regulations.

## STORAGE CONDITIONS

Store the device and its accessories in a dry, covered place, under temperatures between -5 °C and +60 °C. Do not place the equipment near heat sources.

When handling the equipment, pay extra attention to avoiding shock, even to packaged device and tools as that could cause damage.

## COMMISSIONING, SAFETY MEASURES AND CHECKING ELECTRICAL CONNECTIONS

Open the box, remove the induction heater and accessories and check for completeness.



## T-HotBox 3650

### NOTE!

The induction heater and tools can be switched on only after attaining the ambient temperature. Wait at least 30 minutes, i.e. after all condensation on the box and electronic components of the equipment evaporates.

Pay attention to avoid damage to connector on the front and back panels when handling the induction heater and tools.

### NOTE!

Before connecting the induction heater to the power supply, make sure that the voltage and frequency of the local power supply network, including the circuit breaker (min. 16 A, type B) conform to the standard CEI EN 6024/1 as well as the data on the type plate of the device, and that the electrical installations have been made in accordance with the relevant regulations. Electrical safety of the equipment is secured by using a three-conductor power cord with a protective conductor.

### NOTE!

Installation and the first switching on of the induction heater must be carried out by a qualified person in accordance with the relevant regulations and instructions contained in this manual.

**Switching on:** Turn the main switch on front panel to the ON position. Red light in switch will light up, indicating that the device is under power. The machine prepared for work will emit standby sound signal double beep every 5 seconds.

*It is possible to turn off the standby sound signal if you turn on the device with control knob set on the position 4s.*

**Switching off:** Turn the main switch to the OFF position to turn the induction heater and the working tool off. Unplug the power cord from the power socket. Detach the tool connecting cable.

Before every use of the equipment, check correct setting and proper condition of the equipment.

### CAUTION!

The case of the induction heater complies with enclosure protection rating IP 21. It is therefore not permitted to use the equipment in a humid environment.

### CAUTION!

Should the user modify, adjust or change the device or any of its accessories in any way, or integrate it in another device, the manufacturer shall be relieved of any responsibility and the user must remove the CE marking from the equipment.

**Any breach of the above instructions may put the T-HotBox 3650 operator at risk and/or cause damage to property.**

## T-HotBox 3650



1	CONNECTOR FOR TOOL CABLE
2	TIME/POWER CONTROL KNOB
3	MAIN SWITCH WITH RED LIGHT
4	HANDLE

### OPERATION AND CONTROL OF THE EQUIPMENT

Select a suitable working tool depending on the job to be performed and connect it to the induction heater using the tool cable. One end of the tool cable is plugged to the working tool and the other to the “TOOLS” socket on the front panel of the device. Only use working tools which are made for the T-Hotbox and have a yellow point marked near the connection plug.

Using the rotary control knob on the front panel select the desired time or output power:

#### **Time mode:**

Positions on the left side of the control knob correspond to the output time when the machine is working on 100% of power. You can select the duration time in the range of: 0.5s, 1s, 1.5s, 2s, 2.5s, 3s, 4s and infinity ( $\infty$ ). If you press the button and keep pressing it, the device will switch off heating after the selected time has passed. If you release the button and press again the time will count again from the beginning.

#### **Power mode:**

Positions on the right side of the control knob correspond to the output power of the machine. In this mode the machine is working over infinite time. You can select from percentage values of power: 20%, 40%, 60%, 80%, 100%.

Place the working tool near the place or object to be heated. Heating starts after the control button on the working tool is pressed. Simultaneously, the machine will start producing quick tone switching sound. In power mode or infinity time ( $\infty$ ) the working tool will continue to heat the material for as long as the button remains depressed. Use individual working tools in accordance with instructions provided in the chapter “Use of individual working tools” below.

# T-HotBox 3650

If an audible alarm sounds (continuous speaker sound), release the control button immediately. The equipment switches off automatically in certain cases using the overload protection, see chapter “Error messages / Protective systems”

## TERMINATION OF EQUIPMENT OPERATION

After completion of work, turn the main switch to the off position. Leave the device and the tool(s) used to cool sufficiently, for at least 25 to 30 minutes. Then unplug the power cord from the socket. Unplug the working tool cable. Place the device and working tools in to the plastic case.

## USE OF INDIVIDUAL WORKING TOOLS



1	VS PEN
---	--------

**VS PEN**



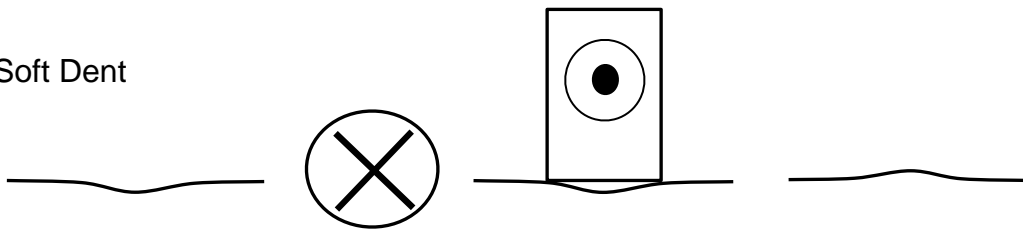
## T-HotBox 3650

The VS Pen is designed to heat a small concentrated area of sheet metal. The power button is located directly on the tool itself. It is ideal for the heating of small areas on a car body. Its main purpose is the removal or reduction of small, shallow dents or blemishes without damaging the paint. **Warning - here is significant risk of damaging the paint, if the heating is done too long.** It can also be a helpful tool to any PDR (paintless dent removal) technician as with it he can bring up general lower areas with it.

In the dent removal application the concentrated heat will expand the metal and bring it up. This only works on soft dents. In some cases the dent can reappear once the metal has cooled off. The following has to be made aware of:

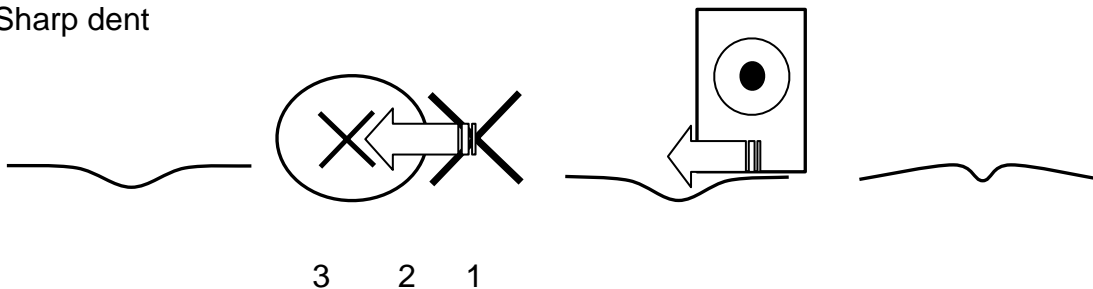
- **Don't push down with the tool during the operation, as this might create a larger dent, due to the fact that the metal is soft once it is heated.**
- **Don't heat too long. As this might and will burn the paint. It is best to test it first on a similar panel. Normally .5 sec setting and even 1 sec. is ideal. But there might be the case that even at this setting that the paint might be damaged, due to the way the material is built-up beforehand. We don't take any responsibility for any paint damage.**
- **It doesn't work on a negative curved area**
- **It doesn't work on an area which has a glued brace behind it.**
- **If the dent is too large then the risk is that the dent becomes larger. Then stop immediately. If this occurs you can first let it cool off before trying it again. Then first start heating on the side and then slowly move into the center with impulse heating.**

Soft Dent



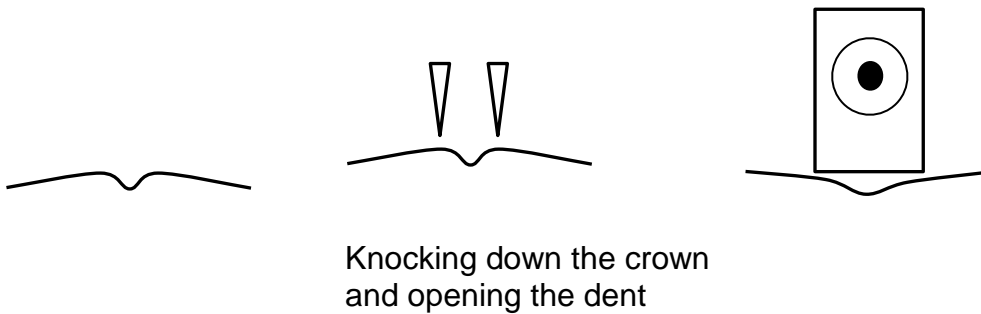
Heat in the middle. This is always the ideal area to heat. First try at a low time setting and then increase the time setting the more experience you get.

Sharp dent



## T-HotBox 3650

With sharper dents the process is more difficult. As in most cases the metal is stretched or elongated. First it is best to heat on the side with a short impulse heating. Once you see the metal coming up you can move with some quick impulses and heating to the center of the dent. If the metal goes down, then the dent is simply to sharp, or there might be a negative curve, or there might be a brace behind it, or maybe you pushed down while heating the metal. If the metal comes up the center of the dent remains. Now it is possible to reopen the dent with a knock down and to heat the metal again to bring it up.



This process may have to be repeated several times. In most cases with a sharp dent, the center can't be removed.

It is recommended first to practice on a panel, in order to get used to the quick heating. Also try not to push down the tool onto the metal because this can also cause a larger dent.

### **CAUTION!**

**There is a risk of paint damage due to overheating. It depends on the build-up of the paint. We don't take any responsibility for this. It is best first to test it on a similar panel with the exact same paint material build-up. There is always a rest risk at hand.**

Shrinking or hardening of the metal is also possible. Try either on the top side as well as the bottom side. After heating cool off the area to stiffen the material. The most efficient way is to do this with a longer heating time, but use caution, **as this will also increase the risk of burning the paint.**

# T-HotBox 3650

## APPLICATION LIMITATIONS

This equipment is designed and manufactured, in its construction and dimensions, for heating of metal objects by means of induction. Any other use, incorrect procedures, use on other than recommended materials, and/or incorrect operational mode settings can place the operator at risk and/or cause damage to material and the induction heater.

The manufacturer does not accept any responsibility for any injury and/or material damage caused by improper or incorrect use of the equipment.

## OPERATIONAL ENVIRONMENT

Operational temperature range: 5-40 °C

Operational relative humidity range < 90%

## HANDLING

### CAUTION!

Handle the induction heater with care and ensure its stable positioning on a flat, Non-flammable surface when in use.

Always operate the induction heater using the indicated handle.

The induction heater is fitted with a flexible power cord and a cable connecting the working tools. Proceed with care to avoid dangerous situations.

Before you start heating, check that the induction heater is in a level and stable position.

## MAINTENANCE

The induction heater is designed to require very little maintenance. The internal space of the induction heater should be cleaned by a trained specialist depending on the frequency of use and the dustiness of the working environment.

If the equipment is transported frequently, it should be checked by a trained specialist depending on the frequency of transports and any loose mechanical components inside the cabinet tightened as necessary. Any loose connections can cause short circuit inside the device.

### NOTE!

Never remove the cabinet cover and do not interfere with the internal components in any way. Always contact your local dealer or importer. Removal of the cover by an unauthorized person invalidates any T-HotBox HTR-02 warranties.

# T-HotBox 3650

## PREVENTIVE MAINTENANCE

Avoid any mechanical damage to the control panel and connectors when transporting the equipment. The connector must be kept dry and clean at all times. If the connector becomes soiled, clean them with isopropyl alcohol and dry out.

Maintenance should take place regularly, once a week or more frequently, depending on operational conditions.

Check the condition of all cables and the induction heater frequently. If necessary, replace cabled with new ones.

Check the induction heater and remove dust and dirt that may settle on certain parts of the equipment, especially the ventilation apertures.

Proper maintenance ensures reliable and fault-free operation of the equipment.

## ERROR MESSAGES / PROTECTIVE SYSTEM

The equipment is provided with a protective system designed to prevent damage/destruction of the equipment. Malfunctions are indicated by constant tone signal of the speaker. If the malfunction occurs repeatedly, contact your local dealer or importer. A list of protections and errors:

### **Constant tone signal while working**

Output power exceeded. Release the control button immediately.

#### **The constant tone signal will be terminated when the button is released.**

This is internal overcurrent protection of the device. It is possible to resume work afterwards. If the error persists after several attempts to work, switch the device off and wait 20 minutes until it cools down.

#### **The constant tone signal will not be terminated after the releasing the button.**

Possible damage to the internal circuitry. If the error persists after next start of the device, contact your local dealer or importer

### **Constant tone signal while not working**

**Fan failure:** Check the cleanliness around the fan, equipment vents and ensure sufficient air supply. If the error persists, contact your local dealer or importer.

**Overheating of the heat sink:** Switch the device off immediately and wait approximately 20 minutes until it cools down sufficiently. It is possible to restart work afterwards.

**Damaged internal circuitry:** Contact your local dealer or importer

# T-HotBox 3650

## **Protection by a safety fuse:**

The device contains an internal replaceable fuse, which is part of the system prevention of damage or destruction of the equipment. The fuse is high probably burned down, when all these three conditions are true:

- Device is switched on (Shining red light in the switch)
- Fan is not working (Rotor does not rotate)
- Device is not emitting standby sound signal (Double beep every 5 seconds)

Main incoming power lead wire is protected by fuse F1 which is located inside of the device. **This fuse can be changed only by certified person at service center.** Type of protective fuse and its breaking current value is situated on a printed circuit board near the fuse holder. The fuse value is also presented in table “KEY TECHNICAL PARAMETERS”.

## **SPECIAL MAINTENANCE**

Any repairs, when required, must be performed by a qualified person only, using original spare parts, and in accordance with the relevant regulations and instructions provided in this manual.

## **CAUTION!**

Replacing equipment parts for other than original spare parts and any modifications or alterations of the induction heater relieve the manufacturer of any liability and responsibility for any injury to operators and/or material damage.

**Any such modifications also invalidate any equipment warranties.**

## **EMERGENCY**

In case of fire, use suitable extinguishers in accordance with relevant regulations.

## **CAUTION!**

Never use water-based fire extinguishers as the induction heater may still be live.

## **WARRANTY**

The manufacture guarantees the induction heater to be free of fault for one (1) year from the date of purchase.

The warranty does not cover:

- the replacement of safety components designed to break/burn in case of induction heater overload
- the use of other than original spare parts
- any damage caused by improper handling, tampering with the equipment by a third party, and/or use of the induction heater for purposes other than for which it has been designed
- any damage caused during transport



## CLAIMS

The user may claim a defect of the equipment before expiration of the warranty period. Any such claim must be made in writing, indicating the following:

- date of delivery subject to the malfunction (equipment batch number)
- description of the malfunction
- whether the equipment was used under operational conditions as per technical specifications
- the actual application of the induction heater, specification of the heated material, tool used
- date and circumstances under which the malfunction occurred
- any documentation and/or photos necessary for successful processing of the claim

Failure to observe the above conditions entitles the induction heater supplier to reject the claim.

The supplier carries the costs of accepted claims. The claimant shall carry the costs of a rejected claim. The postdate indicated on the claim letter received by the supplier shall serve as the claim date.

The user shall send the damaged or faulty part to the supplier upon request, at the user's cost. The induction heater must be carefully packaged and labelled for shipping. The relevant costs will be reimbursed to the user for all accepted claims.

## DISASSEMBLY – WASTE DISPOSAL

The manufacturer or the supplier of the induction heater (electrical equipment) is responsible for the discharge of duties specified in the Act No. 185/2001 of the Czech Code, on waste management, as amended, in its section on waste electrical and electronic equipment, in particular Part 8, Section 37, letters f, g, h, i, j, k, l, m, n, and o. This Act conforms with the Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE), as amended by the Directive 2003/108/EC of the European Parliament and of the Council of 8 December 2003, and the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003.

The manufacturer (the final vendor) notifies the purchaser (consumer) that:

- 1) the electrical equipment must not be disposed of along with normal household waste; it must be placed at a dedicated container or be handed to a specialized recycling center.
- 2) after decommissioning, the electrical equipment will be dismantled and its components reused as spare parts or recycled.
- 3) the electrical equipment does not contain hazardous substances harmful to human health and/or the environment.

The manufacturer (final vendor) notifies the purchaser (consumer) that the product is subject to the duty of collection of waste electrical and electronic equipment directly at the point of sale, unless another manner of collection is announced in writing at the time of sale. The collection of waste electrical and electronic equipment is free of charge and may not be conditioned by a purchase of any new equipment. The same quantity is collected as had been sold.

# T-HotBox 3650

## TROUBLESHOOTING

The T-Hotbox has a built-in fast electronic over-current protection, which protects the device against high currents on the output.

1) If you use the tool head with the blue dot (designed for 120V) in Europe on 230V, it will trigger the internal over-current protection and the unit will emit a continuous error sound signal (beep) when the button on the tool head is depressed. The error sound signal will stop once the button on the tool head is released.

2) If you use the tool head with the yellow dot (designed for 230V) in USA on 120V, the output power will be very low and insufficient to heat up metal quickly.

There's no damage caused in either case, but because there's no error signal in the case of scenario 2, it's possible the operator will think there's a problem with the unit not working.

\*\*\*\* You Must Use The Correct Voltage Tool Head For The Power Supply Being Used \*\*\*\*

### Possible malfunctions and recommended remedies

Description of malfunction	Likely cause	Remedy
The induction heater cannot be switched on	Faulty power supply connection	Check the power supply connection and mains voltage Check the power switch on the front panel
No heating	The tool connecting cable is incorrectly connected or is faulty	Check tool cable connection. Replace damaged tool cable Try another tool
The induction heater is correctly connected but the target is not heated	Secured electronic components overheated	Wait to cool off and reinitiate work
The induction heater emits constant tone signal while working (Tool button pressed)	Internal overcurrent protection	Possible to resume work afterwards Wait to cool off and reinitiate work
The induction heater emits constant tone signal all the time (Tool button not pressed)	Internal overheating protection or damaged internal circuitry	Wait to cool off and reinitiate work If the error persists, contact your local dealer or importer

## T-HotBox 3650

### T-Hotbox 3650 / Tool Heads & Multi Voltage Use

#### How to identify the two different tool head voltages:

The Heat Pen / Tool Heads with a BLUE dot on the connector end are for 120 Volt use.



The Heat Pen / Tool Heads with a YELLOW dot on the connector end are for 230 Volt use.



We stock and sell both the 120 volt and 230 volt preconfigured units; however it is possible to convert either model to operate properly with the other supply side current by purchasing the optional 120v and 230v heat pen/tool heads separately and by using a World Plug adapter with a hard wired ground pin.

All units have a built in voltage converter designed to operate from a range of 100 volt to 230 volt input. It is NOT necessary to use a voltage converter, only a World Plug Adapter with a hard wired ground pin.

#### **For standard 120 volt usage: Order Item # A116 / 120Volt T-Hotbox**

All Item # A116 units are sold for use with USA standards are pre-configured at the factory for 120 volt usage with the correct plugs and tool heads, no other set up changes are needed. To use simply plug the unit into the 120 volt wall plug and make sure the 120 volt BLUE dot tool head is attached to the cable.

#### **For standard 230 volt usage: Order Item # A116B / 230Volt T-Hotbox**

All Item # A116B units are sold for use in 230 volt Countries. These are pre-configured at the factory for 230 volt usage with the correct plugs and tool heads, no other set up changes are needed. The World Plug Adapter may be needed for the various 230 volt type wall plugs.

## T-HotBox 3650

### Voltage Conversion

**To convert a 120 volt unit to function properly with 230 volt power supply** you will need Item # A116PLUG (or equivalent) World Plug Adapter and Item # A116HP 230volt tool head. Exchange the tool head on the cable to the A116HP. Plug the World Adapter into the 230 volt wall plug. Then plug the unit into the World Adapter and power up the unit.

**To convert a 230 volt unit to function properly with 120 volt power supply** you will need Item # A116PLUG (or equivalent) World Plug Adapter and Item # A116HPA 120volt tool head. Exchange the tool head on the cable to the A116HPA. Plug the World Adapter into the 120 volt wall plug. Then plug the unit into the World Adapter and power up the unit.

#### A116PLUG



## T-HotBox 3650

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Optional Items available from Ultra Dent Tools:

Item # A116C 3 Meter Extended Cable  
Item # A116HPA 120 Volt Tool Head – Blue Dot  
Item # A116HP 230 Volt Tool Head – Yellow Dot  
Item # A116HPAS Small 120 Volt Tool Head – Blue Dot  
Item # A116HPS Small 230 Volt Tool Head – Yellow Dot

Item # A116PLUG World Plug Adapter with Hard Ground Pin

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These operating and maintenance instructions are intended for qualified and duly trained personnel and the customer accepts all responsibility for its use.

### DECLARATION OF COMPLIANCE

A copy of the CE Declaration of conformity is available at

<http://www.betaginnovation.com/>

