



## **Electro-Magnetic Dent Removal and Induction System for Alu** (17501)

### **OPERATING AND MAINTENANCE INSTRUCTIONS**

Read this manual carefully before using  
Electro-Magnetic Dent Removal and Induction System for Alu

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HBC system reserves the right to  
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typographical errors, inaccuracies  
and/or improvements to the  
equipment.

(Patent pending)



## **WARNINGS AND SAFETY MEASURES**

### **WARNING!**

Electric shock hazard!

Electro-Magnetic Dent (for Alu) 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 Electro-Magnetic Dent (for Alu) 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 aluminium vehicle components without damaging nearby parts. Operators must acquaint themselves with and understand these operating and maintenance instructions prior to using the induction heater.

Unauthorised persons shall not be allowed to enter the area where aluminium vehicle parts are heated. Only one authorised 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. Aluminium and 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 aluminium and 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 aluminium and metal objects, such as wristwatches, jewellery, necklaces, keys, belt buckles, coins, metal buttons, zippers, etc. During work with device do not wear also any electrical devices on hands, such as wristwatches, wrist sporttrackers 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 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 watchperson 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 galvanised, cadmium plated, varnished or blackened sheet metal or aluminium parts, 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.

Please 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 of the device, tool cable and especially of the tool!**

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 and working tool is fitted with overheating 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, aluminium 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.**

### **GENERAL INFORMATION on Electro-Magnetic Dent (for Alu) (17501)**

The microprocessor-controlled Electro-Magnetic Dent (for Alu) is designed for heating of aluminium parts of vehicles without damaging adjacent components. It is easily portable, powered by a single-phase 230 V/120V/100V (60Hz or 50 Hz) net. It is highly versatile and suitable for applications like:

- Paintless dent repair (PDR)
- Removing striping, emblems, decals and foils
- and other applications

Electro-Magnetic Dent (for Alu) is designed to heat up aluminium alloys, which are used in automotive, using concentrated magnetic field at the end of the tool. 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. That is why induction heater heats aluminium alloys readily, but has no effect on glass, plastics, wood, cloth and other non-conductive materials.

**It is not allowed to apply the device to ferrous metals and their alloys.**

Device is designed to initialize a work sequence only on aluminium alloys.

During operation, the tool can secondarily heats up the metallic parts in the vicinity.

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

2014/35/EU	Low voltage Directive (LVD)
2014/30/EU	Electromagnetic Compatibility Directive (EMC)
93/68/EEC	CE Marking Directive
2006/42/EC	Machinery Directive
2011/65/EU	Restriction of Hazardous Substances Directive (RoHS)
2000/14/EC	Noise Emission in the Environment Directive
2012/19/EU	Waste Electrical and Electronic Directive

## KEY TECHNICAL PARAMETERS

<b><u>INPUT:</u></b>	
Voltage (depends to version)	230V ~ $\pm 10\%$ / 120V ~ $\pm 10\%$ / 100V ~ $\pm 10\%$
Frequency	50/60 Hz
Fuse (depends to version)	T 8A (230V) / T 12A (120V) / T 16A (100V)
Power	max. 1400 VA
Power Factor	> 0,95
<b><u>OUTPUT:</u></b>	
Voltage	max. 33 V rms
Frequency	60 kHz
Power	max. 1300 W
<b><u>UNIT:</u></b>	
Dimensions	135×215×125 mm (with handle)
Weight	1.8 kg (unit only)
Ambient temperature	5-40 °C
Relative air humidity	< 90 %

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

## PACKAGING

The induction heater itself is packaged in a plastic case together with working tools. 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 (if used)
- 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.

#### **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 switch 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 2s.*

**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 Electro-Magnetic Dent (for Alu) operator at risk and/or cause damage to property.**



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



Connect working tool 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. Use only working tool which was made for the **Electro-Magnetic Dent (for Alu) System**, this tool was delivered with device.

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: 0.5s, 1s, 1.5s, 2s and infinity ( $\infty$ ). If you press the button and keep pressing it, the device will automatically stop heating after the selected time has passed. If you release the button and then press it 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%.

### **Operation of the Equipment:**

Place the working tool near the place to be heated. Once the button is pressed device will initiate calibration sequence. Start of calibration sequence is indicated by short acoustic "beep" signal. Device during this period selects the best resonant frequency for the heating of the aluminium alloy. After calibration process the heating sequence is initiated with newly selected resonance frequency. 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.

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

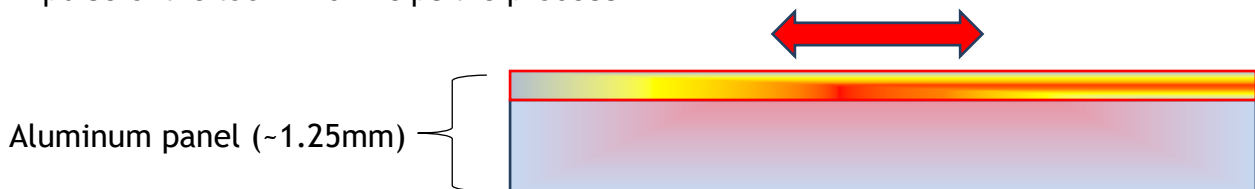
## **TERMINATION OF EQUIPMENT OPERATION**

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 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.

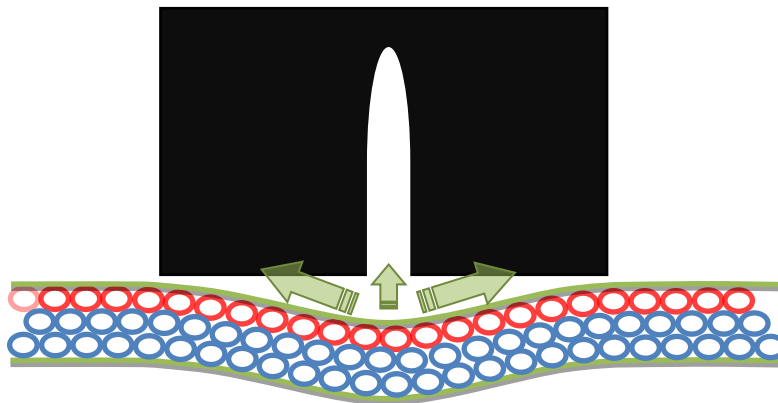
## Electro-Magnetic Dent (for Alu) System - DENT REMOVAL

The systems concept has been developed over the years on carbon steel panels and has found its way into the aluminum repair process. It is important to understand and to respect the parameters on how it works and what the limitations are, in order to ensure a proper application.

The system works differently from the carbon steel versions, due to the materials characteristics. A different approach had to be applied, due to the high heat conductivity of the material, the need to have a focused point affected and also the different variations of aluminum alloys. The device first has to find the tool resonance frequency in respect to the material. In aluminum this range is larger than on steel and also due to the fact, that a precise energy level is required. After this calibration process, the surface eddy current effect is being used to expand and pull up the material. This means the tool magnetic field heats up the top layer of the material and thus causing it to expand. Due to the materials expansion characteristics, the effect is much better than on a steel panel. The other key working function is the vibrating impulse of the tool which helps the process.



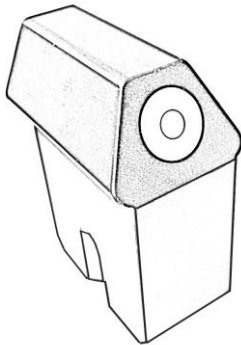
This effect makes it ideal for the rising of soft damages to medium damages.



There are four applications

1. Soft dents and medium dents
2. Dent reduction of larger or sharper dents
3. Area work or cleaning up an area that has been repaired by the dent removal tools or glue system.
4. Shrinking or stiffening of metal (Min. 3 times required)

## USE OF WORKING TOOL - ALU HEAT PEN



The Alu Heat Pen is designed to heat a small concentrated area of a aluminium sheet. The trigger button is located directly on the tool itself. It is ideal for the heating of small areas on a car body. The main purpose of this tool is the removal or reduction of small, shallow dents or blemishes without damaging the paint. 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. Although the risk of damaging the paint is very high, if the heating is done too long. 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.

The main effect of the tool is in the center of the tool. It is very important to have no distance to the metal. The following has to be considered:

- 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 should first let it cool off before trying it again.
- If you over apply the tool than there is a risk to damage the coating.

What to consider when using the tool:

1. Move from the outside to the center of the dent.
2. Don't move behind of the center of the dent, while you move over.
3. Don't press down or apply pressure.
4. The more aggressive during the pulling the better and an over pulling is needed.
5. Hold the tool flat to the surface.
6. Don't apply the tool too long as this may damage the coating.

There are generally two different ways to repair a damage also depending on the type of damage. If you have a soft damage a simple pull might be enough. But in many cases the dent has to be pulled and the center might have to be reopened (with the knock down) and re-pulled again.

### **CAUTION!**

There is a risk of paint damage due to overheating. It depends on the buildup 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.

### **WARNING!**

During work with device the tool become hot over time. This is normal process which is caused by partial power losses in tool core. Allow sufficient cooling period of the tool and tool cable!

Every Alu Heat Pen is equipped with inside temperature switch, which will disconnect the tool button circuit in case of tool temperature reaching 60°C. This protection mechanism is not acoustically notified by device, in other words pressing of the tool button will not initiate heating and device will continue to emit standby sound. Wait for the tool to cool down and you can continue with work.

Temperature of tool cable must not exceed 60°C! Allow sufficient cooling period!

### **WARNING!**

There is a fragile core inside of each Alu Heat Pen, by dropping the tool to the ground you can cause damage to the core. Please avoid any physical damage on tool or tool cable. Using damaged tool or tool cable can lead in to device destruction.

### **WARNING!**

It's very dangerous to use damaged tool with exposed inside parts!!!

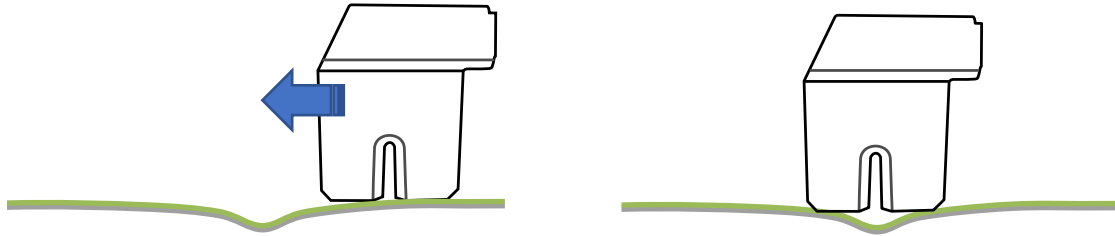
### **APPLICATION**

It is important to bear in mind, the **Electro-Magnetic Dent (for Alu)** power setting is always 100% if the time functions are being used.

The temperature effect or overheat is the key aspect to watch out for. This may happen very fast during the repair process. For example if the surface temperature is 20 deg. the material can be heated up to 150 deg. in 2 sec. depending on the thickness and type of material. The paint thickness can also affect this as well as how far away the tool is to the surface.

## Soft Dent Repair

Don't press the Alu Heat Pen on to the surface. Just hold it on the top and as the metal comes up, pull up the tool head, but keep the tool still on the surface. Start from the side and move into the center as the metal coming up.

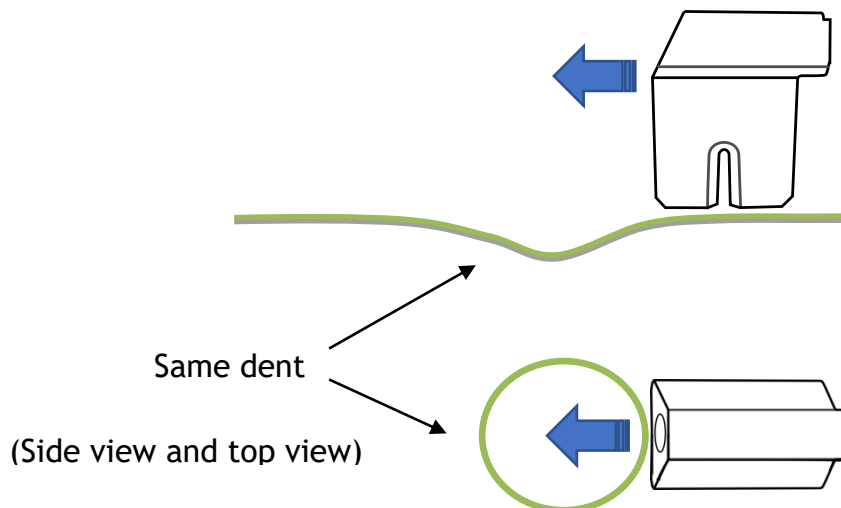


It is necessary to over-pull the dent.

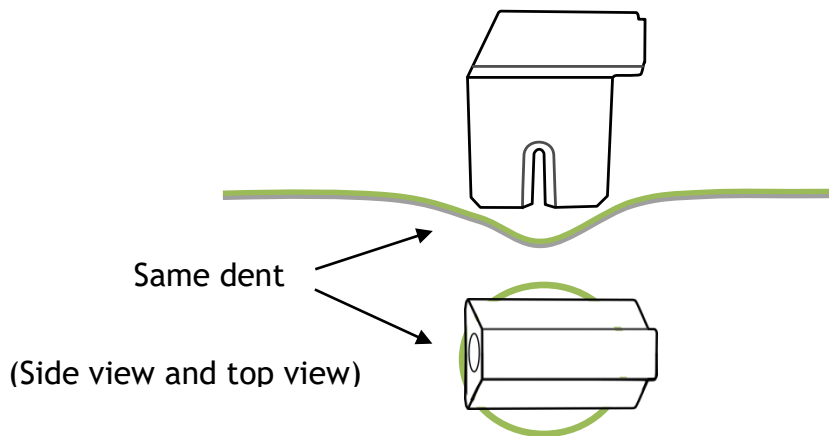
## Medium Dent

On medium dents start on the outside of the damage. If you start in the center of the damage it might become larger. This can happen due to:

- Main pressure (metal stress) of metal in the damage is towards down
- Dent is too large
- Stretched center
- Pressing down on the tool
- Brace behind the metal
- Negative curve



Start on the side with a short impulse. Depending on the size of the damage it might be necessary to start far away from the center of the dent. The impulse should sound like a bee-beep (2 Beeps). This is about .1 sec pressing the red button on the tool. Always use the light and look on the surface to see what the metal is doing.

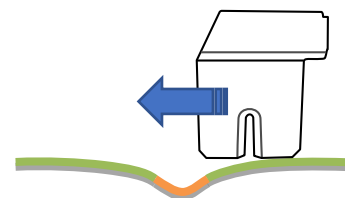


Then move closer to the dent, and again a short impulse (bee-beep). Important is to do an impulse on the edge or almost going down into the center of the dent. Then once the metal has come up, bring up the center by heating at least .6 sec. The panel should be over-pulled. Also the raising of the panel can be done by short impulses, always raising the tool to see what the metal is doing. This will take some practice.

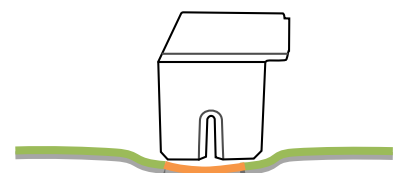
### Sharp dent, dent reduction

With sharper dents the process is different, as in most cases the panel 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 to the center of the dent. If the panel comes up it can be that the center of the dent remains. Possible now is to re-open the dent with a knock down and to repeat the process.

Start on the outside with an impulse (bee-beep). Then move with short impulses to the center. Important is to do first the edge and then going down into the center of the dent.



Open up the dent with the knock down and rework the dent, similar to the glue system. Meaning making a soft dent or in some cases making it larger. This process may have to be repeated several times. In many cases with a sharp dent the center can't be removed completely.



### Shrinking

Shrinking or hardening of the panel is also possible. Try either on the top side as well as the bottom side depending on the materials stretched direction. After the heating, cool off the area to stiffen the material. The most efficient way is to do this with a longer heating time. It is important to repeat the process several times in order to get the better hardening. Then cool off with air or water to get the shrinking effect.

## **APPLICATION LIMITATIONS**

This equipment is designed and manufactured, in its construction and dimensions, for heating of aluminium body parts of the car 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 of the equipment: 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 unauthorised person invalidates any Electro-Magnetic Dent (for Alu) System warranties.

## **PREVENTIVE MAINTENANCE**

Avoid any mechanical damage to the control panel, connectors or tool when transporting the equipment. The connector must be kept dry and clean at all times. If the connector become 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 cables 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 current exceeded. Release the control button immediately.

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

This is internal over-current 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 30 minutes until it cools down.

#### **The constant tone signal will continue 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 and wait approximately 30 minutes until it cools down sufficiently. It is possible to restart work afterwards.

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

### **Intermittent tone signal after startup** (stable acoustic signal with short pauses)

Power network frequency outside of the limits. Switch the device off and try again later. If the error persists, contact your local dealer or importer.

### **Three short tone signals after pushing the tool button**

Device could not find correct resonance frequency for work. Try to push button again or change position of the tool on the surface and resume work. It is possible that tool is too far away from aluminium panel.



**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 supplier guarantees the induction heater to be free of fault for 12 months from the date of dispatch.

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, tempering 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 post date 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. Updated by Waste Electrical and Electronic Equipment Directive 2012/19/EU.

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 specialised recycling centre.
- 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.

## TROUBLESHOOTING

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 there is a faulty	Check tool cable connection. Replace damaged tool cable Try another tool
Device will not start after the tool button is pressed and tool cable is connected	Possible overheating of the tool Overheating protection	Wait to cool off and resume work Try another tool
The induction heater emits constant tone signal while working (Tool button pressed)	Internal over-current 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
The induction heater emits intermittent tone signal immediately after startup	Power network frequency outside of the limits	Switch the device off and try again later If the error persists, contact your local dealer or importer
The induction heater emits three short tone signals after pushing the tool button	Device could not find correct resonance frequency for work	Try to push button again or change position of the tool Tool is too far away from aluminium panel
Device will not start after the tool button is pressed and tool is cold	Possible problem with tool or cable	Try another tool and check the integrity of the cable

## STANDARD, OPTIONAL ACCESSORIES

(Range depends on selected set)

Power cord (Coupled to a device), length 4.7 m, nominal cross-section 3×1 mm<sup>2</sup>

Tool cable, length 1.2 m, nominal cross-section 3×2.5 mm<sup>2</sup> and shielding, with two plugs

Alu Heat Pen - Working tool

Plastic case for device and accessories

Operating and maintenance instructions

## DECLARATION OF COMPLIANCE

A copy of the CE Declaration of conformity is available from



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