PRO SPOT
QUALITY WELDING SYSTEMS

CH-33

Induction Heater

Instruction Manual

Foreword

CH33 is a mobile induction heater which is used to heat metallic parts on vehicles without damaging nearby parts. All other use of the equipment, or use that is contrary to the instructions in this manual, can cause personal injury and/or machine damage.

Pro Spot can in no way be held responsible for intentional or unintentional damage, and consequent unlimited loss of profit, loss of income, loss of business opportunity, loss of use or other similar nuisance, irrespective of how this has arisen, that originates from incorrect use of this equipment or its use in a manner not intended.

Warranty

Pro Spot offers a one-year guarantee from the date of delivery. This guarantee covers material defects and assumes normal care and maintenance.

The guarantee assumes that:

- the equipment is correctly installed and inspected in accordance with current local regulations.
- the equipment has not been altered or rebuilt without approval from Pro Spot.
- genuine Pro Spot spare parts are used in any repairs.
- operation and maintenance has been carried out according to the instructions in this manual.

All claims on warranty must verify that the fault has occurred within the guarantee period, plus that the unit has been used within its operating range as stated in the specifications. All claims must include the product type and article number. This data is stamped on the name plate (refer to *section 1.2 "Marking"* for location).

Information

This instruction manual provides advice as well as instructions for installation, operation, maintenance and troubleshooting.

IMPORTANT! Read this manual carefully to become familiar with the proper operation of the equipment. Do not neglect to do this as improper handling may result in personal injury and damage to the equipment.

The drawings in this manual are intended only to be illustrative and do not necessarily show the design of the equipment available on the market at any given time. The equipment is intended for use in accordance with current trade practice and appropriate safety regulations. The equipment illustrated in the manual may be changed without prior notice.

The contents in this publication can be changed without prior notice.

Conformity with directives and standards

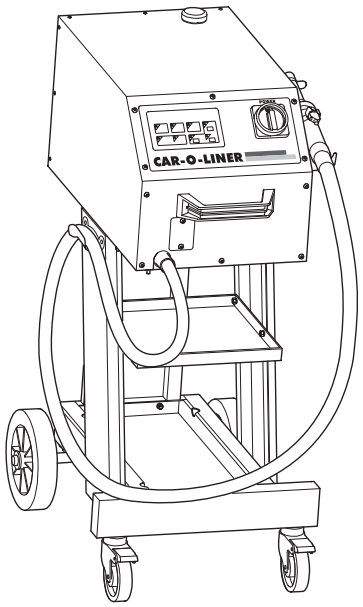
CH33 is designed and manufactured by Car-O-Liner AB, which is an EN-ISO 9001 accredited development and manufacturing organization.

CH33 complies with CE standards.

Contents

1 Introduction

1.1 Induction heater



CH33 is a mobile induction heater which is used to heat metallic parts on vehicles without damaging nearby parts. The induction heater can produce heat without physical contact and without an open flame. The heater ensures minimal dismantling of nearby heat sensitive parts.

CH33 has a versatile working range. For example, the heater is used for:

- heating rusted wheel bolts and nuts.
- heating rusted door hinge pins.
- heat shrinking steel and aluminium panels during repair.
- heating of rusted exhaust manifold flange bolts in hard to reach places.
- heating of rusted bolts and nuts on the suspension or steering.
- easy removal of underseal and PVC coating.

CH33 is principally designed to heat all magnetic materials (conductors) by concentrating a powerful magnetic field at the end of the inductor. But, the heater also works well on aluminium. The magnetic field alternates at a frequency of approximately 25 kHz. The magnetic field creates eddy currents in the material, and the electrical resistance creates heat in the metal.

Since heat is created by electronic losses and radiation from the work piece, CH33 has an internal cooling system with water as cooling agent. The water circuit cools the high power electronics, cables, inductor handle and inductor. As soon as the trigger is pressed, the water pump starts pumping the cooling water in the heater.

1.2 Marking

The name plate is placed at the rear of CH33.

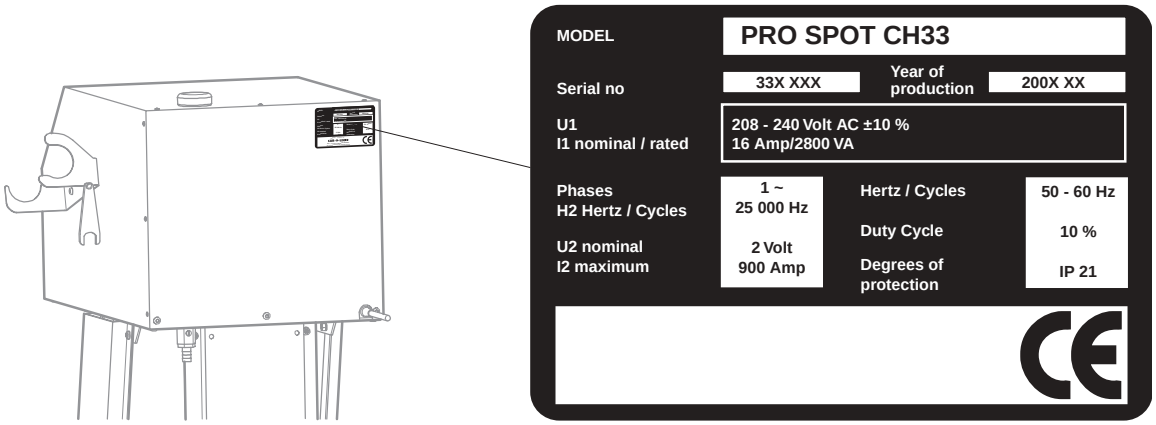


Figure 1.1 The name plate of CH33 induction heater.

2 Safety

2.1 General

CH33 has been designed and tested to meet strict safety requirements. Please read the following instructions carefully before operating CH33 and refer to them as needed to ensure the continued safe operation of the heater.

Information provided in this manual describes the suggested best working practices and should in no way take precedence over individual responsibilities or local regulations.

Great effort has been placed on the design and manufacture of CH33 so that it will comply with all applicable safety aspects for this type of equipment. During operation and other work, it is always each individual's responsibility to consider:

- Their own and other's personal safety.
- The safety of the heater through correct use of the equipment in accordance with the descriptions and instructions provided in this manual.

By observing and following the safety precautions, users of CH33 will ensure safer working conditions for themselves and their fellow workers.

2.2 Warnings and important notices

The following types of safety signs are used on the equipment and in Pro Spot's instruction manuals:

PROHIBITED
Prohibits behaviour that can cause injury.

COMMAND
Prescribes a specific responsibility or action.

WARNING
Warns of risks for personal injuries and or damages to equipment.

The following warnings and important notices are used in the instruction manual:

WARNING
Warning (in bold type) is used in this manual to indicate a possible danger that could lead to personal injury. An instruction is normally given, followed by a short explanation plus the possible effect if the instruction is not followed.

IMPORTANT
Important (in bold type) is used to indicate a possible danger that could lead to damage to the equipment and/or cause environmental damage.

NOTE: (in bold type) is used to accentuate supplementary information that is required for problem-free use or optimal use of the equipment.

In addition to the safety signs illustrated in *section 2.3 "Safety signs"*, the following warnings and important notices appear in the manual:

WARNING! Do not place the induction heater on an unstable or uneven ground. The heater might fall, causing personal injuries or serious damage to the heater.

WARNING! All electrical modifications must be made by a qualified electrician. Risk for electrical shock.

WARNING! Do not fill the water tank with anything but water (and antifreeze agent, if needed). Improper handling may result in personal injury and/or damage to the equipment.

WARNING! Do not touch any object that has been near the inductor without ensuring that it has cooled off.

WARNING! Do not touch the inductor while it is acitvated due to strong magnetic field and heat. Risk for personal injuries.

WARNING! When using the heater, the working area should be cleared from combustible items to prevent these items from being ignited.

WARNING! Make sure that you know where the fire extinguishing equipment is. Risk for injuries.

WARNING! Loose cables and hoses present tripping risks. Risk of injuries.

WARNING! If not removing paint before heating, use a suction fan to remove unhealthy fumes. Risk for personal injury.

WARNING! When operating, servicing or working in the immediate area around CH33, the user should not wear or use metal objects such as watches, rings, keys etc. Otherwise, these objects could be heated by the magnetic field from CH33 which might cause burning injuries.

WARNING! Most service must be carried out by Pro Spot service personnel and service support. Risk for electrical shock.

WARNING! Never remove any covers or perform any work to the incuction heater without unplugging it from the wall outlet. Wait for five minutes. Risk for electrical shock.

WARNING! Unplug the induction heater from the wall outlet before servicing, cleaning or maintenance. Risk for electrical shock.

WARNING! The inductor may be hot. Risk for burning injuries.

IMPORTANT! Read this manual carefully to become familiar with the proper operation of the equipment. Do not neglect to do this as improper handling may result in personal injury and damage to the equipment.

IMPORTANT! It is the responsibility of the owner to ensure that the equipment has been installed as specified in the instructions provided. It is also the owner’s responsibility to ensure that the equipment is inspected in accordance with applicable regulations before it is used.

IMPORTANT! If the heater is used in temperatures below freezing point, antifreeze agent must be used. Polypropylenglycol is recommended as antifreeze.

IMPORTANT! For the sake of the environment, it is important that the equipment is dismantled in an environmentally friendly way.

2.3 Safety signs

Undamaged safety signs shall always be affixed at the indicated places. If any signs are damaged or missing, the user is responsible for their immediate replacement. The following safety signs can be found on the heater:

WARNING
Appropriate protection (protective gloves and goggles) must be worn when using this equipment.

WARNING
Sparks from heating could start a fire.

WARNING
Risk of tripping on loose hoses, etc.

WARNING
All electrical modifications must be made by a qualified electrician. Disconnect the supply before performing any service or installation work.

2.3.1 Placement of safety signs

The safety signs are placed as follows:

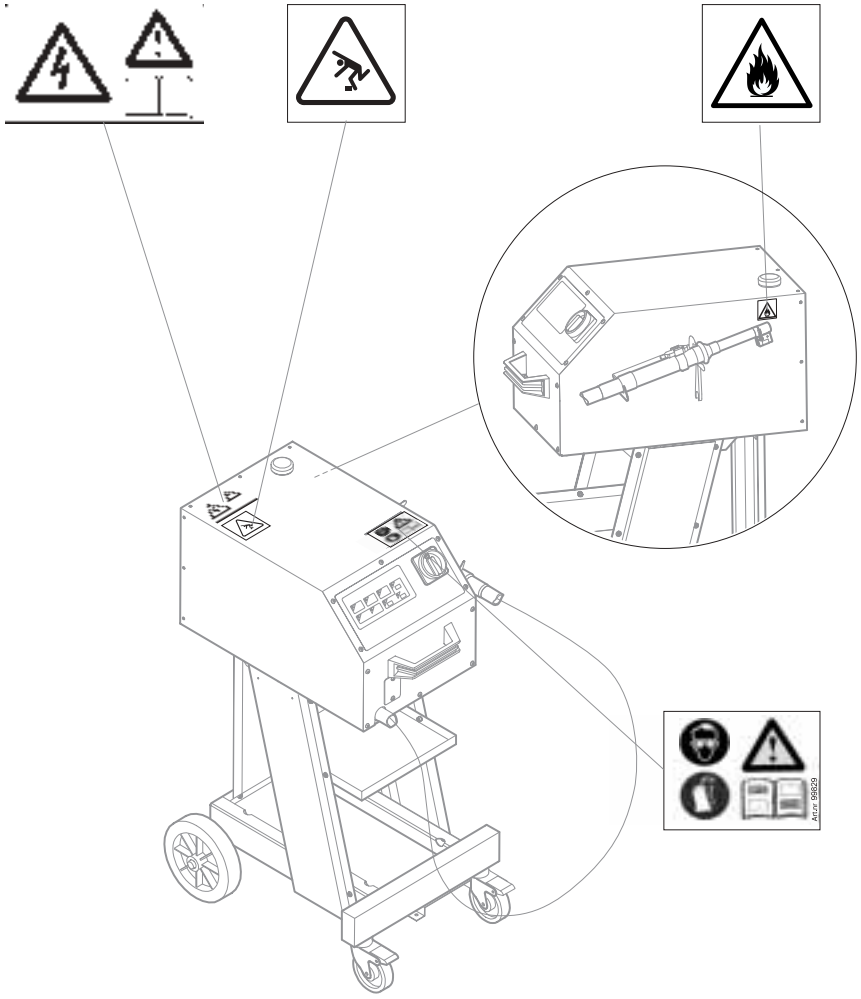


Figure 2.1 Placement of safety signs.

2.4 Safety devices

When the heater is used frequently, the inductor, the cables, the electronics and the power transformer become very hot. To prevent the heater from malfunctioning due to overheating, it is continuously cooled during operation. The heater is being permanently cooled by water running through the inductor. The water starts flowing when the trigger is activated, and it continues flowing about 10 seconds after the trigger has been released. A sensor detects the water flow and switches off the heater if the water flow is blocked.

CH33 is connected to earth. There is a residual current breaker operator (RCBO) which is built into CH33, and if the power exceeds 16 A, the fuse will switch of the heater.

CH33 also has an over temperature protection which switches of the heater if it gets overheated.

The inductor handle is insulated to protect the user from electrical chocks. The inductor handle has also a bulge on the end of the handle to prevent the user’s hand from sliding down onto the hot inductor.

3 Installation

3.1 General

CH33 is inspected and checked prior to leaving the factory to guarantee consistent quality and the highest possible reliability. Instructions for installation, with general tips and directions, are provided as follows.

WARNING! Do not place the induction heater on an unstable or uneven ground. The heater might fall, causing personal injuries or serious damage to the heater.

IMPORTANT! It is the responsibility of the owner to ensure that the equipment has been installed as specified in the instructions provided. It is also the owner's responsibility to ensure that the equipment is inspected in accordance with applicable regulations before it is used.

3.2 Packaging and delivery inspection

Check the delivery against the packing list, consignment note, or other delivery documentation to verify that everything is included and in the correct quantity. Check CH33 carefully to make sure that no damage has occurred during transport. If any part is damaged or missing, the heater may not be used until the part is repaired or replaced. If anything is missing, please contact your supplier. Remove all packaging material from the heater.

3.3 Filling the water tank

The water tank can be filled with normal and clean tap water.

WARNING! Do not fill the water tank with anything but water (and antifreeze agent, if needed). Improper handling may result in personal injury and/or damage to the equipment.

IMPORTANT! Do not use water that is salt, brackish or rich in lime. If there is *any* uncertainity regarding the quality of the water, please use destilled water.

IMPORTANT! If the heater is used in temperatures below freezing point, antifreeze agent must be used. Polypropylenglycol is recommended as antifreeze.

1 Loosen the lid on the top of the heater.

2 Fill the water tank with normal and clean tap water.

NOTE: Do not fill up the tank entirely to allow space for the hot water to expand. Fill the tank with 16 litres of water.

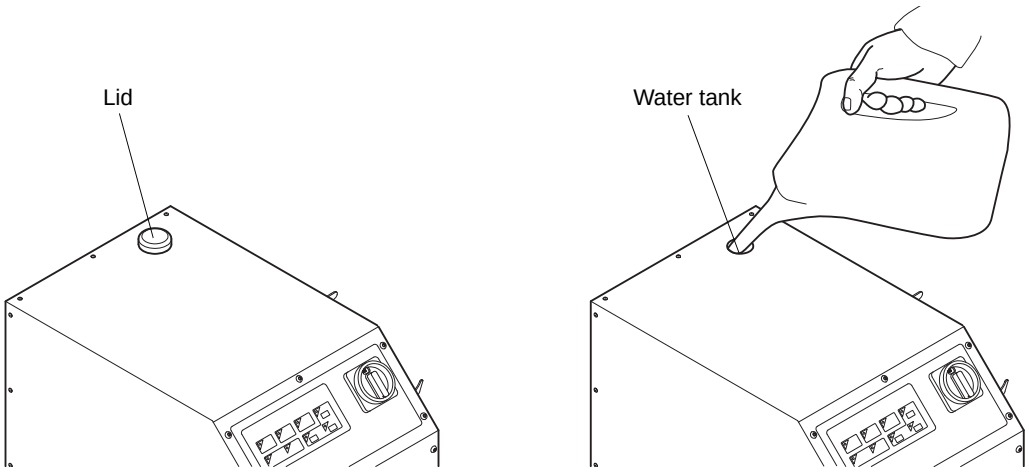


Figure 3.1 Filling the water tank.

3.4 Connection of electric supply

The heater is designed for 208-240 V, 50-60 Hz. It is fitted with a plug that allows it to be plugged to a wall outlet. The power supply must have a ground connection, and it must also be protected with a fuse as follows:

- When using only 70 % of the output power, the supply can be protected with a 10 A fuse.
- When using 100 % of the output power, the supply must be protected with a 16 A fuse.

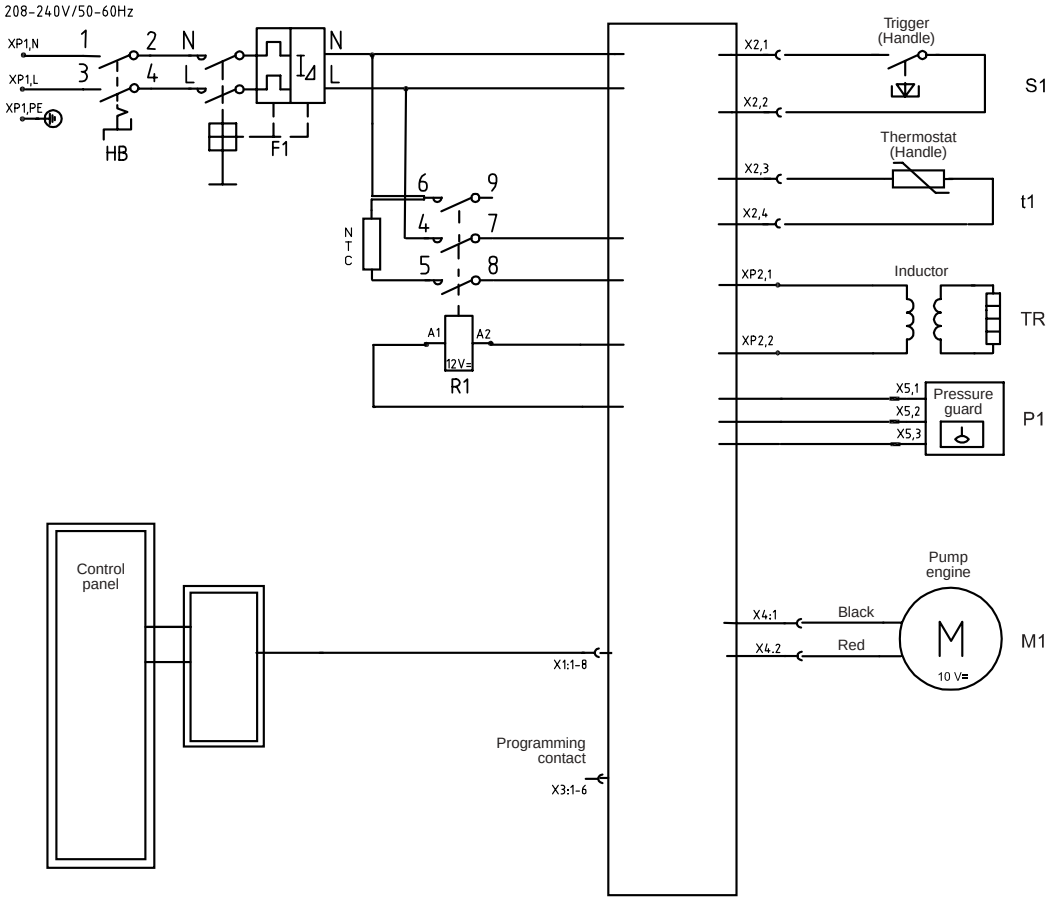
The connection of CH33 to the electrical supply is done as follows:

1 Plug CH33 to a wall outlet.

NOTE: If the original plug cannot be plugged into the wall outlet, contact a qualified electrician.

2 If you change the plug, make sure to connect the yellow-green wire to ground.

WARNING! All electrical modifications must be made by a qualified electrician. Risk for electrical shock.



HB	Main switch
F1	Residual current breaker operator
S1	Trigger on handle
t1	Thermostat in handle
TR	Transformer in handle
P1	Pressure sensor
M1	Pump engine
NTC	Resistance

Figure 3.2 Electrical diagram of CH33.

4 Operation

4.1 General

Before you begin using CH33, be sure to read the instructions in this instruction manual and that you understand them. CH33 is inspected and checked prior to leaving the factory to guarantee consistent quality and maximum reliability.

WARNING! Do not place the induction heater on an unstable or uneven ground. The heater might fall, causing personal injuries or serious damage to the heater.

WARNING! When operating, servicing or working in the immediate area around CH33, the user should not wear or use metal objects such as watches, rings, keys etc. Otherwise, these objects could be heated by the magnetic field from CH33 which might cause burning injuries.

WARNING! Do not touch any object that has been near the inductor without ensuring that it has cooled off.

WARNING! Do not touch the inductor while it is acitvated due to strong magnetic field and heat. Risk for personal injuries.

WARNING! When using the heater, the working area should be cleared from combustible items to prevent these items from being ignited.

WARNING! Make sure that you know where the fire extinguishing equipment is. Risk for injuries.

WARNING! Loose cables and hoses present tripping risks. Risk of injuries.

IMPORTANT! It is the responsibility of the owner to ensure that the equipment has been installed as specified in the instructions provided. It is also the owner's responsibility to ensure that the equipment is inspected in accordance with applicable regulations before use.

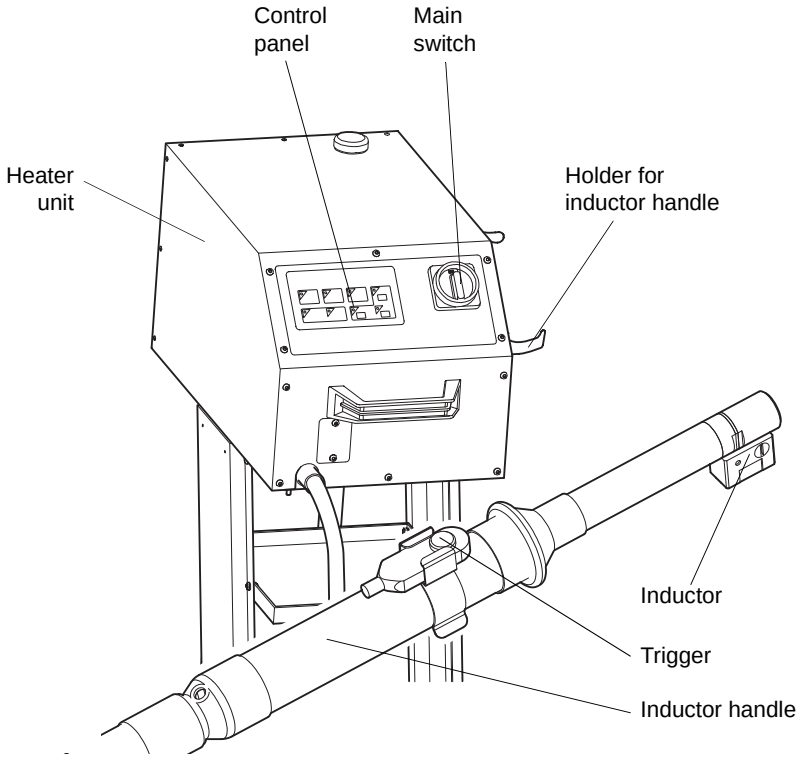


Figure 4.1 The CH33 Induction heater.

CH33 basically consists of an inductor and a heater unit. A powerful magnetic field is concentrated in the inductor when the trigger is activated. Therefore, the inductor, the inductor handle, the cables and the power electronics are automatically cooled with water as a cooling agent. The water is kept in the water tank, which is placed in the heater unit. The heater unit also contains the control panel, the main switch and the holder for the inductor handle.

Buttons

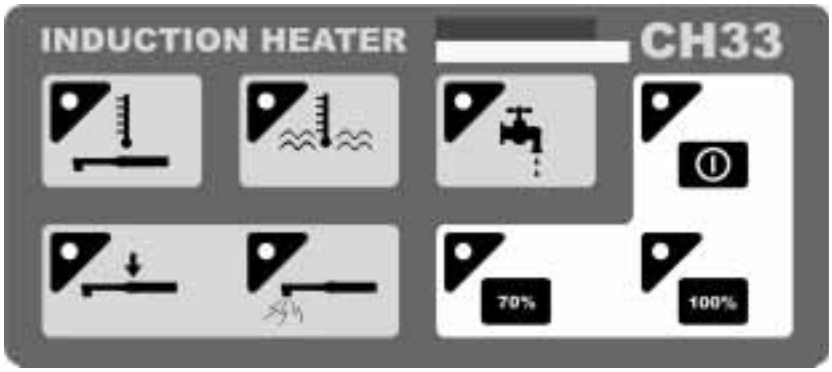


Figure 4.2 The buttons on the control panel.

The following buttons are found onto the control panel:

On/Off
To be able to use the induction heater, the “On/Off” button must be activated once the heater is switched on by using the main switch. The button is also used to reset the heater once a fault has occured. Once this button is activated, a green LED (light emitting diode) is lighted.

Power 70%
The button “Power 70%” is activated to set the output power to 70%. This power is used when there’s a risk that the metal will be overheated when using maximum power. Once this button is activated, a green LED (light emitting diode) is lighted.

Power 100%
The button “Power 100%” is activated to set the output power to 100%. Once this button is activated, a green LED (light emitting diode) is lighted.

Alarm indicators

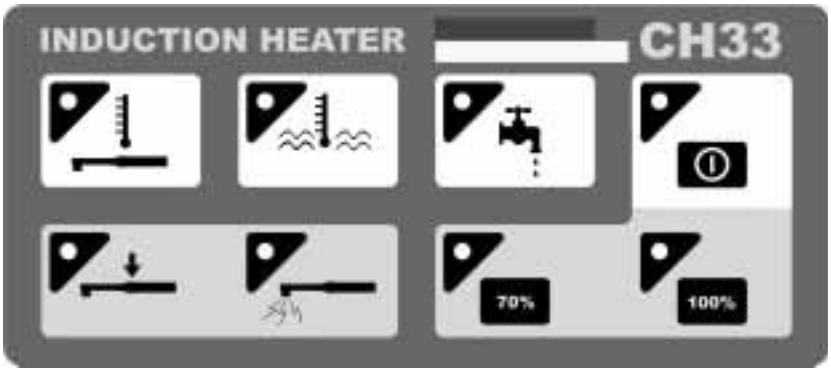


Figure 4.3 The alarm indicators on the control panel.

The alarm indicators informs the user that something is wrong with the heater. The alarm indicators are marked with red LEDs.

Hot inductor
The red LED “Hot inductor” is lighted once the handle gets overheated. The indicator also blinks at cable break or short circuit.

Over temperature
The red LED “Over temperature” is lighted if the cooling water temperature gets overheated. The heater will not function when this indicator is lighted.

Water flow
The red LED “Water flow” is lighted if the cooling water is not flowing correctly, that is if the water pressure is to high or to low. The heater will not function when this indicator is lighted.

On/Off
The LED “On/Off” blinks when there is something wrong with the electronics.

Operation indicators

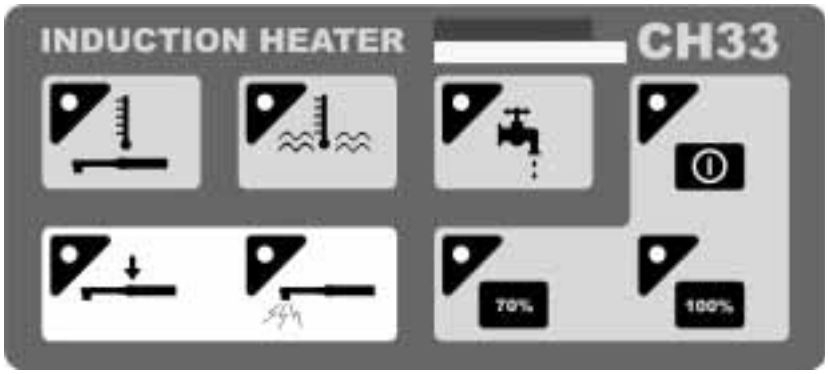
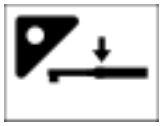


Figure 4.4 The operation indicators on the control panel.

The following operation indicators gives the user information during operation. The operation indicators are marked with green LEDs.

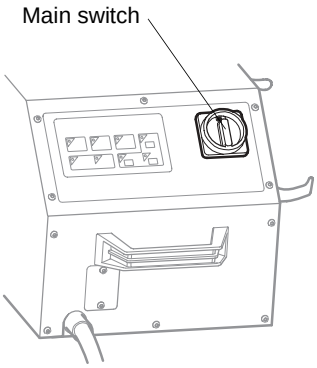


Undamaged cable
The green LED “Undamaged cable” is lighted when the main switch is activated. This indicator tells the user that the cable to the handle is not damaged.

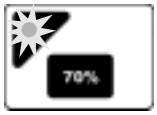
Inductor triggered
The green LED “Inductor triggered” is lighted once the “On” button is activated *and* the trigger on the handle is pressed.

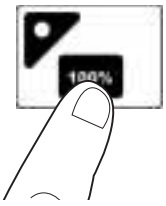
4.2 Using the heater

To turn on the heater:

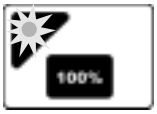


1 **Turn the main switch to position “1”.** When the power is on, the LED marked “70%” lights.

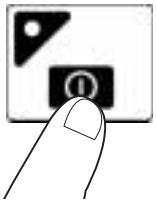




2 **Press the “ 100%” button if you want to use maximum output power.** When the maximum power is set, the LED marked “100%” lights.



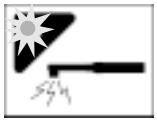
NOTE: The decreased output power, 70 %, is set as default once the heater is switched on.

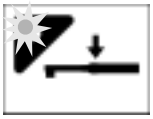


3 **Press the “On” button.** When the “On” button is activated, the LED “On” is lighted.

NOTE: The “On” button blinks at over current and overtemperature.

4 **Place the inductor on or close to the work piece and press the trigger on the inductor handle.** When the trigger on the handle is triggered, the LED “Inductor triggered” lights and the LED “Undamaged cable“ lights.





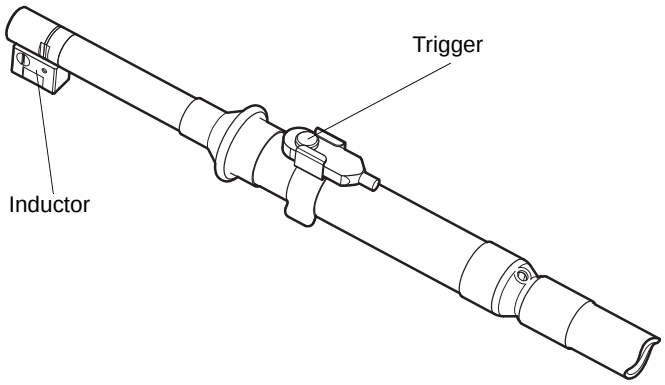


Figure 4.5 The trigger on the inductor handle.

WARNING! If not removing paint before heating, use a suction fan to remove unhealthy fumes. Risk for personal injury.

NOTE: CH33 heats all magnetic materials. When heating aluminium (being non-magnetic), in connection with shrinking, the inductor will repel from the work piece. Then, the user must press the inductor against the material.

5 Maintenance

WARNING! All electrical modifications must be carried out by a qualified electrician. Risk for electrical shock.

WARNING! Most service must be carried out by Pro Spot service personnel and service support. Risk for electrical shock.

WARNING! Never remove any covers or perform any work to the incuction heater without unplugging it from the wall outlet. Wait for five minutes. Risk for electrical shock.

WARNING! Unplug the induction heater from the wall outlet before servicing, cleaning or maintenance. Risk for electrical shock.

WARNING! When operating, servicing or working in the immediate area around CH33, the user should not wear or use metal objects such as watches, rings, keys etc. Otherwise, these objects could be heated by the magnetic field from CH33 which might cause burning injuries.

5.1 Regular checks

- Check that there is sufficient water and cooling agent in the water tank.
- Check that the coarse filter by the water tank is not blocked up with dirt. Clean if necessary.
- Check that there is no water leakage around the inductor, by the hoses or the water tank.
- Check that the isolation is not damaged on the heater. If it is damaged, contact Pro Spot service personnel.
- Check that the inductor is not bent or in any other way damaged. Change damaged inductor.
- Check that the mains cable is not damaged. If it is damaged, contact Pro Spot service personnel.

5.2 Cleaning

1 Clean CH33 externally with a damp cloth soaked in soaped water.

NOTE: Never hose or clean the heater by using a high-pressure washing equipment.

5.3 Checking the residual current breaker operator

At least once a year, the residual current circuit breaker must be checked:

1 **Open the cover at the front of the heater by loosening the screws, see *Figure 5.1*.**

2 **Press the button on the residual current breaker operator.**

NOTE: If the residual current circuit breaker trips when the button is pressed, it is functioning. If it doesn't trip, please contact Pro Spot Service and Support department.

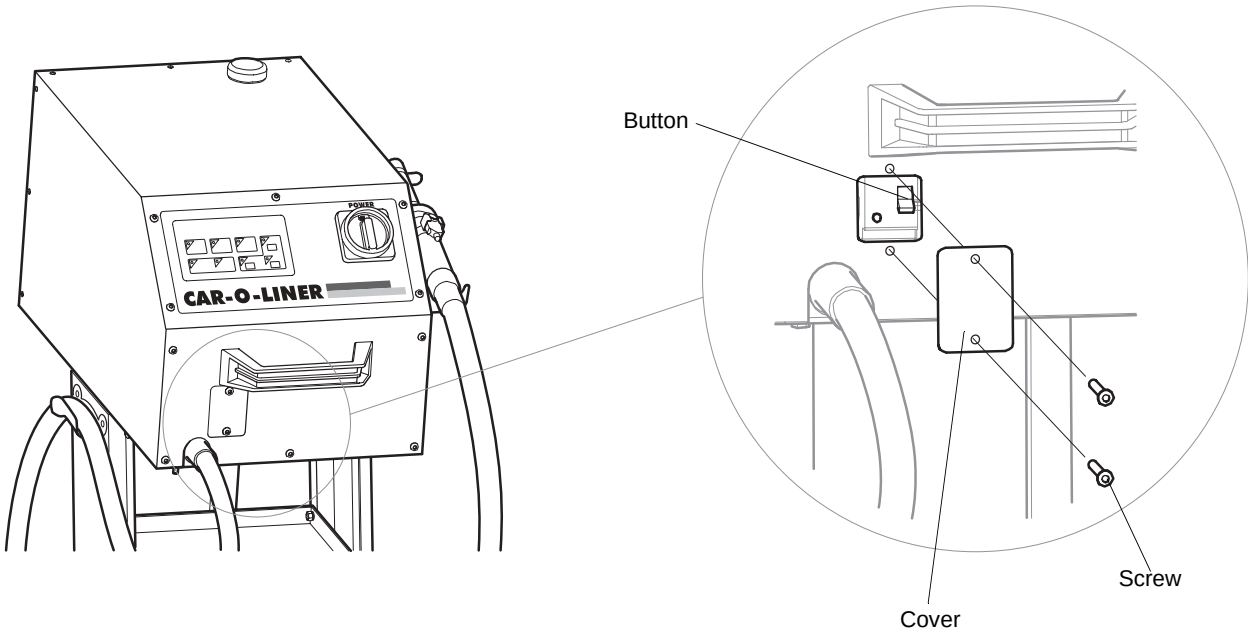


Figure 5.1 Checking the residual current breaker operator.

5.4 Changing the inductor

When using the induction heater the inductor gets worn, and it can therefore be replaced. Either the complete inductor is changed or only the worn parts is replaced.

The key is used to remove and replace the inductor from the handle.

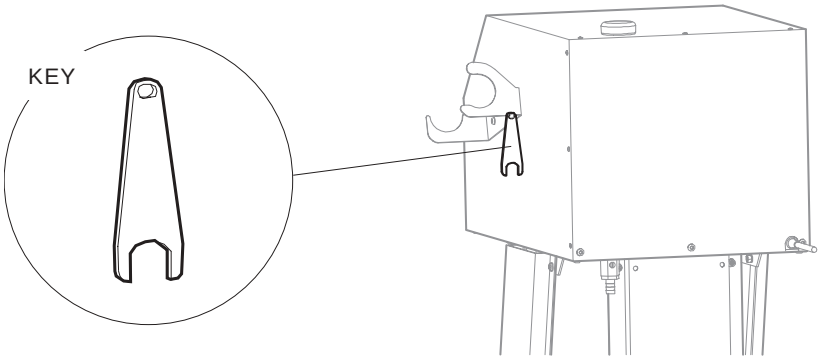
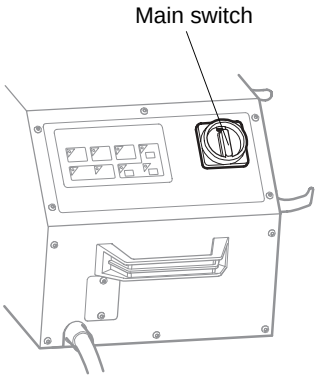


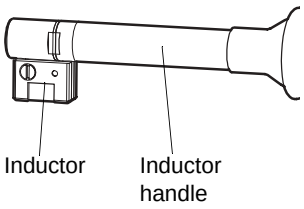
Figure 5.2 The key which is used to remove and replace the inductor from the handle.

5.4.1 Changing the complete inductor

The complete inductor can be bought as an accessory, art. No. 121 01 01 302. It is changed as follows:

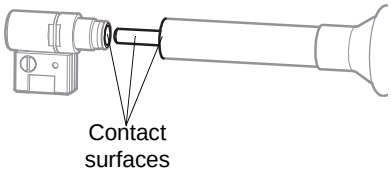


1 Switch off the main switch.

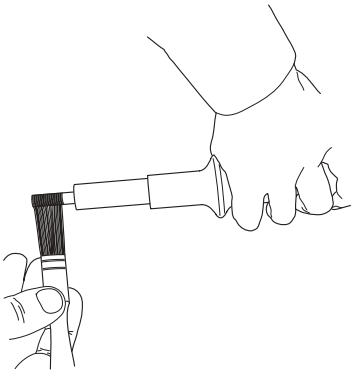


2 Unscrew the inductor from the handle by using the key (see *Figure 5.2*).

WARNING! The inductor may be hot. Risk for burning injuries.

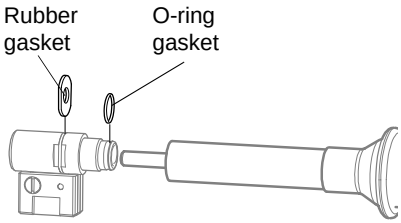


3 Check that all contact surfaces are undamaged and clean. If necessary, clean the contact surfaces with very fine emery cloth.



4 Grease the thread of the inductor handle, using copper pasta.

NOTE: Use only copper pasta. Don´t use any grease or oil.



5 Change the O-ring gasket and the rubber gasket on the inductor handle.

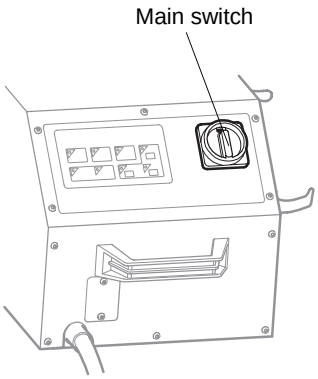
6 Replace a new inductor onto the handle by tenderly tightening the inductor with the key (see *Figure 5.2*).

NOTE: Only use an inductor supplied by Pro Spot.

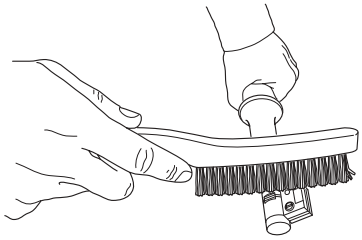
5.4.2 Changing the worn parts of the inductor

The inductor repair kit is used to change only the worn parts of the inductor. The kit can be bought as an accessory, art. No. 121 01 01 901. The worn parts are changed as follows:

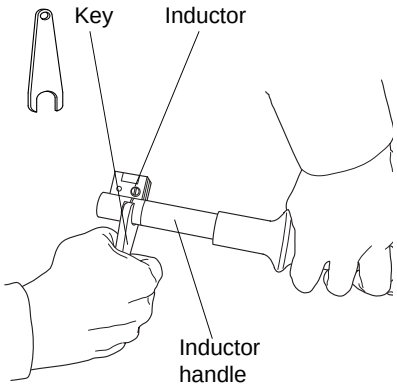
NOTE: Only use an inductor supplied by Pro Spot.



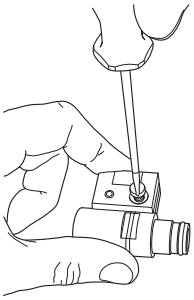
1 Switch off the main switch.



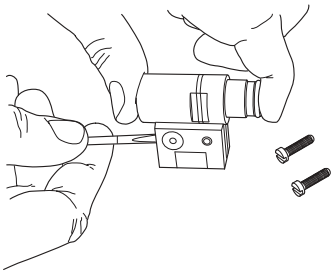
2 Gently clean the inductor, using a brush.



3 Loosen the inductor from the inductor handle, using the key.



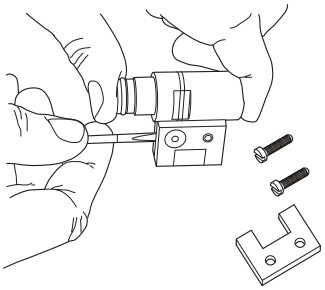
4 Loosen both plastic screws, using a screw driver.



5 Gently break off one of the used bakelite plates, and replace it with a new bakelite plate.

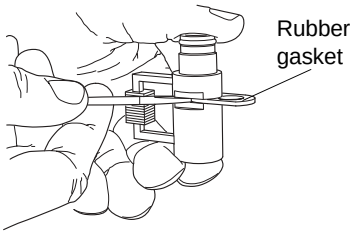
NOTE: Do not remove both bakelite plates at once.

NOTE: Be careful not to dislocate the inner core of the inductor, which consists of a number of thin plates.



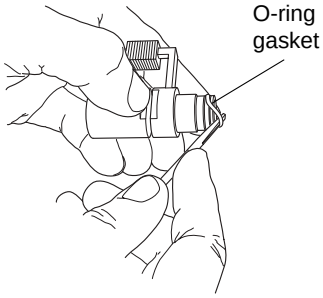
6 Replace the other bakelite plate.

7 Replace and tighten both plastic screws.



8 Remove the used rubber gasket from the inductor.

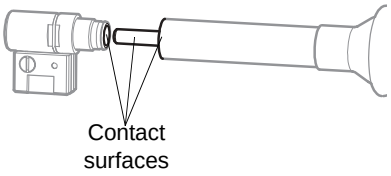
9 Insert the new rubber gasket.



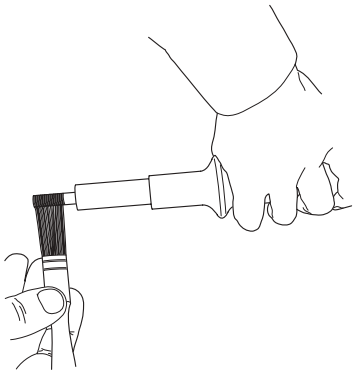
10 Remove the used O-ring gasket, using a small screw driver.

NOTE: Make sure not to damage the O-ring track on the inductor. Otherwise, the damages might break the new O-ring gasket.

11 Insert the new O-ring gasket, using a screw driver.



12 Check that all contact surfaces are undamaged and clean. If necessary, clean the contact surfaces with very fine emery cloth.



13 Grease the thread of the inductor handle, using copper pasta.

NOTE: Use only copper pasta. Don´t use any grease or oil.

14 Replace a new inductor onto the handle by tenderly tightening the inductor with the key (see *Figure 5.2*).

5.5 Filling the water tank

The water tank can be filled with normal and clean tap water.

WARNING! Do not fill the water tank with anything but water (and antifreeze agent, if needed). Improper handling may result in personal injury and/or damage to the equipment.

IMPORTANT! Do not use water that is salt, brackish or rich in lime. If there is *any* uncertainity regarding the quality of the water, please use destilled water.

IMPORTANT! If the heater is used in temperatures below freezing point, antifreeze agent must be used. Polypropylenglycol is recommended as antifreeze.

1 Loosen the lid on the top of the heater.

2 Fill the water tank with normal and clean tap water.

NOTE: Do not fill up the tank entirely to allow space for the hot water to expand. Fill the tank with 16 litres of water.

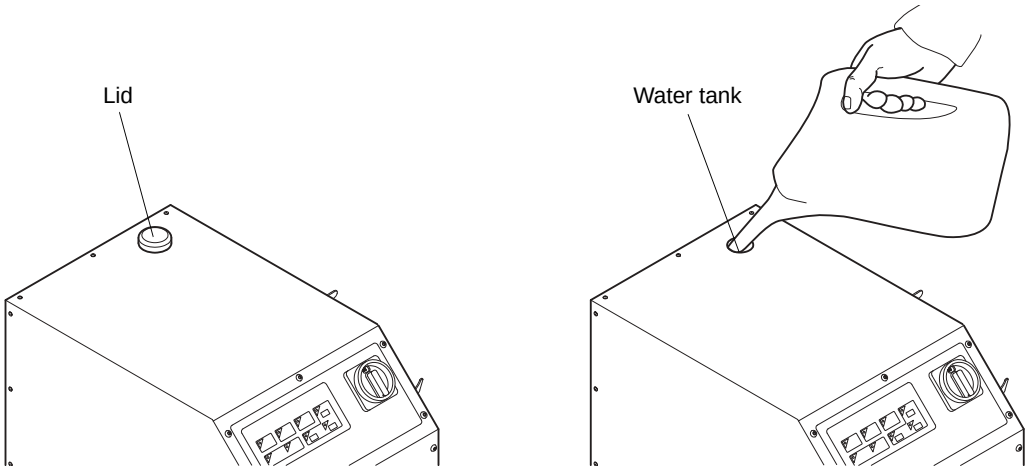


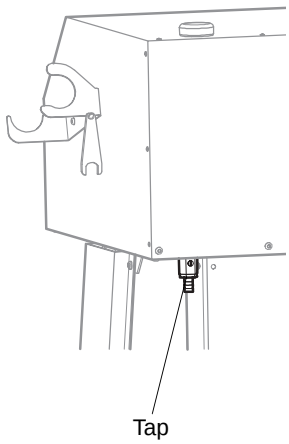
Figure 5.3 Filling the water tank.

5.6 Emptying the water tank

Normally, the water tank is never to be emptied. But if something unexpected occurs, the water tank can be emptied as follows:

1 **Open the water tap by turning the tap 1/4 of a turn.** Use an allen key or a screw driver to turn the tap.

2 **Close the tap by turning it 1/4 of a turn.**



6 Troubleshooting

The troubleshooting instructions in this chapter will help you to quickly find and correct the most common faults that may occur when using CH33.

WARNING! All electrical modifications must be carried out by a qualified electrician. Risk for electrical shock.

WARNING! Unplug the heater from the wall outlet before servicing, cleaning or maintenance. Risk for electrical shock.

WARNING! Never remove any covers or perform any work to the heater without unplugging the heater from the wall outlet. Wait for five minutes. Risk for electrical shock.

WARNING! When operating, servicing or working in the immediate area around CH33, the user should not wear or use metal objects such as watches, rings, keys etc. Otherwise, these objects could be heated by the magnetic field from CH33 which might cause burning injuries.

The following fault tracing table is useful when tracing the faults. But, the table present the most common faults and their possible causes and there might be additional faults and possible causes other than those listed in the table.

Fault	Possible cause	Solution
No power to the heater.	The heater is not plugged into the wall outlet.	Plug the heater to the wall outlet.
	No voltage supply.	Check that there is power in the wall outlet and check if the mains protection has tripped.
	Loose connections	Make sure that there are no loose connections in the electrical plug and the wall outlet.
Power sufficient, but the heater doesn't operate	The residual current breaker operator has tripped.	Switch on the residual current breaker operator.
The heater does not receive sufficient power.	Incorrect voltage supply.	Check that correct voltage is supplied to the heater. The required voltage is stated on the name plate of the heater.
The copper pipe at the handle is very hot but the heater still functions.	The water cooling system is blocked.	Please contact Pro Spot service personnel.
Water leakage at the inductor	The gasket is damaged	Change or tighten

Fault	Possible cause	Solution
The hose is broken	The hose has been damaged	Please contact Pro Spot service personnel.
The LED “Water flow” is lighted and the heater is turned off. 	The water cooling system is blocked.	Change the water and check the water level. If it still doesn’t work, please contact Pro Spot service personnel.
	The water pressure is too high or too low.	Please contact Pro Spot service personnel.
The LED “Over temperature” is lighted and the heater is turned off. 	The cooling water temperature gets overheated.	Let the heater cool down or change the water. Once the heater has cooled down, restart the heater by switching on the mains switch
The LED “On/Off” blinks. 	There is something wrong with the electronics.	Turn off and on the mains switch. Press the “On/Off” button. If the LED “On/Off” continues to blink, please contact Pro Spot service personnel.
The residual current circuit breaker is automatically switched off.	The heater is overloaded.	Reset the residual current circuit breaker. See *Figure 5.1.* Restart the heater by switching on the mains switch.
The heater is automatically switched off.	The heater is overheated.	Let the heater cool down or change to cool water and switch it on once it has cooled.
The heater does not start once the button “On“ is activated.	The power cable, the transformer or the power module is suffering from serious malfunctioning.	Contact Pro Spot Service personnel.

Table 6.1 Possible faults on CH33.

7 Dismantling and Salvage

IMPORTANT! For the sake of the environment, it is important that the equipment is dismantled in an environmentally friendly way.

To limit strain on the environment and its natural resources, it is important that the various parts of CH33 are recycled.

Mechanical components, electrical components, plastic hoses, and steel and aluminium should be sorted for material recycling.

8 Technical Specifications

Supply voltage	208-240 V ±10 %, 50-60 Hz	
Mains protection		
100 % output power	16 A	
70 % output power	10 A	
Frequency	25 kHz	
Required surrounding temperature	5 °C to 40 °C	41 °F to 104 °F
Cooling	Water	
Dimensions – heater with trolley:		
Length	600 mm	24 in
Width	1,005 mm	40 in
Height	360 mm	14 in
Weight – heater with trolley	59 kg	130 lbs
Enclosure	IP 21	

Table 8.1 Technical specifications of CH33.

9 Spare Parts and Accessories

The spare parts required for the maintenance of CH33 are listed in *Figure 1.1*.

NOTE: Use only genuine Pro Spot spare parts in any repairs.

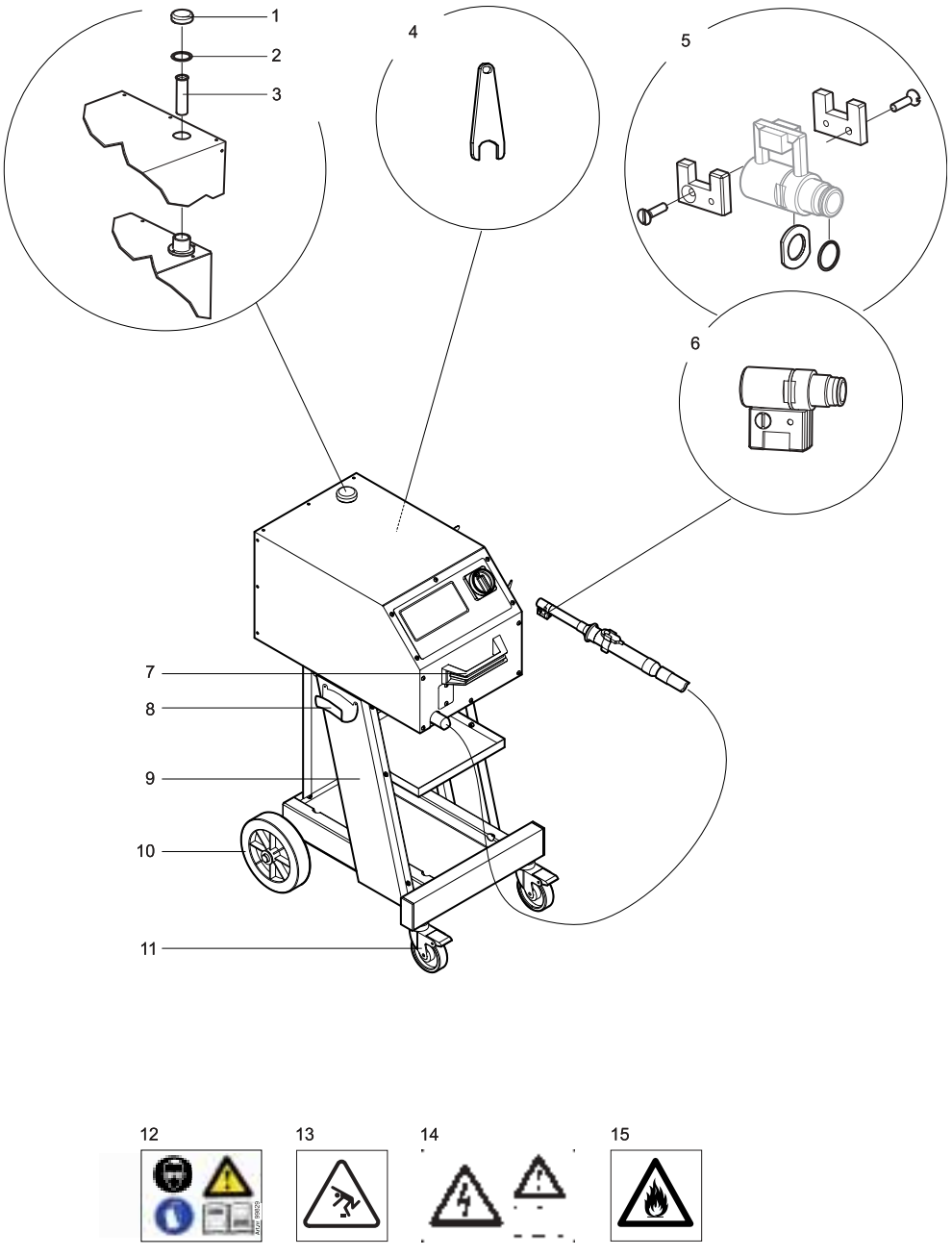


Figure 1.1 CH33 spare parts.

Position	Object	Quantity	Art. No:
1	Water tank lid	1	121 01 01 136
2	Water tank gasket	1	121 01 01 165
3	Coarse filter	1	121 01 01 141
4	Key	1	121 01 01 150
5	Inductor repair kit	1	121 01 01 901
6	Inductor, complete	1	121 01 01 302
7	Handle	1	99381
8	Hose holder	1	141 09 10 108
9	Trolley	1	139 06 01 202
10	Rear wheel	1	99550
11	Front wheel	1	99080
12	Safety sign “Appropriate protection must be worn...“	1	99829
13	Safety sign “Risk of tripping...“	1	99786
14	Safety sign “All electrical modifications...“	1	99824
15	Safety sign “Sparks from heating...“	1	99839

Table 9.1 CH33 spare parts.

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