

COOLANT COOLED INDUCTION HEATER 3700W

MODEL NO: VS280

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.



Refer to

Instructions



protection











Wear protective Electrical shock Warning magnetic field gloves hazard

the vicinity of a pacemaker

Do not use in Keep away from rain

SAFETY

ELECTRICAL SAFETY 1.1.

- WARNING! It is the user's responsibility to check the following:
- Check all electrical equipment and appliances to ensure that they are safe before using.
- Inspect power supply leads, plugs and all electrical connections for wear and damage.
- Ensure that the insulation on all cables and on the appliance is safe before connecting it to the power supply.
- DO NOT use worn or damaged cables, plugs or connectors.
- Ensure that any faulty item is repaired or replaced immediately by a Sealey qualified technician.
- If the cable or plug is damaged during use, switch off the electricity supply and remove from use.
- Sealey recommend that an RCD (Residual Current Device) is used with all electrical products.

Important: Ensure that the voltage rating on the appliance suits the power supply to be used and that the plug is fitted with the correct

- **DO NOT** pull or carry the appliance by the power cable. ×
- **DO NOT** pull the plug from the socket by the cable.

1.2. **EXTENSION CORDS**

- WARNING! If an extension cord is required, only the following specifications are approved for use with the induction heater:
 - 7.6-meter cord: 2 AWG
 - 15.2-meter cord: 1 AWG

Using cords outside these specifications may result in overheating or insufficient power delivery.

- DO NOT connect multiple extension cords in series.
- Use only the specified extension cords listed above.
- Always fully unwrap extension cords before use. Tightly coiled cords can overheat and pose a fire hazard.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid

1.3. **GENERAL SAFETY**

- DO NOT touch heating parts with bare hands.
- DO NOT touch live electrical parts or electrodes with bare skin or wet clothing.
- DO NOT operate in the vicinity of containers under pressure, or in the presence of explosive dust, gases or fumes.
- **DO NOT** cover or stick objects into any of the ventilation holes on the equipment.
- DO NOT wear clothing containing metal components, such as zippers, rivets, or metallic buttons, while operating the induction heater. The heater can rapidly heat these metal parts, potentially causing serious burns or igniting the clothing.
- WARNING! The magnetic fields created by high currents may affect the operation of pacemakers. DO NOT operate or come within three feet of an active induction heater, if you have a cardiac pacemaker or any electronic or metal surgical implant. Wearers of vital electronic equipment should consult their Doctor before using Induction heater, although the magnetic field generated by the heater typically extends only a few inches, it can interfere with the function of implanted medical devices. This applies to both users and bystanders. To prevent accidental exposure, individuals with such implants must stay at least three feet away from the induction heater while it is in operation.
- WARNING! Keep bystanders, children, visitors, and animals at a safe distance while operating the induction heater. Their presence may cause distractions, increasing the risk of losing control of the equipment and leading to potential injury or damage.
- Ensure area is adequately ventilated and dry.
- Before operating the induction heater, remove all metallic objects from your person, including coins, keys, chains, pocket knives, tokens, and miniature tools. DO NOT carry or wear these items while the heater is in use. The induction heater can rapidly heat metal objects, posing a serious risk of burns or ignition of clothing.
- Ensure ambient temperature is between -10 to 40°C
- Avoid using in bright sunshine or rain.

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- DO NOT use the machine in an environment where the air is polluted with conductive dust or gases.
- DO NOT overreach; maintain proper footing and balance at all times. Ensuring stable footing and balance allows for better control of the induction heater, especially in unexpected situations.
- DO NOT operate the induction heater while under the influence of drugs, alcohol, or any medication that may impair your judgment or coordination. Impaired operation increases the risk of accidents and injury.
- DO NOT operate the induction heater within six inches of any airbag component. The heat and electromagnetic field may accidentally

- trigger airbag deployment or damage sensitive components.
- ✓ Consult the vehicle manufacturer's service manual to identify the exact locations of all airbags before working on a vehicle. Keep in mind that airbags can be located in areas such as the roof, doors, sides of seats, and other locations.
- □ WARNING! Due to the heat generated by the induction coils blistering of painted surfaces will happen if over heated.
- Children from age 8 years and above, persons with reduced physical, sensory, or mental capabilities those with lack of experience and knowledge can use the appliance, if they have been given supervision or instruction concerning use of the appliance in a safe way to understand the hazards involved.
- ✓ Children shall NOT play with the appliance.
- ✓ Cleaning and user maintenance on the appliance shall not be made by children without supervision.
- The appliance shall be disconnected from its power source during service and when replacing parts.
- ✓ Maintain a clean and well-lit work area. Cluttered or poorly lit environments increase the risk of accidents.
- ✓ Work outdoors whenever possible, provided there is no risk of rain, water, or moisture exposure. If outdoor work is not feasible, ensure the indoor workspace is dry and well-ventilated. Ventilation fans should be positioned to exhaust air from the inside to the outside.
- √ Always keep a fully charged fire extinguisher readily accessible when operating the induction heater.
- ✓ Always wear safety goggles when operating the induction heater. Protect your eyes from potential sparks, debris, or accidental splashes.
- ✓ Fumes and smoke from hot or burning adhesives are toxic. Always wear a dual-filter respirator mask (dust and fume) that is approved by the appropriate government authority to protect your respiratory health.
- ✓ Wear heat-resistant gloves when operating the induction heater. The heater rapidly heats metal, and handling hot metal surfaces without protection can result in burns to your hands and fingers.
- **WARNING!** C. HF Radiation: High-frequency (HF) emissions can cause interference. HF radiation may disrupt radio navigation systems, safety services, communication devices, and computer equipment.
- ✓ Installation should be performed only by qualified personnel familiar with electronic equipment. Improper installation can result in equipment damage or personal injury.
- ✓ The user is responsible for ensuring that any interference caused by the installation is promptly corrected by a qualified electrician.
- ✓ If notified by the appropriate government communications authority about interference, immediately cease use of the equipment. Continued operation may violate regulations and result in penalties.
- ✓ Ensure the installation is regularly inspected and maintained. Routine checks help prevent malfunctions and ensure safe operation.
- ✓ Keep all doors and panels of the high-frequency source securely closed during operation. This helps prevent exposure to electromagnetic radiation and ensures safe, reliable performance.
- **DO NOT** use the heating inductor if its insulation is damaged or breached. Damaged insulation can cause sparking upon contact with the vehicle, creating a serious fire hazard, especially when working near fuel tanks, gas lines, or other flammable materials.
- **DO NOT** use the heating inductor if the insulation is damaged or compromised. Breached insulation can cause sparking upon contact with a vehicle, creating a serious fire hazard, especially when working near gas lines or fuel tanks.
- **WARNING!** Never attempt to heat aerosol cans, paint cans, or any pressurized containers that store fuels, compressed gases, or liquids. The heat generated by the induction heater can cause these containers to explode and ignite their contents, resulting in fire or serious injury.

1.4. SAFETY DEVICES

This equipment is water-cooled, using water to regulate the temperature of the electronics, transformer, and tool.

A built-in flow sensor prevents the induction heater from being activated via the control button if the water flow rate is insufficient. Additionally, the system includes sensors to monitor the internal temperature of both the induction heater and the coolant. If overheating is detected, the equipment will not start, ensuring safe operation.

2. INTRODUCTION

Delivers longer-lasting high heat fast and effectively. Ideal for cars, trucks, agricultural machinery, boats and engineering. Suitable for larger seized nuts and bolts including track rods. Straightening of steel frames and chassis and can pre-heat larger wielding areas. Variable heat settings, enable the users to apply correct heat for specific jobs.

3. SPECIFICATIONS

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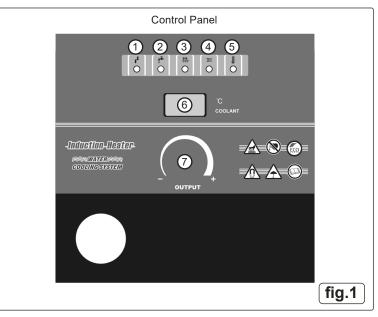
Model No:	VS280
Frequency:	18kHz
Fuse Rating:	16A
Nett Weight:	16.9kg
Power Supply Cable Length:	3.5m
Power:	3700W
Supply:	230V ~ 50Hz 16A
Maximum Weight With Coolant:	18.5kg
Ingress Protection Rating:	IP21
Tank Capacity:	2.8L
Induction Cable Length:	2.3m
Cable Length:	3.5m
Temperature Range:	0 to 40°C
Duty Cycle:	16mins @ 20° C, 8mins off
Container Capacity:	2.8L
Cooling Liquid:	Propylene Glycol
Heat Penetration:	10*18mm/s

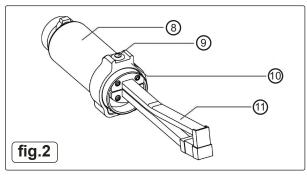
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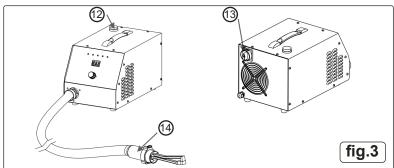


4. FUNCTIONS & FEATURES

Number	Function
1	Circuit problem light
2	Coolant insufficient light
3	Working light
4	Clogged light
5	Over heat (protection light)
6	Temperature indicator of coolant liquid
7	Heating power adjust knob
8	Transformer unit
9	Inductor button
10	Rotatable ring
11	Inductor unit
12	Coolant liquid refill
13	Power switch
14	Transformer unit

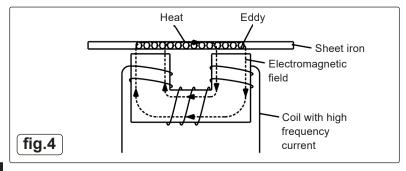






The device is engineered to heat ferromagnetic conductive materials by focusing a high-intensity alternating magnetic field at the inductor head.

Operating at a frequency of approximately 18 kHz, the alternating field induces eddy currents within the target material. These currents generate localized heat due to the Joule effect (resistive heating) within the material's structure. The inductor itself remains cool and does not generate heat; instead, it emits a non-thermal, alternating magnetic field, ensuring energy is transferred efficiently and contactlessly to the workpiece.



5. OPERATION

5.1. BEFORE OPERATION

□ WARNING: DO NOT place the induction heater on uneven or unstable surfaces. Instability may cause the unit to tip over, resulting in potential personal injury or significant equipment damage.

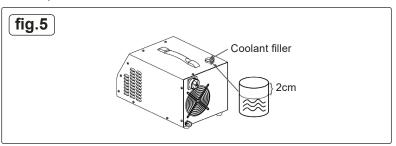
5.2. UNPACKING

- Inspect the packaging for any signs of damage upon receipt.
- Carefully remove the instruction manual and all packaging materials.
- IMPORTANT: Ensure that no packaging materials remain near the machine before powering it on, as this may pose a fire hazard.

5.3. COOLANT REFILL

NOTE: The machine is not pre-filled with coolant due to transport regulations.

- Use propylene glycol or a manufacturer-approved coolant.
- Coolant is filled via the top-fill tube located on the machine. See fig.5
- Fill until the coolant level is approximately 2-3 cm below the top of the inlet tube.
- The total coolant capacity is approximately 2.8 litres.



5.4. INITIAL COOLANT FILLING AND AIR PURGE

When filling the machine with coolant for the first time, or after replacing old coolant, the clogged indicator (fig.1.4) may illuminate on the control panel. This is a normal condition caused by air trapped in the coolant hoses.

To resolve this:

- 1. Ensure the coolant tank is properly filled according to the instructions.
- 2. Power the machine off and on several times.
- 3. This cycling will help purge air from the coolant lines.

Once the coolant fully circulates through the system and all air is expelled, the clogged indicator will turn off automatically, and the machine will operate normally.

NOTE: DO NOT operate the machine continuously while the clogged indicator is active, as insufficient coolant flow could lead to overheating or system faults.

5.5. OVER HEAT PROTECTION FUNCTION

The induction heater is equipped with an automatic overheat protection system. If the coolant temperature reaches approximately 55°C (131°F), the system will:

- Automatically shut down to prevent internal damage,
- Illuminate the "Overheat" indicator light on the control panel (fig.1.5).

Once the internal temperature cools down (typically within 8 minutes), the overheat light will turn off automatically, and the machine will be ready for use again.

IMPORTANT: DO NOT attempt to restart the machine during the cooling cycle. Allow the system to cool completely before resuming operation.

5.6. MACHINE STARTUP PROCEDURE

To prepare the machine for operation:

- 1. Turn on the main power switch of the machine.
- 2. The system will begin an initialization sequence, which takes a few seconds.
- 3. Once initialization is complete and all indicators show normal status, the machine is ready for use.
- 4. To begin induction heating, press the inductor activation button. See fig.2.

NOTE: Ensure all safety checks and coolant levels are confirmed before starting the operation.

5.7. INDUCTOR BUTTON FUNCTION

The inductor activation button is integrated into the transformer assembly and mounted on a rotatable ring, allowing flexible positioning during operation. See fig.2

- When the inductor button is pressed, the induction heating process is initiated.
- During heating:
- The "Working" indicator light on the control panel will illuminate.
- The coolant temperature will be displayed in real time on the panel.

NOTE: Ensure proper coolant circulation is maintained during operation to prevent overheating.

5.8. CYCLE TIME

The maximum continuous cycle time for the equipment is 16 minutes when operating at maximum heating power. After each full-power cycle, the machine must undergo a cool-down period of approximately 8 minutes before the next cycle.

- When using lower heating power, the cycle time increases proportionally, allowing for longer operation before cooling is needed.
- The actual allowable cycle time is dependent on the coolant temperature, which is monitored and displayed in real-time on the control panel throughout the heating process.

This live temperature feedback allows the user to monitor system conditions and manage work cycles effectively to avoid overheating. **NOTE:** Overheat Protection

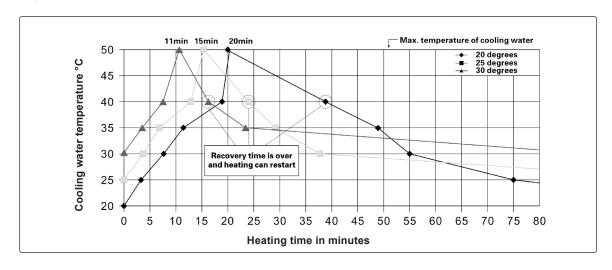
The machine is equipped with an automatic overheat protection system. If the coolant temperature reaches approximately 55°C (131°F), the system will:

- Automatically stop operation to prevent internal damage.
- Illuminate the "Overheat" indicator light on the control panel.

Once the internal temperature drops to a safe level, typically after about 8 minutes of cooling, the overheat indicator will turn off automatically, and the machine will be ready for use again.

IMPORTANT: DO NOT attempt to force operation while the overheat protection is active. Always allow the machine to cool down fully before restarting.

Both the heating performance and cooling duration of the induction heater are influenced by the surrounding environmental temperature:



5.9. SWITCHING OFF THE MACHINE

After turning off the main power switch, the machine may still retain residual high-voltage electricity for a short period due to internal capacitors.

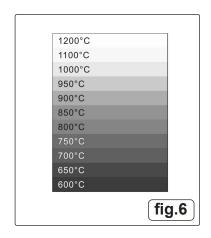
- The system is designed to automatically discharge this residual power over time.
- To ensure complete internal power discharge, it is recommended to:
- 1. Turn off the power switch.
- 2. Wait at least 15 minutes before performing any maintenance, transport, or disassembly.
- WARNING: DO NOT open or service the machine immediately after shutdown. High-voltage components may still carry charge and pose a serious shock hazard.

5.10. USE/OVERHEATING

Controlling the heating point on the workpiece is critical for safe and effective operation.

- Overheating may cause:
- Structural weakening of the workpiece.
- Premature wear or damage to the inductor.
- A practical way to monitor this is by observing the colour of the heated area:
- The colour of the metal provides an approximate indication of its temperature.
- DO NOT allow the heating point to exceed 800°C to 900°C.
 - Refer to fig.6. Temperature Colour Scale for visual reference.

Maintaining correct temperature not only protects the workpiece but also extends the life of the induction system.



6. MAINTENANCE

6.1. MODIFICATION WARNING

- DO NOT remove covers or perform any work on the induction heater while it is connected to the mains power supply.
- The equipment must not be modified in any way without prior written approval from the manufacturer.
- The user is fully responsible for any technical failures resulting from:
- Improper use.
- Inadequate maintenance.
- Accidental damage.
- Unauthorised repairs or modifications by anyone not authorised by the manufacturer.

Service and Maintenance Warning

- All major servicing or maintenance must be performed by authorised service personnel.
- High-voltage risk: Internal components carry a dangerous electric charge.

Electrical Safety

- Always disconnect the machine from the power source before carrying out any:
- Cleaning.
- Maintenance.
- Service or repair.

Personal Safety

- DO NOT wear metallic objects (e.g., watches, rings, bracelets) during operation.
- Metal accessories may become dangerously hot due to induction fields and can cause burns.

Important Note on Warranty

- Any attempt by the user to interfere with the machine during the warranty period in an effort to rectify faults will void the warranty provided by the supplier.

6.2. INDUCTION HEATER

- Keep the unit clean by wiping it down regularly with a damp cloth and mild soapy water.
- Inspect wiring and coolant hoses to ensure they are free from damage or wear.
- If damage or coolant leakage is found:
- Immediately switch off the machine.
- Disconnect the power supply.
- Contact Sealey Service Centre for assistance.

6.3. COOLING UNIT & PLACEMENT MAINTENANCE

- Ensure cooling vents and airflow paths (on both sides and underneath the unit) are not obstructed.
- Clean the cooling grille and ventilation openings using a damp soapy cloth.
- Regularly verify the cooling fan is operating correctly.
- Good airflow is essential for reliable operation and to prevent overheating.

Checking the Coolant Level

- To fill the coolant:
- Add the coolant through the fill tube located at the top of the machine.
- The correct fill level is approximately 2–3cm below the top of the inlet tube.
- The total coolant volume required is approximately 2.8 litres.

Ensure no air remains in the cooling system after filling. Recheck the level if the clogged indicator (fig.1.4) activates.

Coolant Warning & Guidelines

■ **WARNING! DO NOT** fill the coolant reservoir with anything other than clean water or a water/antifreeze mixture. Using inappropriate liquids can cause personal injury and/or damage to the equipment.

IMPORTANT!

- DO NOT use salty, brackish, or very hard water.
- If you're unsure about water quality, use a 30% propylene glycol antifreeze mixture.

Cold Environment Use

- If the induction heater is operated in temperatures below freezing, antifreeze must be used.
- The recommended mixture is 30% propylene glycol to prevent freezing and protect internal components.

6.4. INDUCTOR UNIT HANDLING & MAINTENANCE

- Ensure the inductor is securely mounted in the inductor handle before operation.
- The contact surfaces between the handle and the inductor must be clean and free of oil, dirt, or debris. Use alcohol to clean these surfaces.
- DO NOT use any inductor that has:
- A cracked field amplifier, or
- Signs of water leakage.

When performing maintenance or repair tasks, the inductor may become tacky due to paint residue.

This is normal and does not affect equipment function or performance.

6.5. REPLACING THE INDUCTOR UNIT

A replacement inductor can be ordered from Sealey Service Centre. To install the new unit, follow these steps carefully:

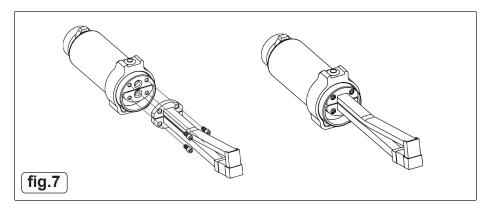
1. Turn Off the Machine.

Ensure the induction heater is powered off and unplugged from the mains supply before beginning any work.

2. Remove the Existing Inductor.

Use an Allen key to detach the current inductor unit from the handle. See fig.7

- 3. Inspect and Clean Contact Surfaces
- Check that the terminals on both the inductor unit and the handle are clean and free of debris.
- If dirty, gently polish with soft emery cloth, then clean with alcohol.
- DO NOT use grinders or wire brushes, as these may damage the contact surfaces.
 - 4. Install the New Inductor Unit
 - Use only the original bolts, washers, and O-rings supplied with the new unit.
 - Secure the inductor by hand-tightening the bolts.
 - Ensure all components are properly seated and tightened, **DO NOT** overtighten.

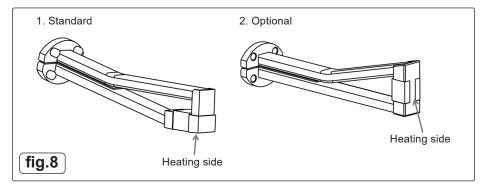


IMPORTANT NOTE: on Securing the Inductor Unit

When replacing the inductor unit, ensure that all bolts are firmly and properly tightened.

Failure to secure the screws correctly can result in the threaded insert becoming detached and sticking to the screw. This may cause damage to the insert and potentially lead to it being pulled out during future inductor replacements.

6.6. TYPE OF HEATING HEAD (fig.8)



■ WARNING! Unauthorised Modifications

DO NOT modify the equipment or its components without the prior written permission of the manufacturer.

The user is liable for any technical failures resulting from:

- Improper use.
- Inadequate maintenance.
- Damage.
- Unauthorised repairs or modifications by any party other than the manufacturer or one specifically authorised by the manufacturer. All major service and maintenance must be performed exclusively by the manufacturer's authorised service personnel. Contact Sealey Service Centre.

Risk of electric shock. Unauthorised servicing may result in serious injury or equipment damage.

DO NOT remove any cover plates or perform maintenance on the induction heater without first disconnecting it from the mains power supply. Risk of electric shock.

Disconnect the induction heater from the mains power supply before performing any service, cleaning, or maintenance. Failure to do so may result in electric shock.

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6.7. COOLANT DISCHARGE

In certain cases—such as routine maintenance, system repair, or replacement of degraded coolant—the coolant must be properly drained from the system. This operation should be carried out by a qualified technician.

Discharge Procedure:

- 1. Power Off the induction heater and disconnect it from the mains supply.
- 2. Allow the machine to cool down completely before proceeding.
- 3. Locate the coolant drain outlet. See fig.9
- 4. Position a suitable container beneath the drain outlet to collect the used coolant.
- 5. Carefully open the drain valve or plug to begin coolant discharge.
- **6**. Once drained, inspect the coolant for contamination or discolouration.
- 7. Close the drain valve securely after the coolant has been completely evacuated.
- **8**. Dispose of used coolant in accordance with local environmental regulations. **Important:** Only trained personnel should perform coolant discharge to avoid system damage or personal injury.

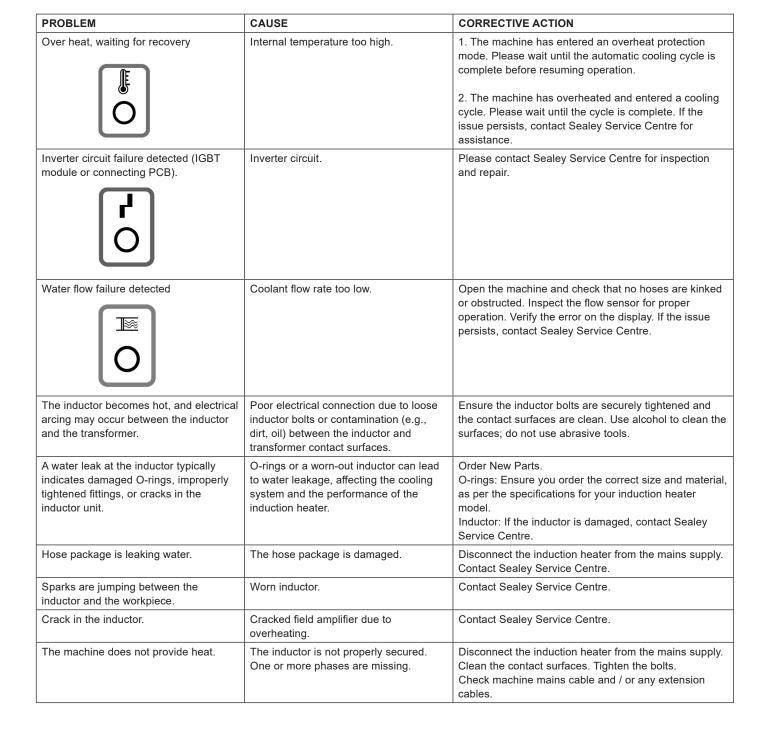
6.8. PACKAGING AND END-OF-LIFE DISPOSAL

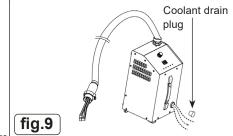
All packaging materials used with this equipment are recyclable. Please ensure they are disposed of through appropriate recycling channels.

The induction heater is designed with a high level of recyclability. However, some components may contain hazardous substances and must not be discarded with regular household waste.

For guidance on environmentally responsible disposal, consult your local electronic waste disposal regulations.

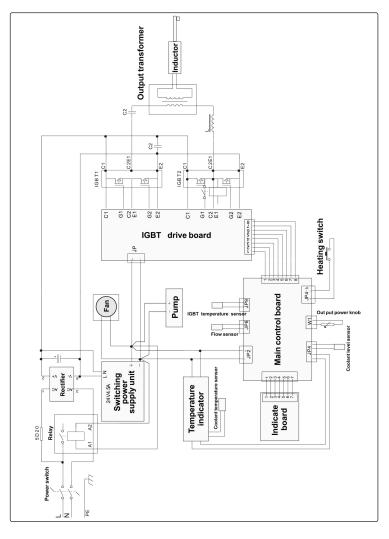
7. TROUBLESHOOTING



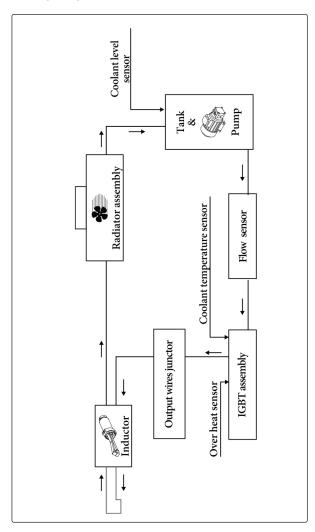


The control panel does not illuminate.	The induction heater is not connected to the mains supply.	1-3 Contact Sealey Service Centre.
	No electricity at the wall socket or the	
	Main fuse has tripped.	
	3. Loose connections in the plug or wall	
	Socket.	
	4. Damaged extension cable if there is	4. replace damaged extension cable.
	one.	
Abnormal Noise.	Something is lodged against the fan.	Turn off the machine and disconnect the mains cable from the power supply. Contact Sealey service Centre.

7.1. WIRING DIAGRAM



PIPING DIAGRAM



ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.





WEEE REGULATIONS

Dispose of this product at the end of its working life in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). When the product is no longer required, it must be disposed of in an environmentally protective way. Contact your local solid waste authority for recycling information.

NOTE: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice. Please note that other versions of this product are available. If you require documentation for alternative versions, please email or call our technical team on technical@sealey.co.uk or 01284 757505.

IMPORTANT: No Liability is accepted for incorrect use of this product.

WARRANTY: Guarantee is 12 months from purchase date, proof of which is required for any claim.

Sealey Group

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