





This operating manual is for the Pioneer HS-6K Shrink Machine only.

The operating manual contains all information necessary for proper use of the unit. The contents correspond to the HS-6K Shrink System at the point in time of product release. This manual and HS-6K unit is subject to changes in the pursuit of continuous improvement and product development.

No claims may be made from the contents of this manual (data, diagrams, drawings, descriptions, etc.) Subject to errors!

The operation manual is to familiarize yourself with the HS-6K shrink system and to use it properly and safely for its intended purpose.

Please let us know if you should find any errors or incorrect information on reading through this manual.

The operating manual contains instructions for operating HS-6K safely, properly, for avoiding dangers, reducing repair costs and standstill periods, and for increasing the reliability and service life of the induction unit.

Hazards from electromagnetic radiation

If the induction heating is started up without a shrink chuck being located in the coil, the magnetic field affects the immediate vicinity of the coil.

For your own safety, please observe the following rules:



Do not introduce any devices susceptible to magnetic interference into the vicinity of the unit!



**If you have a cardiac pacemaker, please consult your doctor.
In rare cases, interference is possible!**

Safety Instructions



Read the operating manual carefully before initial operation of the unit. Become well acquainted with the control and safety elements!



The unit may only be operated by trained, instructed staff!



The operating manual is an important part of the HS-6K Shrink System and must be easily accessible, legible and understandable for all persons working with the unit.



The unit may only be used for its proper purpose and in correctly functioning state!

The HS-6K Shrink System is specially designed for tool change with Pioneer shrink chucks (operation time, cooling time, etc.). When other shrink chucks are shrunk in or out, problems can occur causing damage to the chucks or to the induction unit itself.



Use only Pioneer shrink fit chucks! No guarantee can be assumed for any other chucks!

The manufacturer cannot guarantee safe operation of the unit after any unauthorized modifications or interventions in the unit. The risk of endangering life of the operator or third parties, and the risk of damage to the HS-6K Shrink System and other items of property is sole responsibility of the user alone!



Choice of the installation site

HS-6K Shrink System is designed as a bench-top unit and should be installed safely and free of vibrations at a dry workplace which is as free as possible from dust and dirt.



Installation the unit free of vibrations; protect from contamination and moisture!

Avoid direct sunlight for better visibility and operation of the display.

Electrical Safety Instructions

The unit contains live components with dangerous voltages. Please observe the following for your own safety:



Do Not Open the machine!

Any and all service must be performed by Pioneer trained service staff!



Do not allow metal chips and liquids to enter into the unit!



Keep the unit clean and clean it regularly!



Only suitable cutting tools and shrink chucks should be used in this machine!



Do not introduce any items through the ventilation grids!

Hot Parts Safety

The surface of the Shrink chuck can heat up to approx. 400°C (750°F) with a maximum of 566°C (1050°F).
The EZ tool holder adaptors can also get hot, but the heating coil does not heat up during proper operation.



Caution! Risk of injury from burning on the hot parts!

For your own safety, comply with the following safety measures when working with the unit:



When shrinking tools in and out, always wear heat resistant gloves that match operational temperature as protection from burning and cut injuries!



Wear approved safety goggles when shrinking!



Ensure that hot parts cannot be touched by mistake!



Never leave hot shrink chucks standing exposed, place them in the EZ Shrink cooling station immediately and cover with EZ cooling adapter and cycle the cooling station!



Do not place hot tools on flammable surfaces, but only on heat-resistant surfaces!



Apart from the chuck and tool, do not introduce metallic objects into the inner area of the coils. This machine is induction and will heat up any metal material!



During operation, never reach into the heating area of the coils, as rings, chains, or other jewelry can heat up very quickly and burn the wearer!

Over Heat Safety

The shrink chuck and tool can overheat as a result of incorrectly parameters and repeated heating up of a shrink chuck in a short period of time. This is why the parameters must be entered with care, always use a lower setting until proper operation can be confirmed.

Repeated heating must be avoided, fully cool the chuck and tool to room temperature in the case of a failure before attempting to restart the procedure.



Avoid overheating of the shrink chuck and extremely long shrinking times!



Do not keep flammable substances in the vicinity of the unit!



Do not use flammable cleaning agents!

Operational Hazard's

Ensure that no parts of your body or any items are introduced into the movement zone of the coil during operation of the induction unit. The weight of the coil could cause crushing and cuts in combination with tool cutting edges.

Please also observe the extra safety instructions in the appendix and supplementary equipment.



Caution in the moving zone of the coil: risk of crushing and cuts!



Always use proper HS Shrink holder base that matches the shank of the shrink chuck for proper alignment of the shrink chuck to the coil.

Improper alignment may cause damage to the coil, heating components and shrink chuck.

SAFETY SIGNS

Definition of 1 or more Safety Signs that maybe located on the HS-6K Machine.



CE MARK



READ MANUAL FIRST



WEAR GLOVES



EMERGENCY STOP



GROUND WIRE



KEEP HANDS AWAY



HOT DO NOT TOUCH



KEEP HANDS AWAY



220V, SINGLE PHASE



ELECTRIC SHOCK



DIRECTION SIGNAL

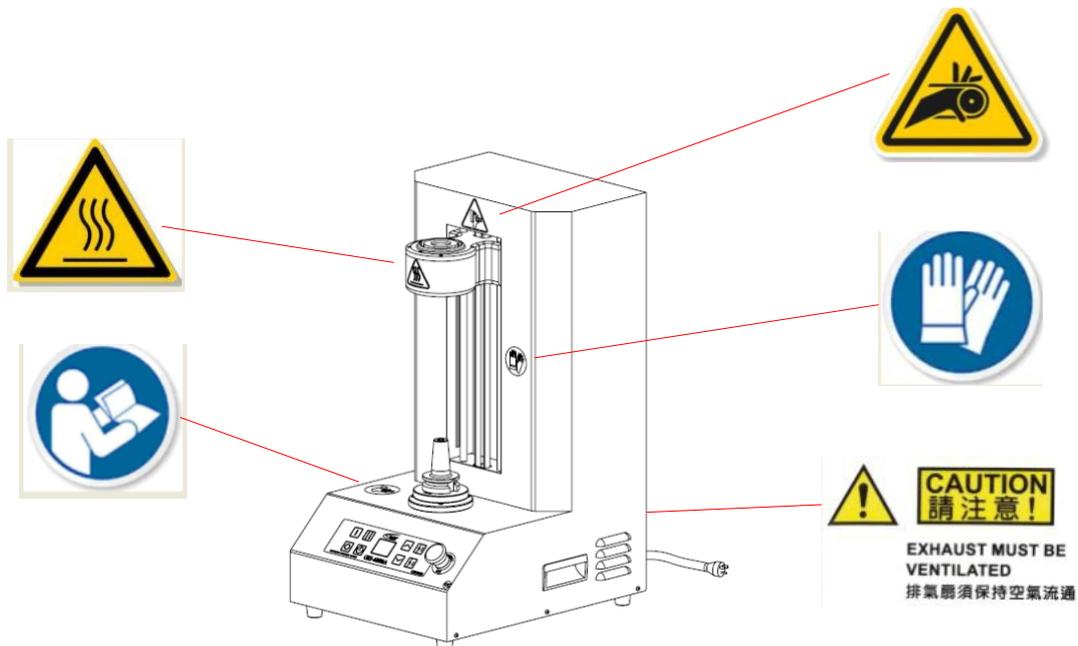


FAN EXHAUST WARNING



DANGER SHOCK

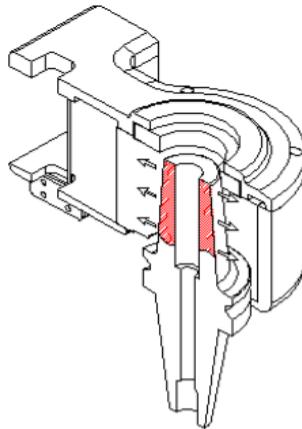
Location of safety signs on the shrinking device



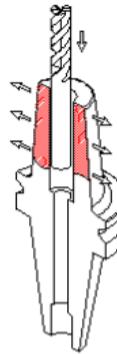
Function of the machine

This Shrink fit tooling system generally used on spindle bearing of CNC machinery quickly shrinks in and out function. This equipment directly uses induction heating system to make the clamping chuck dilate to the range to fit the cutter. After cool down by cooling system, cutter will perfectly connect with tooling holder. See Cooling Unit HS-WC Manual for operation.

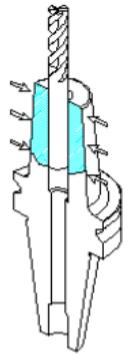
shrinking in



Heating

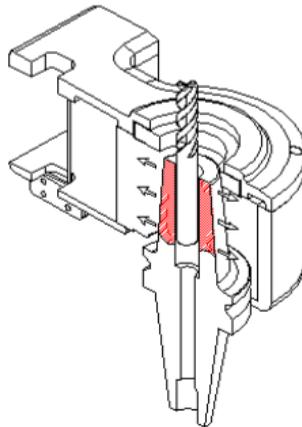


cutter in

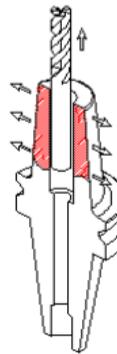


shrink

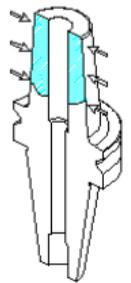
shrinking out



Heating



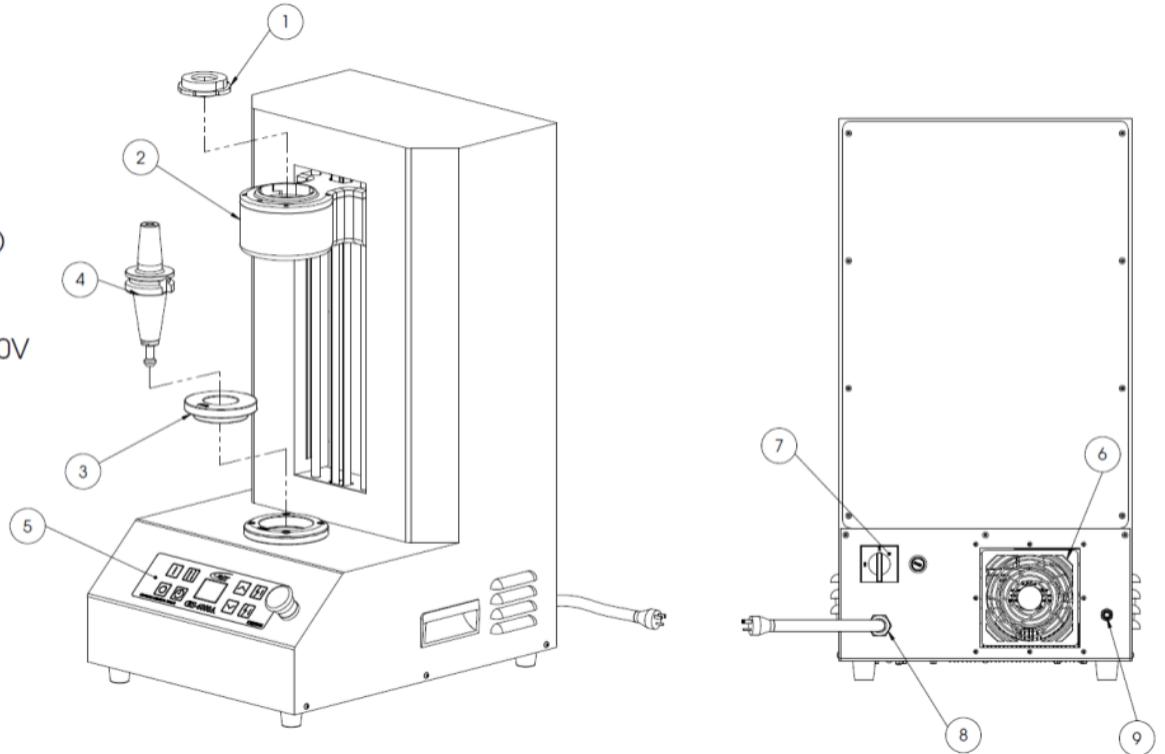
cutter out



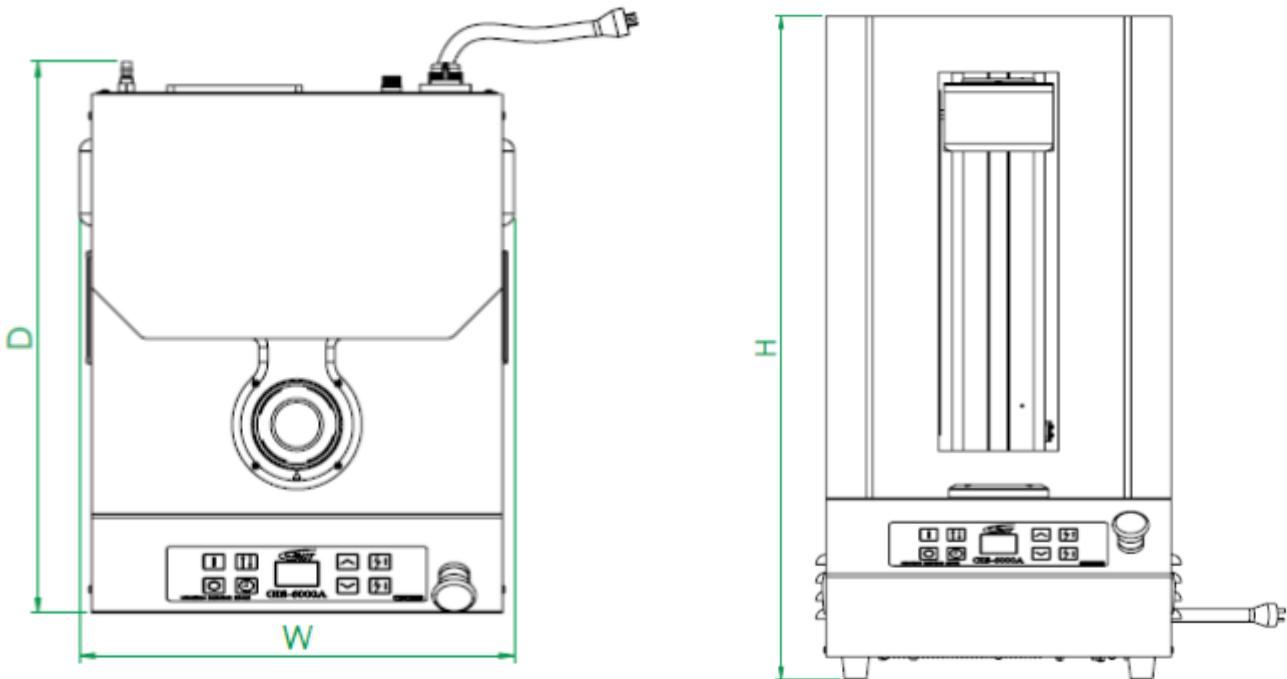
shrink

Legend of the machine

1. Induction ring
2. Induction coil
3. Adaptor
4. Shrinking chuck
(provide by oneself)
5. Operation display
6. Fan
7. Main power switch
8. Single phase AC220V
9. Air pressure



Machine Dimension

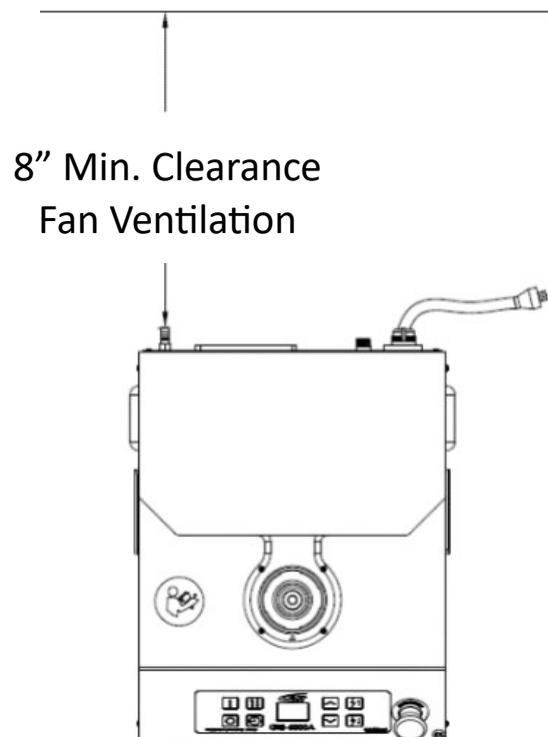


Power supply requirement

This is important connect this machine to the correct voltage in the factory power source. Use only an independent power source.

1. Before connecting the power wires makes sure the voltage between the machine and your factory power source is the same.
2. Take out the electrical cover at the electrical control panel outside.
3. Connect the power wires to the L1, N and PE.
4. The machine must be properly grounded to prevent possible injury from electrical shock.
5. Connect the power wires from machine back to the electrical control panel according connector type.
6. Certified electrical personnel should perform all electrical connections.

Selection of location

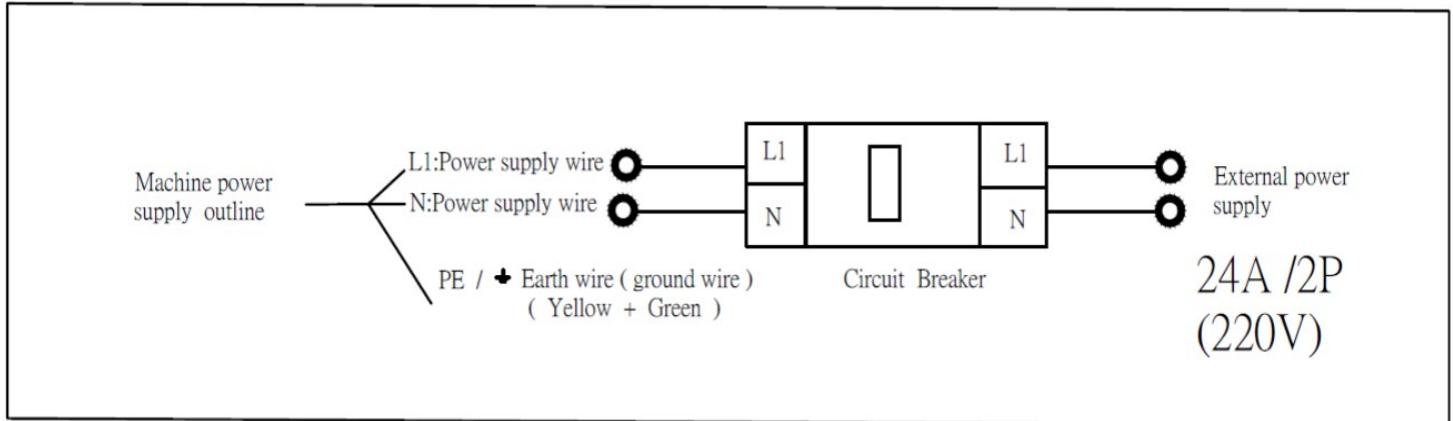


Temporary Storage

If the machine is not installed and used immediately upon delivery, it should be stored in a dry place that is adequately protected against atmospheric condition. We recommend that the machine is kept in its original packaging cases and protective package until the time of installation.

The reason is to retain integrity of hygienic standard of the machine.

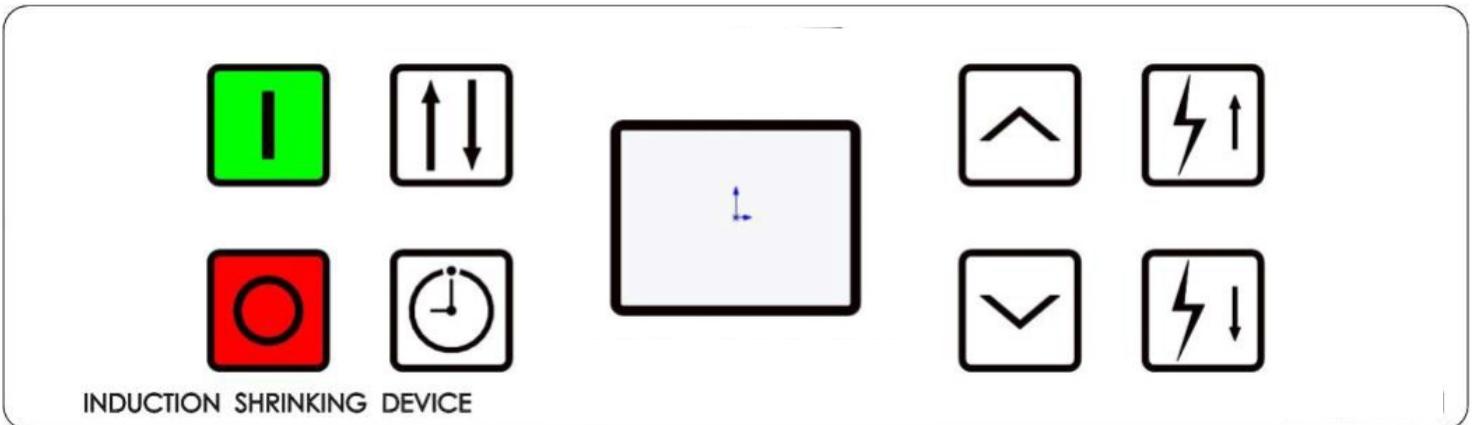
Grounding should be based on the local regulations, otherwise electric shock may occur.



Note:

For the unsteady voltage area, please install a power stabilizer to avoid the damage on circuit system inside the machine. Any damage on circuit system by unstable voltage is not warranted.

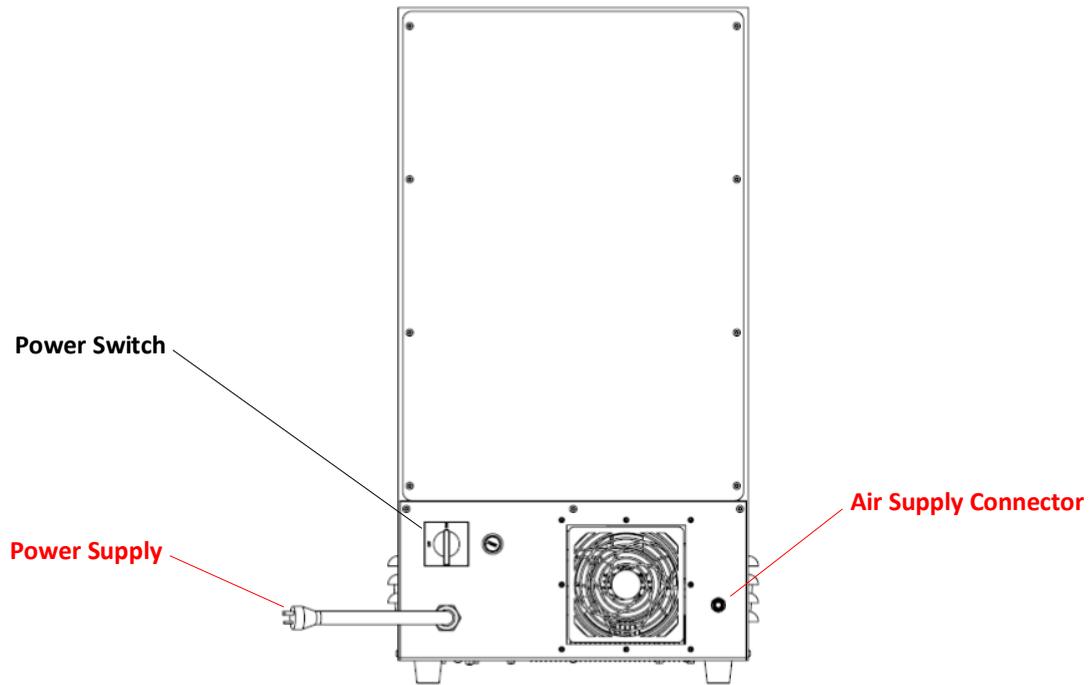
Display Illustrate for GIS-6000B



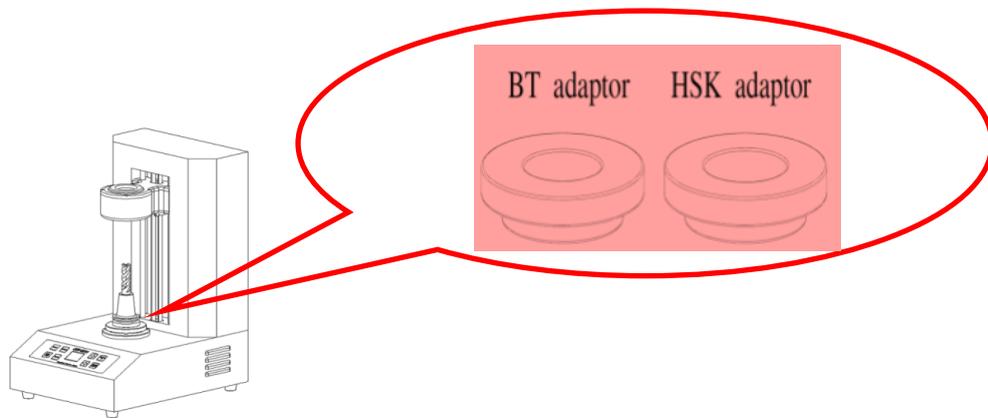
	Heating Button (ON)
	Heating Button (Off)
	Heating Time Button
	Distance Function
	Timer Display
	Induction Coil Up
	Induction Coil Down
	Power Up
	Power Down

Before Usage

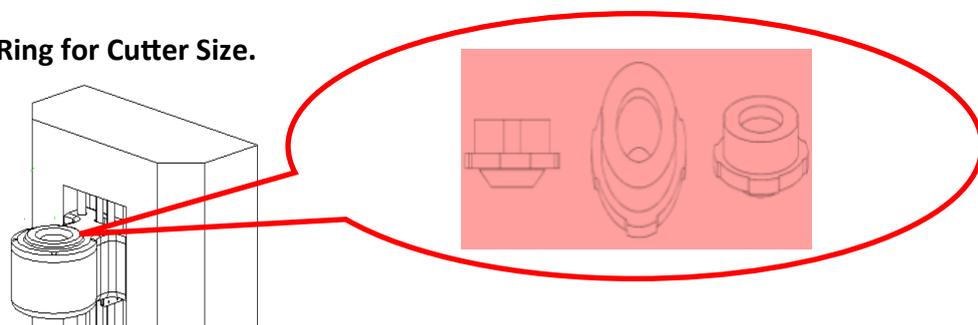
1. Power is connected
2. Air is connected
3. Once 1 & 2 are verified turn on the Power Switch



Install Correct HS Base.



Install Correct Induction Ring for Cutter Size.

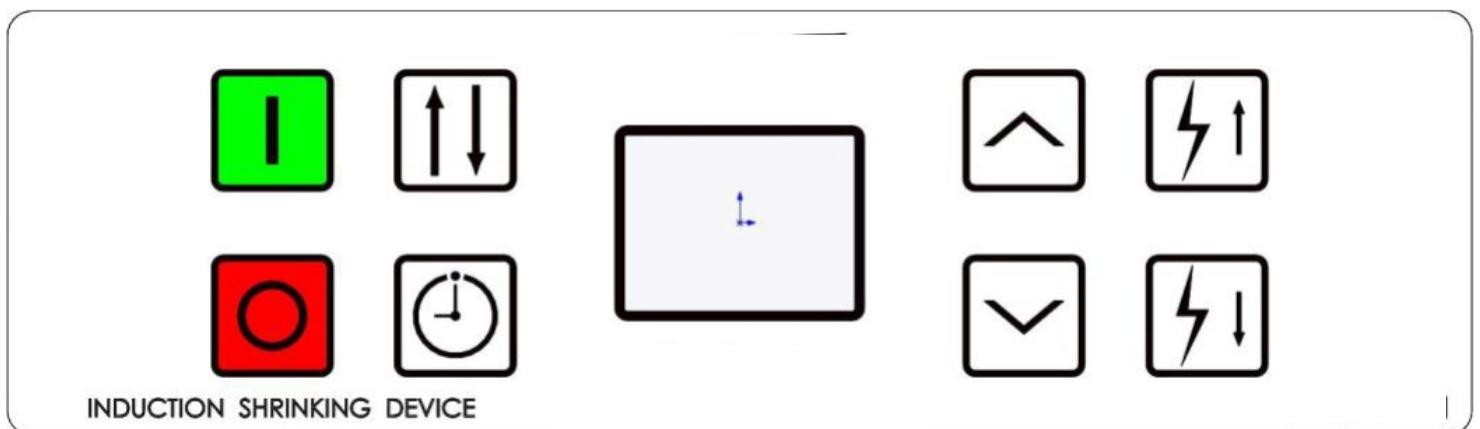


Two features for induction ring:

1. Induction ring will easier to find out the suitable altitude without guess or experience.
Below drawing can see the suitable altitude.
2. Smaller cutter needs more centralized heating to have better effect. Induction ring will easier centralized heating in the middle to make the heating shorter and better.

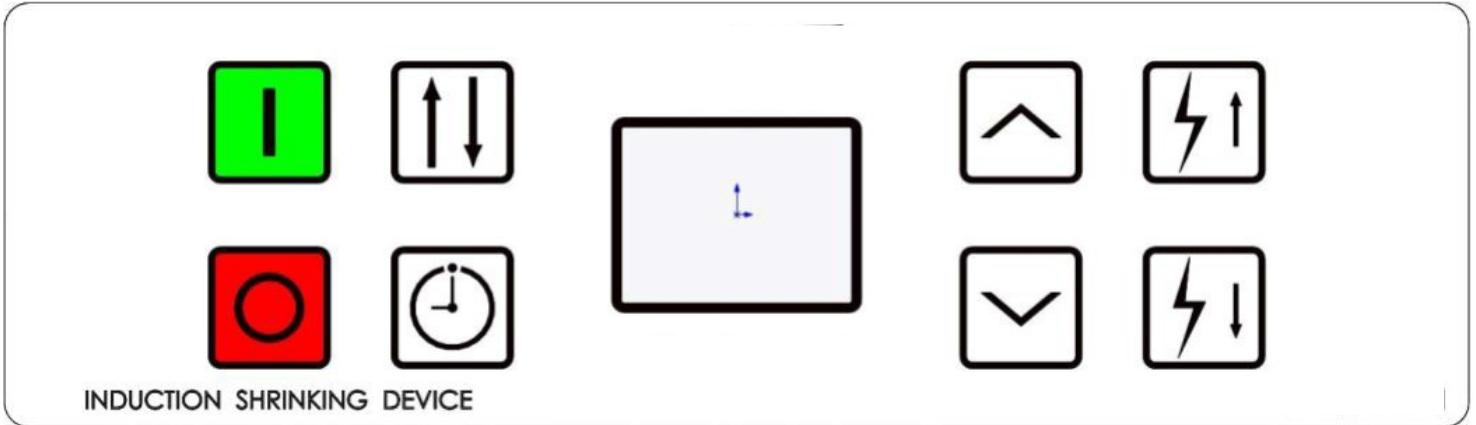


Adjustment time setting to be decided by cutter size. Humanity display panel, user can simply operates each step without following the instruction manual.



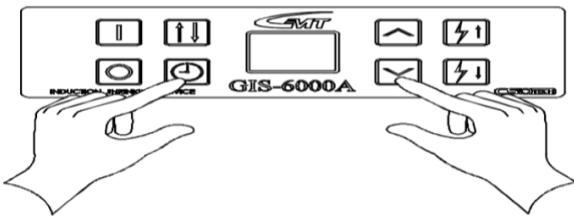
WARNING

**Use all safety Equipment, Proper Temperature Gloves and Safety Glasses.
Prior to Proceeding!**



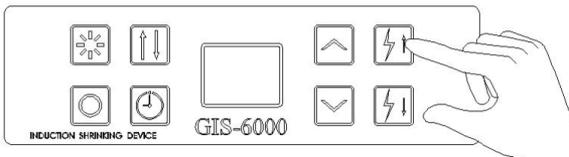
Step 1—Timer

Press Timer Button, shows heating time in seconds display on the panel, up or down to set heating timer. See recommended Timer Setting to the right.



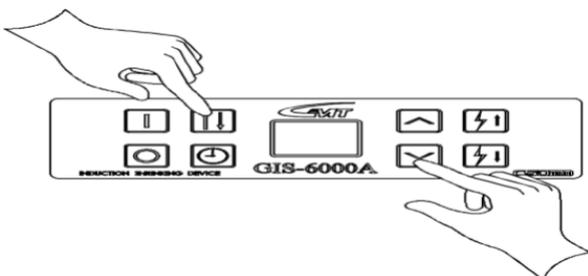
Step 2—Power

Press Power Button up or down, note settings to the right are all set at Maximum.



Step 3—Coil Location

Press the Distance Button, use the down arrow to move the coil until it locates on top of the tool holder.



Suggested Starting Time

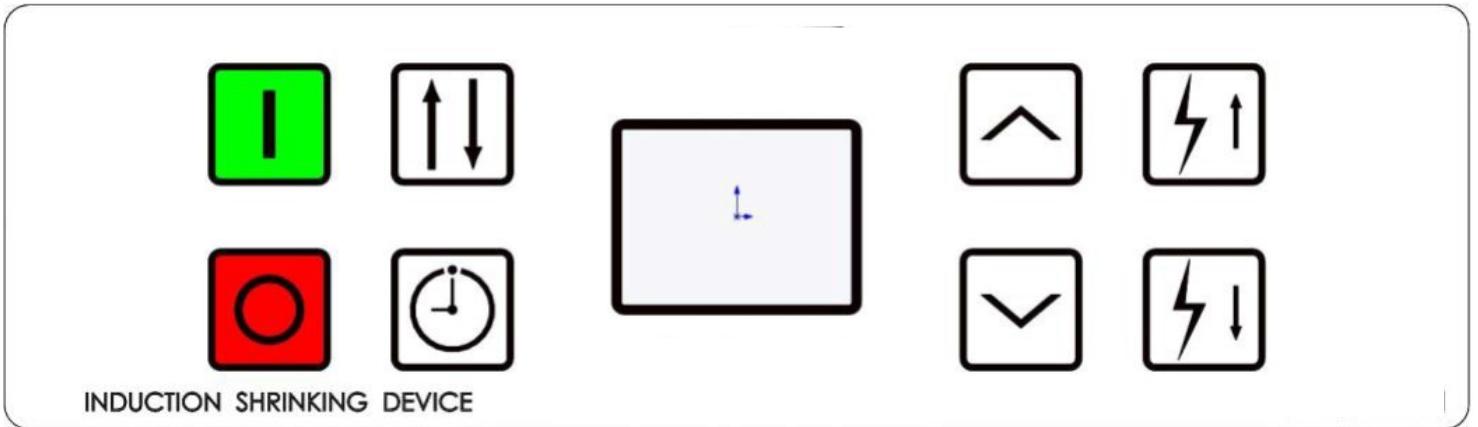
Shrink Holder ID Size	Timer Setting
1/8 & 3mm	15
3/16 & 5mm	7
1/4 & 6mm	14
5/16 & 8mm	12
3/8 & 10mm	18
1/2 & 12mm	12
5/8 & 16mm	12
3/4 & 20mm	20

Power Setting at 5 or Max.

Reduce timer setting approx. 20% for slim nose holders and extensions

**Review Manual
Prior to Operating**

**HOLDER OR CUTTER MAYBE HOT
DO NOT TOUCH!
WITHOUT ALL
SAFETY EQUIPMENT**



Step 4— Start Cycle

Press  Green Start Button, Timer will count down. Once cycle is complete the coil will return up to the home position.

NOTE: If the coil does not return to the home position press  and hold the up arrow to move the coil to the home position.

NOTE: Stop button only cuts off power input, the coil will not have any movement.

If  Stop is pressed the coil must be manually returned to home position.

Step 5— Insert / Remove Cutting Tool

Once the cycle is complete and the coil returns to home position, using Proper Temperature Gloves insert / remove the cutting tool.

NOTE: Air will continue to cycle through the coil to cool the coil after cycle is complete. This cycle may take several minutes to complete.



Maintenance

NOTE: Turn off the machine and lock out power prior to any maintenance.

1. The machine must be cleaned and maintained regularly, do not use corrosive cleaning fluids.
2. Grease the 2 guide bars every 6 months.

Per your company safety standard, operation should be reviewed, operators retained annually.

Trouble Shooting

1. Machine will not cycle:
Verify Air is connected and proper pressure, 72-100 PSI
2. Voltage Trip:
A certified electrician to verify voltage 200V - 240V, if greater reduce voltage
3. Current Trip:
Restart the Machine. Check if display has power. If not contact Pioneer for service
4. Temperature Trip
 - Check induction coil, if temperature is too high allow the machine to cool to room temperature and restart the machine
 - Check cooling fan on the back of the unit to make sure it is operating
 - Turn off the machine, wait 10 minutes and restart the Machine. If restarts the machine is overheating
5. Cutter will not remove from holder:
 - Not enough time on the timer, cool tool completely to room temperature, increase time on timer and try again
 - Cutting Tool is not Carbide, HS-6K is designed for carbide only
 - Improper location in coil during heating cycle, cool tool to room temperature, locate holder in the coil where the nose of the holder is touching the locating disc, cycle the machine again.
 - Holder has been overheated past 1050°F, annealing the holder. Always confirm tool holders are at room temperature prior to heating operation, fully cool every tool before attempting to heat or re-heat
6. Cutter will not enter the holder:
 - Tool Holder is not made from H13 or Equiv. material
 - Cutter shank is oversized and not ground to ISO h6 tolerance
 - Machine cycle is not properly setup for holder or cutter size
 - Check shank for damage or build up



Cutter Removal troubleshooting

If the cutting tool will not remove the common causes are:

- 1) The machine is at the wrong settings for this tool:
Double check settings
- 2) The cutting tool is not carbide:
This machine is only designed for carbide
- 3) The cutting tool or holder bore is damaged in the bore from breakage or handling:
Inspect all holders and cutter shanks prior to assembly
- 4) The tool holder has been heated past 1050°F, annealing the holder:
Always confirm tool holders are at room temperature prior to heating operation, fully cool every tool before attempting to heat or re-heat
- 5) Tool Holder is not H13 material:
Verify material of manufacturer prior to usage, this machine is designed to work with ANSI H13, ISO 40CrMoV5, JIS SKD61 or DIN X40CrMoV51 double tempered at 1050°F (566°C).

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