**HS-360D**

## SPECIFICATIONS

Max Temperature	
Upper	2000°F (1093°C)
Lower	600°F (315°C)
Input Voltage	120V
Hz	60
Amp Circuit Required	20 Amp
Power	
Upper	1800W
Lower	400W
Controller	Programmable PID
Volume	360 in <sup>3</sup>
Internal Dimensions	6" wide x 6" tall x 10" deep
Max Ambient Temperature	95°F (35°C)

# HOT SHOT®

The Hot Shot 360D Oven is a state of the art, table-top, heat treating oven capable of reaching and holding temperatures up 2000°F. Heat Treating Ovens can be used to heat such things as glass, cylinder heads, welded and carbon steel joints, pumps, various mechanical plates, ceramics, etc.

## HOT SHOT 360D ELECTRICAL FEATURES

- Novus 480D process controller (upper).
- Novus 1030T PID process controller (lower).
- USB port for programming.
- Failsafe overtemp manual reset thermostat.
- 40 amp rated SSR with convection heat sink.
- Kiln type "K" thermocouple.
- Door limit switch.
- Easy to read slant top control panel.
- Heavy Duty cord with 20 amp plug.
- Fully grounded control and oven shell.

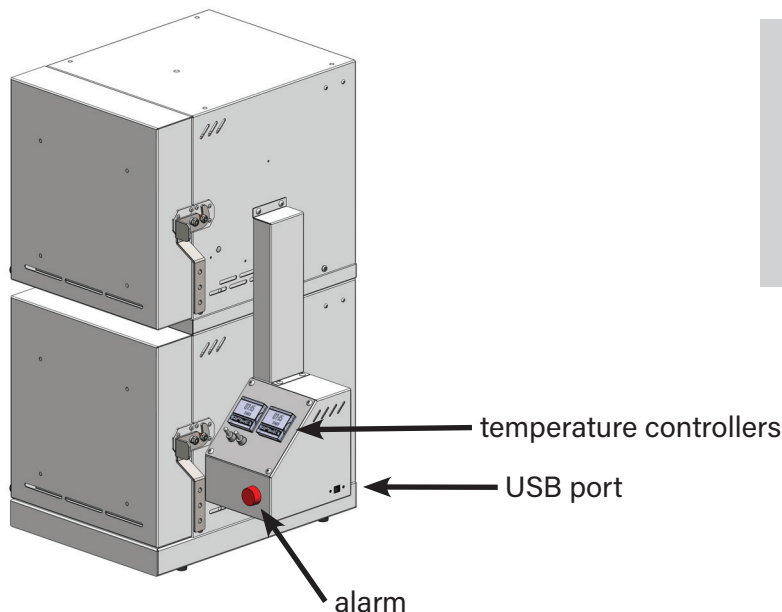
## HOT SHOT 360D MECHANICAL FEATURES

- Dual layer air plenum for external heat management and precise temperature control.
- 20 Gauge 304 Stainless steel core construction.
- Powder coated exterior shell.
- Two-inch Kaowool insulation in door.
- 16 Gauge Kanthal A-1 heating element.
- 6H x 6W x 10D working chamber / 360 cu-in.

## HOT SHOT 360D PERFORMANCE

### Performance Features

- The Hot Shot oven is equipped with Cool-Touch Technology (patent pending). This provides a safe external temperature to allow for safer operation and protection of its surroundings.
- 120V 20-amp supply circuit required.
- 2200-watt heating element/18 amp total oven load.
- 2000°F/1093°C max operating temperature (upper).
- 600°F/315°C max operating temperature (lower).
- Ambient to 2000°F/1093°C in as little as 40 minutes (room temperature, empty oven).
- Maximum ambient room temperature of 95°F - (35°C).



Temperature Controller  
Programming Code:

**4912**

(Please keep with your  
Hot Shot Oven records)



## OVEN + KILN WARRANTY

All Hot Shot Oven & Kiln, oven and kilns are warranted against defects in material and workmanship for 18 months. Hot Shot Oven & Kiln will repair or replace (at our option), at no charge, any part(s) found to be faulty during the warranty period specified. The oven/kiln will be free of defects in workmanship and materials when used under normal and proper operating conditions. The oven and kiln warranty repairs must be performed by/at Hot Shot Oven & Kiln facility.

### OBLIGATIONS OF THE ORIGINAL OWNER

Provide written proof of date of purchase. Notify Hot Shot Oven & Kilns immediately after defect has been discovered. Transportation of oven/kilns to Hot Shot Oven & Kiln is the responsibility of the original purchaser. Return transportation back to the customer is provided by Hot Shot Oven & Kiln when the oven/kiln is in-warranty.

**FOR WARRANTY REPAIRS:** Warranty repairs should be handled through Hot Shot Oven & Kiln who will arrange for any repairs or replacement of parts under the terms of this warranty. Otherwise, the defective part may be returned (postage prepaid) to Hot Shot Oven & Kiln at 2305 Stonebridge Rd, West Bend, WI 53095. If, after factory examination, the original part is found to be defective, a new or repaired part will be shipped prepaid by Hot Shot Oven & Kiln. If the entire oven is to be returned to the factory, all transportation costs will be done by the purchaser. The purchaser should notify Hot Shot Oven & Kiln (262) 361-4912 prior to shipping for a Return Materials Authorization (RMA) Number. Hot Shot Oven & Kiln will help advise if it is necessary to return the entire oven or only certain parts. Warranty work will be performed within 3 business days after defective part is returned to the factory. Hot Shot Oven & Kiln reserves the right, at its option, to replace the entire oven or any part of it in order to fulfill its obligation under this warranty.

### THIS WARRANTY DOES NOT COVER:

- Ovens altered in any way, abuse or neglect, moisture, improper storage or installation.
- Ovens over fired (reaching temperature higher than melting point of ware inside oven) regardless of cause.
- Ovens operated on incorrect voltage. Improper electrical installation. Knife Blade furniture or ware other than Hot Shot Oven & Kiln made.
- Ovens used for salt firing.
- Ovens used for Nitriding.
- Ovens used for purposes other than the firing of heat-treating various metals.
- Ovens operated more than the temperature on the rating plate.
- Damage to Property or personal injury that may occur from ovens that are fired on or near wood floors or combustibles.
- Damage to property or personal injury that may occur from improper ventilation of the work area and building structure.

This warranty is in lieu of all other warranties, expressed, or implied.

### EXCLUSIONS OF THE WARRANTY

This warranty does not cover any of the following: accident, misuse, fire, flood, and other acts of God, acts of terrorism, nor any contingencies beyond the control of Hot Shot Oven & Kiln, including but not limited to water damage, incorrect line voltage, improper installation, installation where this unit will not meet local electrical codes, missing or altered serial numbers, and service performed by an unauthorized facility. Hot Shot Oven & Kiln's liability for any damages caused in association with the use of Hot Shot Oven & Kiln's equipment shall be limited to the repair or replacement only of the Hot Shot Oven & Kiln's equipment. No person, agent, distributor, dealer, or company is authorized to modify, alter, or change the design of this merchandise without express written approval of Hot Shot Oven & Kiln.

**Liability Limitation:** In no event shall Hot Shot Oven & Kiln be liable or responsible for consequential, incidental or special damages resulting from or related in any manner to any Hot Shot Oven & Kiln product, third party installation(s), manufactured or distributed, or parts thereof.

Hot Shot Oven & Kiln does not accept returns on units that have been burned in or fired.

## STARTING YOUR OVEN FOR THE FIRST TIME?

Please carefully remove all packing material from the inside of your oven. Visually check that the element hasn't been bumped or moved during shipping.

- DO NOT block any vents.
- Keep the back of the oven (fan unit) at least 3 inches away from a wall or other objects.
- DO NOT attempt to duct the exhaust of the fan unless the exhaust has a power vent compatible with the cfm of the fan.

### UPPER OVEN

Your temperature controller has been pre-programmed to outgas your oven automatically and anneal your heating element. Place oven on a level, non-combustible surface. Apply power.

Control power = on. Heat enable = on. Door = closed. Press "P" once, e-prog = yes. Press "P" again, run = yes. Press "P" again to return to the main screen.

Oven will start @ 400°F and will work its way up to 1800°F in timed segments, after 1800°F is reached, it will slowly cool down to ambient to anneal the heating element.

Run command will automatically be removed at the end of the sequence. Do not open the door until the process has ended and the oven has cooled.

If you are firing the oven for the first time, here's what you can expect:

**Important: Do these steps in a well ventilated area or outdoors if possible.**

**Note: The oven fan is regulated by the oven core temperature, therefore, it will not turn on immediately.**

- Run and heat soak for ½ hour @ 400°F - slight odor of burned anchor lube and assembly lubricants, small amount of smoke, kaowool board will turn chocolate brown and start outgassing.
- Run and heat soak for 45 minutes @ 800°F - odor from the insulating board will really begin to stink, you will wonder if this is actually normal, don't worry, it is. If you open the oven door, expect to see a fire show of outgassing contaminants & heavy smoke.
- Run and soak for 1 hour @ 1200°F.
- Run and soak for 1 hour @ 1600°F - your cooling fan should have kicked on by now, but the smell is still very strong, the inner insulating board of the oven is starting to cleanse itself and is turning white, there will be a brown ring around the door that will move away from the inner shell as temperature increases.
- Run and soak for 1 hour @ 1800°F - all downhill from here, you have burned off most of the impurities from the insulating board. Inner oven should be chalk white. The brown ring around the door should be fading.

2nd and 3rd firings: slight odor will be present, decreasing with each subsequent firing.

While it's not necessary to run your oven all the way up to the max temperature for the outgassing process, holding at 1500°F for 1 hour will remove 90% of the contaminants from the insulation. You will see steam escaping from the seams and even water forming at the feet of the oven from trapped moisture being burned away from the inner (hot) layer and condensing when it gets to the outer (cooler) layer.

### LOWER OVEN

- Press "P" until "run" appears.
- Change run command to "yes".
- Oven will heat up to 600°F.
- Allow oven to run for 4-5 hours.
- Allow oven to cool slowly with the door closed.
- The oven is now ready to use.

Your heating element is made from Kanthal Ni-Chrome wire, allowing cold air to enter a hot oven will harden your element and make it become brittle. Never use compressed air or fans to force cool the oven, always close the door and let the oven cool on its own, this will keep your heating element annealed.

Our cool touch technology, with the fan running, should keep the outer surface within 20°C of room ambient temperature.

## OVEN ON TEMP NOW?

Here's a few things to do after your oven has reached a stable operating temperature

1. Press and hold the "P" button until "ATUNE" appears, select yes and let your unit set its own PID's. Auto tune is complete when the "tune" light goes out on the main screen. Always auto tune +/- 200°F of your normal operating temperatures. Keep the door closed during this tuning; oven needs to be stable and have no cold air introduced during auto-tune.
2. Make certain that the cooling fan located in the back of your oven has engaged and the fans air movement is not impeded.

## SAFETY RECOMMENDATIONS

1. Do not use an extension cord.
2. Install on a 20 amp 120V circuit.
3. Do not use the oven to cure paint or any other solvent borne products.
4. Do not use the oven for powder coat.
5. Use in a well ventilated area.
6. Wear protective clothing and protect thyself from burns.
7. Turn off the "heat enable" when loading/unloading parts.
8. Do not unplug the unit till it has fully cooled down.
9. Do not EVER put magnesium in the oven.
10. Do not exceed 2000°F.
11. Do not block any vents
12. Keep the fan exhaust at least 3 inches from any wall or obstruction.
13. In the event the oven overheats, the oven will automatically shut down. Please contact our office at 262-361-4912 to work with our team on resetting your oven if shut down occurs.



**WARNING:** This product can expose you to chemicals including chromium, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## READY TO PROGRAM YOUR CONTROLLER NOW?

### Novus 4 480D setting ramp and soak times, temps and events.

The oven comes with a factory installed USB port for programming the controller via a computer. Note: Disconnect oven from power source before plugging in USB.

Press and hold the "P" button till PTOL appears, then use the "P" button to scroll thru parameter group.

GROUP	PARAMETER
PSPO	starting temp (control temp starting pt)
Pt1	time 1 (set desired time)
PSP1	temp 1 (set desired temp)
PE1	event 1 (off or A-1 for alarm)
Pt2	time 2 (desired time)
PSP2	temp 2 (set desired temp)
PE2	event 2 (off or A-1 for alarm)
Pt3	time 3 (set desired time)
PSP3	temp 3 (set desired temp)
PE3	event 3 (off or A-1 for alarm)
Pt4	time 4 (set desired time)
PSP4	temp 4 (set desired temp)
PE4	event 4 (off or A-1 for alarm)
Pt5	time 5 (set desired time)
PSP5	temp 5 (set desired temp)
PE5	event 5 (off or A-1 for alarm)
Pt6	time 6 (set desired time)
PSP6	temp 6 (set desired temp)
PE6	event 6 (off or A-1 for alarm)
Pt7	time 7 (set desired time)
PSP7	temp 7 (set desired temp)
PE7	event 7 (off or A-1 for alarm)

GROUP	PARAMETER
Pt8	time 8 (set desired time)
PSP8	temp 8 (set desired temp)
PE8	event 8 (off or A-1 for alarm)
Pt9	time 9 (set desired time)
PSP9	temp 9 (set desired temp)
PE9	event 9 (off or A-1 for alarm)

Note: If any "PT" value is set to zero, the controller will stop and end the sequence at the point.

rPT.P = number of times the controller will repeat the sequence (after the Pt9 has timed out, it will return to Pt1 and repeat the sequence)

Running in manual set point mode.

Press "P" once, E-prog = no press, press "P" again, run = yes, you can manually adjust the green temp set point and oven is in "run hold" mode with no timers. Use the "^-v" keys to change set point.

N1030T controllers only

From the main start up screen, press "P" to cycle through time and run-hold options.

Press "P" once for timer display, twice for "T1" timer set, third time is run option.

On the "run" screen select "yes" to run hold, "no" to remove run command or "F" to enable the function key.

Once you have enable the "F" key, push and hold the F key for a 3 count, run command will applied and controller will run for the amount of time set on "T1", when this timer reaches zero value, the run command is removed from the controller.