

RELIANT

Typical Maintenance Schedule for Powder Coating Oven

We want your equipment to run smoothly and efficiently for years to come! Here are some common maintenance tasks that can extend the service life of your oven and prevent costly downtime. Performing these scheduled, routine tasks will not only help prolong the life of your oven, it will assure that your equipment retains warranty coverage.

EVERY DAY

Check/Clean Oven Floor



Before using the oven, check the interior floor in case it needs to be swept or vacuumed to remove debris—be sure to keep dirt away from the heat unit and exhaust.

Check/Clean Oven Walls & Ceiling



Inspect the oven's interior and check the walls or ceiling in case they need to be cleaned by hand or vacuumed/blown down to remove debris. **DO NOT** use solvent-based cleaners because residue can cause finish problems on your parts.

Check/Clean Oven Heat Unit Recirculation Intake



Check the intake for the heat unit's recirculation fan (covered by a vented guard) in case it needs to be cleaned by hand or vacuumed to remove debris.

Check/Clean Oven Heat Unit Fresh Air Intake



Inspect the heat unit and check the fresh air intake for the heat unit (covered by an adjustable vented guard) in case it needs to be cleaned by hand or vacuumed to remove debris.

Check/Clean Oven Heat Unit Combustion Air Supply Intake



Check the intake for the combustion air supply fan (covered by a wire guard) in case it needs to be cleaned by hand or vacuumed to remove debris.

Check/Clean Oven Exhaust Intake



Check the intake for the exhaust (covered by a vented guard) in case it needs to be cleaned by hand or vacuumed to remove debris.

Check The Thermocouple For Damage



Ensure that the thermocouple hasn't been damaged during daily use. Use of the oven with a damaged thermocouple can lead to permanent damage to the heat unit. **Use of the thermocouple cage is highly recommended.**

Check The Incoming Gas Pressure



Before using the oven, check the analog (dial type) pressure gauge provided with the heat unit. It is mounted near the connection point where the incoming gas supply is mated to the heat unit. The incoming gas pressure should be between 10" and 14" w.c. Excessive gas pressure can cause the burner to over-fire, which is dangerous. Insufficient gas pressure can cause oven performance issues.

ONCE A WEEK

Clean The UV Scanner



Gently clean the lens of the UV scanner about once a week. It is on the end of the scanner body. Unscrew the UV scanner from its mounting plate by hand using light pressure. Carefully wipe away built-up debris using a clean cloth. **DO NOT** use compressed air or chemicals/detergents to clean the lens! Retighten firmly by hand. **DO NOT** overtighten! The UV scanner is located near the center of the burner assembly on the heat unit. Follow the gas train piping until you come to the hole in the skin of the heat unit. The UV scanner is a purple and white cylinder on flexible conduit aimed directly into the hole and pointed at the flame. Over time, the lens of the scanner may become dirty and no longer properly detect the flame. This will automatically shut off the burner or prevent it from starting. Regular cleaning of the lens will help avoid this issue.

IMPORTANT! PERFORM A SAFETY CHECK

Power Flame, the manufacturer of the burners integrated into Reliant ovens, has a published list of recommended weekly safety checks. These checks take a certain amount of time, but do not require an outside technician if the operator has had appropriate training.



Close the manual gas valve at the start of the heat unit's gas train. It is located near the dial-type pressure gauge where the incoming gas supply is connected to the heat unit. After disconnecting incoming power to the oven, remove the vented guard over the heat unit's recirculation intake and perform a visual inspection to assure that no debris has been trapped inside the heat unit or is caught in the recirculation fan. Once the inspection has been performed and any cleaning done, replace the vented guard and reconnect power to the oven.



Start the oven normally. Confirm that the oven heat unit shuts down promptly (within about 3 seconds after the system fails to ignite). Re-open the gas valve and try again. If the heat unit fails to ignite, check the low gas pressure safety switch. This switch is on the gas train, about a foot to the right of the dial-type pressure gauge. It is a small cube shaped device with a clear plastic cover. There is a raised ring about as big around as a pencil near the edge of the cover. There is a small black indicator that is flush with the



edge of the ring. If the safety switch has been tripped, the indicator will pop up slightly (only a fraction of an inch). The indicator also serves as a reset button. Pressing down gently on the indicator with your finger, you can reset the safety switch. The black indicator will click slightly and remain flush with the raised ring when the safety switch has been reset. Start the oven normally and confirm correct operation.



Power Flame also recommends that the owner consider acquiring and using a digital display module to check the burner's performance. This device mates to the Honeywell flame safety system. It is available from Reliant Finishing Systems as part of an upgrade package or as a stand-alone part. It is also available from numerous other vendors. If available, use the display module to check the flame signal strength on a daily or weekly basis.

Maintain A Log Book



By keeping a log of key information from daily and weekly inspections, such as incoming gas pressure, shut-down performance, and flame signal strength, the owner/operator can gain a better understanding of the oven's performance characteristics. By logging unexpected events, like the oven failing to ignite or shutting down abruptly, the operator can help speed the troubleshooting process and reduce downtime. **MAKE AN OVEN LOG AND KEEP IT ACCURATE AND UP TO DATE!**

EVERY 2-7 WEEKS

It is critically important, for the safety and longevity of your oven, that the bearings are greased on a regular basis and only with the appropriate high-temp grease (rated over 400° F). Failure to do either could result in premature wear to the equipment and possible damage.

First you must identify which bearings are on your Reliant oven. Again, using the wrong type of grease can severely damage your bearings.



AMI ISAHI bearings have a bluish casting with AMI molded on them. The race is silver with ISAHI and Japan engraved into it.

For this brand of bearing use only Synxtreme HD - 2/220 high-temp grease



IPTCI bearings have a dark gray casting with IPTCI molded on them. The race is black with IPTCI and China engraved into it.

For this brand of bearing use only Synco Super Lube® high-temp grease



Depending on the style of use, if your facility, the following schedule should be followed.

Daily Operational Hours	Frequency of Lubrication (Weeks)
8	7
16	4
24	2

Grease The Heat Unit Bearings



Apply one or two small squirts to the grease fittings above the bearings. Be careful not to apply too much grease to the bearings - one or two small pumps from a grease gun should be plenty. One bearing is easy to see, the other is behind the vented safety guard below the heat unit's motor.

Grease The Oven Exhaust Fan Bearings



Apply a small squirt in the grease fittings above the bearings of the oven exhaust fan. Be careful not to apply too much grease to the bearings - one small pump should be plenty. The bearings are located under the vented green safety cover that houses the oven exhaust fan and motor.

ONCE A MONTH

Check The Heat Unit Fan Belt



After disconnecting incoming power to the oven, check the heat unit fan belt for wear and tension. When checking tension, the belt should have between a half-inch to a little over an inch of deflection when you press down firmly on the belt. **DO NOT** overtighten the belt. Make sure the belt has the recommended amount of tension and is not overly worn or damaged. When the belt tension is correct, it is normal for the belt to "chirp" briefly when the heat unit fan is turned on.

Check The Oven Exhaust Fan Belt



After disconnecting incoming power to the oven, check the exhaust fan belt for wear and tension. When checking tension, the belt should have about a half-inch of deflection when you press down firmly on the belt. **DO NOT** overtighten the belt. Make sure the belt has the recommended amount of tension and is not overly worn or damaged.

Check The Oven Exhaust Pulley



Ensure the proper fitment of the variable pulley on the motor shaft for the exhaust unit. Make certain both the variable pulley and the fan shaft sheave are properly aligned. This can be accomplished with the use of a level.

Inspect The Fan Shaft On The Exhaust Unit



Ensure bolts are tight on exhaust unit fan shaft sheave.

Look Over The Airflow Switches



The airflow sensing switches will need to be checked for build-up and cleaned as needed. Also check that the copper tubing is also free of build-up and damage.

1) Open the main oven control panel and flip off both circuit breakers located on the top right corner of the panel.



2) Locate the combustion fan shroud on the heat unit. Remove the compression fitting on the silver line labeled "High" and remove the tubing.

3) Blow through the tubing and ports where the silver tubing mounts with compressed air. Once finished, remount the tubing and tighten up the fitting.



4) Locate where the exhaust duct meets the exhaust fan shroud. You will see a copper tube going into the duct that connects to the air sensing switch. Loosen the compression fitting from the bottom of the air sensing switch where the tubing is mounted.

5) Remove the tubing from the port on the air sensing switch. Blow through tubing and ports with compressed air. Once finished, remount the tubing and tighten up the fitting.



6) The last air sensing switch is mounted on top of the heat unit. Once located, repeat steps 5 & 6.

7) Flip the circuit breakers back on at the main oven control panel.

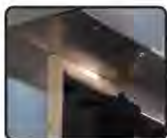
EVERY 3-6 MONTHS

Check The Vent Lines & Ductwork



Every few months check the vent lines from the gas train regulators, the oven exhaust duct and the discharge cap for blockage or leaks.

Check The Doors



Check your oven's door gasket every few months. Replace it if it shows significant wear or is torn. Otherwise, it can be gently cleaned of dirt or powder residue. The doors should fit snugly to prevent heat loss. Latches should be checked for proper operation and adjusted if necessary.

Inspect & Lubricate The Hinges



Check the bullet hinges and grease as needed. They should only require a few pumps from a grease gun in the grease fittings to keep them topped off. Also check for excessive wear on the brass bushings located between the upper and lower halves of the hinges.

Check The Door Post Floor Plates



Inspect the nuts on the door post floor plates and tighten as needed. It's possible for them to loosen over time from use.

Check The Ignition Rod On The Powerflame Burner



First remove the rod from its housing. Next, check the ceramic coating around the rod for damage. Verify the tip of the rod is free of debris.

ONCE A YEAR

Service The Heat Unit Fan/Drive & Test



Have a service technician inspect and possibly clean or replace the heat unit fan, check the bearings for excessive play or noise, make sure the motor is clean, and then test the fan for proper performance.

Service The Heat Unit Combustion Air Supply Fan/Drive & Test



Have a service technician inspect and possibly clean or replace the heat unit combustion air supply fan, check the bearings for excessive play or noise, make sure the motor is clean, and then test the fan for proper performance.

Service The Oven Exhaust Fan/Drive & Test



Have a service technician inspect and possibly clean or replace the oven exhaust fan, check the bearings for excessive play or noise, make sure the motor is clean and then test the fan for proper performance. This test should include checking the oven exhaust duct and discharge cap for blockage or leaks.

Perform A Leak Test



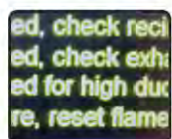
Have a service technician perform a leak test on the oven heat unit's gas train.

Perform A Combustion Test



Have a service technician perform a combustion test on the oven heat unit and adjust as needed for best performance.

Perform A Safety Test



After your oven has been in operation for about a year, the testing done by a service technician should include a check of the high limit safety switch that shuts off the heat unit's burner if the discharge air temperature is too high, along with a test of the air proving switches used on the heat unit combustion supply fan, the heat unit recirculation fan and the oven exhaust fan.

Check Oven Structure



About once a year you should look over the oven structure to make sure there are no unusual gaps between panels, at seams, etc. It is possible to caulk small gaps, using high-temperature caulk rated for service at 450° F or higher. Serious issues with the structure should be addressed immediately with a skilled service technician.

By following this inspection and maintenance timeline, you'll get the best performance from your Reliant oven. If you have questions, need advice or want to get maintenance or repair parts, call Reliant Finishing Systems at (888) 770-0021 or contact us via email at info@reliantfinishingsystems.com.