

Title	WD7664 / WD7663 Maxon			Procedure No.	
	Burner Ellis Whisper Dryer Installation & Start UP Procedure		Author	Chris Giordano	
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WD7664 / WD7663 Maxon Burner Ellis Whisper Dryer Installation & Start UP

Receiving



Do a quick visual inspection on the truck for any major damages prior to signing the paperwork. Damage should be noted on the driver's paperwork and the Ellis Customer Support Team should be contacted ASAP at 630-250-9222.

We can be reached on the after-hour support line at 630-250-4844.

Once unloaded remove all shipping protective plastic wrap. Inspect the machine for shipping damages and the Ellis Customer Support Team should be contacted immediately at 630-250-9222.

If there is no damage proceed forward with the next steps.



Look for yellow folder.



In most cases the lint filter will be shipped prior to the dryer and will arrive in a crate similar to the one pictured here.



Do a quick visual inspection on the truck for any major damages prior to signing the paperwork. Damage should be noted on the driver's paperwork and the Ellis Customer Support Team should be contacted ASAP at 630-250-9222.

We can be reached on the after-hour support line at 630-250-4844.



Preparation for Leveling



Move the machine into its final position.



Remove the large sheet metal cover under the front door. Mark it "FRONT" on the back side. The covers are all custom fit at the factory.

Remove the same cover from the rear of the machines. The last cover to remove is the upper cover on the basket drive end of the machine (the one with the grease fitting labels).



If you are installing multiple machine or aligning to other machine don't forget to snap a chalk line to have a reference

point. This is critical if a conveyor is also installed or will be installed in the future. The door height needs to be considered for conveyor install.



Remove the RED SHIPPING CLAMPS bolted to the four basket support pedestals. Remove the SHIPPING BEAM CLAMPS that hold the burner tower flange to the basket box flange.





Remove the tower clamps (3 or 4 depending on models)



Phase One Leveling

Be very precise with all leveling steps.

Now you are going to level the basket support structure. This consists of the double box tubes in the front and rear of the machine as well as the drive shaft.





We recommend cutting the shipping braces in half to use as jacking bolt support plates or $4^{"} \times 4^{"} \times \frac{1}{4}^{"}$ plates, this will insure the jacking bolt doesn't penetrate the concrete after having the machine operating for a while.



WHISPERDRYer INSTALLATION INSTRUCTIONS 181220.docx





Phase 1 Leveling

- Check for the highest point
- Start at the highest point, you can then level the machine by using the drive shaft to level depth wise or front and rear beam to level width wise.
- Utilize the jacking bolts located at each of the drive end corners of the basket box.
- You may need to double up the support plate if you need more height.

Phase 2 leveling



<u>**Do not**</u> grout before performing phase two leveling. Anchors may be needed to help level.



Phase Two Leveling & Anchoring



A temporary air connection will be necessary to do the phase two properly. The tilting valves can be actuated manually to test phase two leveling. All 6 Pads need anchoring $\frac{3}{4}$ " x 8.5" wedge anchors.

Alternatively, the phase two leveling and anchoring will require the connection of air and electric to the machine. Come back to this section after completing those two sections of this procedure.

Tilt with manual bypass on air valve to **load** and deploy the RED SAFETY BRACES built into or shipped with the machine (depending on machine Model).

Drill and install the floor anchors on the two front corners of the basket box. Tighten the anchors and return to horizontal.

Tilt with manual bypass on air valve to **unload** (some machines may not have this option) and deploy the RED SAFETY BRACES built into or shipped with the machine. Drill and install the floor anchors on the two rear corners of the basket box. Tighten the anchors and return to horizontal.

Use valves to tilt to **load**. Note if the basket housing dips slightly just before it actually tilts. If it dips you have an air gap at the cup and rest pin in the corner that dipped. Use the jacking bolt to raise the frame in that corner just enough to eliminate the dip.

Use valves to tilt to **unload**. Note if the basket housing dips slightly just before it actually tilts. If it dips you have an air gap at the cup and rest pin in the corner that dipped. Use the jacking bolt to raise the frame in that corner just enough to eliminate the dip. **Double check phase one leveling points.**



Now the air gap between the flanges can be set. Utilize the jacking bolts on the burner end of the machine. Your goal is to close the gap between the flanges as much as possible while still allowing the basket box to tilt in both directions with no rub. Adjust the jacking bolts on the tower only as required.





Set the Plenum seal to touch the flange. You want full contact at this point to keep air from entering at this point in the air flow cycle. Set the air gap so it is as close as possible without any rubbing while tilting (one way or two ways). The gap should be even and no more than a ¼' all around the flange.



When the Phase Two leveling is complete grout all 6 anchoring pads as required.





Duct work and Lint Filter Connections

The lint filter is supplied with all required plumbing and electrical connection parts. The air piping for the lint filter blowdown and water piping for the lint filter sprinkler need to be piped and run at time of install. The fittings needed are provided with the machine.

Air Inlet (~30") and Exhaust Duct (~24") should be round or equivalent (In^2) with a minimum of turns. Fewer turns will equate to higher efficiency.

- A properly installed exhaust duct will have less than 1 inch WC of back pressure while running a formula.
- A properly installed inlet and exhaust duct will be supported properly so the weight is <u>not</u> fully supported by the inlet flange of the blower or the lint filter.





Roof Top Exhaust Duct







Electrical Connection

Top entry of the control cabinet is not advised.

Do not power up the machine until all machine electrical connections are made (lint filter coil, temperature sensor, and front and rear beacons and sirens).

THIS MAY CAUSE SEVERE DAMAGE AND OR ELECTRICAL SHOCK!



The Softrol Dryer(s) will require a ground rod installed by the machine and connected directly to the ground lugs.

Talk to the customer and/or the contractor. Verify the three phase power being brought to the machine is of the proper voltage (per the data nameplate) and current rating. A ground cable of equal size to the three phase cables must be installed.



Use an ohm meter to be sure the machine disconnect is open before bringing power to the machine. Identify and remove the control transformer secondary fuse,

Close the customers three phases disconnect providing electrical power to the top of the machine disconnect. Use your meter to verify the voltage you have matches the machine data plate and the stickers on the control cabinet.

Check the voltage on each phase to the ground to be sure you have all three.



If one of the phases shows 0 volt to ground you may have a "B phase grounded service" please contact us immediately for further guidance after verifying that it is not a blown fuse or faulty breaker.

Close the machine 3 phase disconnect. Repeat the above electrical test with your meter at the bottom of the disconnect

Take special note for **230 volt** systems **with a high voltage phase**. The high phase must not be left on the primary of the control transformer. Long term control damage will result.



Check the voltage at the secondary of the control transformer. If the transformer is tapped properly you should read approximately 120 VAC. If this is OK turn off the machine disconnect. Verify all three phases are opened and then replace the secondary fuse.

Turn on the machine disconnect. Turn on the control power switch and push the green control power button. If the green light stays on you are done with this task.



Some locations have a corner grounded delta "B Grounded phase". If that is the case at the location of install please contact Ellis Service department immediately. Office 630-250-9222

Bump for Rotation

The wiring for rotation of the basket and main blower was done at the factory during testing. You will be using the main blower motor to test rotation. If this one tested okay the basket will be okay as well.

The main blower motor should turn counter clock wise looking at the cooling fan as noted on the blower door.

If it turns the wrong way, swap two of the customer's three phases. Use your meter to be sure the power is turned off and make sure high leg is not on the transformer.

Verify the combustion blower motor rotation.



Air Connection

The air supply plumbing should be no smaller than $\frac{1}{2}^{\prime\prime}$ NPT. Adjust the pressure regulator to 95 PSI.



Air Connection WD7696 and older WD7664& WD7663





Sprinkler Water Connection

This should be supplied by a 3/4" NPT pipe from an **uninterruptable supply of water**. In house pump sources are not advised. The isolation valve should be located where it would be difficult to turn off unintentionally.



We recommend the following:

- A continuous supply of water of **40 PSI.**

- Flushing the water supply prior to connecting to the inlet point to avoid getting debris in the sprinkler solenoid valve that could cause leakage in the valves.



Gas Connections & Vents



The recommended gas supply to the machine is a minimum of 20 inches WC and a maximum of 30 inches WC (0.72 to 1.08 PSI). Anything outside this parameter contact technical support for advice.

Customer may need to install a gas regulator to adjust Gas pressure at the dryer. The regulator on the gas train is to adjust the burner itself.

Run 1¼" black iron pipe from the gas header to the machine. Have a soap solution on hand to check for leaks in the connections and for later on the gas train piping during the start-up.



Refer to local code; Local code typically requires the gas regulators and vent valve to be vented to the outside of the building. The machines are shipped with plugged vent ports.



Start Up

Testing / Check / Verify

- 1. Request Formula list from Customer.
- 2. Turn on the control power.
- 3. Open the air isolation valve.
- 4. Open the sprinkler water isolation valve.
- 5. Open the gas isolation valve.
- 6. Open and close the front door.
- 7. Tilt the machine to full load position and then to the unload position from the front control.
- 8. Rotate the basket in both directions with the front yellow pendant.
- Open and close the back door from the rear control (if option is available). Tilt to unload and back to level from the back control (if option is available). Rotate the basket in both directions with the rear yellow pendant.
- 10. Push in the front "E" stop button. The green lighted button should turn off. Reset the "E" stop and push the green lighted button. It should come back on. Repeat this test with the rear "E" stop button (if option is available).
- 11. Push in the "SPRINKLER WATER SHUT OFF", next push in the "SPRINKLER TEST" button. You should not get any reaction from the water solenoid valves.
- 12. Reset the shutoff switch. Push the test button again. This time you should see water at the lint filter and in the basket.
- 13. Check to make sure the Zytron control inside the control cabinet is set at 250 F.
- 14. Check the blower door safety interlock switch release logic. The green lighted button on the side of the control should allow entry when lit and pressed.
- 15. Verify that the following is done;
 - ✓ Low pressure gas cutoff is set at .4" WC.
 - ✓ High pressure gas cutoff is set at 34" WC.
 - Inlet and outlet temperature indications on the control are reading ambient temperature.
- 16. Inspect the basket exhaust flange seal. Adjust the seal to eliminate any visible air gap. Check the adjustment of the two air fan differential switches;

Differential Air Pressure Diaphragm Switches

- \checkmark Gray Spring Switch = 0.25 to 0.5 inches WC. Combustion Air Blower
- ✓ Red Spring Switch = 0.8 to 1.0 inches WC. Main Blower



Formulas

Consult with the customer making sure they provide you with a list of formula names and numbers they want assigned to each. Have them tell you which ones are to be conditioned and full dry. Find out enough information about each product to be dried to allow you to decide on the appropriate inlet and outlet temperatures.

Use our standard formula format and edit as required. Enter all formulas.

First Light Off

Header and Gas Train meters are part of the Maxon package. The average Gas Train reading while running a formula at 100% firing rate is approximately 1.8" at the burner gauge. (Low NOX & WD 7696 will have different requirements)

This is what should happen when you start a formula;

- ✓ The main blower starts and its differential switch closes.
- ✓ Combustion air blower starts and its differential switch closes.
- ✓ Both of these switches are inputs to the flame guard.
- ✓ The basket starts to rotate.
- ✓ After approximately 60 seconds the following should happen;
 - Flame guard switch initiates the ignition spark plug and opens two pilot gas valves. You should have a flame signal.
 - The modulating gas valve should begin stroking open and you should continue to have a flame signal.
 - Pilot valves close and you should continue to have a flame signal.

With an empty machine select a formula and start the machine. A few flame failures are common at this stage due to air in the new gas pipe.

While running check the pilot and main gas plumbing for leaks.



Start Drying Loads

The first few loads will allow you to make any gas pressure adjustments required as well as formula adjustments to achieve desired results.

After a few hours of observation you should be able to reinstall the basket box covers. The balance of the time will be split between tuning the machine and training the customer.

Operator Training

- ✓ Cleaning requirements.
- ✓ How to program and edit formulas.

Maintenance Personnel

- ✓ Preventative Maintenance.
- \checkmark How the machine works.
- ✓ How to program and edit formulas.
- ✓ Review Common questions / problems.
- ✓ Cleaning requirements.