

User Manual



Model: FSL300 Dual Port Laser Fume Extractor



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1. Product Overview

This high quality fume extractor featuring low noise brushless motor technology is designed for capturing dust particles and removing odors when cutting or engraving with the Full Spectrum Laser line of laser cutters. With dual air inlet ports, up to two lasers can be run at the same time using a single filter. Use only OEM replacement filters from Full Spectrum Laser in this machine to maintain top performance and warranty.

2. Unpacking Inspection

Please check carefully to ensure that the following listed parts are included. If there are any missing or damaged items, please contact customer service.

Name of Parts	Qty	Remarks
Main Unit	1	
Power Line	1	
4" Hose	1	
4" Air Inlet Cover	1	The FSL300 has dual 4" air inlets to operate up to two machines. Use the hose cover when operating a single machine.
Large Pleated Prefilter	1	Installed
HEPA Filter Cartridge	1	Installed
Activated Carbon Lower Filter Cartridges	5	Installed

3. Unit Components



4. Specifications

Model FSL300 Specifications	
Air Inlet Interface	<i>2x 4" duct</i>
Input Voltage	<i>AC110V</i>
Maximum Power	<i>700W</i>
Noise	<i><75dB</i>
Systemic Flow	<i>365 CFM</i>
Dimensions of Main Unit	<i>21.6" × 16.3" × 51.2"</i>
Weight	<i>165 lbs</i>

5. Installation & Use instructions

The FSL300 fume extractor features an efficient bottom up design. Exhaust fumes enter from the bottom, through a large pre-filter, followed by a HEPA filter cartridge followed by 5x Activated Carbon Cartridges.

5.1 Filter Cartridge Installation

Pull upward the two twist locks, and rotate them clockwise to the "OPEN" position to open the front panel.

The filters are held down by two twist clamps which counteract the upward force exerted by the rising exhaust. Rotate the clamps to release the pressure holding down the filters.



Grasp the handle on top layer and pull out the filter elements one by one.



After replacement, put back the elements in sequence from bottom to top one by one. The arrows on the cartridges indicate the direction of air flow and should be **pointed up**.

After all cartridges are placed back, use a spanner to rotate clockwise the adjusting nut to tighten the cartridges down if necessary.



Rotate the twist clamps downward to lock the cartridges in place.

The large pleated filter can be removed by twisting.

5.2 **Cleaning and maintenance of Lower Compartment and Pre-filter**

If contaminants are observed on the lower compartment through the front glass window, please follow these steps:

Pull upward on the two door latches, and rotate clockwise in the "OPEN" position to open the front door. Wipe the clear glass of the front door and the interior side of the door plate. Vacuum the interior and the large pleated pre-filter. Pull out the black dust collection drawer, discard any particles and clean.

Pleated Pre-Filter Cartridge Removal

Hold the filter cartridges with two hands and rotate it towards the right to tighten or left to loosen.



The pre-filter cartridge and the machine bottom must be cleaned regularly (recommended at least weekly) to prevent the filter system from becoming clogged and causing premature failure.

5.3 Suction Duct Hose Installation

The FSL300 has 2 air inlets to operate up two machines simultaneously. When operating a single machine, place the included 4" air inlet cover over one of the inlets to block suction from that inlet.

Remove the hose from the package, and attach one end of the 4" duct flange on the top cover of the machine and the other end to your Full Spectrum Laser machine's outlet duct. Cover the extra inlet or hook up another hose (not included) to the second inlet if intending to operate a second machine.



Do not introduce a bend radius of more than 10" on the hose.

5.4 Machine Operating Instructions

Plug in and check if the power plug is properly fit into the socket.

Turn on the power switch.



5.5 Control Panel Button Functions



On/Off Button

Pressing the power switch on the remote control or the machine control panel should cause the machine to start running and the orange light on the machine control panel should turn ON. Pressing the power button again should cause the machine to stop running and the orange indicator light on the machine control panel should turn OFF.

Flow+ Button

Press this button when the machine is running to increase the fan speed, the number on digital display increases in multiples of 10, the maximum number is 100 which means the machine is running in full speed.

Flow- Button

Press this button when the machine is running, the number on digital display decreases in multiples of 10.

Proper Fan Speed

The fan speed should be set according to the actual requirements to remove all smoke without creating too much of a vacuum. During laser cutting, the laser machine should not fill up with smoke. If there is lingering smoke during cutting increase the fan speed. Too high a setting may cause the work piece to lift up and be pulled toward the vacuum created. In addition, too high a fan speed increases the power consumption as well as the noise level.

Time Set Button

While the machine is running, press the Timer Set button, the digital display will show HXXX. Then press the Flow+/Flow- buttons to adjust the shutdown timing. XXX represents the timer countdown in hours with a maximum of 300 hours and minimum of 1 hour. After you are satisfied with the setting, press the Timer Set button again and the digital display will show HXXX and start the countdown timer. For example, H005 represents that the machine will shut down automatically in 5 hours. This function is useful at the end of the day when you turn the laser off but still want to keep cleaning any smell residues that may remain inside the machine.

Ok/Setting Button

If the machine is in alarm status and buzzer sounds, press the Ok/Setting button to turn OFF the alarm. If the machine is not in alarm status, press the Confirm/Set button to check the total working hours of the machine.

10. Troubleshooting



Make sure the power is switched off and unplugged before inspecting or repairing the machine!

- Problem 1:** The machine still works, but the air flow is very weak and suction power is greatly reduced.
- Cause:** Air Inlet is blocked or foreign body exists inside the duct. The filter becomes saturated and hence gets blocked and gives an alarm. Usually only the pre-filter gets clogged quickly with large particles and needs to be vacuumed or replaced.
- Solution:** Turn off the power and open the top cover. Check if there is any foreign objects blocking the air inlet. Then check if the air vent is blocked or not. If the suction power of the empty-loaded machine is normal, it means the filter needs to be replaced.
- Problem 2:** The machine shuts down automatically after it is just started. Even if you restart the machine, the same problem happens again.
- Cause:** The air flow through the machine is obstructed. As a result, the starting current of the fan becomes very high, hence the machine shuts down automatically for self protection.
- Solution:** Turn off the power and open the top cover. Check if there is any obstructions in the air inlet or replace filters.
- Problem 3:** Power switch is ON, but machine does not run and the power indicator does not light up.
- Cause:** The fuse might be bad.
- Solution:** The fuse needs to be replaced. Pop the fuse out from the power socket using a flat head screwdriver and replace.



If the problem remains after these inspections and maintenance are performed, please contact customer service.

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7. Filter Use & Maintenance

This product has consumable replacement filters. They need to be cleaned or replaced periodically to ensure proper operation.

1. **Dust/grease Pan**

In the FSL300 fume extractor, exhaust is forced upwards. When the FSL300 fume extractor is turned off, large particles should fall down and be caught by the dust/grease pan. Empty the dust/grease pan out periodically to get rid of this debris.

2. **Large Pleated Pre-filter**

The large pleated pre-filter removes the largest dust particles. Vacuum it periodically and replace it when the air flow is reduced and vacuuming is no longer effective. The large pleated pre-filter can be removed by twisting it to the left.

3. **HEPA Filter Cartridge**




Load the HEPA Filter Cartridge with the arrow pointing up on top of the large pleated filter and below the activated carbon filters. It should be immediately cleaned off by vacuuming when any accumulated dust affects the suction power. When cleaning does not help replace the Middle HEPA Filter with a new one. Remember to unlock the twist clamps to release the filters and relock the twist clamps when added back in.

4. **Activated Carbon Filter Cartridges**

Load 5x Activated Carbon Filter Cartridges on top of the HEPA Filter Cartridge. The cartridges are marked with an arrow in the direction of airflow. In the FSL300 these cartridges should be loaded with the arrow facing up. If there is good airflow but the odors are not removed, the Activated Carbon Filter is consumed and must be

replaced. Remember to unlock the twist clamps to release the filters and relock the twist clamps when added back in.

8. Replacement Parts

Name	Remarks	Pictures
Large Pleated Pre-filter	Filters large particles. Replace or clean weekly.	
HEPA Filter	Placed on top of the large pleated pre-filter and below the Activated Carbon Cartridges. Removes small particles.	
Lower Activated Carbon Filter Cartridges	Removes odors.	

9. Important Use Considerations



While using the machine, the ambient temperature range of the gas and the dust which is sucked into the air inlet should be within the range 15-60°C. Never use the machine when the temperature is higher or lower than this temperature range.



When using the machine, the humidity of the gas and the dust sucked into the air inlet should be between the range of 40%-80%. If the humidity is excessively high, the activated carbon filter element will become rapidly saturated with water and consumed.



Do not use this machine without all filter elements because the fumes or the dust particles may be sucked into the air blower and the control system causing damage. Any operation without all filter elements installed is not covered under warranty. Use only OEM replacement filter elements from Full Spectrum Laser.



Do not continue to use the machine when the HEPA Filter Cartridge or the Pre-Filter is clogged as this will increase motor wear and shorten the service life of the machine. Please clean and/or replace the filter elements regularly to ensure proper machine operation.

The warranty will not cover any losses or damage that may be incurred by the user if instructions are not followed.

10. Contact Information

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