



UNIVERSITY OF WASHINGTON LOCKOUT TAGOUT (LOTO) PROCEDURE
(WAC 296-803)

DESCRIPTION:

University of Washington Department/Division: <i>Paul G. Allen School of CSE</i>	Building/Address: <i>Bill & Melinda Gates Center for CSE</i>
Equipment ID: <i>1014931</i>	Equipment/System Description: <i>Metal 3D Printer Studio System</i>
Location: <i>CSE2 G15, CSE2 G15A</i>	Procedure last updated: <i>2023.01.10</i>

PURPOSE: (WAC 296-803-20005)

This procedure establishes the minimum requirements necessary to protect employees from injury caused by the unexpected energization, start up, or release of stored energy during service or maintenance. Use this procedure to make sure the machine or equipment is stopped, isolated from all potentially hazardous energy sources, and locked out before any employee begins work

AUTHORIZATION: (WAC 296-803-20005)

List any authorized persons authorized to lock and tag out the machine or equipment using this procedure:

Alexander Lefort, Fabrication Research Lab Manager

SCOPE: (WAC 296-803-20005)

Provide a description of the scope of work for this service or maintenance work (include the work order #): Work order #:

Tech repairs
Tech maintenance

NOTIFY: (WAC 296-803-20010)

Notify all affected employees that the machine or equipment is to be shut down and locked out for service or maintenance:

Name/Job Title:	Notification Method:
<i>Listserv</i>	Email
Lab Personnel	Sign posted on equipment

NORMAL SHUTDOWN: (WAC 296-803-20010)

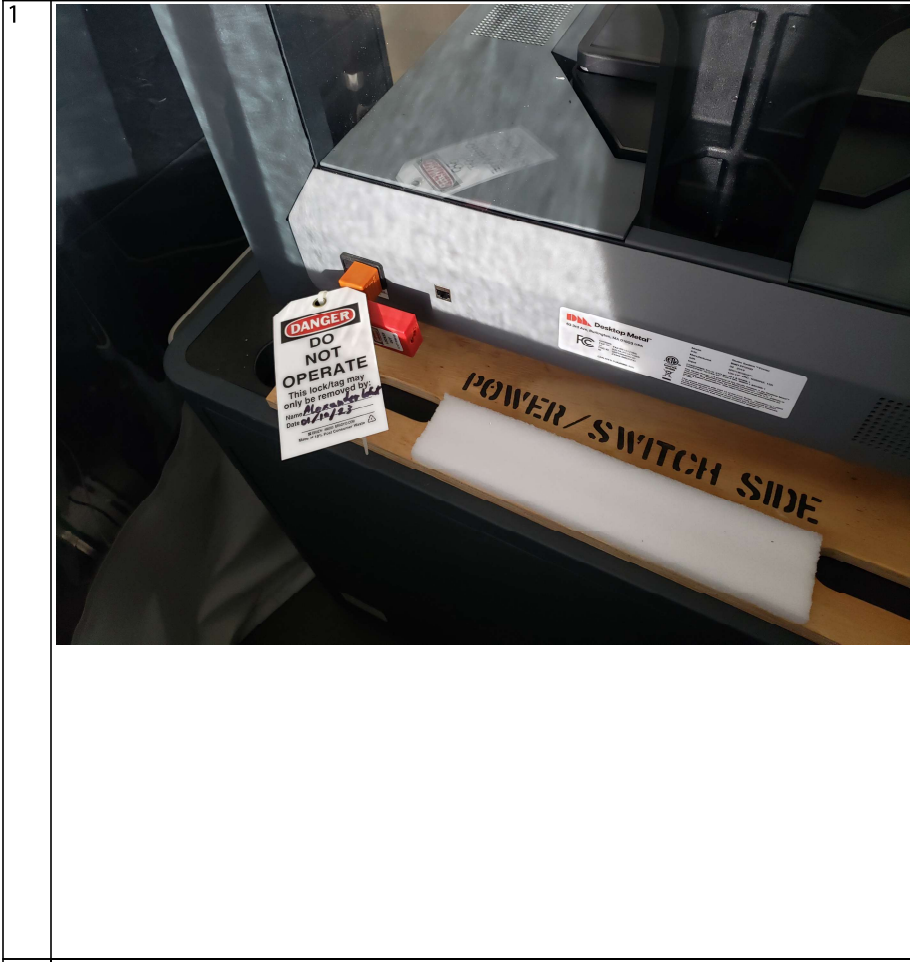
Shut down the machine or equipment by normal stopping procedures (such as depressing a stop button, opening switches, or closing valves). List the types and locations of machine or equipment operating controls:

Shutdown Method:	Location:
Ensure the machine is powered down; Screens and switches off.	Front of machine case, screen above emergency-stop button.
To power down, go to Support window, then "Shut Down."	
Once shut down, flip power switch to off.	Back of the machine case, next to machine-side power receptacle.

ISOLATE AND LOCKOUT: (WAC 296-803-20001)

Isolate energy sources using appropriate isolating devices. Lock and tag out the energy isolating devices with assigned individual locks and tags:

WARNING: The following are the known lockout steps. If additional steps are discovered, inform your supervisor, lock them out, and modify this procedure accordingly.



Energy source and magnitude:

Type of energy source:

Magnitude:

Energy Isolating Device Location:

Power cord, coming from back of unit.

Isolation device/procedure:

Shut down the printer by navigating with the touch screen on the front to "Settings," "Support," then "Shut Down." Once screen fully turns off, flip power button on back to off position. Unplug the power cord.

Control Method: Lock/Tag Info (Initial and Date)

Apply machine-side cord receptacle insert lock. Rotate knob to lock insert in place. Apply LOTO hasp through knob-lock hole.

Method to relieve residual/stored energy:

N/A

Verification Method:

Attempt to switch the machine on via power button. Ensure power switch is flipped back to off position.

Restored by: (Initial and Date):



Energy source and magnitude:

Type of energy source:

Magnitude:

Energy Isolating Device Location:

Power cord, coming from back of the machine.

Isolation procedure:



Shut down the debinder by navigating with the touch screen on the front to "Settings," "Support," then "Shut Down." Once screen fully turns off, flip power button on back to off position. Unplug the power cord.

Control Method: Lock/Tag Info (Initial and Date)

Apply cord cap to cord end using the cap-attached diagram for proper fitting and lock in the closed position around the cord with LOTO hasp.

Method to relieve residual/stored energy:

N/A

		<p>Verification Method:</p> <p><i>Attempt to switch the machine on via power button. Ensure power switch is flipped back to off position.</i></p> <p>Restored by: (Initial and Date): <input type="text"/></p>
3		<p>Energy source and magnitude:</p> <p>Type of energy source: <input type="text" value="Electrical"/></p> <p>Magnitude: <input type="text" value="240V, 30A, 3P"/></p> <p>Energy Isolating Device Location:</p> <p><i>Power cord, coming from back of the machine.</i></p> <p>Isolation device/procedure:</p> <p><i>Shut down the sintering furnace by navigating with the touch screen on the front to "Settings," "Support," then "Shut Down." Once screen fully turns off, flip power button on back to off position. Unplug the power cord from wall- and machine-side.</i></p> <p>Control Method: Lock/Tag Info (Initial and Date):</p> <p><i>Apply cord cap to machine-side cord end using the cap-attached diagram for proper fitting and lock in the closed position around the cord with LOTO hasp.</i> </p> <p>Method to relieve residual/stored energy:</p> <p><i>N/A</i></p> <p>Verification Method:</p> <p><i>Attempt to switch the machine on via power button. Ensure power switch is flipped back to off position.</i></p> <p>Restored by: (Initial and Date): <input type="text"/></p>
4	<p>Click to insert picture (portrait photo only)</p>	<p>Energy source and magnitude:</p> <p>Type of energy source: <input type="text"/></p> <p>Magnitude: <input type="text"/></p> <p>Energy Isolating Device Location:</p> <p><input type="text"/></p> <p>Isolation device/procedure:</p> <p><input type="text"/></p> <p>Control Method: Lock/Tag Info (Initial and Date)</p> <p><input type="text"/></p> <p>Method to relieve residual/stored energy:</p> <p><input type="text"/></p>

		Verification Method: <input style="width:100%;" type="text"/>
		Restored by: <i>(Initial and Date)</i> : <input style="width:100%;" type="text"/>
5 Click to insert picture <small>(portrait photo only)</small>		Energy source and magnitude: Type of energy source: <input style="width:100%;" type="text"/> Magnitude: <input style="width:100%;" type="text"/> Energy Isolating Device Location: <input style="width:100%; height: 30px;" type="text"/> Isolation device/procedure: <input style="width:100%; height: 80px;" type="text"/> Control Method: Lock/Tag Info <i>(Initial and Date)</i> <input style="width:100%; height: 40px;" type="text"/> Method to relieve residual/stored energy: <input style="width:100%; height: 35px;" type="text"/> Verification Method: <input style="width:100%; height: 35px;" type="text"/> Restored by: <i>(Initial and Date)</i> : <input style="width:100%;" type="text"/>

GROUP LOTO: (WAC 296-803-50050)
Determine which procedures to use if more than one person will be involved in the LOTO procedure:

<p style="color: red; text-align: center;">Will more than one person will be involved in this procedure?</p> <p><i>If you select NO, group LOTO <u>will not</u> be used, skip to next section</i></p> <p><i>If you select YES, a group LOTO <u>will</u> be used, and describe your group LOTO method below</i></p>	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
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Choose a group LOTO method:

A hasp will be used for this procedure

A lock box will be used for this procedure Lock Box Identification #:

A Primary Authorized Person Name:

Name:

During shift or personnel changes, make sure there is continuous LOTO protection and record the new PAP and date each time there is a change.

THE MACHINE OR EQUIPMENT IS NOW LOCKED OUT AND SERVICE OR MAINTENANCE CAN BE DONE

RESTORE: (WAC 296-803-50035)

Restore the machine or equipment to service after the service or maintenance is completed.

Step 1: Check the machine or equipment and the immediate area around it to make sure all non essential items have been removed and that the machine or equipment is in operating condition and ready to energize.

Step 2: Make sure all employees are safely positioned for starting or energizing the machine or equipment.

Step 3: Verify that the controls are in neutral.

Step 4: Remove the lockout devices and reenergize the machine or equipment.

Note: Some forms of blocking may require re-energization of the machine before they can be safely removed.

Step 5: Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready to use.