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Operational Safety Procedure Review and Approval Form # 137186
(See [ES&H Manual Chapter 3310 Appendix T1 Operational Safety Procedure \(OSP\) and Temporary OSP Procedure](#) for Instructions)

Type:	OSP Click for OSP/TOSP Procedure Form Click for LOSP Procedure Form Click for LOTO-COMPLEX Information Click for LOTO-GROUP Information								
Serial Number:	ENP-22-137186-OSP								
Issue Date:	7/19/2022								
Expiration Date:	7/19/2025								
Title:	Lathes								
Location: (where work is being performed) Building Floor Plans	101 - Experimental Hall A 72 - Physics Storage 98 - Physics Fabrication - 1	Location Detail: (specifics about where in the selected location(s) the work is being performed)	Various Location in Physics Division						
Risk Classification: (See ES&H Manual Chapter 3210 Appendix T3 Risk Code Assignment)	Without mitigation measures (3 or 4):		3						
	With mitigation measures in place (N, 1, or 2):		1						
Reason:	This document is written to mitigate hazard issues that are : <i>Determined to have an unmitigated Risk code of 3 or 4</i>								
Owning Organization:	PHALLA								
Document Owner(s):	Butler, Jessie (jbutler@jlab.org) <u>Primary</u>								
Supplemental Technical Validations <input type="checkbox"/>									
High Noise (Dainnya Busbin, Imani Burton, Jennifer Williams) Machine Tools (Bert Manzlak, Bill Rainey) Pinch Points (Bert Manzlak, Bill Rainey) ESH&Q Liasion (Bert Manzlak)									
Document History <input type="checkbox"/>									
<table border="1"><thead><tr><th>Revision <input type="checkbox"/></th><th>Reason for revision or update <input type="checkbox"/></th><th>Serial number of superseded document <input type="checkbox"/></th></tr></thead><tbody><tr><td></td><td>Previous OSP expired</td><td></td></tr></tbody></table>				Revision <input type="checkbox"/>	Reason for revision or update <input type="checkbox"/>	Serial number of superseded document <input type="checkbox"/>		Previous OSP expired	
Revision <input type="checkbox"/>	Reason for revision or update <input type="checkbox"/>	Serial number of superseded document <input type="checkbox"/>							
	Previous OSP expired								
Lessons Learned	Lessons Learned relating to the hazard issues noted above have been reviewed.								

Comments for reviewers/approvers:



Attachments

Procedure: *Lathes OSP.pdf*

THA: *Lathes THA.pdf*

Additional Files:

Review Signatures

Subject Matter Expert : High Noise **Signed** on 7/18/2022 4:34:34 PM by Jennifer Williams
(jennifer@jlab.org)

Subject Matter Expert : Machine Tools **Signed** on 7/17/2022 8:58:15 PM by Bert Manzlak (manzlak@jlab.org)

Subject Matter Expert : Pinch Points **Signed** on 7/17/2022 8:58:23 PM by Bert Manzlak (manzlak@jlab.org)

Approval Signatures

Division Safety Officer : PHALLA **Signed** on 7/18/2022 4:35:03 PM by Ed Folts (folts@jlab.org)

ESH&Q Division Liasion : PHALLA **Signed** on 7/19/2022 8:38:13 AM by Bert Manzlak (manzlak@jlab.org)

Org Manager : PHALLA **Signed** on 7/18/2022 4:40:36 PM by Mark Jones (jones@jlab.org)

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Operational Safety Procedure Form
(See [ES&H Manual Chapter 3310 Appendix T1](#)
Operational Safety Procedure (OSP) and Temporary OSP
Procedure for instructions.)

Click
For Word Doc

Title:	Lathes		
Location:	Hall A and Other Physics Division Work Areas	Type:	<input checked="" type="checkbox"/> OSP <input type="checkbox"/> TOSP
Risk Classification (per Task Hazard Analysis attached) (See ES&H Manual Chapter 3210 Appendix T3 Risk Code Assignment.)	Highest Risk Code Before Mitigation		3
	Highest Risk Code after Mitigation (N, 1, or 2):		1
Owning Organization:	Physics / Hall A	Date:	15 July 2022
Document Owner(s):	Jessie Butler (JButler)		

DEFINE THE SCOPE OF WORK

1. Purpose of the Procedure – Describe in detail the reason for the procedure (what is being done and why).

Jefferson Lab has determined that the use of lathes are inherently risky and carries an unmitigated Risk Code of 3 or higher. This OSP is used to ensure hazards are communicated and training is appropriate prior to use of these pieces of equipment.

2. Scope – include all operations, people, and/or areas that the procedure will affect.

This OSP covers all lathes used in Physics Division.

3. Description of the Facility – include building, floor plans and layout of the experiment or operation.

A lathe is a machine tool which spins a block of material to perform various operations such as turning, facing, sanding, knurling, or drilling with tools that are applied to the work piece to manufacture an object, which has symmetry about an axis of rotation.

Lathes listed in this OSP are used in metalworking. These lathes can be used to produce most solids of revolution, screw threads, or helical. The material is held in place at the headstock by the use of a chuck; three jaw, four jaw, or six jaw. If necessary, the use of a center at the tailstock can be employed. Long cylindrical material can also be supported by the use of a steady rest or follow rest.

ANALYZE THE HAZARDS and IMPLEMENT CONTROLS

4. Hazards identified on written Task Hazard Analysis

See attached Task Hazard Analysis (THA)

5. Authority and Responsibility:

5.1 Who has authority to implement/terminate

Hall A Work Coordinator

5.2 Who is responsible for key tasks

Hall A Tech Staff or properly trained personnel by the owner of this document.

5.3 Who analyzes the special or unusual hazards including elevated work, chemicals, gases, fire or sparks (See [ES&H Manual Chapter 3210 Appendix T1 Work Planning, Control, and Authorization Procedure](#))

Industrial Hygiene
 Industrial Safety
 RADCON

6. Personal and Environmental Hazard Controls Including:

6.1 Shielding

As required per equipment manual or deemed necessary for the task being performed.

6.2 Barriers (magnetic, hearing, elevated or crane work, etc.)

As required per equipment manual or deemed necessary for the task being performed.

6.3 Interlocks

As required per equipment manual or deemed necessary for the task being performed.

6.4 Monitoring systems

As required per equipment manual or deemed necessary for the task being performed.

6.5 Ventilation

As required per equipment manual or deemed necessary for the task being performed.

6.6 Other (Electrical, ODH, Trip, Ladder) (Attach related Temporary Work Permits or Safety Reviews as appropriate.)

As required per equipment manual or deemed necessary for the task being performed.

7. List of Safety Equipment:

7.1 List of Safety Equipment:

Since this OSP covers several different pieces of equipment, operator must wear proper safety equipment as outlined in the operation manual of the equipment used in performing the task.

7.2 Special Tools:

As required per equipment manual or deemed necessary for the task being performed.

8. Associated Administrative Controls

This OSP, THA and the machine's operation manual.
 On the job training and demonstrated proficiency.

9. Training

9.1 What are the Training Requirements (See [List of Training Skills](#))

- Read operation manual
- Read and sign this OSP
- Read chapter 6121 Appendix T1 Safe operation of machine tools
- Receive Supervisor's authorization
- Operational checkout and familiarization by equipment

DEVELOP THE PROCEDURE

10. Operating Guidelines

- Ensure that the lathe is securely mounted to prevent tipping or movement.
- Ensure that all operator selector switches and buttons are clearly identified.
- Ensure that the work area is orderly and that there are no tools or parts that could be dislodged and fall or roll.
- Ensure that all warning labels are in place on the lathe. “Do not stand in line of chuck while starting”; “Safety glasses with side shields must be worn while operating this equipment/machine”
- Ensure that the floor around the machine is kept clean, dry, and free of trip hazards.
- Ensure that the chuck, drive plate, or faceplate is securely tightened onto the lathe spindle.
- Perform a visual inspection of the chuck’s condition prior to use, to evaluate cleanliness and general integrity.
- Ensure that the chuck jaws of a 3 or 6 jaw chuck are inserted in the proper position.
- Ensure that all jaws of a 3 or 6 jaw chuck are tight against the work piece before starting the lathe spindle.
- Ensure that the chuck jaws are not extended beyond the manufacturers recommended maximum diameters. Refer to Manual.
- Ensure that the chuck key is removed from the chuck immediately after using.
- Ensure that the lathe is off and has stopped completely before clearing chips.
- Use a brush, hook, or pliers to remove chips.
- Ensure that the machine has stopped completely before taking measurements.
- Ensure that a rotating work piece that extends beyond the normal extremities of a horizontal lathe is restrained to prevent whipping and is surrounded by a barrier.
- When work is turned between two centers, ensure that the proper adjustment is made between the centers and that the tailstock is locked in place.
- Ensure that the tool bit is set on the centerline of the work to prevent it from climbing over the tool or cutting above center and dragging.
- Ensure that work is not cut through completely when it is turning between two centers.
- Turn the chuck or faceplate through by hand before turning on the power to ensure that there is no binding or clearance problem.
- Ensure that the lathe is started on a low speed if possible.
- Ensure that that you, the machinist, are not positioned in the plane of rotation when starting the lathe spindle.
- Ensure that the tool bit is a safe distance from the collet or chuck when inserting or removing work.
- Ensure that the machine is run at the proper speeds and feeds for the job. Consult a speed and feed table to determine the best speed.
- Ensure that the tool holder is set up to the left side of the compound slide to prevent the compound slide from running into the chuck or spindle attachments.
- Ensure that the tool bit is clamped in the tool holder as short as possible to prevent it from breaking or chattering.
- When filing on work revolving in the lathe, file left handed to prevent slipping into the chuck.
- Ensure that work is done in a well-lit area.
- Do not reach around a guard.

11. Notification of Affected Personnel (who, how, and when include building manager, safety warden, and area coordinator)

Notify equipment owner by phone or email in case of incident or equipment malfunction.

12. List the Steps Required to Execute the Procedure: from start to finish.

- Provide clearance between machines so that movement of one operator or helper will not interfere with the work of others.
- Provide ample room for handling of material, work pieces, and chips.
- Provide safe storage and handling of tooling and parts that could dislodge and fall or roll.
- Keep floor area around machine free of obstructions and maintained in safe condition.
- Use attached guard or shield to prevent chips from being thrown, except in areas not assigned as work areas or stations.
- Ensure spindle has stopped completely before moving safeguards or covers.
- Do not reach around a safeguard and ensure that all guards:
 1. Prevent body parts from entering the area being guarded.
 2. Do not create pinch points between the guards and other stationary or moving parts of the machine or tooling.
- Ensure that fixed guards are securely attached to the machine forms, components, or fixtures and, where possible, utilize fasteners removable by tools not normally at the disposal of the operator.
- Ensure that any loose parts on the machine are removed before operating the machine.
- Ensure that the bit/cutter is not in contact with the work piece before the machine is started.
- Ensure piece is securely in place before spindle is engaged.
- Ensure that the spindle rotates in the correct direction for the tool being used before cutting material.
- Ensure moving parts are well lubricated and maintained.
- Keep clamping jaws clear of debris.
- Ensure that the correct table feed and spindle speed for the job is used. Reduce feed and speed if any unusual noise or vibration is noticed.
- Only operate the machine in a well-lit area.
- Always stay at the machine while it is running.

13. Back Out Procedure(s) i.e. steps necessary to restore the equipment/area to a safe level.

Stop and contact area Work Coordinator or Supervisor

14. Special environmental control requirements:

14.1 List materials, chemicals, gasses that could impact the environment (ensure these are considered when choosing Subject Mater Experts) and explore [EMP-04 Project/Activity/Experiment Environmental Review](#) below

Any coolant used must have a MDS on hand and be approved by the Environmental group

14.2 Environmental impacts (See [EMP-04 Project/Activity/Experiment Environmental Review](#))

N/A

14.3 Abatement steps (secondary containment or special packaging requirements)

N/A

15. Unusual/Emergency Procedures (e.g., loss of power, spills, injury, fire, etc.)

In the event of injury, or an immediate emergency exists, call **911** and also notify: area Work Coordinator and Supervisor

- Guards (x5822)
- Occupational Medicine (x7539)
- Crew Chief (x7045) (if inside the fence)

In case of an injury follow standard JLAB procedures. Initial response cards are located with each phone for appropriate emergency phone numbers. Additional information can be found at https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-24400/*.pdf.

16. Instrument Calibration Requirements (e.g., safety system/device recertification, RF probe calibration)

As required by operator’s manual.

17. Inspection Schedules

Operators should conduct a pre-use inspections and as required by operator’s manual

18. References/Associated/Relevant Documentation

- User’s Manual, Location: In Hall A tech area
- EH&S Manual chapter 6121 Appendix T1 Safe operation of machine tools
- OSHA Standard 29 CFR 1910.212 Machinery and Machine Guarding

19. List of Records Generated (Include Location / Review and Approved procedure)

This OSP and associated THA

Submit Procedure for Review and Approval (See [ES&H Manual Chapter 3310 Appendix T1 OSP & TOSP Instructions – Section 4.2 Submit Draft Procedure for Initial Review](#)):

- Convert this document to .pdf
- Open electronic cover sheet:
<https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-24048/3310T1Form.doc>
- Complete the form
- Upload the pdf document and associated Task Hazard Analysis (also in .pdf format)

Distribution: Copies to Affected Area, Authors, Division Safety Officer

Expiration: Forward to ES&H Document Control

Form Revision Summary

- Revision 1.7 – 02/25/2021** – Corrected link to Word doc; updated ‘ESH&Q’ to ‘ES&H’; other minor edits. No approval required.
- Revision 1.6 – 06/23/2020** – Update section 15 to reflect guard number, what to do in an emergency, crew chief numbers, etc. approved by H. Fanning
- Revision 1.5 – 04/11/18** – Training section moved from section 5 Authority and Responsibility to section 9 Training
- Revision 1.4 – 06/20/16** – Repositioned “Scope of Work” to clarify processes
- Qualifying Periodic Review – 02/19/14** – No substantive changes required
- Revision 1.3 – 11/27/13** – Added “Owning Organization” to more accurately reflect laboratory operations.
- Revision 1.2 – 09/15/12** – Update form to conform to electronic review.
- Revision 1.1 – 04/03/12** – Risk Code 0 switched to N to be consistent with [3210 T3 Risk Code Assignment](#).
- Revision 1.0 – 12/01/11** – Added reasoning for OSP to aid in appropriate review determination.
- Revision 0.0 – 10/05/09** – Updated to reflect current laboratory operations

ISSUING AUTHORITY	FORM TECHNICAL POINT-OF-CONTACT	APPROVAL DATE	REVIEW DATE	REV.
ES&H Division	Harry Fanning	04/11/18	02/25/24	1.6

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Task Hazard Analysis (THA) Worksheet

(See [ES&H Manual Chapter 3210 Appendix T1](#)
[Work Planning, Control, and Authorization Procedure](#))

Click
For Word

Author:	Butler, Jessie (JButler)	Date:	15 July 2022	Task #: If applicable	N/A
Complete all information. Use as many sheets as necessary					
Task Title:	Lathes	Task Location:	Hall A and Physics Division work spaces		
Division:	Physics	Department:	Hall A	Frequency of use:	As needed
Lead Worker:	Hall A Work Coordinator				
Mitigation already in place: Standard Protecting Measures Work Control Documents	Specific to manufacturer so users of the equipment must read and understand equipment operating manual.				

Sequence of Task Steps	Task Steps/Potential Hazards	Consequence Level	Probability Level	Risk Code (before mitigation)	Proposed Mitigation (Required for Risk Code >2)	Safety Procedures/ Practices/Controls/Training	Risk Code (after mitigation)
1	Machine Tools – (e.g., rotating parts, cuts, pinch points, sharp edges, abrasions)	High	Low	3	1. Wear safety glasses 2. Wear gloves	1. Use machine guards 2. Wear proper work attire 3. Read & sign equipment OSP 4. Read and understand equipment Operation Manual	1
2	High Noise Level	Medium	Medium	3	1. Wear hearing protection	1. Properly wear ear plugs or ear muffs when required.	1
3	Dust – (hazardous or nuisance)	Medium	Low	2	1. Wear safety glasses 2. Wear dust mask / respirator is necessary and trained	1. SAF 200: Respirator training	N

Highest Risk Code before Mitigation:	3	Highest Risk Code after Mitigation:	1
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Task Hazard Analysis (THA) Worksheet

(See [ES&H Manual Chapter 3210 Appendix T1](#)
[Work Planning, Control, and Authorization Procedure](#))

When completed, if the analysis indicates that the [Risk Code](#) before mitigation for any steps is “medium” or higher (RC≥3), then a formal [Work Control Document](#) (WCD) is developed for the task. Attach this completed Task Hazard Analysis Worksheet. Have the package reviewed and approved prior to beginning work. (See [ES&H Manual Chapter 3310 Operational Safety Procedure Program](#).)

Form Revision Summary

Revision 0.2 – 07/26/21 – Periodic Review; updated header and footer

Periodic Review – 08/29/18 – No changes per TPOC

Periodic Review – 08/13/15 – No changes per TPOC

Revision 0.1 – 06/19/12 – Triennial Review. Update to format.

Revision 0.0 – 10/05/09 – Written to document current laboratory operational procedure.

ISSUING AUTHORITY	TECHNICAL POINT-OF-CONTACT	APPROVAL DATE	REVIEW DATE	REV.
ES&H Division	Harry Fanning	08/29/18	07/26/24	0.2

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For questions or comments regarding this form contact the Technical Point-of-Contact [Harry Fanning](#)

