JOB SAFETY ANALYSIS

Safety Information for the University of California, Berkeley

DEPARTMENT OF MECHANICAL ENGINEERING

OPERATING A CNC LATHE

TASK	HAZARDS	CONTROLS
1. Assess work area; is it clear of obstructions and slip/trip/fall hazards?	• Slip, trip, or fall	• Clear work area of any obstructions or slip/trip/fall hazards
2. Install all of the required tooling for a job into the turret	• Lacerations to fingers/hands from the tool • Pinching hazards for fingers/hands • Tools coming loose while cutting	• Handle cutting tools with care; avoid sharp edges • Keep fingers and hands free from pinch points • Ensure the tool is secured in its holder before loading it into the turret
3. Load material into the chuck	• Lacerations to fingers/hands from the material • Pinching hazards for fingers/hands • Material dislodged from the chuck while cutting • Muscle fatigue	• Deburr material before handling, never run hands along edge • Keep fingers and hands free from pinch points; specifically when tightening and loosening the chuck jaws • Ensure the material is tightly secured in the chuck before turning the spindle on • Position body to maintain balance, maximize use of legs, and ask for assistance if necessary
4. Set the work coordinate system for each tool in both the X and Z axis of the machine	• Crashing the machine • Eye injury from flying debris	• Work slowly and deliberately. Use appropriate jog increments and spindle speed when setting tools • Only operate machine with doors closed, wear safety glasses at all times when operating machine

	5. Load G-code onto machine and dry run through program	• Crashing the machine • Eye injury from flying debris	• Add a minimum of 3 inches to your X and Z-axis offsets so all tools run in the air and well above the part. Reduce the Rapid Overrides on the machine to 25% maximum. Reduce the feed rate to 50% maximum. Always be ready to hit the E-Stop button. • Only operate machine with doors closed, wear safety glasses at all times when operating machine
	6. Return X and Z-axis offsets to where they were first established and run through the entire program	• Crashing the machine • Operator entanglement • Material dislodged from the chuck when cutting • Eye injury from flying debris • Excessive noise levels	• Never leave the machine running unattended. Reduce feed and rapids if necessary to allow operator to reactor more quickly. Always be ready to hit the E-Stop button. • Never run the spindle with the doors to the machine open. Enable E-Stop when reaching into machine. • Ensure chuck is securely clamped onto the work. • Only operate machine with doors closed, wear safety glasses at all times when operating machine • Wear ear plugs/muffs if necessary
	7. Remove finished work piece and clean the machine	• Lacerations to hands/fingers from chips • Lacerations to hands/fingers from the cut part • Eye injury from flying debris	• Never brush chips away with bare hands or fingers. Use a chip brush or pliers to remove chips. • Always deburr your parts before handling. Be cautious of extremely sharp edges produced from the cutting process. • Do not use compressed air to clean table. Use a chip brush and coolant spigot.
	8. Remove all tool holders from the turret	• Pinching hazards • Lacerations to hands/fingers from bit	• Keep hands free from pinch points; particularly when unloading the tool from the spindle • Handle tool bit with care; avoid sharp edges

	Required Training: Student Shop Safety Training Program Must complete additional training under guidance of a qualified Student Shop Laboratory Mechanician	**Required Personal Protective Equipment (PPE)** Safety glasses
Other Information:	Mori Seiki DuraTurn 1530 User Manual	
Contributors:	ME Pro Shop, Scott G. McCormick; R&D Engineering Manager, Jacob Gallego; Principal Lab. Mech.	
Created:	Jan. 2007	
Updated:	July 2020	
JSA Library Number:	(EH&S will insert number here, if applicable)	

For more information about this JSA, contact the *Office of Environment, Health and Safety* at UC Berkeley, 317 University Hall #1150, Berkeley, CA 94720-1150
(510) 642-3073 ● http://www.ehs.berkeley.edu