



UNC
ENVIRONMENT,
HEALTH & SAFETY

Job Safety Analysis

Safety Information for The University of North Carolina at Chapel Hill

Operating a Metal Lathe



Title	Work Task	Hazards	Controls
Preplan the Work	1. Obtain personal protective equipment before the job.	1. None	1. Personal Protective Equipment (PPE) consisting of: -Safety glasses with side shields -Sturdy footwear -DO NOT wear jewelry or gloves that could get caught in equipment during operation. Long and loose hair must be contained.
Pre-operation Check	2. Perform an equipment preoperational check.	2a. Entanglement in unguarded moving parts. 2b. Injury due to improper machine operations	2a. Inspect guards prior to work. 2b. Locate and ensure you are familiar with all machine operations and controls.
Site Preparation	3. Inspect for unsecured tools and objects on the lathe.	3. Tools and objects can fall and be propelled at the operator.	3. Remove unsecured tools and objects from the lathe.

Don PPE	4. Put on personal protective equipment before performing the job.	4. None	4. Personal Protective Equipment (PPE) consisting of: -Safety glasses with side shields -Sturdy footwear -DO NOT wear jewelry or gloves that could get caught in equipment during operation. Long and loose hair must be contained.
Operation	5. Mount chuck or collet	5a. Hand/finger contusion due to tool slippage from securing chuck or collet 5b. Foot injury from dropping chuck/tool 5c. Strain/sprain from transporting heavy and/or awkward chuck.	5a. Use correct tool to secure chuck or collet 5b. Wear recommended footwear 5c. Use mechanical lifting device or get assistance
	6. Set spindle speed	6. Damage to cutting tool and/or spindle drive system	6. Refer to operations manual and set proper spindle speed for material type/diameter to be machined
	7. Set lathe feed	7. Bodily injury and/or damage to workpiece from incorrect feed rate	7. Refer to operations manual and set proper lathe speed
	8. Select proper cutting tool and sharpened tool	8. Dull tools and improper height lead to bad surface finishes, out of tolerance parts and potentially a hazardous situation.	8. Use correct and properly sharpened tool
	9. Set up workpiece in chuck or collet	9a. Hand/finger contusion due to tool slippage from tightening chuck jaws or collet 9b. Damage to workpiece due to loose and/or off center installation of workpiece into chuck 9c. Strain/sprain from heavy and/or awkward workpiece 9d. Damage from chuck key flying off 9e. Long workpieces can bend and strike operator	9a. Use correct tool to secure chuck jaws and collet to workpiece 9b. Ensure workpiece is secure and evenly tightened into chuck or collet. Use dial test to center workpiece. 9c. Use mechanical lift or get assistance from co-worker 9d. Never leave key in chuck. For newer models, use spring-loaded or self-ejecting chuck key 9e. Use workpiece of minimum length or use a bar feed tube to hold workpiece

	10. Lathe in operation	10a. Injury to exposed body parts at points of operation 10b. Eye injury from debris 10c. Heat damage to part and cutting tool 10d. Injury during measurements or adjustments	10a. Keep body parts and clothes away from the point of operation 10b. Wear PPE during operation 10c. Start at low speed and slowly increase to avoid overheating; use coolant 10d. Stop operation of lathe before performing measurements or adjustments
	11. Completing work	11a. Injury to exposed body parts at points of operation 11b. Strain/sprain from heavy workpiece 11c. Trip/fall on other tools/materials 11d. Foot injury from dropping workpiece	11a. Ensure equipment has stopped prior to placing hands near the point of operation 11b. Use mechanical lift or get assistance from co-worker 11c. Clean work areas 11d. Wear recommended footwear
Doff PPE	12. Remove personal protective equipment after completing the job.	12. None	12. Personal Protective Equipment (PPE) consisting of: -Safety glasses with side shields -Sturdy footwear
Training	-“Hands-On” training on lathe operation by competent person. -Machine Guarding self-study -Personal Protective Equipment	-Inexperienced operators must be supervised by a competent person	
Created	Kim Haley, University IH Date Created: March 29, 2016		
Referenced Material	Environment, Health and Safety Manual; Chapter 5, Personal Protective Equipment Industrial Maintenance and Construction/Support Services Safety Manual; Machine Guarding Requirements		
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