

Job Hazard Analysis

JHA Name: Portable Drill (Regular, Hammer, Impact Driver)



Assessment Date: 01-15-14

Revision Date: 05-15-17

Building or Location: North Mankato & Faribault Campuses

Department or Program: Multiple Departments & Programs

Description of Individual Tasks or Assignments: Drilling Holes in Various Materials and Securing Materials Together with the use of Fasteners (e.g., Screws).

Tools, Equipment, or Machinery Used when Performing Task: Portable Drill (Regular, Hammer, Impact Driver), Drill/Cutting Bits, Fasteners (e.g., Screws), Flexible Cords, Batteries

Hazard Type(s) Associated with Task or Assignment:		Check for Exposure:	Specific Hazard Exposure:	Check if Exposure Recommends or Requires a Style of PPE?
1	Impact <u>Example:</u> Person(s) can strike an object, or be struck by a moving or flying/falling object (e.g., fragments, chips, particles, sand, dirt/debris).	X	Potential exposure to flying fragments, particles and debris generated from drilling (e.g., injuries to eyes), potential exposure to breaking bit (e.g., injuries to eyes and other soft tissue)	X
2	Penetration or Cut <u>Example:</u> Person(s) can strike an object, be struck by an object, or fall upon an object or tool that would cut or otherwise break the skin.	X	Potential exposure to cuts and abrasions when handling work pieces with rough or sharp edges, and from accidental contact with drill bit (e.g., hand and finger injuries).	X
3	Crush or Pinch <u>Example:</u> An object(s) or equipment/machine may crush or pinch a body or body part	X	Potential exposure to spinning/moving parts (e.g., entanglement injuries)	
4	Chemical or Harmful Dust <u>Example:</u> Exposure to chemicals (i.e., hazardous substances and harmful physical agents), infectious agents from spills, splashing, physical contact, and/or exposure to dusts, vapors, fumes, or gases that could cause illness, irritation, burns, asphyxiation, breathing/vision difficulty, sensitization, infection, or other toxic health effects (i.e., acute or chronic). Note: "May also have or create ignition potential."			
5	Heat <u>Example:</u> Exposure to radiant heat sources, sparks, and splashes or spills of hot material			
6	Light (optical) Radiation <u>Example:</u> Exposure to strong light sources, glare, or intense light exposure which is a byproduct or a process. Note: "This category may also include hazards presented from lack of light (e.g., working in dark spaces/areas)."			
7	Electrical Contact <u>Example:</u> Exposure, contact, or proximity to live or potentially live electrical objects.			
8	Ergonomic/ Human Factors <u>Example:</u> Working in cramped spaces, repetitive movements, awkward postures, vibration, heavy lifting, etc. Note: "This category may also include unique hazards presented from tasks that require demanding or challenging degrees of mental and/or physical effort to be exerted by an individual. See <i>Physical Effort Definition/Examples</i> category for further explanation of physical effort."	X	Potential exposure to sources of worker discomfort/fatigue from working in awkward positions (e.g., Muscular Skeletal Disorders and fatigue), potential exposure to source of vibration (portable drills) (e.g., injuries to hands, arms), and potential exposure to repetitive movements, lifting light to moderately heavy loads, and bending (e.g., Back and other Muscular Skeletal Disorders)	X
9	Environmental <u>Example:</u> Exposure to noisy environments, hot or cold work environments, poor weather conditions, working at a height, and any other conditions in the workplace that could cause danger, discomfort, and/or negative health effects.	X	Potential exposure to loud/prolonged noise (portable drill)	X

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Personal Protective Equipment Requirements:

Eyes & Face:	Safety Glasses with Side Shields or Goggles (Required when operating portable drill)
Head & Ears:	Hearing Protection Devices (Required when using portable drill)
Whole Body:	
Feet:	
Hands:	Leather Gloves (Required when handling work pieces with rough or sharp edges)
Respiratory:	
Other:	"Note: Personnel must change from loose clothing, tie back long hair, and take off jewelry that could become entangled or snagged in moving drill bits/chucks"

Other Control Measures or Requirements (Engineering & Administrative Controls):

#1) Impact Hazards & #2) Penetration or Cut Hazards: Select the appropriate drill (e.g., regular styles, Hammer, and Impact Driver) and the appropriate bits or attachments that are suitable for the task and material (e.g., work piece or work surface). To reduce chances of drill bit breaking, use appropriate bit for the material, and feed bit with appropriate downward pressure. Never exceed the manufacturer's recommended maximum drilling capacities for the tool or accessories. Only approved attachments, and/or properly sharpened drill bits and cutting tools may be used. Avoid reaching under or around work pieces or work surfaces being drilled (accidental contact with the bit). **#8) Ergonomic Hazards:** Personnel should receive Ergonomics training (including warning signs and conditions of ergonomic/human factors hazards). When possible set up workstation or immediate job site to help minimize reaching, and/or sitting or working in awkward positions to prevent strains, soreness, and other discomfort. Use the auxiliary handle for larger work, continuous operation, and as otherwise required or recommended by the manufacturer. Portable drill transfer vibrations can be reduced/minimized by regular preventive maintenance of the equipment (keeps equipment running smoothly). "Note: Portable drills are only operated for very short periods of times in most College environments in comparison to other General Industry, and/or Construction applications." Secure small work materials (e.g., with vice, clamp, etc.) at a comfortable working height and position, so they do not twist or spin. Never drill one handed while attempting to hold the work piece in the other hand. Make sure your grip and footing are secure when using portable drills to prevent strains and slips. **#9) Environmental Hazards:** Personnel should receive Hearing Conservation training (e.g., regarding noise hazards), and be included in the Hearing Conservation Program when potentially exposed to a TWA of 85dB. **Miscellaneous Considerations:** Always disconnect drills from their power sources before changing bits or attachments. Ensure bits are properly seated and securely tightened in the chuck. Never leave the adjustment key in the chuck (i.e., do not let go of the key until it is free of the chuck and secured). Keep drill air vents clear to maintain adequate ventilation to the internal components. Operators of tools, equipment, and machinery should read and follow all Manufactures' recommendations/requirements (e.g., inspections, servicing/maintenance, safe usage, etc.). Any tools, equipment, or machinery found damaged, defective, or otherwise unsafe should immediately be removed from service and not used until repaired or replaced. Personnel should always consult their Supervisors on the selection and use of PPE for the tasks being performed.

Physical Effort Definition/Examples

1.) Physical Mobility- Movement from place to place on the job, considering distance and speed **2.) Physical Agility-** ability to maneuver body while in place or in static position **3.) Physical Strength (Light to Moderate)-** Ability to handle routine office materials and tools **4.) Physical Strength (Moderate to Heavy)-** Ability to handle 50lbs+ objects, considering frequency **5.) Dexterity-** skill and ability in using hands, fingers, and feet **6.) Physical Balance-** ability to maintain balance and physical control **7.) Coordination-** harmonious functioning of body parts (e.g., eye/hand, hand/foot, etc.) **8.) Endurance-** ability to sustain a prolonged stressful effort or activity with limited opportunity to rest

Note: "This JHA provides only the minimum PPE/safety requirements necessary to safely complete the task or assignment, and the JHA only covers the hazards or exposures that are most likely to be encountered. Nothing within this JHA bars or restricts personnel from requesting higher degrees of PPE or control to mitigate workplace hazards. In addition, South Central College personnel (e.g., employees and students) are required to complete any applicable safety or on-the-job trainings required prior to performing their positions or participating in their programs of study. Finally, South Central College personnel should consult their supervisors/instructors, the college's written safety programs/policies, and/or the Security & Safety Director whenever they have questions or concerns."

Certification: This document certifies a hazard assessment was conducted meeting the provisions specified under 29 CFR 1910.132 (d) and South Central College's related safety programs and policies.

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Date: 05-15-17