PLAN REVIEW	
Reviewer	***Date***
Shane Carlson	07/30/2020

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MACHINE GUARDING

PURPOSE

Hutchinson Public Schools recognizes that the proper guarding and use of machines is essential to the safety of the instructors and students. This policy is intended to comply with OSHA standard 29 CFR 1910.219 "Machinery and Machine Guarding", and the Minnesota Department of Education Best Practices Guidelines for use of stationary machinery.

The contact person(s) in Hutchinson Public Schools for the shop safety and machine-guarding program is: Daryl Lundin

PROGRAM DESCRIPTION

All mechanical action or motion is hazardous. Rotating members, reciprocating arms, moving belts, meshing gears, cutting teeth, robotic movements, and parts in impact or shear are some examples of the type of action requiring protection. When the operation of a machine or accidental contact with it can injure the operator or others in the vicinity, the hazards must be either controlled or eliminated.

Eliminating or controlling hazards will be accomplished by using engineering controls (guards), personal protective equipment and training in the rules of the shop and safe behavioral practices.

Areas in Hutchinson Public Schools where shop safety and machine guarding rules apply include:

1. Instructional Shops
2. Maintenance Shops

3. Bus Maintenance Shop

GENERAL SAFETY RULES

Only tools, equipment and machinery that are properly maintained and adjusted may be used. Inspection and maintenance records will be kept on all stationary equipment.

Safety guards and devices furnished by the school district shall be used. Removal or non-use will not be authorized.

Before performing maintenance or major adjustments to moving parts that require panels and guards be removed, all machine energy sources or energy isolating devices must be locked out and tested. (Refer to the district's lockout/tagout plan for more information.)

Approved personal protective equipment shall be worn when the exposure indicates the need for it, i.e., head and ear protection, face and eye protection, respiratory equipment, protective footwear, etc.

Stationary machinery will have non-skid flooring placed in the operator's working area.

All machinery will be secured to prevent tipping, walking or excessive vibration while operating.

All knives and cutting heads shall be kept sharp, properly adjusted, and firmly secured. Dull, badly set, improperly filed, or improperly tensioned saws shall be immediately removed from service. Cracked saw blades shall be removed from service.

Arbors of all circular saws shall be free from play. Bearings shall be kept free from lost motion and shall be well lubricated.

Push sticks or push blocks shall be provided at the work place in several sizes and types suitable for the work to be done.

Floors will be kept free of debris or substances that might constitute a tripping or slipping hazard. The area under and around machines will be kept free of sawdust accumulation.

Employees and students will wear clothing appropriate to the type of work to be performed. Clothing shall not have loose or flowing appendages. Shoes shall

completely cover the foot. Jewelry such as rings, pendants, necklaces, earrings, and watches shall not be worn when they constitute a hazard. Long hair (longer than collar length) must be restrained to preclude the possibility of entanglement.

Horseplay, running, practical jokes and disruptive behavior are prohibited.

A first aid log will be kept in each shop area.

ENGINEERING CONTROLS

General Requirements

Each stationary machine will be installed and equipped as described below:

1. All machinery must be installed according to the National Electrical Code (NEC). Machines with exposed non-current carrying metal components have the potential to become energized and shall be grounded.
2. Control switches shall be within reach of the operator. On/Off switches should be lockout capable in the off position. Also, machine controls must not be wedged for continuous operation.
3. An emergency stop button will be installed within reach of the operator. The emergency stop will be red with a yellow background.
4. Machines that are not adequately safeguarded to protect the worker during an under voltage situation or a power failure must have a UL listed under voltage protective device installed. This device prevents the machine from starting up after a power interruption, which may expose staff and students to the hazards of moving parts.
5. Machines shall be color-coded according to ANSI and NFPA 79 standards.
6. Each machine will have an adequate dust collection system.
7. Each machine will have a safety placard posted so that it is easily visible to the operator.
8. Each machine shall have all its appropriate guards, according to the OSHA standards 29 CFR 1910.211 to 1910.219.
9. When a guard cannot be used in a circular saw operation (such as dadoing, jointing, molding or rabbeting), feather boards or other suitable jigs will be used.

GUARDS

Areas where guarding is required are:

1. Point of Operation – cutting, shearing, punching, bending.
2. Power Transmission – gears, drive belts & chains, in-running nip points.

3. Rotating Parts – collars, couplings, cams, clutches, flywheels, shaft ends, spindles, rotating bar stock, lead screws, and horizontal or vertical shafting.
4. Flying Particles – grinding, chemical spraying.
5. Hot/Cold extremes.

Types of guarding include:

1. Fixed enclosures
2. Interlock enclosures
3. Presence sensing devices
4. Two Hand controls
5. Guard by location
6. Hand restraints and pullbacks

Guards shall be considered a permanent part of a machine or equipment and will be:

1. Strong enough to resist normal wear and shock.
2. Will not interfere with efficient operation of the machine.
3. Will prevent access to danger zones or point of operation.
4. Shall not weaken the equipment structure.
5. Afford maximum protection for the operator and for surrounding employees.
6. Shall not be a source of additional hazards, such as: splinters, pinch points, and sharp corners.

Checklists for each machine will be completed on a regular basis to ensure the proper function of each machine.