BRIDGE MILL SAFETY GUIDELINES

The Vertical Bridge Mill is used for boring, drilling, milling, tapping and similar operations.

1). Hazards: The majority of milling machine accidents occur when operators unload or make adjustments. The principal hazard is that of injury to arms, hands or fingers by contact with the cutter or other sharp objects or by pinching. this contact can be due to:

a). lack of essential guarding
b). Improper training
c). Unsafe work Practices

- failure to withdraw the fixture a safe distance from the cutter while loading, unloading, gaging, etc.
- attempting to remove chips by hand
- adjusting coolant flow while cutters are moving
- checking the finished surface of components or calipering and measuring work while cutters are moving
- using wipers or rags near cutters while they are moving
- wearing gloves, loose sleeves and the like near revolving cutters, spindle ends or other moving parts
- slippery or uneven floors or poor housekeeping around machines
- lack of adequate lifting equipment for heavy jobs or fixtures
- inefficient means of securing jigs, fixtures and the like, that involve pushing levers or spanners toward the cutters
- unguarded pinch points between moving parts and external objects.

2). Before starting the machine, the operator will make certain that conditions are such that neither he/she nor a fellow worker will be injured by the operation of the machine. Among the items to be checked are:

- All guards are in good condition and in place.
- Proper cutting tool, correctly sharpened, is used.
- Tool is securely fastened or wedged in place.
- Machine has been properly lubricated.
- Work has been properly secured in place, and bolts and other holding devices are such that they will not be caught or come into contact with moving parts of the machine.
- Table feeds, proper cutting speeds and all machine attachments are correctly set and in proper working order.
- Tools or other loose objects are not lying about where they may fall or be caught and thrown, with injury to the operator or others or with damage to the machine or to the work.

3). In clamping the work in place on the table or bad, place the clamps and block them so they will have a full grip on the work and not spring it out of shape. When U-clamps are used, make sure that the fork end is on the work. Use adequately sized washers or plates to prevent spreading of the clamp forks.

4). Tighten bolts and nuts only with wrenches that fit properly; otherwise the wrench may slip off and the operator may be injured. Do not use pipe for wrench handle extension.

5). When a vise is used to hold the work, do not tighten it by striking the handle with a hammer. This is likely to spring the vise or break off the end of the screw that carries the handle. The operator must make sure that the bolts holding the vise in position and place are securely tightened.

6). Do not removed chips by hand. Use a brush or other tool for this purpose. Do not use compressed air to remove chips!

7). Before attempting to raise or lower the head, the operator is to make sure that the clamps on the column have been loosened.

8). Before leaving the machine for any reason, the operator is to make sure the machine is stopped and the power shut off.

9). If there is any unsafe condition about the machine or the work, the operator should report that fact to the foreman .

10). Do not wear neckties, wristwatches, rings, jewelry, gloves, etc. when operating the machine. Long sleeve shirts will be rolled above the elbows.

11). The area around the machine should be free of oil or coolant spills (avoid a slippery floor) and as free as possible from obstructions. Keep the area clean at all times.

12). **Do not use compressed air to blow chips from the spindle/table machine surfaces, cabinets, controls, or the floor around the machine.**

13). For normal lifting, use leg, not back, muscles. For heavy lifting, use a hoist.

14). When work platforms are used around the machine, they should be extremely sturdy, safe, and with anti-slip surfaces.

15). Wrenches, tools, and other miscellaneous equipment should be kept off the machine table as well as off all moving units of the machine.

16). Be mentally alert on the job, always sober, and never dulled by the influence of drugs, prescribed or otherwise.

17). Use the proper hand tools for each job.

18). Only qualified personnel should perform maintenance repair work.

19). Report any unsafe conditions to your supervisor.

20). Keep machinery clean.

21). Clean machine and area after each use.

22). Observe caution when climbing steps to change low and high gears and/or make a speed change, always stop spindle and machine travel first.

23). Before changing tooling using the draw bar make sure the power is off .

24). Use appropriate lifting devices for large fixtures and workpieces.

25). Stop spindle and machine travel when removing chips, changing or measuring workpiece, or adjusting setups.

26). Check setup for clearance between workpiece, fixturing, and machine parts.

27). If a large workpiece must overhang the table, use appropriate safety cones, markers or signs.

28). Besides using movable shield, use of magnetic shield may also be necessary.

29). Make sure all changeable tooling is properly secured.

30). Return tooling and fixturing to it's appropriate place.

Do's and Don'ts

DO get thoroughly familiar with the STOP lever.

DO make sure that the work is held securely before engaging the cutter with it.

DO make sure that all tools and machine parts are clear of the cutter before starting the machine.

DO keep your hands away from the revolving items (cutters, spindles, etc.)

DO handle all cutters carefully to guard against injury to yourself and others.

DON'T under any circumstances attempt to operate any machine unless you are thoroughly familiar with it.

DON'T Move any lever unless you know exactly what is going to happen when it is moved.

DON'T play around with the lever of any machine.

DON'T attempt to remove chips from the machine with your bare hands or fingers. Use a brush or other suitable implement.

DON'T go away, even for a moment, and leave the machine running.

DON'T try to operate the machine and engage fellow workers in conversation at the same time. Keep your mind on your work and let the other fellow do the same.