

MACHINE TOOLS

a spring release to return the guard to a position clearing the work. Each guard should have an automatic interlock so that the machine will not operate except when the guard is in place.

On some makes of machines still in use, the lever which controls the direction of operation of the spindle is located so that the operator's hand may be caught on the back gears driving the spindle. An auxiliary lever should be installed which can be operated at a point outside the danger zone created by these gears.

On large machines where the operator may not be close to the regular control switch, a pendant switch mounted on an arm or sweep should be installed to operate a magnetic brake so that the machine can be stopped instantly.

When the operator inserts an arbor into the spindle, he should be sure that both arbor and spindle holes are clean and free from nicks. He should draw the arbor firmly into place by a sleeve nut, and securely tighten the nut. Before he removes the arbor from the spindle, he should make certain that the machine is at a standstill.

Planing Machines

Similar to a carpenter's hand plane, a planer machines a metal surface with the cutting tool held stationary while the work is moved back and forth underneath it. Shapers are generally classified as planing machines, but the process is reversed—the work is held stationary while the cutting tool is moved back and forth. Other machine tools coming within this classification are slotters, broaches, and keyseaters.

Planers and shapers

Planer accidents result frequently from unsafe practices which are basically problems of training and supervision.

- 1 Placing the hand or fingers between the tool and the work
- 2 Running the bare hand over sharp metal edges
- 3 Measuring the job while the machine is running
- 4 Failing to clamp the work or tool securely before starting the cut.
5. Riding the job.
6. Having insufficient clearance for work.

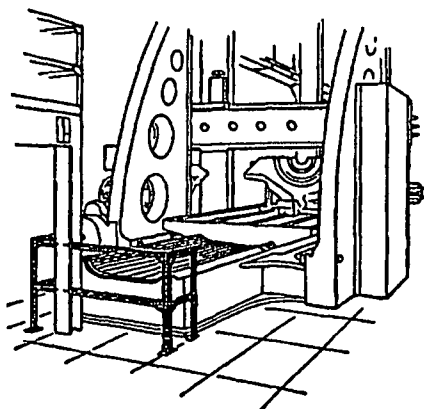


Fig. 24-9a. A guardrail or similar barrier should close off any space 18 in. or less between a fixed object and parts of a fully extended planer or its stock. Openings in the bed of the planer should be filled to eliminate shear hazards.

7 Coming in contact with reversing dogs

- 8 Failing, when magnetic chucks are used, to make certain the current is turned on before starting the machine

The reversing dogs on planers and shapers should be covered. If the planer bed, when fully extended, or any stock on the bed being processed, travels within 18 in. of a wall or fixed objects, the space between the end of the travel and the obstruction should be closed by a barrier on either side of the planer (Fig. 24-9).

Shaper accidents have essentially the same causes as planer accidents. In addition, injuries frequently result from contact with projections on the work or with projecting bolts or brackets, especially when the table is being adjusted vertically. The ram of the shaper should be left projecting over the table so that the operator will know when the table is high enough.

Failure to locate the stops or dogs properly may cause injury to shaper operators. The stops should be rigidly bolted to the table, especially on heavy jobs.

The shaper operator should make sure that the tool is set so that if it shifts away from the cut it will rise away from the cut and not dig into the work. The handle of