



MIOSHA Fact Sheet

General Industry Safety & Health Division

Brake Monitors

What is a Brake Monitor?

It is a permanently installed component of a partial revolution mechanical power press's control system that monitors the time it takes for the brake to stop the press during every cycle. A brake monitor will not provide operator protection for a full revolution press.

There are different brands of brake monitors. They will have various features including stopping time, warning fault, and brake fault. The stopping time is monitored every time the brake engages and the ram stops. This number will vary almost every time the press stops. Warning fault is a preset number that can be set to pre-warn the employer that the brake is nearing the brake fault; this will not shut the press off. The brake fault is a preset number that is set by the employer. When the brake stops at or over this number the press will shut off and will not activate unless it is reset. When this occurs the brake needs to be adjusted and/or the brake fault needs to be re-determined.

When is a brake monitor needed?

The brake monitor is required when an employee is reaching into the die to load or unload the partial revolution press by hand, referred to as hands in die operation. The brake monitor is not required if the press is equipped with pull backs or restraints.

Why is it important to monitor the brake's stopping time on each stroke?

It is important because as the brake wears, it takes longer to stop the motion of the crank and ram/slide. Wear could allow the operator to beat the slide and place hands into the die before the ram closes.

What are the two basic types of brake monitors?

There are full cycle monitors and top stop monitors. A full cycle monitor is capable of monitoring stopping time at any point in a cycle. The top stop monitor is capable of measuring the stopping time only at the top portion of the cycle. Either type, if installed and maintained properly, is acceptable.

What is safety distance?

Safety distance is the distance measured from the nearest pinch point in the die to the closest safe guard, such as two hand controls or light curtain. Safety distance is determined by the brake fault time that was set by the employer. When this number is verified it will be multiplied by 63 and will equal it in inches. Example: $63 \times .500 = 31.5$ inches. This is the minimum safety distance.

What are the training requirements?

An employer shall train all personnel who are responsible for the operation, care, inspection, and maintenance of mechanical power presses and assure that they are knowledgeable of the rules of [Part 24, Mechanical Power Presses](#). Training must be provided prior to initial work assignment or whenever there is a change in the work process or conditions.

Additional Information

Please visit the MIOSHA website at www.michigan.gov/mioshpublications where additional information may be available; or contact the Consultation, Education & Training Division at (517) 322-1809.

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