

Standard Interpretations

/ Requirements for guarding points of operation and belts on heavy duty sewing machines.

- **Standard Number:** 1910.212(a)(1) ; 1910.219

OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov>.

July 9, 1991

Jack Lauber, Staff Director
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Dear Mr. Lauber:

Thank you for your letter of June 13, regarding the Occupational Safety and Health Administration (OSHA) requirements for guarding points of operation (29 CFR 1910.212) and belts (29 CFR 1910.219) on heavy duty (technical or industrial fabric) sewing machines.

The Department of Labor, even prior to the establishment of OSHA, has been involved with the problems of what constitutes the necessary and appropriate safeguarding of machines. The applicable standard [29 CFR 1910.212(a)(1)], which was adopted by OSHA from the standards promulgated under the Walsh-Healey Public Contracts Act (41 U.S.C. 35 Et seq), requires the guarding of machines to protect the operator and other employees in the machine area from hazards such as those created by the point of operation, ingoing nip points, rotating parts, flying chips and sparks. As you stated in your letter, the standard for guarding a point of operation of a machine does specify that a guard shall not, itself, offer an accident hazard.

The principle hazard generally associated with the point of operation of sewing machine is that, during the operation of the machine, the operator could inadvertently allow his or her hand to enter the area were the sewing is taking place (the point of operation) and were either the finger or hand could be pierced by the needle. In order to minimize this possibility, the immediate solution would be to place some type of barrier guard around the needle. This guard would, as a minimum, circle or enclose the area form the fabric up to the height above the fabric which the point of the needle reaches when it is at its maximum open height.

There have been several interpretations and other official communications published by OSHA regarding the guarding requirements for belts and hand wheels on sewing machines. These documents have been directed at the light and medium duty sewing machines. These are the type machines which are usually used to sew apparel. OSHA's position has been that the drive wheels and belts located beneath the table should be fully enclosed, but that the enclosure of the belt and hand wheels above the table is unnecessary and would interfere with the sewing operations provided certain criteria are met. These criteria include (a) that the operator uses both hands to feed and guide the material while the belt and hand wheel are in motion, and (b) that a safe distance is maintained from the belt and hand wheel when the machine is in motion. The operator's hand should be near the wheel nip point only to raise and lower the needle, and only when the motor is disengaged. Additionally, the arrangement or size of the table top should be sufficient to preclude another employee, while passing by or working adjacent to the wheel or belt, from being exposed to injury. Finally, the effectiveness of the above mentioned concepts should be evidenced by the lack of employee injuries.

It should also be pointed out that the requirements for guarding belts contained in 29 CFR 1910.219 do not apply to the following type belts when they are operating at two hundred and fifty (250) linear feet per minute or less:

- (1) Flat belts one (1) inch wide or less;
- (2) Flat belts two (2) inches wide or less, which are free from metal lacing or fasteners;
- (3) Round belts one-half (1/2) inch or less in diameter;

and

- (4) Single strand V-belts, thirteen thirty-seconds (13/32) inch wide or less

There may be occasional differences between the guarding needs of light and medium duty sewing machines discussed above and the type machines you discussed in your letter. These differences might include the need for alternative safeguarding based upon the distance the needle moves above the material during machine operation, the distance from the point of operation the machine operator's hands remain during operation, the speed at which the material being sewn is drawn through the point of operation, and the distance from the belts and drive wheels that the operator's hands are located. Therefore, the need to guard the point of operation and the drive belts should be determined based upon a case-by-case evaluation. This evaluation should be made by a qualified safety professional who observes the operation of the particular machine(s) in operation.

Thank you for your interest in safety.

Sincerely,

Roger A. Clark
Director, Directorate of Safety Standards Programs

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