

BREVET DE TECHNICIEN SUPERIEUR

- GROUPE 17 -

- LANGUE VIVANTE ETRANGERE -

SESSION 2000

- EPREUVE D'ANGLAIS -

Durée : 2 heures

SUJET

Le sujet est composé de 3 pages numérotées de 1/3 à 3/3

L'usage du dictionnaire bilingue est autorisé

B.T.S. DU GROUPE 17 :

Assistant en création industrielle
Conception de produits industriels
Conception et réalisation de carrosseries
Constructions navales
Etude et réalisation d'outillages de mise en forme des matériaux
Industries céramiques
Industries des matériaux souples
Industries papetières
Maintenance et après vente automobile
Maintenance industrielle
Mécanique et automatismes industriels
Mise en forme des alliages moulés
Mise en forme des matériaux par forgeage
Microtechniques
Moteurs à combustion interne
Plastiques et composites
Productique bois et ameublement
Productique mécanique
Réalisation d'ouvrages chaudronnés
Traitements des matériaux

MACHINE GUARDS PREVENT SERIOUS INJURIES

A company in Orrington (Maine, USA) was hit with \$20,500 in penalties from the Occupational Safety and Health Administration (OSHA¹) following the death of a maintenance worker in its trash-to-energy plant last year.

The worker was sweeping around an operating conveyor when the handle of his broom became caught in the nip point² between a roller and the conveyor framework. He died as a result of the accident.

An OSHA inspection found that the conveyor wasn't properly equipped with machine guards that would have prevented the accident.

OSHA states that at least one method of machine guarding must be provided to protect employees in the machine area from hazards created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.

The point of operation, the area on the machine where work is actually performed upon the material being processed, requires guarding if an injury to an employee is possible. These devices should be designed and constructed to prevent the operator from having any part of his body in the danger zone during the operating cycle.

All guards should be affixed to the machine where possible, and secured elsewhere if attachment to the machine is not possible. And obviously, the guard should not be a hazard itself.

Some OSHA-approved guarding methods include barrier guards and electronic safety devices:

¹ **OSHA (Occupational Safety and Health Administration):** a U.S. Federal agency, Division of the U.S. Department of Labor responsible for the regulation of workplace safety.

² Nip point: contact point between two calendaring or laminating rollers.

Barrier guarding is the most commonly seen device. It is available in several forms, such as heavy steel rails mounted to structural steel columns or wire panels that are bolted to steel posts. Most of these guards are painted a bright, safety yellow and are used to keep workers a safe distance away from high-risk areas.

Electronic devices usually feature infrared eye-beams that create a screen between a hazardous machine and personnel. If the beams are broken by an object or appendage, the device sends a signal to the machine to stop moving.

People often distrust electronic devices because of the possibility of a system failure.

These are just a small sampling of the guarding devices on the market, so be sure to look into all the options to find one that suits your facility's needs. Keep in mind that while some are more costly than others, all will save thousands of dollars by protecting workers from harm.

*By Joy LePree, Senior Associate Editor
Impomag.com/Feature article (abridged)
<http://www.manufacturing.net/>*

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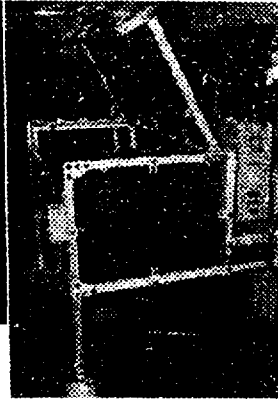
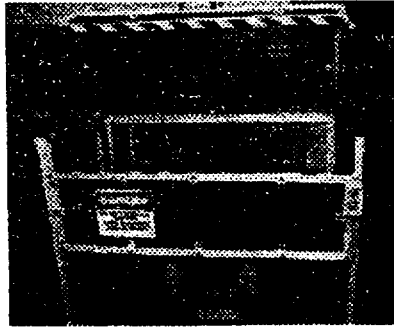
1

PAUL DAVIS AUTOMATION, INC.

BEFORE GUARDING ↓



↓ AFTER GUARDING ↓

**WE CAN HELP YOU GUARD YOUR MACHINES !**

© 1999, Paul Davis Automation.

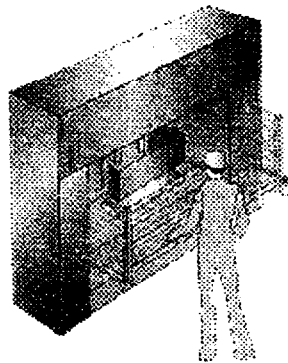
2

SCIENTIFIC TECHNOLOGIES INC.

Physical barriers were once the only way to safeguard workers from potentially hazardous machinery. **No more! Safety light curtains instead form a virtual barrier.** When breached, the machine or process stops.

An example of our solutions: **Hydraulic Press Guarding**

A safety light curtain provides an "L" shaped optical pattern protecting machine operators from a hydraulic press. The horizontal section prevents the operator from standing between the machine hazard and the vertical section without being detected.

DISCOVER *STI* AT: sales@sti.com

I – COMPREHENSION (12 points) :

- 1) Faites un compte rendu en français de l'article intitulé : "Machine guards prevent serious injuries. (250 mots environ)

(8 points)

- 2) Répondez en anglais à cette question en citant le texte :
(45 mots environ)

What are machine guards used for ?

(4 points)

II – EXPRESSION en anglais (8 points)

Two companies (*PAUL DAVIS AUTOMATION and STI*) advertise some of their guarding devices on page 2. In your opinion which solution is safer and more reliable in high-risk areas: barrier guarding (*PAUL DAVIS*) or electronic devices (*STI*) ? Justify your answer drawing on the advertisements (page 2) and / or your own experience. (≈ 100 words).