PRESS BRAKES (BRAKE PRESSES, BRAKES)

Press brakes are an unforgiving piece of machinery, and a frequent cause of workplace amputations. They are a mechanical or hydraulic machine for bending sheet metal and plate material, and a common machine in engineering workshops.

FIGURE 1: PRESS BRAKE

HAZARDS:

- Handling sheet metal
- Contact or entanglement with die sets and moving beam, and workpiece and press frame
- Noise
- Slips, trips and falls
- Leaking hydraulic oil
- Contact or entanglement with moving parts (during maintenance, cleaning and repairs)
- Faulty or altered machinery (maintenance & cleaning)

PPE:

- Protective gloves
- Safety glasses
- Hearing protection

TASK – INSERT WORKPIECE & MAKE THE BEND

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Harm</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handling sheet metal</td>
<td>&gt; Cuts</td>
<td>&gt; WEAR protective gloves.</td>
</tr>
<tr>
<td></td>
<td>&gt; Strain injury</td>
<td>&gt; Use mechanical aids to lift materials, when necessary.</td>
</tr>
</tbody>
</table>
LED-based solution is installed on the upper die of the press brake. If the system detects something, the machine will stop immediately or reduce power and speed.

Closed tool method reduces the press brake’s opening to 6 mm, limiting the risk of body parts entering the hazardous zone. USE WITH a presence sensing system.

**OTHER (NON-MECHANICAL) HAZARDS**

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Harm</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise</td>
<td>&gt; Hearing damage or loss</td>
<td>&gt; REDUCE noise levels by isolating machines or enclosing within noise barriers.</td>
</tr>
<tr>
<td></td>
<td>&gt; Crush injuries</td>
<td>&gt; ASSESS noise levels.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; ARRANGE hearing screenings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; ALWAYS WEAR hearing protection.</td>
</tr>
<tr>
<td>Slips, trips and falls</td>
<td>&gt; Potential for hands to be trapped</td>
<td>&gt; KEEP up-to-date housekeeping procedures.</td>
</tr>
<tr>
<td></td>
<td>&gt; Cuts</td>
<td>&gt; KEEP the area around press brakes clear of slip and trip hazards.</td>
</tr>
<tr>
<td></td>
<td>&gt; Bruising</td>
<td>&gt; WEAR suitable footwear.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; PROVIDE non-slip mats and suitable flooring.</td>
</tr>
</tbody>
</table>
May leak with high pressure jets of oil. Hydraulic oil under pressure will get into skin, even through leather gloves.

**TASK – MAINTENANCE, CLEANING & REPAIRS**

**Hazard**
- Contact or entanglement with moving parts
- Faulty or altered machinery

**Harm**
- > Bruising
- > Cuts or amputation
- > Fractures

**Control**
- > APPLY a programme preventive maintenance (hydraulic hoses and hydraulic hose couplings).
- > Leaking oil, or bulging or abraded hose walls, MUST have faulty parts replaced.
- > NEVER use hands or fingers to detect leaks.
- > If oil seeps onto anyone’s skin, or someone working near hydraulic oil under pressure thinks they were bitten by an insect, they MUST be TAKEN to hospital, with full information presented to medical staff.
- > WEAR APPROPRIATE PPE (personal protective equipment).
FIGURE 2: UNGUARDED BRAKE PRESS

An unguarded brake press means workers’ hands are too close to the hazardous trapping space.

FIGURE 3: A LIGHT CURTAIN

A light curtain guard can prevent workers from accessing the brake press.

References, current standards and further information can be found on the Safe Use of Machinery project page at: www.worksafe.govt.nz

PUBLISHED: APRIL 2014. CURRENT UNTIL REVIEW IN 2017