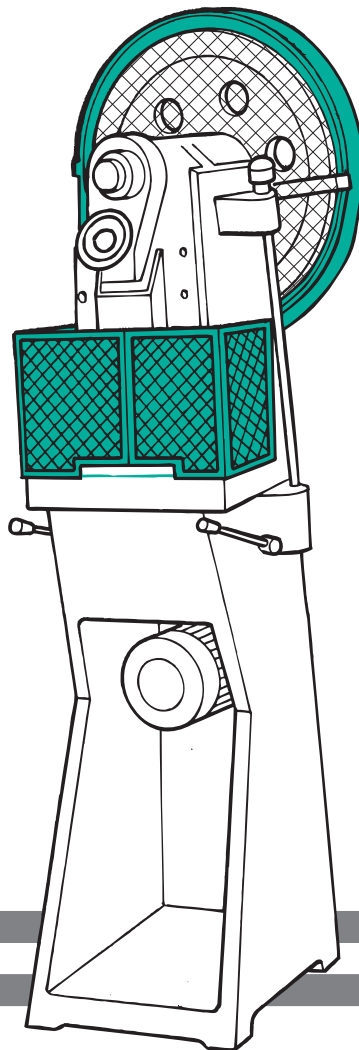


2.4.10 Mechanical-clutch power press

Legislative Decree 81/08 App. V, Presidential Decree 459/96 App. I, UNI EN 692/06



HAZARD

PROTECTION

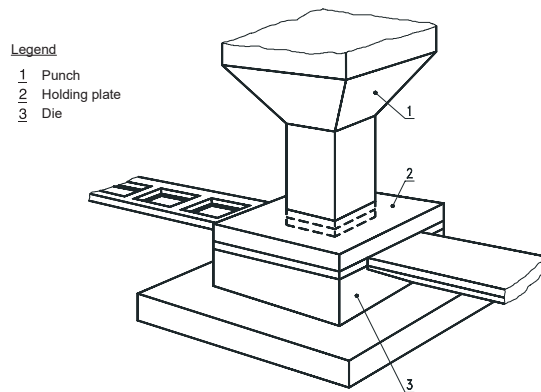
Machine for cold-working of sheet metal by closing a die made up of an upper moving element (punch) and a fixed lower part (die) both appropriately shaped. On this type of machine, when a work cycle has started, it cannot be stopped until it is completed. A simple fault to the “mechanical clutch” system can lead to the uncontrolled repetition of the stroke.

2.4.10.1 HAZARDS

Crushing of upper limbs between the two parts of the die

To use these presses safely, regardless of the type of work cycle (automatic, semi-automatic, manual), the front of the machine must be protected by one of the following:

- Closed dies, designed and built to be intrinsically safe.



Segregation can be obtained by applying a sheet metal holding plate, fastened to the die, which is thick enough to contain the punch stroke and prevent it coming out.

The shape, size and location of the slits for inserting and removing the material must not make it possible to reach the hazardous element (see 2.2.4 "Safety distances").

- Fixed guards with total segregation (see "Fixed guards" in 2.2.3.2) placed in such a way as to prevent the hazardous part being reached (see 2.2.4 "Safety distances").
- Movable interlocked guards with guard-locking (see "Movable interlocked guards with guard-locking" in 2.2.3.2) that prevent the hazardous area being reached until the punch has stopped in the daylight position.

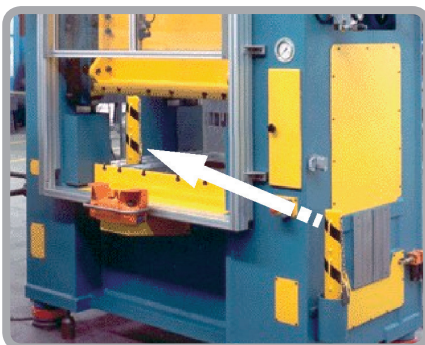
These three protection methods are the only ones considered safe enough for this type of press and mean that any control equipment, including the pedal, to be used to start the cycle.

Crushing or dragging of upper limbs by contact with the rotating flywheel

All moving parts of the flywheel (holes, spokes, belts) placed at a height of less than 2.7 m from the floor must be protected by fixed guards with total segregation (see "Fixed guards" in 2.2.3.2).

Crushing during die changeover or maintenance

During die changeovers or maintenance, or whenever you need to put even a part of you between the upper and lower moving elements of the press, a safety device (e.g. spacer) must be inserted to physically prevent the upper moving element from descending.



The combination of protective measures must protect all exposed persons, i.e. those who might access the hazardous area during operation, set-up, maintenance, cleaning or inspection of the machine.

2.4.10.2 CONTROL EQUIPMENT

Starting

The only way to start the machine is to use specific control devices (see 2.2.6.1 “Starting”) that are easy to recognise and are protected against the risk of being accidentally activated (e.g. pushbuttons with guard ring, shrouded pedals, etc.), or, if specifically provided, directly by closing the interlocked guard with guard-locking (see “Movable interlocked guards with guard-locking” in 2.2.3.2).

On mechanical-clutch power presses, the use of two-hand controls or immaterial barriers is forbidden as they do not offer adequate safety unless they are combined with one of the three protection methods described above.

Unexpected restart

Spontaneous restarts (see 2.3 “Machine electrical systems”) of the machine after power is restored must be prevented using a specific device.

Stopping

The machine must have a control device (see 2.2.6.3 “Stopping”) to stop it safely.

Emergency stop

All machines must have at least one emergency stop device (see 2.2.6.4 “Emergency stop”) placed within easy reach of the operator. If there are several operators (large machines) there must be emergency stop devices that can be activated quickly by each worker.

2.4.10.3 ERGONOMICS

Positioning

Machines must be installed so that there is free access to the work area when setting, loading and unloading devices, etc. are being used (for example, devices for lifting or transporting the sheet metal, such as wheeled workbenches).

2.4.10.4 OCCUPATIONAL HEALTH AND SAFETY

Noise

Find out the noise levels to which staff are exposed when using the machine and follow the employer’s instructions.

2.4.10.5 PERSONAL PROTECTIVE EQUIPMENT



Gloves (see 5.6.4 "Gloves giving protection from mechanical risks") protecting against mechanical and cutting risks and which are waterproof when oils are used.



Safety shoes (see 5.7 "Foot protection") with protective toe cap (S1).



Hearing protectors (see 5.3 "Hearing protection").

2.4.10.6 OPERATING INSTRUCTIONS

The machine must come with a manual, in Italian, explaining correct use and maintenance, including a programme of periodic inspections.

2.4.10.7 OCCUPATIONAL HEALTH AND SAFETY ACTIONS

Before use

- Read the Operating and Maintenance Instructions provided with the machine.
- Check that the guards (see 2.2.3 "Guards") and safety devices (see 2.2.5 "Safety devices") are present and positioned correctly.
- Check that the guard interlock systems work (see 2.2.5.1 "Interlock systems").
- Check that the emergency stop button works (see 2.2.6.4 "Emergency stop").
- Remove from the press all tools not needed for the machining process.
- Remove the keys from the mode selectors on the machine; these keys should be kept by a supervisor.
- Wear the personal protective equipment (PPE) shown in this data sheet.

During use

- Keep the guards on the machine positioned correctly.
- Report any malfunctions or faults promptly to the machine supervisor.

After use

- Switch off the machine.
- Put measuring equipment and instruments back in their containers.
- Leave the machine and the area around it (especially the workstation) clean and tidy.
- Reactivate any deactivated guards.