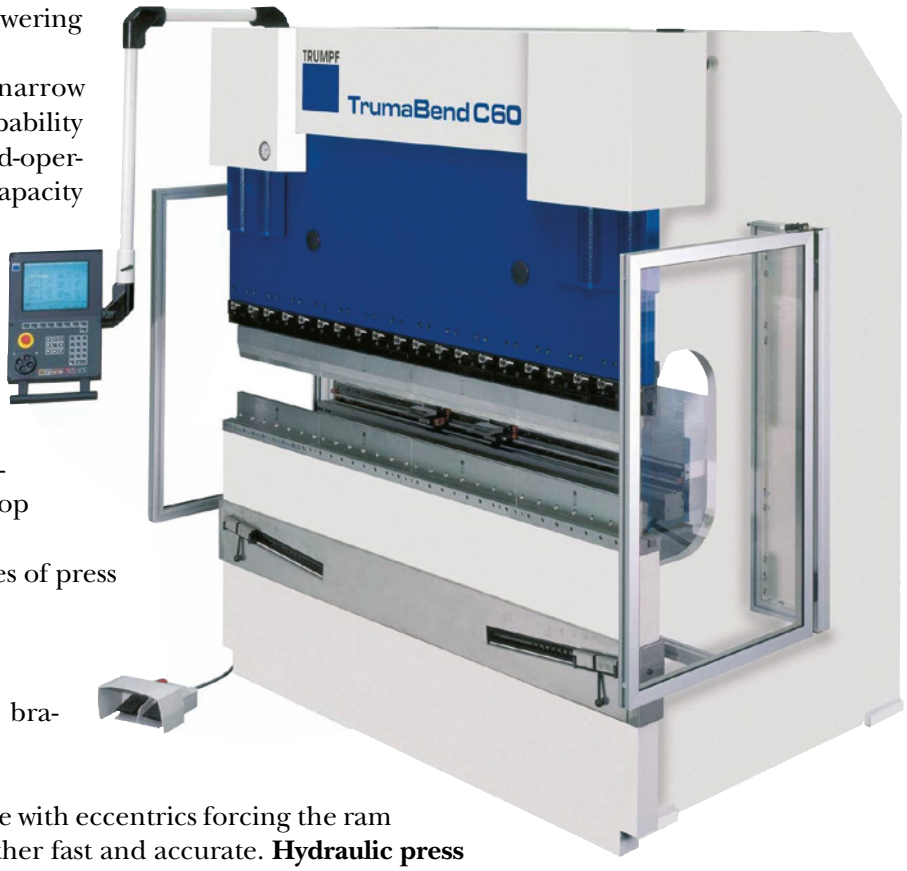
PRESS BRAKES

A press is a machine tool used to compress, flatten, or shape a workpiece by pressure. **Press brakes** are used for bending heavy-gauge materials. In press-brake bending, the workpiece is placed between upper and lower dies and is subject to the force and pressure exerted by lowering the ram.



The press consists of a long, narrow ram and a bed. The size and capability of a press brake range from hand-operated units to machines with a capacity of 3,000 tons or more.

Conventional press brakes operate in a down-acting mode – the upper ram and its punch travel downward toward the tool attached to a stationary bed.

On the contrary, up-acting machines stroke upward with the top beam stationary.

The following are the main types of press brakes:

- mechanical press brakes;
- hydraulic press brakes;
- hydraulic-mechanical press brakes;
- pneumatic press brakes.

Mechanical press brakes operate with eccentrics forcing the ram down for bending. They are rather fast and accurate. **Hydraulic press brakes** are more flexible than mechanical brakes. With a hydraulic brake, the operator can program changes to bend angle and gauge repositioning in a sequence. The **hydromechanical press brake** combines the benefits of flexibility typical of hydraulic presses with the accuracy of mechanical devices.

READING COMPREHENSION

ACTIVITIES

- *Answer the following questions.*

1. What is a press brake?
2. How is the workpart machined in a press brake?
3. How large and capable is a press brake?
4. What is the difference between down-acting and up-acting press brakes?

SPEAKING

- *Describe the most common configurations of press brakes.*

VOCABULARY

- *In the text, find the English equivalents of the following Italian words and expressions.*

1. Piegare .....
2. Pistone .....
3. Tonnellate .....
4. Banco fisso .....
5. Eccentrici .....
6. Flessibilità .....