

PRESSES

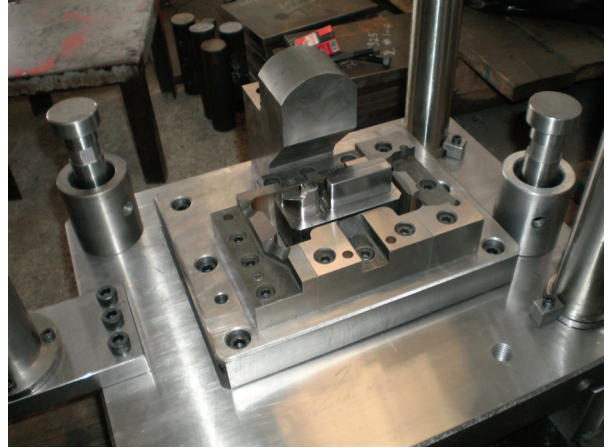
A **forming press**, commonly shortened to **press**, is a machine tool that changes the shape of a workpiece by the application of pressure. The operator of a forming press is known as a **press-tool setter**, often shortened to **toolsetter**.

Presses can be classified according to:

- their mechanism: hydraulic, mechanical, pneumatic;
- their function: forging presses, stamping presses, press brakes, punch press, etc.;
- their structure, e.g. knuckle-joint press, screw press;
- their controllability: conventional vs. servo-presses.

Hydraulic and **mechanical presses** are classified by the frame the moving elements are mounted on. They generate a compressive force. The most common are the **gap-frame**, also known as C-frame, and the **straightside press**. A straightside press has vertical columns on either side of the machine and eliminates angular deflection. A C-frame allows easy access to the die area on three sides and requires less floor space.

A **stamping press** is a metalworking machine tool used to shape or cut metal by deforming it with a die. In simple terms, a stamping press is the modern day equivalent of a hammer and anvil. The difference is that a stamping press uses precision-made male and female dies to dictate the shape of the final product.



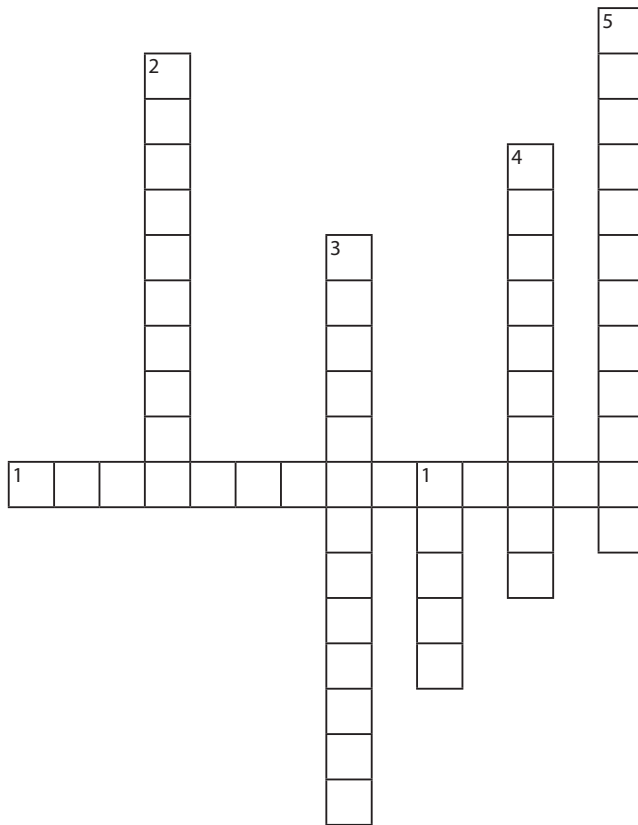
A **screw press** is a type of machine press in which the **ram** is driven up and down by a screw. The screw shaft can be driven by a handle or a wheel. It works by using a coarse screw to convert the rotation of the handle or drive-wheel into a small downward movement of greater force. The overhead handle usually incorporates balls as flyweights. The weights help to maintain the momentum and thrust of the tool to make it easier to operate.

A **punch press** is a type of machine press used to cut holes in a material. It can be small and manually operated and hold one simple die set, or be very large, CNC operated, with a multi-station turret and hold a much larger and complex die set.

toolsetter: *modellatore*
gap-frame: *intelaiatura*
straightside press: *pressa laterale dritta*
ram: *pistone*

1 Complete this crossword puzzle.

THE PRESS



Across

- 1. A device using a hydraulic cylinder to generate a compressive force.

Down

- 1. A forming press is commonly shortened to...
- 2. The operator of a forming press.
- 3. A metalworking machine tool used to shape or cut metal by deforming it with a die.
- 4. A type of machine press used to cut holes in a material.
- 5. A machine tool that changes the shape of a workpiece by the application of pressure.

2 Answer the questions.

- 1. What is a press?
- 2. How is the operator of a press called?
- 3. How are presses classified?
- 4. What is the working principle of hydraulic and mechanic presses?
- 5. How does a stamping press work?
- 6. What is a screw press?
- 7. What is a punch press used for?