

Shapers and planers

A **shaper** is a type of machine tool that uses linear relative motion between the workpiece and a single-point cutting tool to machine a linear **toolpath** and to cut the work piece. Its cut is analogous to that of a lathe, except that it is linear instead of helical. A **planer** is similar to a shaper, but larger, and with workpiece moving, **whereas** in a shaper it is the cutting tool which moves. The most common applications of planers and shapers are linear-toolpath ones, such as:

- generating accurate flat surfaces (while not as precise as grinding, a planer can remove a tremendous amount of material in one pass with high accuracy);
- **cutting slots** (such as **keyways**).

It is even possible to do work that might now be done by wire EDM in some cases. Starting from a drilled or cored hole, a planer with a boring-bar type tool can cut internal features that do not lend themselves to milling or boring (such as irregularly shaped holes with tight corners).

Planers and shapers are now obsolescent, because other machine tools (such as milling machines, broaching machines, and grinding machines) have mostly eclipsed them as the tools of choice for doing such work. However, they have not yet disappeared from the metalworking world. Planers are used by smaller tool and die shops within larger production facilities to maintain and repair large stamping dies and plastic injection moulds. Additional uses include any other task where an abnormally large block of metal must be squared when a quite massive horizontal grinder or floor mill is unavailable, too expensive, or otherwise impractical in a given situation. As usual in the selection of machine tools, an old machine that is in hand, still works, and is long since paid-for has substantial cost advantage over a newer machine that would need to be purchased. This principle easily explains why “old-fashioned” techniques often have a long period of gradual obsolescence in industrial contexts, rather than a sharp drop-off of prevalence such as is seen in mass-consumer technology fashions.



cutting slot: *fessura di taglio*
keyway: *inserzione*
toolpath: *percorso*
whereas: *mentre*

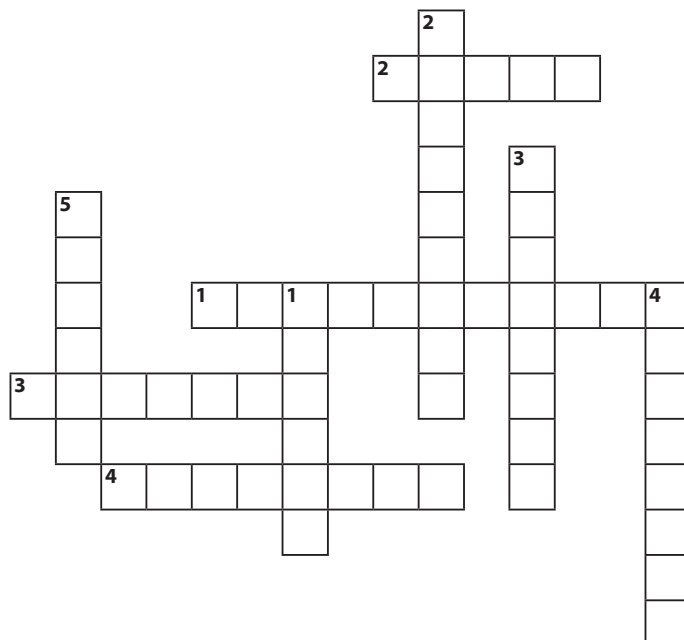


1 Choose the correct option.

1. Which of the following is used for machining larger workpieces?
 - a. Shaper.
 - b. Planer.
 - c. None of the mentioned.
2. Which of the following is used for machining smaller pieces?
 - a. Shaper.
 - b. Planer.
 - c. None of the mentioned.
3. Which of the following machines is primarily intended for producing flat surfaces?
 - a. Shaper.
 - b. Drill.
 - c. Lathe.
4. Which of the following operations can be performed using a shaper?
 - a. Gear cutting.
 - b. Curvilinear contours.
 - c. Both of them.
5. In a shaper, the job is kept...
 - a. stationary.
 - b. rotating.
 - c. reciprocating.

2 Complete this crossword puzzle.

SHAPERS AND PLANERS



Across

1. A synonym for old-fashioned.
2. The English for *stampo*.
3. The Italian for slot.
4. The Italian for tool.

Down

1. Where the cutting tool moves.
2. The English for *pezzo in lavorazione*.
3. A synonym for buy.
4. The path the tip of a cutting tool follows.
5. Where the workpiece moves.