



ФГБОУ ВО ВОЛОГОДСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ

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III ВСЕРОССИЙСКИЙ (С МЕЖДУНАРОДНЫМ УЧАСТИЕМ) КОНКУРС НАУЧНО-ТЕХНИЧЕСКОГО ПЕРЕВОДА

Английский язык

Технический текст

Types of Saws

Most saws take the form of a thin metal strip with teeth on one edge or a thin metal disk with teeth on the periphery. Usually the teeth are “set” (bent) to alternate sides so that the kerf (groove) cut by the saw is wider than the thickness of the saw. This prevents binding between the cut surfaces and the sides of the saw. The thin-strip saws are used in a variety of arrangements for both hand and machine operation, while circular, or disk, saws are invariably machine powered.



The hand hacksaw has a U-shaped frame and blades 20 to 30 cm (8 to 12 inches) long, 1.25 cm (0.5 inch) wide, and 0.06 cm (0.025 inch) thick that close the U and are placed under tension by a screw adjustment in the handle. This saw is one of the most common tools in a machine shop and is used for cutting off solid parts held in a vise. Saws of this type are also used by butchers for cutting bones. For cutting curves and other irregular shapes in wood or other materials, the coping, or jeweler’s, saw, which is basically a hacksaw with a deeper U-shaped frame and a much narrower blade, is well-suited.

The power jigsaw, or scroll saw, does mechanically the same irregular cutting as the hand coping saw. The straight, narrow blade is mounted vertically between a pulsating

lower shaft and a reciprocating upper shaft, which together move the blade rapidly up and down. Power hacksaws, driven by electric motors, are indispensable in any general-purpose machine shop or tool room; they are most often used for cutting metal. The blade is much wider and thicker and the frame much heavier than those of a hand hacksaw. The frame, carrying the blade, moves back and forth, cutting in one direction only, while a slight feeding pressure or weight automatically presses the saw against the work.

The vertical bandsaw blade is an endless narrow metal strip, with teeth along one edge, that runs around two large motorized pulleys or wheels that are mounted on a frame so that one is directly above the other. The blade passes through the table on which the work is laid. Blades are available with various sizes of teeth, and on most machines the blade speed can be varied to suit the material being cut.

Among the saws that are neither loops nor disks are three of the most common hand saws used by the carpenter: the rip saw, the crosscut saw, and the backsaw. The first two have roughly triangular blades about 50 cm (20 inches) long, 10 cm (4 inches) wide at the handle, and tapering to about 5 cm (2 inches) at the opposite end. Rip saws are used for cutting wood with the grain, crosscut saws for cutting across the grain. The main difference between the saws is in the way the teeth are ground. The rip saw teeth have cutting edges that are at 90° to the blade and act like a row of chisels; the crosscut has knifelike teeth that are set to alternate sides and cut two parallel lines on each side of the kerf, so that the wood in between is broken up. The backsaw is a crosscut saw with a rectangular blade and heavy steel backing along the side opposite the teeth; this keeps the blade perfectly straight. It is usually guided by an attachment that keeps it level at all times and maintains it in the proper direction when making angular cuts.