

BENCH AND MACHINE TOOLS

5.1. Vocabulary

Ex. 1. Match the words to their Russian equivalents.

1. lathe



a. абразивный; шлифующий

2. grinding machine



b. подшипниковый пресс

3. abrasive



c. шлифовальная (ручная) машина

4. bench grinder



d. шлифовальный станок; заточный станок

5. table saw



e. отрезной станок со столом

6. sander



f. токарный станок

7. drill press



g. стационарный сверлильный станок

8. bearing press

h. пескоструйный аппарат

Ex. 2. Complete the sentences with the given words:

sander, abrasive, bench, drill, grinding, table, lathe, bearing, saw

I used the _____(1) press to fix the broken machine.

The _____(2) material is used for sanding surfaces.

The worker used the _____(3) grinder to sharpen the dull blade.

The _____(4) machine helped smooth the rough edges of the metal.

The _____(5) is used to shape and cut materials like wood or metal.

He used the _____(6) _____(7) to cut the wooden board into smaller pieces.

The _____(8) press made it easy for him to create precise holes in the metal.

The _____(9) is useful for removing paint from old furniture.

5.2. Reading

Ex. 1. Read the text.

Bench and Machine Tools

Bench and machine tools are used to shape, cut, grind or smooth a range of materials. They include abrasive wheels, bench grinders, drill presses, lathes, sanders, table saws, and grinding, cutting or polishing machines.

Abrasive Wheels: These are powered wheels made from abrasive material such as carborundum (silicon carbide) or corundum (aluminium oxide). They are used to remove rust, scale, paint or other surface coatings, and for cutting or shaping metal or stone. The wheel rotates at high speed and the workpiece is pressed against it.

Bench Grinders: These are fixed on a workbench and have two rotating wheels – one coarse and one fine. They are used for sharpening or grinding metal tools or parts. The coarse wheel removes material quickly, while the fine wheel gives a smoother finish.

Drill Presses: Also called pillar drills, these are fixed in place and have a rotating drill bit that moves up and down when a lever is operated. They are used for drilling precise holes in wood, metal or plastic.

Lathes: These rotate a piece of material about its axis while it is shaped with cutting tools. Lathes can be used to make symmetrical objects like bowls, candlesticks or furniture legs, or to create detailed designs on a spindle or dome.

Sanders: These use a moving abrasive surface to smooth or roughen a workpiece. There are different types of sander, including belt sanders, which have a continuous belt of abrasive material; disc sanders, which have a rotating disc with an abrasive surface; and random orbital sanders, which move the sanding pad in an elliptical pattern.

Table Saws: These have a circular blade mounted under a table. The workpiece is moved across the table into the blade. Table saws can be used to make straight cuts, mitre cuts (angled cuts) or bevelled edges.

Grinding, Cutting or Polishing Machines: These use abrasive belts or discs to remove material or to shape, smooth or polish surfaces. They can be hand-held or fixed in place. Examples include angle grinders, bench sanders and bearing presses.

Ex. 2. Answer the questions.

1. What are bench and machine tools used for?
2. Name some examples of abrasive wheels.
3. How are abrasive wheels used?
4. What are bench grinders used for, and what is the difference between the coarse wheel and the fine wheel?
5. What are drill presses used for, and how do they operate?
6. How do lathes work, and what can they be used to make?
7. What are sanders used for, and what are some different types of sanders?
8. How do table saws work, and what types of cuts can they make?
9. What are grinding, cutting, or polishing machines used for, and give some examples of these machines.

5.3. Communication

Ex. 1. Make sentences using the following words:

1. bench grinder/sharpen/tools

2. drill press/make/wood
3. sander/smooth/surface
4. lathe/shape/cut
5. table saw/operate
6. bearing press/install/bearings
7. grinding machine/use/show
8. abrasive/polishing/grinding
9. bench/workshop
10. machine tools/other/know