

ALTERNATIVE TYPES OF WELDING

12.1. Vocabulary

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

1. cycle	a. искажение
2. apply	b. глубина
3. anvil	c. причина
4. cold	d. цикл
5. distortion	e. потребление
6. consumption	f. применять
7. deep	g. холодный
8. clamp	h. наковальня
9. cause	i. зажим

Ex. 2. Match the words with their definitions.

1. rotate	a. relating to or having a frequency at the upper end of the audible range or above it.
2. friction	b. the process of becoming or making something smaller in size.
3. velocity	c. a tool consisting of a metal rod with a shaped tip, typically used for making holes in hard materials.
4. rapid	d. need something because it is essential or very important.
5. joint	e. the speed of something in a given direction.
6. shrinkage	f. move or cause to move in a circle around an axis or center.
7. explosive	g. of small width in relation to length; not wide.
8. punch	h. the outside part or uppermost layer of something.
9. narrow	i. a substance that is able to cause an explosion.
10. environment	j. the resistance that one surface or object encounters when moving over another.
11. require	k. the surroundings or conditions in

	which a person, animal, or plant lives or operates.
12. surface	l. happening in a short time or at a fast pace.
13. high-frequency	m. a point at which parts of an artificial structure are joined.

Ex. 3. Complete the sentences with the given words.

surface, deep, rapid, rotate, cycle, Shrinkage, distortion, requires

The _____ (1) consumption of welding materials led to a shortage in the workshop.

The metal undergoes a _____ (2) of melting and cooling during the welding process.

To achieve _____ (3) weld penetration, adjust the welding settings accordingly.

Heat can cause _____ (4) in the metal structure after welding.

Welding _____ (5) proper training to ensure safety in the workshop.

The parts need to _____ (6) evenly during the welding process for uniform fusion.

_____ (7) can occur in the welded joint if not properly controlled.

Cleaning the _____ (8) thoroughly before welding improves the quality of the bond.

12.2. Reading

Ex. 1. Read the text.

There are various types of welding, each with unique advantages and applications. One common alternative to traditional methods is TIG welding, or Tungsten Inert Gas welding. This technique uses a non-consumable tungsten electrode to produce the weld. It is known for

creating high-quality, precise welds, making it ideal for thinner materials and intricate projects.

Another type is MIG welding, or Metal Inert Gas welding. This method uses a continuously feeding wire that acts as both the electrode and the filler material. MIG welding is popular because it is relatively easy to learn and works well on a variety of metals, including aluminum and steel.

Stick welding, or Shielded Metal Arc Welding (SMAW), is another alternative. This method uses a consumable electrode coated in flux, which protects the weld area from oxidation and contamination. Stick welding is versatile and can be used for construction, shipbuilding, and repair work.

Finally, there is Flux-Cored Arc Welding (FCAW). This is similar to MIG welding but uses a special tubular wire filled with flux, which provides additional protection from contaminants. FCAW is favored for its high welding speed and is commonly used in heavy-duty industrial applications.

Each welding method has its specific strengths, making them suitable for different tasks and industries. Whether it's for fine detail work, large-scale projects, or simply ease of use, alternative types of welding offer a range of possibilities.

Ex. 2. Answer the questions.

1. What is TIG welding and what makes it ideal for certain projects?
2. How does MIG welding differ from TIG welding in terms of the electrode and filler material used?
3. What is another name for Stick welding, and how does it protect the weld area during the process?
4. How is Flux-Cored Arc Welding (FCAW) similar to MIG welding, and what additional feature does it offer?
5. Why is MIG welding popular among welders, and on which types of metals does it work well?
6. In what industries or applications is Stick welding commonly used?

7. What are some advantages of using FCAW over other types of welding methods?

12.3. Communication

Ex. 1. Make sentences using the following words:

1. Arc/welding/common
2. Gas/welding/gases
3. Spot/welding/metal
4. TIG/welding/high-quality
5. MIG/welding/popular
6. Resistance/welding/electrical
7. Laser/welding/precise
8. Ultrasonic/welding/plastics
9. Electron/beam/welding
10. Friction/welding/strong