VALVES

13.1. Vocabulary

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

1. backflow	a. задвижка; шибер
2. household outlet	b. газовый кран
3. check valve	c. редукционный клапан
4. relief valve	d. противоток
5. RPZ	e. бытовая розетка
6. isolation valve	f. предохранительный клапан
7. gas cock	g. обратный клапан
8. hose bibb	h. ниппель рукава (гидранта)
9. pressure reducing valve	i. клапан RPZ
10. gate valve	j. запорный клапан
11. stop-and-waste valve	k. запорно-сливной клапан

Ex. 2. *Translate the sentences from Russian into English. Use the target vocabulary.*

1. Я выключил газовый кран, прежде чем выйти из дома.

2. Обязательно закройте запорный клапан, чтобы остановить подачу воды.

3. Клапан RPZ предотвращает обратный поток в водопроводной системе.

4. Пожалуйста, откройте задвижку, чтобы вода попала в трубы.

5. Предохранительный клапан сбрасывает давление, когда оно становится слишком высоким.

6. Подключите зарядное устройство к бытовой розетке, чтобы зарядить телефон.

7. Подсоедините ниппель рукава к садовому шлангу для полива растений. 8. Редукционный клапан регулирует давление воды в трубах.

9. Обратный клапан позволяет воде течь только в одном направлении.

10. В водопроводной системе возникла проблема с обратным потоком, что привело к загрязнению.

11. Поверните запорно-сливной клапан, чтобы перекрыть и слить воду из трубы.

13.2. Reading

VALVES

A valve is a device that regulates, directs or controls the flow of a fluid (gases, liquids, fluidized solids, or slurries) by opening, closing, or partially obstructing various passageways. Valves are technically fittings, but are usually discussed as a separate category. In an open valve, fluid flows in a direction from higher pressure to lower pressure.

The simplest, and very ancient, valve is simply a freely hinged flap which drops to obstruct fluid (gas or liquid) flow in one direction, but is pushed open by flow in the opposite direction. This is called a check valve, as it prevents or 'checks' the flow in one direction.

People in developed nations use valves in their daily lives, including plumbing valves, such as taps for tap water, gas control valves on cookers, small valves fitted to washing machines and dishwashers, safety devices fitted to hot water systems, and poppet valves in car engines.

In nature, veins acting as valves are controlling the blood circulation of blood returning to the heart.

Valves are used in a variety of contexts, including industrial, military, commercial, residential, and transport. They are essential components in building services, such as HVAC (heating, ventilation, and air conditioning), and they are used in many everyday household items, such as taps for taps and gas cocks for cookers. Valves are also used in the military and transport sectors.

Some valves are specifically designed to regulate varying amounts of flow; these types of valves are known as throttle valves and control valves.

Valves may be operated manually, either by a handle, lever, pedal or wheel. Valves may also be automatic, driven by changes in pressure, temperature, or flow. These changes may act upon a diaphragm or a piston which in turn activates the valve, examples of this type of valve found commonly are safety valves fitted to hot water systems or boilers. More complex control systems using valves requiring automatic control based on an external input (i.e., regulating flow through a pipe to a changing set point) require an actuator. An actuator will stroke the valve depending on its input and set-up, allowing the valve to be positioned accurately, and allowing control over a variety of requirements.

Ex. 2. *Answer the questions.*

1. What is the function of a valve?

2. How does an open valve allow fluid to flow?

3. What is a check valve and what is its purpose?

4. Give some examples of valves used in daily life.

5. In what natural context are veins acting as valves?

6. Where are valves used besides household items?

7. What are throttle valves and control valves designed for?

8. How can valves be operated manually?

9. When are automatic valves activated?

10. What is the role of an actuator in controlling valves?

13.3. Communication

Ex. 1. *Make sentences using the following words:*

1. check valve/open/closed

2. gate valve/controls/flow

3. relief valve/replace/need

4. isolation valve/turn off/please

5. backflow valve/prevents/flowing

6. gas cock/know/how

7. hose bibb/tightly/closed

8. household outlet/provides/electricity

9. pressure reducing valve/maintains/steady

10. RPZ/helps/protect

13.4. Writing

Ex. 1. *Write an essay (100-140 words) on the topic "Plumbing systems have evolved over time. Are these changes beneficial?"*