

STEERING SYSTEM

11.1. Vocabulary

Ex. 1. Match the words to their definitions.

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| 1. steering wheel | a. a system that uses hydraulic pressure to assist in turning the wheels of a vehicle. |
| 2. power steering | b. a bar connecting the steering mechanism to the wheels, helping to maintain proper alignment. |
| 3. pinion | c. a long, cylindrical component that connects the steering wheel to the rest of the steering system. |
| 4. rotate | d. the components and mechanisms responsible for controlling the direction of a vehicle's movement. |
| 5. spindle | e. a small gear that engages with a larger gear to transfer power and motion. |
| 6. steering system | f. to turn or spin around an axis. |
| 7. tie rod | g. a circular control used to steer a vehicle. |
| 8. power steering pump | h. a rod or pin used to hold something in place while allowing it to rotate freely. |
| 9. steering shaft | i. a device that pressurizes fluid to provide assistance in steering a vehicle. |

Ex. 2. Translate the sentences into English.

1. Насос гидроусилителя рулевого управления помогает вращать шестерню и управлять системой рулевого управления.
2. Рулевая тяга соединяет рулевой вал со шпинделем в системе рулевого управления.
3. Рулевое колесо является важной частью системы рулевого управления, позволяя водителю поворачивать влево или вправо.
4. Без надлежащего технического обслуживания система рулевого управления может стать сложной в эксплуатации.
5. Рулевой вал соединяет рулевое колесо с шестерней, обеспечивая управление рулевым управлением.
6. Система рулевого управления в современных автомобилях часто включает гидроусилитель руля для облегчения маневрирования.
7. Изношенный насос гидроусилителя рулевого управления может вызвать проблемы с системой рулевого управления в целом.
8. Шпиндель служит точкой поворота колес в системе рулевого управления.
9. Важно регулярно проверять и заменять изношенные компоненты системы рулевого управления во избежание несчастных случаев.

11.2. Reading

Ex. 2. Read the text.

Steering System

The steering system in a car is made up of several components that work together to control the direction of the vehicle. The main parts of a steering system include the steering wheel, steering shaft, pinion gear, rack and pinion assembly, tie rods, and the steering knuckle and spindle.

When you turn the steering wheel, it rotates the steering shaft. The steering shaft is connected to the pinion gear, which is a small gear that meshes with the larger rack gear. The rack and pinion assembly is what actually moves the wheels left or right when you turn the steering wheel.

As the pinion gear rotates, it moves the rack gear, which causes the tie rods to push or pull on the steering knuckles. The steering knuckles are attached to the front wheels by the spindles, and this movement is what makes the wheels turn.

In older cars, the steering system used a mechanical connection between the steering wheel and the wheels. This meant that the driver had to use a lot of physical effort to turn the wheels, especially at low speeds. However, most modern cars use power steering, which makes it much easier to steer the vehicle. Power steering uses hydraulic pressure to assist with turning the wheels. A power steering pump, driven by the engine, provides the hydraulic pressure to help move the rack and pinion assembly. This makes it easier for the driver to turn the steering wheel, especially when the car is not moving or is moving slowly.

The tie rods are an important part of the steering system because they connect the rack and pinion assembly to the steering knuckles. They ensure that the wheels turn in the correct direction in response to the driver's input on the steering wheel. Tie rod ends can wear out over time and need to be replaced to maintain proper steering function.

Ex. 2. Answer the questions.

1. How does the steering system in a car control the direction of the vehicle?
2. What are the main components of a steering system?
3. How does the steering wheel affect the movement of the wheels?
4. What is the purpose of the rack and pinion assembly in the steering system?
5. How does power steering make it easier to steer the vehicle?
6. What role do tie rods play in the steering system?
7. Why might tie rod ends need to be replaced over time?

11.3. Communication

Ex. 1. Make sentences using the following words:

1. steering/system/work
2. explain/different/components
3. take/car/check-up
4. upgrade/steering/system
5. responsive/smooth/new
6. adjust/steering/system/bicycle
7. maintain/steering/system/boat
8. uncle/mechanic/specializes
9. trouble/power/steering
10. course/steering/system/vehicles