Application of Robotic Manipulators in Mechanical Engineering: Prospects and Problems.

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ABSTRACT

The article discusses the use of robotic manipulators in mechanical engineering. The prospects of using robotic manipulators for automation of production processes, as well as problems associated with their implementation, are discussed.

Keywords: robots, manipulators, mechanical engineering, cost

Robotic manipulators are widely used in mechanical engineering to automate production processes. They can perform repetitive and time-consuming operations, increasing productivity and product quality. In addition, robotic manipulators can improve safety at work by performing dangerous operations instead of humans.

However, the introduction of robotic manipulators in mechanical engineering is also accompanied by certain problems. Firstly, the cost of robotic manipulators can be significant, which can create additional costs for the enterprise. Secondly, it is necessary to provide appropriate training of personnel to work with robotic manipulators. Thirdly, it is necessary to ensure the reliability and safety of robot manipulators in order to prevent possible emergencies.

However, despite these problems, the use of robotic manipulators in mechanical engineering has great potential to increase production efficiency, improve product quality and improve safety at work. The development of technologies and the reduction in the cost of robotic manipulators allows you to reduce the cost of their acquisition and implementation.

Thus, the use of robotic manipulators in mechanical engineering is a promising direction for the development of production, which can lead to a significant improvement in productivity and product quality, as well as increased safety in production.

The use of robotic manipulators in mechanical engineering makes it possible to reduce production costs and increase its efficiency. Robot manipulators can work in three shifts without a break, do not require remuneration and can perform tasks with high accuracy and speed. This allows you to reduce the production time and increase its volume.

However, the introduction of robotic manipulators in mechanical engineering is also accompanied by certain problems. The cost of robotic manipulators can be significant, which can create additional costs for the enterprise. In addition, it is necessary to provide appropriate training of personnel to work with robotic manipulators. It is also necessary to ensure the reliability and safety of robot manipulators in order to prevent possible emergencies.

Therefore, the use of robotic manipulators in mechanical engineering is a promising direction for the development of production, which can lead to a significant improvement in productivity and product quality, as well as increased safety in production.

Specific examples of the use of robotic manipulators in mechanical engineering may include tasks such as welding, assembly, processing, cutting materials, measuring and testing products. Robotic manipulators can perform these tasks with high accuracy and speed, which allows to reduce production time and increase its volume.

The use of robotic manipulators also allows machine-building enterprises to increase the flexibility of production. Manipulator robots can easily switch between different tasks and perform them with high accuracy and speed, which allows them to quickly adapt to changing production requirements.

One of the examples of the successful introduction of robotic manipulators in mechanical engineering is their use in the automotive industry. Robotic manipulators are used for assembling automotive components, welding bodies, painting and for other production processes. This allows automotive companies to reduce production time and improve product quality.

Nevertheless, the development of technologies and the reduction in the cost of robotic manipulators allows you to reduce the cost of their acquisition and implementation. The use of robotic manipulators in mechanical engineering has great potential to increase production efficiency, improve product quality and improve safety at work.

Conclusion

The use of robotic manipulators in mechanical engineering has great potential to increase production efficiency, improve product quality and improve safety at work. Robot manipulators can perform repetitive and time-consuming operations with high accuracy and speed, which allows to reduce production time and increase its volume. In addition, the use of robotic manipulators allows machine-building enterprises to increase production flexibility and quickly adapt to changing production requirements.

However, the introduction of robotic manipulators in mechanical engineering is also accompanied by certain problems, such as high cost, the need to provide training for personnel and ensuring the reliability and safety of robotic manipulators. Nevertheless, the development of technologies and the reduction in the cost of robotic manipulators allows you to reduce the cost of their acquisition and implementation.

Thus, the use of robotic manipulators in mechanical engineering is a promising direction for the development of production, which can lead to a significant improvement in productivity and product quality, as well as increased safety in production. The introduction of robotic manipulators requires additional costs and efforts, but it can pay off in the form of increased production efficiency and improved competitiveness of machine-building enterprises.

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