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PRESS RELEASE

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ŠKODA AUTO creates smart handling robot at its Vrchlabí plant

- › **Pick-and-place robot handles forged transmission shafts for further processing**
- › **Sophisticated algorithms evaluate 3D camera images and determine the robot's gripping movements**
- › **ŠKODA AUTO developed the smart handling system to accelerate expansion of its production automation expertise**

Mladá Boleslav/Vrchlabí, 20 May 2021 – ŠKODA AUTO is pressing ahead with the automation of its manufacturing processes in the Czech Republic. In gearbox production at the Vrchlabí component plant, a new smart handling robot has taken over the complex task of moving forged parts for the workforce. ŠKODA AUTO has developed this system in-house to build up expertise in production automation.

The manager of the Vrchlabí plant, Ivan Slimák, said: "At our state-of-the-art Vrchlabí site, we are setting benchmarks in the digitalisation of our production methods. We have now taken the next step with our new smart handling robot. Advanced algorithms and image recognition capabilities make our processes as efficient as possible while continuing to improve workplace ergonomics for our staff. We will roll out the principle of smart handling to other areas of production."

At the beginning of the manufacturing process, autonomous robots deliver forged blanks for transmission shafts in bins to the CNC machining lines. They are guided by sensor technologies of the Internet of Things (IoT). The new smart handling robot picks the blanks from the bins and places them onto the CNC machine's conveyor. When processed, it removes the transmission parts and puts them into a transport bin. The robot handles a total weight of 900 kg per shift across both these production steps. The employees who previously carried out this physically demanding work are now assigned to tasks such as tool changes and measuring processes.

The technology behind this new process is based on the principle of digital image recognition. A 3D camera scans the position of the randomly arranged forged parts in the bin. Based on the camera image, an algorithm then determines which of the parts is optimal for the gripper to grab and works out the movements required. The robot positions the blank ready for processing, then picks it up again to place it into a transport bin. As soon as this is full, the robot changes its gripper and prepares the bin for collection. The entire process is highly efficient and fully automated.

It took only eleven months from the first feasibility study to deploying the system in series operation. Several departments worked together to design and implement this smart handling solution. It's just one of a number of automation projects at the Vrchlabí plant.

Another autonomous transport system brings machined parts from the mechanical processing area to another part of the facility for high-precision measurement.

Blanks for shafts and gears are brought to the CNC machines by an autonomous robot, with ordering and retrieval of the parts also taking place automatically. Each day, the robot transports approximately 50,000 blanks.



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At the Vrchlabí site, the carmaker produces more than 2,300 units of the DQ200 7-speed direct shift gearbox (DSG) every day, which is used in numerous ŠKODA models as well as in other vehicles from Volkswagen Group. [In 2019, ŠKODA AUTO produced its three millionth DQ200 transmission.](#)

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Media video and image:



Video: ŠKODA AUTO uses smart handling robot at its Vrchlabí plant

ŠKODA AUTO is pressing ahead with the automation of manufacturing at its Czech production sites. In gearbox production at the Vrchlabí component plant, a new robot is now assisting with the handling of forged parts.

[Youtube](#)

Source: ŠKODA AUTO



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The new smart handling robot picks the blanks from the bins and places them onto the CNC machine's conveyor. When processed, it removes the transmission parts and puts them into a transport bin.

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Source: ŠKODA AUTO



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Based on a camera image, an algorithm determines which of the parts is best for the gripper to grab and then works out the movements required. The robot puts the blank onto the CNC machine's conveyor and, once processed, removes it again to place it in a transport bin.

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ŠKODA AUTO

- › is focusing on three priorities with its 'NEXT LEVEL ŠKODA' program for the future: expanding the model portfolio towards entry-level segments, exploring new markets for further growth in the volume segment and making tangible progress in sustainability and diversity.
- › currently offers its customers ten passenger-car series: the CITIGO® iV, FABIA, RAPID, SCALA, OCTAVIA and SUPERB as well as the KAMIQ, KAROQ, KODIAQ and ENYAQ iV.
- › delivered over one million vehicles to customers around the world in 2020.
- › has belonged to the Volkswagen Group for 30 years. The Volkswagen Group is one of the most successful vehicle manufacturers in the world. In association with the Group, ŠKODA AUTO independently develops and manufactures vehicles, as well as components such as engines and transmissions.
- › operates at three locations in the Czech Republic; manufactures in China, Russia, Slovakia and India mainly through Group partnerships, as well as in Ukraine with a local partner.
- › employs approximately 42,000 people globally and is active in more than 100 markets.