

When the dreams of logisticians come true

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That which was a future vision a few years ago is tangible reality today. With its drone gripper, the clamping and gripping specialist, Röhm, is making the wishes of in-plant logisticians come true. That is because the gripper enables the unmanned transport of tools or other products in production halls. All of this harbours enormous future potential. The gripper came into being in cooperation with the Fraunhofer Institute for Industrial Engineering (IAO) and the Industry 4.0 experts from Digital Worx.

Drones show images from impressive perspectives and deliver packages. In the future, they will offer even more support from the air. The possibilities are almost endless, and a great deal that will be just a matter of course in the future seems to be unimaginable today. Here, it is not enough for the drones to fly from one point to the next for complex handling tasks. They must perform other tasks above and beyond this. For example, products have to be gripped reliably and accurately and distributed unmanned in the shortest possible time. This challenge is also found in innumerable manufacturing companies worldwide.

The fact that this can already be reality is shown by Röhm with its new drone gripper. Moreover, it provides other features that are needed for effective work and easy operation. The gripping technology specialist has an indirect and a direct gripping system in its programme for a great variety of applications. With the indirect gripping system, the drone flies with the mounted gripper and approaches an object equipped with an adapter ring. It can be a rectangular container, for example. With the optional

limit switches, which are placed around the gripper at 3x 120°, it is possible to check the correct position of the gripper. As soon as all three limit switches send a signal, caused by resting on the adapter ring, the electrically powered servo motor can be triggered.

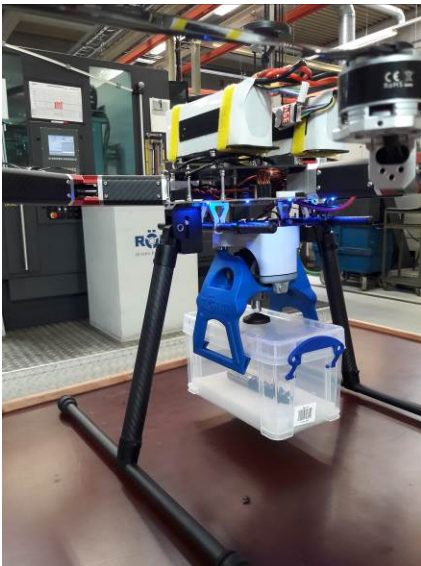
With the direct gripping system, the drone flies with the mounted gripper to the object directly and accurately. In the process, the drone is first of all positioned exactly. During the landing, the dead weight of the drone is cushioned by centrally located damping and ensures that the drone lands gently, and simultaneously the curved gripping surfaces are uncovered. The servo motor controls how the gripping arm swings out. The gripping process is supported by lead-in chamfers on the gripper arms.

Typical of Röhm, the system is very service friendly. No lubrication is required for smooth operations, and the long-lasting servo drive is electric. An integrated damping system is included for gentle docking on delicate parts as well. In addition, the gripper jaws can be individually adapted. And the gripper offers even more: The jaws are printed by Röhm using an additive process. That way, even complex shapes can be gripped. Röhm offers self-centring in part, which makes the handling even easier.

Logistics drones will not be the only and ultimate solution in each of these areas, but they can at least meaningfully expand the “mix” of delivery possibilities in many cases. Sometimes in large-size company buildings, the drones can take over hundreds or thousands of “delivery flights” each day. The autonomous navigation in indoor environments is a major challenge due to the complexity and dynamics of the environment.



With its drone grippers, Röhm shows what will be possible in the future in in-plant logistics.



More information can be found at www.roehm.biz