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Solutions | Magnetic Tool |Modular Magnetic EOAT for Batch Production

In batch production models such as automotive stamping line, a production change induces a change of tooling. In automotive stamping plants, we can find dozens of different grippers corresponding to different parts. This lead to significantly invest in material but also in storage surface. Moreover, this investment is dormant and payloads to be handled by production staff can be more or less high.



For this specific purpose, PES has developed a modular EOAT solution based on its magnetic gripper product line.

The EOAT is made up of two different modularity levels.

The first one is the antenna that includes a quick coupling mechanism with integrated connectors and fittings to transfer pressurized air and some electrical signal to the tools hanged on the antenna. The antenna aims at bringing powerful gripping magnets on the EOAT and set up a gripper with coplanar gripping means and that can be more or less wide depending on the antenna you install. Then the second modularity level aims at adapting this "simple geometry" EOAT to the target part by adding some purely passive components, that is, the magnet pole shoes. The latter are carbon steel machined parts that can be shaped to the geometry of the target part.

This way, PES gives the maximum flexibility to this secondary modularity level that is compact, reliable and cost-effective.

Key Features

- Highly capable EOAT
- High duty cycle magnets to support production flow needs
- Turnkey solution with plug-and-play EOAT
- 8 digital signals + 2 independent air channels per antenna

PES Support Outcomes

- Antenna design and realization
- Pole shoe design and realization
- Feasibility and validation tests performed by PES

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Advantages



Benefits

- Compact and highly capable antennas
- Passive and easy to store pole shoes
- No need of pressurized air for magnet operation once actuated
- Save floor space by reducing EOAT quantity need
- Save storing space and reduce tooling cost
- Save energy consumption (vs. vacuum)



Facts & Figures

- Magnet field actuation time is measured in milliseconds
- Lifetime can reach **9 million of operation cycles** depending on gripping conditions on higher payload units
- **Customer example: PES has demonstrated that a complete set of 32 parts can be handled with only 2 different antennas**