K.Handle

VarioPick

Robotics: more efficiency, flexibility and scalability

The challenge

Increasing labor shortages, tight floor space and often varying parcel volumes, short delivery times and a wide spectrum of items put parcel sorting centers under pressure. More than ever, parcel automation is crucial for efficient and flexible parcel handling.

Our solution

VarioPick is a highly efficient robotic solution for dynamic picking. It has been designed for flexible enhancement of sorting systems. The high-speed solution picks predefined items from a moving bulk stream for singulation purposes or for culling of non-conveyables. It also takes shipments from a stopped conveyor onto an induction or a dynamic belt as well as directly onto the sorter cells. Features include an AI-based recognition system, an advanced control system and an innovative gripper technology.

Deep learning helps VarioPick to precisely identify an object's shape, size and packaging material, and to determine the optimal gripping point.

Highly scalable, VarioPick can be easily adapted to varying process demands, fluctuations in required throughput and more. The solution is flexible and includes the robot which is best suited for to the respective use case.

Customer benefits

- Top picking rates and a throughput more than twice as high as manual processes

- Stand-alone system with a small footprint, fitting to greenfield and brownfield applications

- Plug&Play solution for an easy installation within just one day

- Highly scalable with the possibility to increase throughput by adding one or more VarioPick units

- Low maintenance and service friendly, repairs can be completed in a very short time

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Technical data - metric

Throughput	up to 3,600 pph
Gripping radius	up to 800 mm
Power supply	400 V AC, 3 phases
Effective power	approx. 2 kW
Minimum robot cell dimension	approx. 2 m² excl. transport belts
Robot cell weight (w/o cabinet)	approx. 455 kg
Belt transport speed	up to 1.0 m/s
Temperature range	0 °C - 40 °C
Relative humidity range	10% - 90%

Parcel spectrum

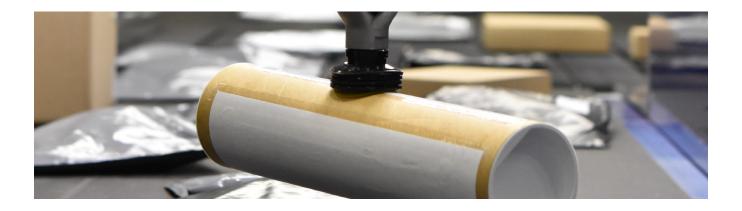|	
Length	80 mm - 450 mm
Width	80 mm - 350 mm
Height	1 mm - 300 mm
Weight	up to 7.5 kg
Packaging	various (cardboard, envelope, polybag, poster roll, etc.)

Functional features

- VarioPick includes a robot with a special gripper, a robot mount, a vision system, a control cabinet, and a display

- High-speed positioning and picking

- Easy and flexible definition of picking criteria

- Complex visual recognition system based on deep learning algorithms to identify an item and the optimal gripping point

- Automatic adjustment of movement and acceleration depending on the item's classification

- User-friendly interfaces with all visualization systems on one dashboard

Application cases

- Culling of defined items (removing non conveyables, carrying out a format or volume split)

- Singulating from bulk

- Inducting by placing parcels on an induction conveyor

- Loading items onto a dynamic belt or a sorter

Technical data - imperial

Throughput	up to 3,600 pph
Gripping radius	31.5 in
Power supply	400 V AC, 3 phases
Effective power	approx. 2 kW
Minimum robot cell dimension	approx. 21.5 ft² excl. transport belts
Robot cell weight (w/o cabinet)	approx. 1000 lb
Belt transport speed	up to 3.3 ft/s
Temperature range	32 °F - 104 °F
Relative humidity range	10% - 90%

Parcel spectrum

Length	3.2 in - 17.8 in
Width	3.2 in - 13.8 in
Height	0.04 in - 11.8 in
Weight	up to 16.5 lb
Packaging	various (cardboard, envelope, polybag, poster roll, etc.)

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