



Breeding & agriculture

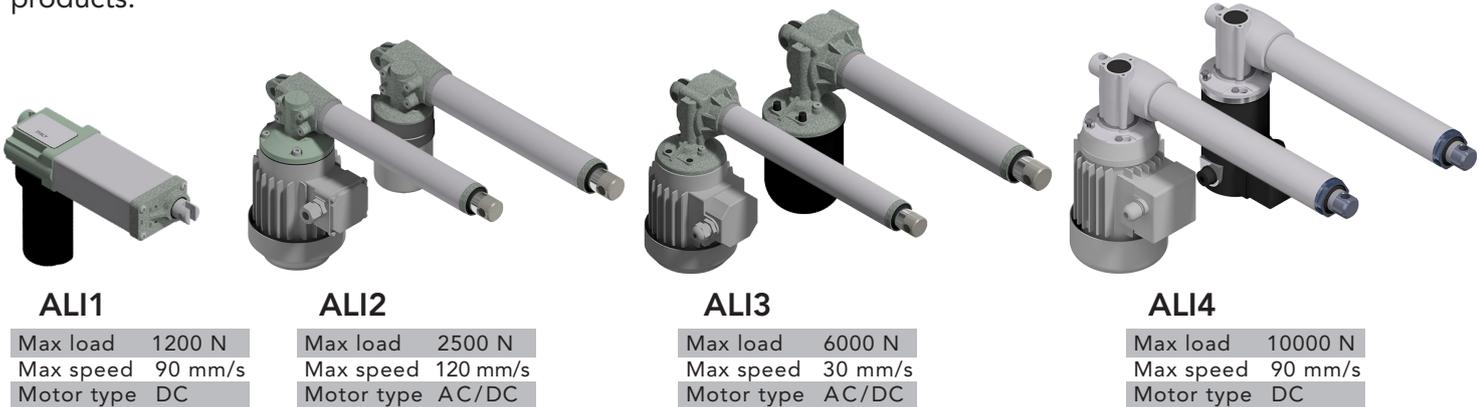


Electric actuators to ease or replace the worker effort

ELECTRIC LINEAR ACTUATORS FOR PROCESS AUTOMATION

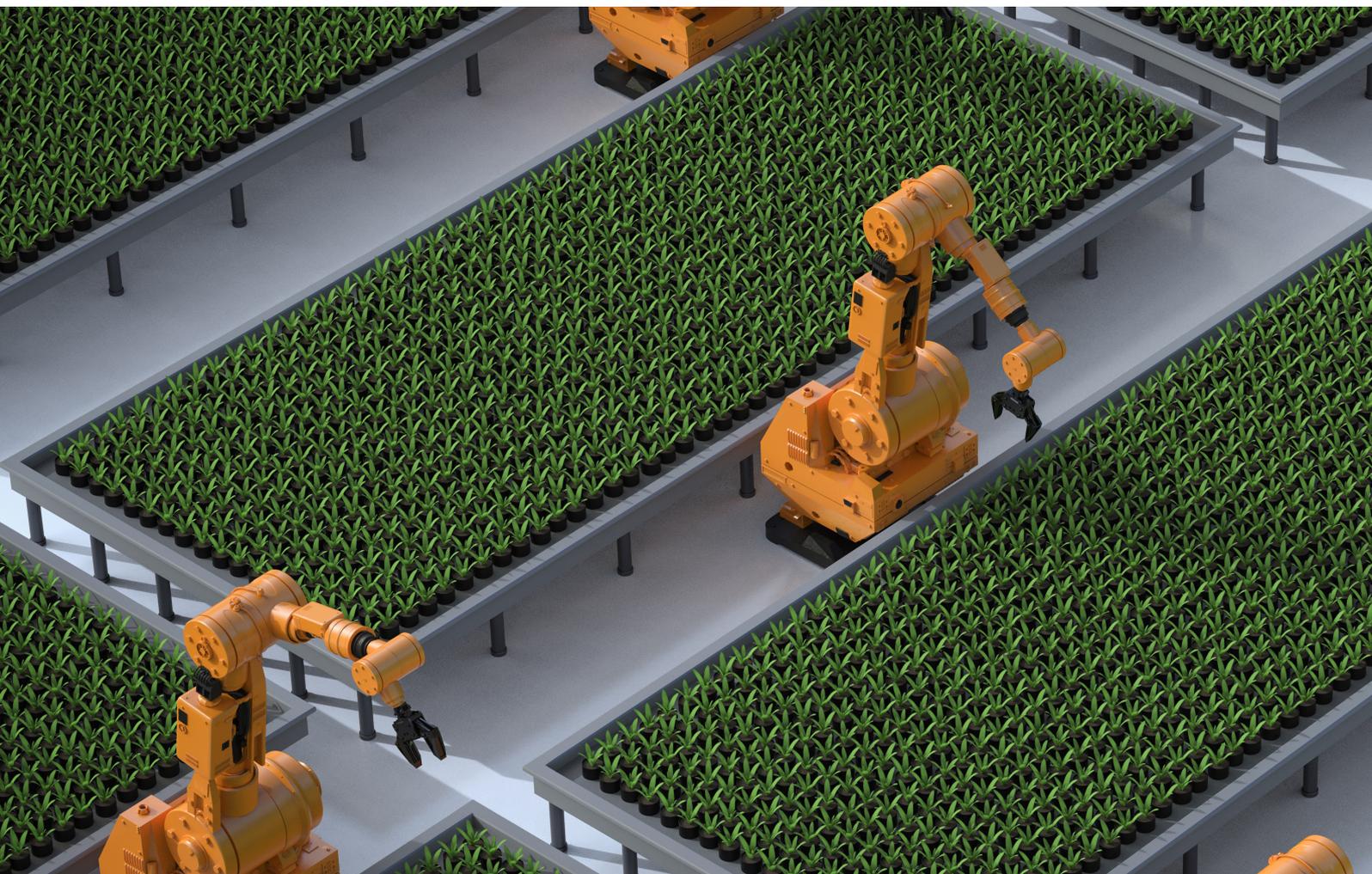
MecVel electric linear actuators versatility allows to push, pull, lift, orient, position loads up to 20 tons in different industrial fields, as the electric system used is performing and eco-friendly, and not polluting as hydraulic or pneumatic ones.

30-years' experience of the company and its customization service allow to offer tailored solutions, developing each product according to the technical specifications of the application to which it is intended. For all these reasons MecVel can supply macro-sectors as agriculture, breeding, zootechnics and food industry, focusing on different handlings with the purpose to optimize them through a selection of dedicated products.



In general, the low-duty MecVel series is the most indicated, as usually it is preferred to have control and resistance with medium-high speed and quite low load (max. 10.000 N).

That's why the range from ALI1 to ALI4 is particularly suitable, but each electric linear actuator is oriented to a specific motion, and fitted with a series of options to respond optimally to the application issues.



AGRICULTURE

Here the main agricultural machinery in which electric linear actuators can be involved, to let farmers to automate some applications:

- **Atomisers and sprayers:** for the orientation of devices used for spraying. ALI1 electric linear actuators with max. force of 1.200 N, max. speed of 90 mm/s and DC motor are the most compact of MecVel range, and perfect for handling these small components
- **Irrigation systems:** for the opening/closing of valves for the water flow. This motion is usually performed by ALI3 electric linear actuator, a real passe-partout, as with its standard performance it can be applied in several situations: 6.000 N as max. force and 35 mm/s as max. speed, while both AC and DC motorizations are available
- **Harvesting machines and tractors** in vineyards, orchards, greenhouses and crops: for raising/lowering the platform used for the harvest or for loading/unloading fruits and vegetables. ALI2 and ALI3 models are equipped with limit switches to provide a constant feedback on the position reached



ALI1 used on a salad picker machine



ALI3 used on harvesting platforms

BREEDING AND ZOOTECHNICS

Some application examples supplied by electric linear actuators:

- **Ventilation systems** for stables: opening/closing of large windows. Due to their dimension and weight, ALI4 is recommended, with force up to 10.000 N and speed up to 100 mm/s, provided with AC or DC motor



- **Eggs incubators:** lifting of the whole machine or orientation of the trays placed inside, for a correct and uniform heating. MecVel ALI3 is the most used to perform this precise motion
- **Mobile robots for the distribution of forage:** control of AGV steering and direction, platform positioning for loading/unloading the material. Even in this case ALI3 with limit switches is the best solution as it provides the right force and accuracy to handle these movements
- **Diverter for herds and flocks:** in weighing and shearing processes, animals are placed in a queue and one by one, through the opening/closing of a gate, are sorted according to the weight or divided from the group to proceed with checks and shearing operations. This application requires high speed and resistance, so ALI1 with bronze wheel is a good compromise to satisfy these needs



FOOD INDUSTRY

There are many solutions using electric linear actuators for the automation of processes in production lines, as:

- **Opening/closing** of industrial ovens or fridges and **handling** of trays in the different phases
- **Extruding/diverting** of liquids or raw products for the transformation into finished products (bread, coffee, jam, tomato, etc.)



- **Guiding systems, automated format changeover and end of line solutions:** adjustment of the material direction on the conveyor belt during diverting and packaging, regulation of rollers position according to the kind of product processed

Customized versions of **ALI2** and **ALI3** are the right choice in all the above cases, and wherever it is required the automated handling of a medium load (6.000 N max.) without renouncing to speed and full control on the motion performed. These applications often require the use of food grease as lubricant, bellows boot to protect the screw, stainless steel for push rod and front end, up to complete painting to furtherly preserve the electric linear actuator and ensure a longer life to the whole system. Front and rear ends can be fully designed for the optimal placement of the product inside a machine or to an existing structure. In case of reduced space, MecVel range from **ALI1** to **ALI4** can mount a parallel motor, to limit the overall dimensions.

Take a look to the production line below to better understand where MecVel electric linear actuators can be applied and how to achieve the best efficiency through a green and flexible system.

