

To **assembly lawnmowers** a Company needed two workers who manually had to pick, lift, rotate by 180° and precisely position the product (weighing 30 kg) on the assembly line: this operation required consistent physical strain with non ergonomic movements for the two workers, with consequent risk of product damage and cumulative trauma injuries. Furthermore the tack time could never be achieved.

It was necessary to adopt a lift assist system to enhance productivity, achieve the tack time and at the same time improve safety for the operators. Traditional manipulators and lift assist devices such as hoists. A traditional pneumatic manipulator or a hoist was not a suitable solution mainly for the following reasons:

the lawnmowers are of six different types each with a different size and weight and they arrive to the operator on the assembly line with no regular sequence; the pneumatic manipulators are not auto weight sense and auto balancing, but need regulation or selection of the load setting each time a new weight has to be picked up.



- the lawnmowers have to be placed on the moving assembly line within a restricted area unto fixed supports; the traditional pneumatic manipulators do not allow for precise positioning as they over-travel, bounce and need lots of corrective actions before reaching the desired position; this task by means of a pneumatic manipulator requires extra and non ergonomic effort ; hoists aren't quick enough.

An overhead rail mounted Indeva equipped with a custom gripping tool suitable for all 6 types of lawnmowers, is the ideal solution that meets all the above mentioned requirements.

- Cycle time(picking, lifting, rotation and placing the product on the assembly line) has been reduced to 35 seconds.
- **The INDEVA is equipped with safety devices against load fall.**
- **The INDEVA is auto weight sense and auto balancing** and does not require load presetting: the operator does not have to stop for selecting a different load presetting for each different type arriving on the assembly line.
- **The INDEVA allows for a precise and quick placement of the product thanks to the autobalancing feature**, which eliminates inertia forces and reacts in real time counterbalancing perfectly the weight lifted.
- **The INDEVA allows to handle the load in an intuitive way by using his hands directly on the load (float mode feature).**
- The INDEVA is equipped with a custom designed gripping tool which complies with all the latest guidelines on ergonomics.

Thanks to the INDEVA manipulator this Company has registered a significant productivity increase and now can satisfy the market even in time of peak demand.

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