AUTOMATED PART LOADING CELL







By combining a CNC lathe and an industrial robot, businesses have the opportunity to reduce human operator's participation in the machining process. By utilizing a simple, digital signal-based communication between the robot and lathe, it is possible to ensure a reliable and safe interaction between the two. With high precision and repeatability, the robot provides non-stop material handling for the reminder of unfinished parts.



Part shelves

The two bi-level part shelves provide a location for storing incoming unfinished part casts and outgoing machined parts. Having two levels for each shelf increases the ease of use of the system – while the robot processes one level, the other can be loaded or unloaded. By mounting plastic linings on top of the incoming pallet, it is possible to create a repeatable location for the robot to pick up the parts.



Gripper

The robot comes equipped with two multi-purpose grippers. The threepoint gripper provides secure handling of the rough steel cast parts while the two-point gripper removes the finished parts from the lathe. Both grippers have adjustable knuckles, in order to adapt to different part diameters. When parts are placed in the lathe, they are firmly pressed into the knuckles of the lathe by a pneumatic pusher, guaranteeing accurate part insertion.



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The HMI screen provides all the necessary information input and overview of capabilities localized in a single touchscreen interface. A simple, user-friendly interface guarantees a quick training and ease of use.



Main screen

The main screen gives a general overview of the cell. It displays data such as current program number, part name, finished part, and stock part count. It also provides the possibility to choose between certain work modes such as finite mode – when it is only necessary to lathe a few parts, or infinite mode – when there is no foreseeable end to part manufacturing.

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Program editor

The program editor screen is where all the necessary information regarding the dimensions of the stock part as well as their placement on the pallet are put in. Part placement is directly influenced by the size of the plastic lining on top of the incoming pallet; therefore, it is vital to input certain parameters regarding the linings themselves as well.

Part handling

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SETTINGS

Additionally, to the previous program editor screen, it is possible to refine the part handling even further. By inputting additional measurements, the robot can vary the positions of part placement and removal from the lathe, as well as part gripping offsets.



EGHT - M

MAIN PROGRAMS



Technical information

Robot parameters

Payload	160 kg
Max reach	3036 mm
Degree of freedom	6 axes
Repeatability	+- 0.15 mm
Ambient temperature	0-45 C
Approximate weight	985 kg
Max rated power	8 kVA
Controller model	Hi5a

Cell parameters

Size	6885 x 7730 mm
Max part size	d-228 x h-78 mm
Min part size	d-115 x h-47 mm
Required air pressure	6-7 Bar
Required volta	

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