LC Innoconsult INTERNATIONAL
SZEGED - BUDAPEST - HONG KONG

Automatic, universal, robot-controlled press brake tool change system

ABSTRACT:

Complete press brake tool change system of robotically automated press brake cells. The bending tools are placed in a special tool magazine in the exact position next to the press brake. From there, the robot takes out the tools with the help of a gripper developed for this purpose and moves them in a vertical direction into the specially designed bending tool holder of the press brake, in a programmed position with high precision and quickly.

BACKGROUND:

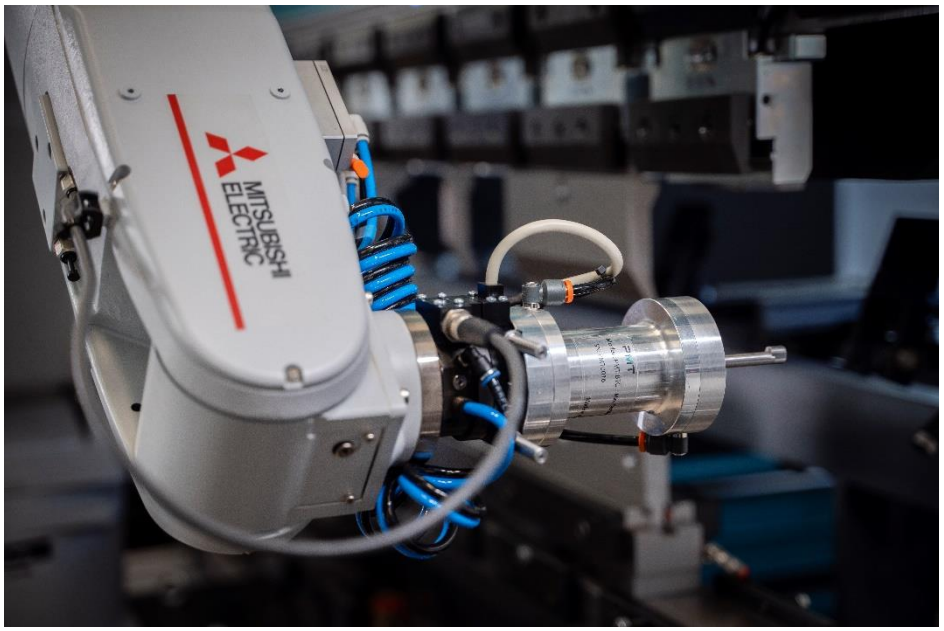
Currently, apart from a few individual tool systems, 95% of the manufacturers of press brakes in the world use two type of tool clamping systems (also tool systems), the WILA and the US (Europe Standard or otherwise known as Amada-Promecam) systems. WILA is the world's leading tool system, but it is very expensive, costing three to five times as much as US system tools. Currently, only the WILA system has a robotic application in the world, the WILA company alone manufactures standard, commercially available grippers (press brake tool grippers) for robotic tool changing systems, as well as tools and accessories for the use of the system. Since 75% of the press brakes put into operation in the world are equipped with the US (Amada-Promecam) tool system, and press brake cells are also built with this tool system, but without an automatic bending tool changer, so this system also requires a solution for replacing the robotic press brake tools, because at the moment it is manually solved inaccurately and over a long period of time.

TECHNOLOGY SPECIFICATIONS:

The main feature of the technology is its universality. But its simplicity, minimal maintenance, simple manufacturability, and low initial cost are significant. And it is not tied to any bending tool system.
Our system also requires little and simple additional work during the production of press brake tools, so it only slightly increases their price. Even bending tools that have been in use for a long time can be converted to robotic grippers. And it can be used for both the WILA and US tool systems, but also for the Bystronic system, as well as for individual tools. In this way, we provide customers with a choice when purchasing the press brake cell.

ADVANTAGES:

Currently, only the WILA company in the world manufactures a commercial automatic press brake tool change system for robotic press brake cells. However, it can only handle its own WILA-Trumpf bending tools. This press brake tool system is the most expensive. Our system is universal, not tied to any system, much simpler and cheaper.



CUSTOMER BENEFITS:

- The bending tool system can be chosen for the press brake cell, it is not tied to WILA alone.
- Changes press brake tools with high precision and speed (three times faster than manual replacement).
- The whole system is simple and cheap.
- Press brake tools are slightly more expensive than standard tools.
- Even existing bending tools can be converted to robotic handling.

TARGET USERS:

- Sheet Metal Companies
- Air Technology Companies
- Instrument Manufacturing Companies
- Machine Manufacturing Companies
- Components Manufacturing Companies
- Components Distribution Companies

TECHNOLOGY/PRODUCT COMPETENCE LEVEL:

The technology is at TRL 7.

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If you are interested, please respond to:

Mr. Balázs Mogyorósi
Technology Transfer Manager,
Head of TT Department
LC Innoconsult International

innovacio@lcinnoconsult.com
www.lcinnoconsult.com