

CHAD SHEET CUTTING SYSTEM

Automated Shearing of Electroluminescent Displays, Smart Cards and other Sheeted Products



System Overview:

The automated CHAD Sheet Cutting System significantly improves the cycle time, ergonomics and reliability of the shearing process for Electroluminescent Displays, Smart Cards, and other various sheeted products. Using a unique pivot point approach to sheet locating and positioning, time-consuming intermediate process steps are eliminated. Additionally, a generous adjustable work envelope accommodates a wide variety of sheet sizes on a single platform. Driven with the intelligence and power of the Adept SmartController, this system is a highly compact robust automation tool.

System Operation:

The CHAD Sheet Cutting System includes the following key sub-systems:

- **Three-axis vision-based positioning system**
- **Unique pivot point die punch tool set**
- **Independent strip and scrap conveyors**

Three-Axis Vision-Based Positioning System

To begin the process, the appropriate sheet ID must be selected from the operator control panel on the computer monitor. The positioning system then picks the first sheet from the feeder, using a vacuum gripper and places it on an air table, moving it towards the shear. The robot positions the sheet's corner fiducial under camera #1 and uses vision servo to accurately locate the sheet within .0005".

Unique Pivot Point Die Punch Tool Set

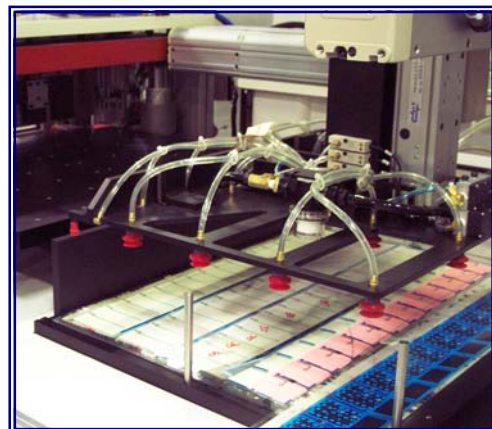
Once the sheet has been accurately positioned, the primary die punches a hole into the sheet and remains down. This now becomes the pivot point for rotational correction. The robot then moves the sheet, such that it rotates about the pivot point, and camera #2 is used to position the sheet parallel to the shear. The secondary punch hole is made in the panel and the shear actuates down.

Independent Strip and Scrap Conveyors

The sheared strips and scrap are fed out of the system on independent conveyor systems. This entire cycle will repeat until the last strip on the sheet is processed and all sheets in the feeder have been emptied.

Key Features:

- **Adept SmartModules three-axis positioning system**
- **Adept SmartController with vision**
- **Vacuum pick-up head**
- **Sheet feeder – 6" maximum stack height**
- **Adjustable 24" x 20" work envelope**
- **Two downward-looking cameras**
- **Pivot point die punch tool set**
- **26" punch and shear station**
- **Sheared product out-feed conveyor**
- **Scrap handling conveyor**
- **User-friendly GUI**



FOR MORE INFORMATION:

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