

Precision Castparts Corp.

Thread Roll Die Inspection

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P11581
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R-I-T



BACKGROUND

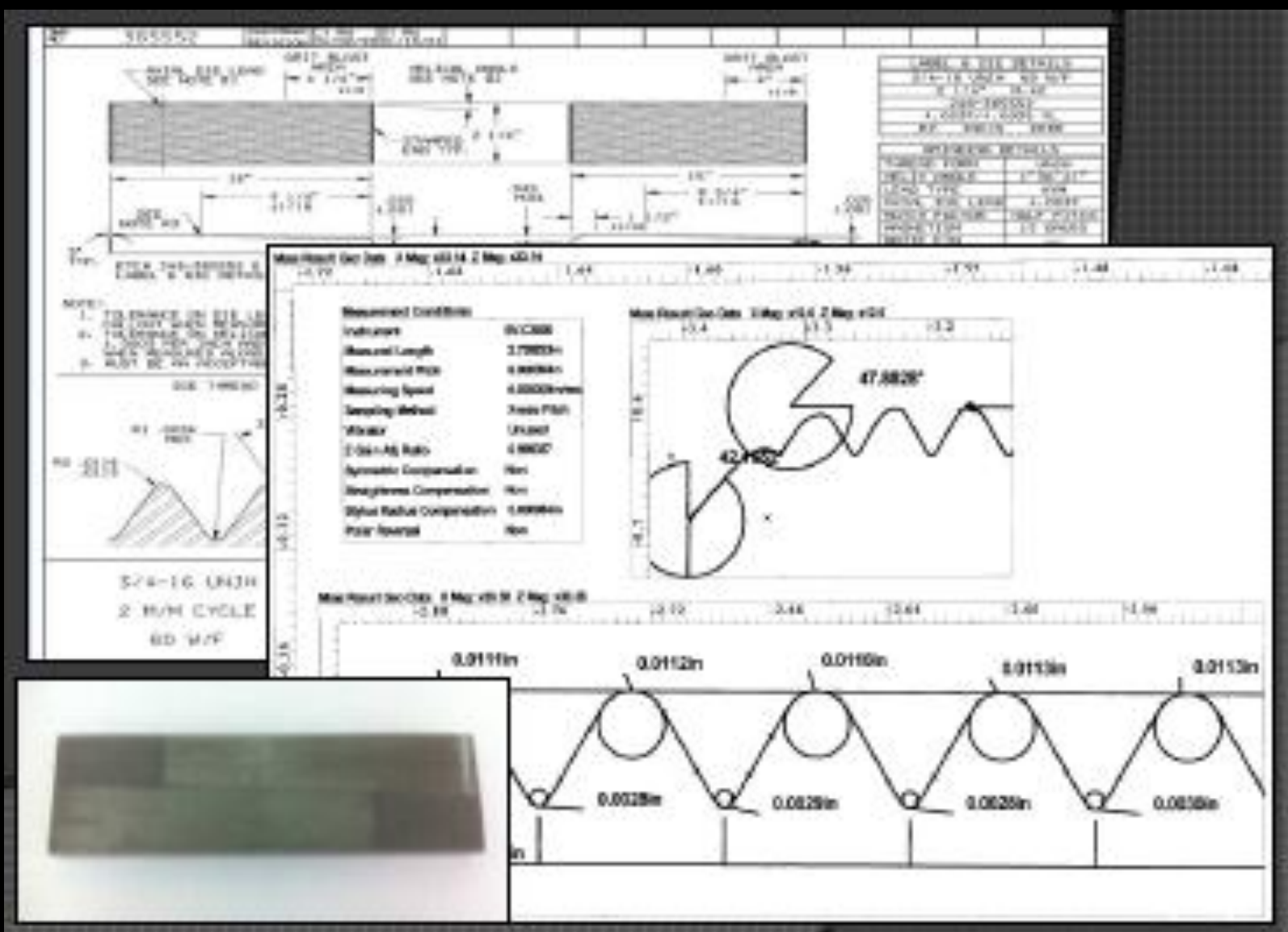
Precision Castparts Corporation SPS Fastener Division uses flat and round dies to produce fasteners for the aerospace industry. The dies are produced by an outside vendor that uses a surface profiling tool to take measurements on critical dimensions. This process is time consuming and impractical for every die. SPS currently does not have their own system in place that can test the dies when they arrive.

OBJECTIVE

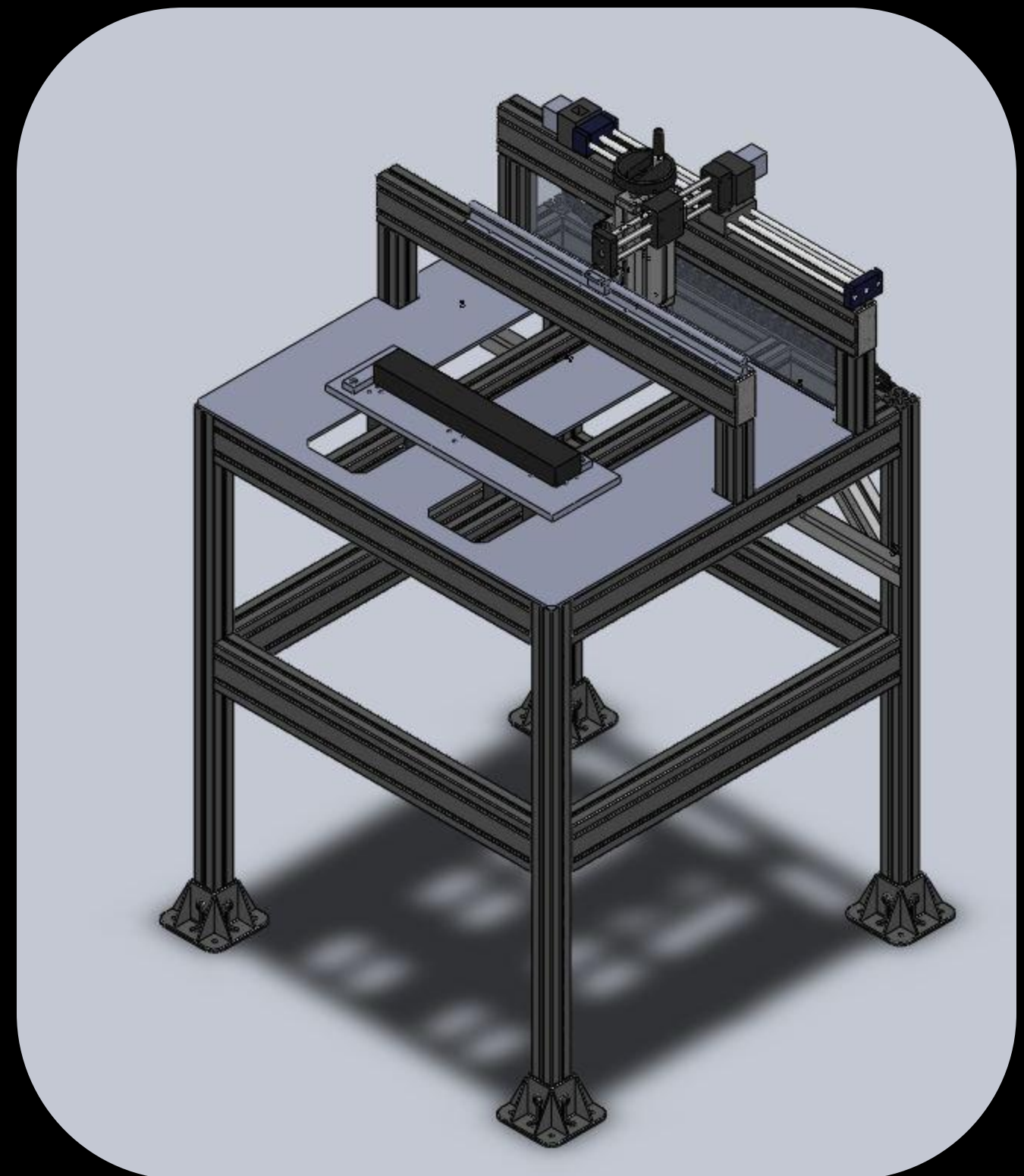
The mission of this team is to design and construct a tool to measure, inspect, and validate critical die dimensions. The data may be used to develop statistical process control and to help understand the wear on a die over its life.

DELIVERABLES

- Develop an automated system for the measurement of dies
- Measure critical dimensions of die
- Develop a statistical database for analysis of results
- Go/No Go capability for operator
- Create standard work required for using the system
- Deliver working product on time and in budget

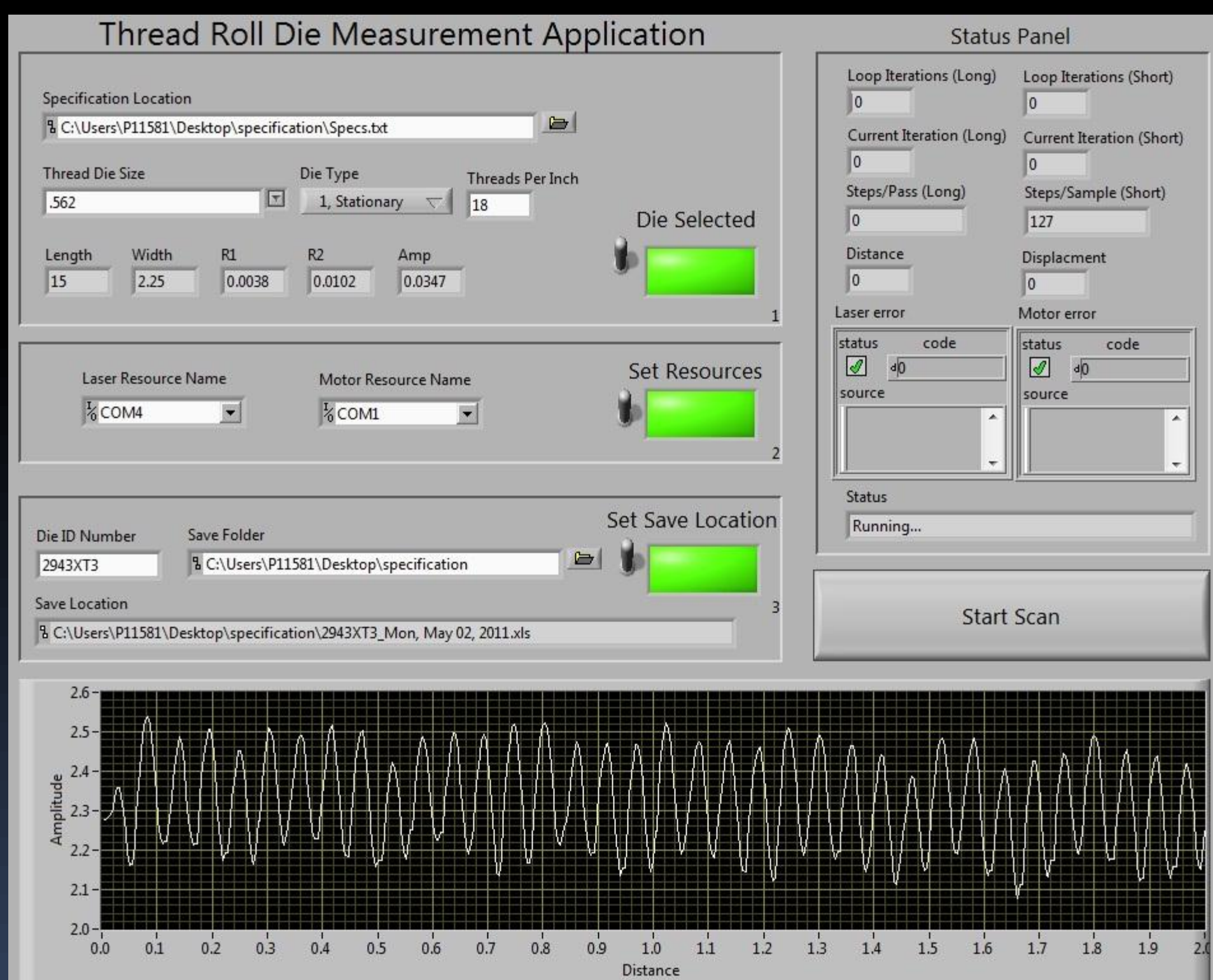


Rolled bolt made on dies



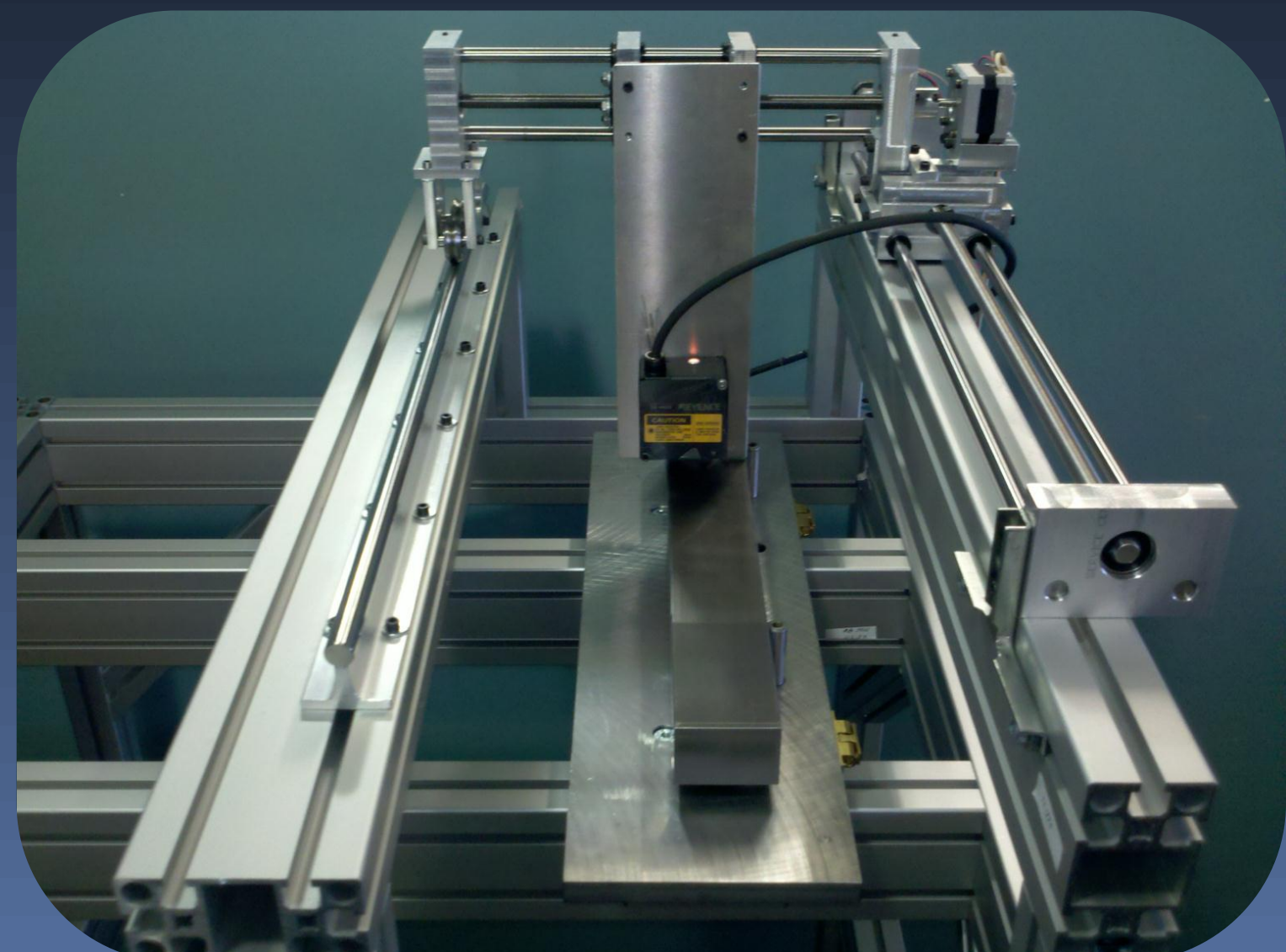
LabView INTEGRATION

- Homing and initialization of gantry
- Reads in specifications from Excel database for various types of dies
- Creates and runs a custom program based on each die



MECHANICAL COMPONENTS

- Laser Displacement Sensor
 - Purchased from Keyence
- Table and Gantry Structure
 - Custom designed from Minitec
- Custom Built Stages
- Stepper Motors
- Motion Controller
- Custom built die fixture



For additional information visit our site at:
<http://edge.rit.edu/content/P11581/public/Home>

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