**Pallet Feeder For Excel Measuring Center**

**Micro-Vu**

Group Members: Travis Grodt, Ian Lynch, Taylor Simas, Joshua Strong, and Robert Wallace

Faculty Advisor: Nick Repanich

**PROJECT OVERVIEW**

The Excel Measuring Center is a digital CMM (Coordinate Measuring Machine) made by the Micro-Vu Corporation. The problem is that to measure parts, they must be manually placed on the machine before the automated measuring can occur. This process takes time and operator presence. As an accessory to this machine, a Pallet Feeder has been designed in order to automate the measuring process of multiple parts. This system allows multiple pallets of parts to be repeatedly placed and measured with less human interaction and labor, improving productivity and lowering operational cost.

**OBJECTIVES**

- Part Viewing Area of at least 600 x 400 mm
- The Pallets must hold at least 2.5 kg of parts
- Be able to measure parts at least 50 mm tall
- To place the pallet within ±0.25 mm
- Should run one cycle in 10 seconds or less

**THE EXCEL MEASURING CENTER**

**THE MECHANICS**

- The solution will have two axes of motion that will combine to bring a specified pallet onto the measuring surface where the InSpec software and Pallet Feeder program will work together to analyze parts on the pallet.
- The vertical axis is driven by two lead screws mounted to the sides of the pallet case, inside the C-Channel support structure.
- The horizontal axis is driven by a single lead screw mounted to the side of one of the lifting forks.
- These forks move into the pallet structure and bring back a single pallet to the measuring surface

**PALLETT LOADER SOFTWARE**

The Pallet Feeder Software is able to interact directly with both the Motion Controller and Micro-Vu's InSpec Metrology Software. It allows for automated measuring, testing, and manual movement operation for fine adjustments and tuning.

**FINAL PRODUCT**

These two pictures show the final product with a view of the horizontal axis (left) and the complete system (right). Our machine can triple the rate of measuring and production compared to manual operation.