

Project Title: Ergonomics Optical Comparator Table

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Area: Mechanical Engineering

Sponsor: Quake Manufacturing, Inc.

Quake Manufacturing, Inc. has been in business since 1990 in Fort Wayne. In their 14,000 SF manufacturing facility, Quake produces fixtures, gauges, tools, prototype parts, and quality machined parts for the manufacturing, automotive and consumer products industries.

The company has a need for an adjustable workstation for their optical comparator to improve the ergonomics of their workstation for their employees. First, the workstation height must be adjustable, ranging from 17 inches to 32 inches above the floor, to accommodate operators with heights between 5'1" and 6'4". Additionally, the workstation must maintain stability, ensuring that the surface remains level with the floor during use. Finally, it must have a load capacity sufficient to support the company's optical comparator, which weighs approximately 300 lbs. Key design variables include the choice between power or manual lift function, programmable or manual height adjustment options, and the inclusion of additional storage such as a drawer or organizer for comparator accessories and the user manual. The preferred material would be aluminum, but it is not required. The company emphasized two key parameters that must remain constant: the workstation surface area, which should not exceed 24" x 36", and the power supply, as the nearest outlet to the optical comparator is a 120V supply outlet.

Budget: \$1500