

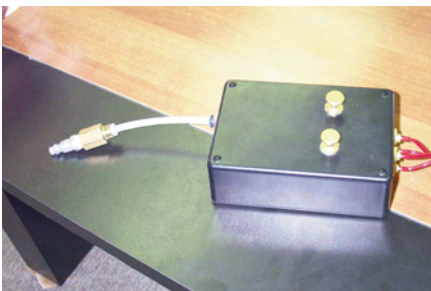
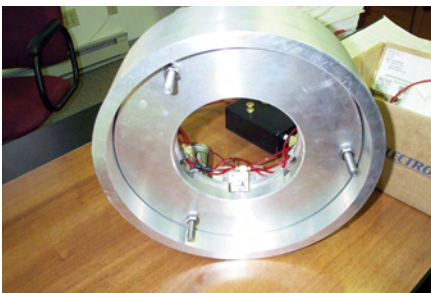
### SCOPE OF PROJECT

**BARKER LEMAR** was contacted by a client who was experiencing a high rate of insurance claims and lost work time due to repetitive motion injuries for a process at the facility. A solution to the cause of these injuries was requested, including potential design and manufacture of equipment to reduce or remove the human element from the task at hand.



### IMPLEMENTATION

The process was analyzed theoretically, and some postulations formed as to the problem and methods of solution. The process was then studied and documented through interviews with injured workers, filming and photographs. The information was then brought back to the office and analyzed. The injury cause was isolated to movements of the hand and wrist; a machine was designed to remove that motion while maintaining or improving process efficiency without job elimination. Constraints included no damage to materials, no substantive change to the process, limited maintenance expenditures, limited exposure to additional injuries, and no substantive change to the end product. Following approval of the design, a prototype version of the equipment was constructed and tested. Testing provided the proof of concept; a second-generation model has been designed, which has a substantial improvement over the prototype in weight and cost.



### SERVICES

Process assessment; ergonomics analysis; mechanism design; materials stress analysis; 3D modeling; mechanical element design; manufacturing; testing with error analysis.

### TIMELINE

Project Start Date: Fall 2000

Project Completed: Ongoing