

# Project Profiles

New Product Development



**Able-Baker Automation™, Inc.**

P.O. Box 6368

Moraga, CA 94570 (USA)

1-510-601-9396

Fax: 1-510-601-9398

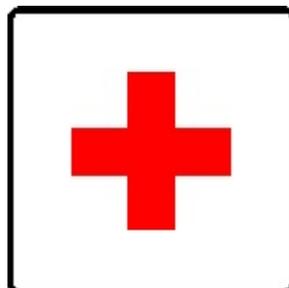
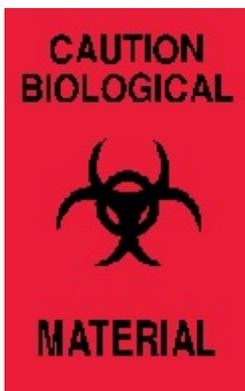
1-877-444-ABLE (2253)

**Home Page:** [www.able-baker.com](http://www.able-baker.com)

# Medical Diagnostic Machine Prototype

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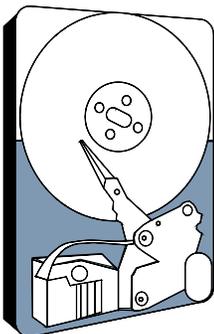
Description:	This project was to design a prototype for a medical diagnostic machine to be used in hospitals and clinics. This device uses a proprietary sensor for one of the measurements and automatically reads test strips for the other tests.
Hardware:	An embedded computer with vision and high precision analog inputs and outputs. Custom interface for the proprietary sensor which provided a resistance signal. This resistance varied over 6 orders of magnitude. Test strips were read by a camera and the data analyzed to determine the absence or presence of faint lines.
Operator Interface:	The prototype machine used a Visual Basic interface. This will be replaced with a dedicated display and integral thermal printer on the final device.
Engineering Activities:	Control System Engineering and Programming. Custom software for testing the system.
System Documentation:	Control Description, Complete Program Listing, Database Printout, and Cross Reference Listing. Complete system drawings were also supplied.



# Manufacturing Machine for Disk Texturing

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Description:	This machine automatically feeds hard drive disk media from cassette holders onto an air bearing spindle. The spindle is then rotated and the laser texturing occurs. The media is then removed from the spindle and placed back into the cassette. This machine processes 200 disks per batch in under 45 minutes.
Hardware:	An IBM industrial computer with two 8-Axis stepper/servo control boards is used to control 4 servo motors and 8 stepper motors. In addition the laser disk processing is controlled by the computer.
Operator Interface:	Microsoft Visual Basic was used to create the operator interface. An easy to use graphic interface was created. A separate pendant is available for system set-up.
Engineering Activities:	Control System Design, Electrical Wiring Diagrams, Programming, Documentation, Material Procurement, Assembly, Installation and Start-Up.
System Documentation:	Control Description, Software Documentation, Maintenance Manuals, Visual Basic Program Listings and complete system drawings.



# Auto-Focus Addition to Disk Laser Texture Machine

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Description:	An Auto Focus mechanism was added to the hard drive media Laser Texture machine. This mechanism automatically re-focused the laser for each disk.
Hardware:	A pair of cameras connected to a Data Translation frame grabber card provided the input for the system. The focus distance was controlled using a stepper type output to pico positioning drives. Two additional cameras were used to verify that the disks were properly textured.
Operator Interface:	Visionblox DLLs were added to the Microsoft Visual Basic application to analyze the camera data. The original application was modified to incorporate these functions.
Engineering Activities:	Control System Design, Electrical Wiring Diagrams, Programming, Documentation, Material Procurement, Assembly, Installation and Start-Up.
System Documentation:	Control Description, Software Documentation, Maintenance Manuals, Visual Basic Program Listings and complete system drawings.

