



case study: Paladin Industries

www.paladinind.com

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| Location | Kentwood, Michigan |
| Years in Business | 22 |
| No. of Employees | 35 (including office) |
| Production Sq. Ft. | 54,000 |
| Annual Sales | \$5,000,000+ |



Alan Applegate, Vice President of Business Development, was interviewed by Helen Kuhl, Editorial Director for Wood & Wood Products. Paladin Industries is a contract manufacturer of decorative, ready-to-finish, membrane pressed wood panels and CNC machined components. Using an unusual approach to reduce labor, they have stayed ahead of the competitive curve.

The Paladin story is one of steady growth, as Larry, his wife, Barbara, and their two sons, Thad and Craig, invested in technology and talent to serve customers in a diverse field of industries. In 1985, Larry Bell set up shop as a manufacturer of wood office furniture components, renting the back room of a warehouse in downtown Grand Rapids. Having no loading dock, Larry's first CNC machine was delivered through a window. In 1989, the Bell family built a 12,500 square foot facility in suburban Kentwood, Michigan, to house four state-of-the-art CNC routers. More expansion milestones followed. In 1993, they purchased their first Friz membrane press. In 1996, the production and assembly areas were expanded. In 2001, a press room and new automation were added to serve the growing office furniture component business. In 2005, they implemented new technology and lean manufacturing processes for customers in automotive and defense industries. In 2006, they enhanced profit-sharing plan to increase productivity and keep top performers in-house. Also "Bob" the CNC robot joins the team.

In 2006, Paladin was presented with a challenge to produce a solid wood shift knob for the automotive industry. They had no idea how involved this project would be, and it turned out to be more labor intensive than they had anticipated. Over lunch one day, they came up with the idea to utilize a Fanuc 2000i robot (aka "Bob") to do all of the sanding right after machining. Using their own creative fixtures to hold the parts, the robot sands the shift knobs at three different stations using 120, 180 and 220 grit sandpaper to produce a finished piece according to the manufacturer's specifications. Bob performs the same amount of work as four to five people at a much faster rate. By automating the process, Paladin now produces 300 shift knobs a day.