Simple Fixturing Enhances Work Car's Versatility

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An aircraft component manufacturer was using an old blast room and non-recyclable abrasives to etch aluminum alloy parts prior to coating. The company hoped to get its employees out of the blast environment entirely, possibly through automation. Because the parts came in a wide variety of shapes and sizes, making customer fixtures for each type would be prohibitively expensive. The leaky old blast room, built by a company that was no longer in business, would require substantial reworking to provide the clean work environment the manufacturer desired. Most of the components to be blasted (the largest being aircraft window frames) would fit easily into a large blast cabinet. The key to this automation application was in finding efficient, cost-effective methods for loading the parts and holding them during blasting.

Solution
Operators place the aircraft components onto a special powered work car, riding on an 8-foot track extension. The surface of the work car is peppered with holes that accept metal dowels. These dowels hold the parts in place during blasting. A variable-speed winch powers the car through the cabinet while 10 BNP suction guns, riding on a horizontally oscillating arm, thoroughly blast the parts. To increase the versatility of this cabinet, two external operator stations are available for manual blasting or touch-up. The cabinet and key wear components are rubber-lined for use with ALOX.

With the combined savings on labor and abrasive and the increased productivity, the company was able to justify the capital expenditure for the automated cabinet.