

Emhart Teknologies shines the light on increasing throughput; Improves assembly efficiency for manufacturer of light fixtures.

Application:
Light Fixture Assembly

Challenge

A major lighting manufacturer enlisted the help of Emhart engineers to reduce the costs associated with assembling light fixtures, particularly the fastening method for mounting the light ballast. The procedure was a labor-intensive exercise using three separate parts. An operator was required to slide two T-studs through the length of an extrusion, align the ballast holes to the studs, and then secure with a nut. The time per ballast installation using this multi-step operation was on average 32 seconds.

Customer Requirements

- Reduce production costs
- Increased throughput
- Improved efficiency

Solutions

Emhart engineers implemented the use of a custom POP® rivet instead of the T stud (Figure A). A specially designed open-end POP® rivet produces a “Stud” (Figure B) which enables the ballast to be secured using a Warren® clip (Figure C). This is achieved by relocating the mandrel break point to provide a consistent “stud” upon installation. Using Emhart’s Popmatic® system, the operator simply points and sets the POP® rivet into position, aligns the ballast, and installs the clip.

Features & Benefits

- Installation time reduced from 32 seconds to less than 8 seconds
- 75% increase in productivity
- Installation can be achieved using Auto-feed POP® Point & Set® Riveting System
- 16% reduction in fastener cost
- Annual savings of \$38,000/year



Figure A



Figure B



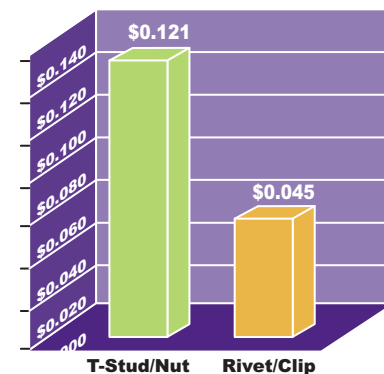
Figure C



Cost Benefit Analysis

PROJECT DATA	T-Stud	POP Rivet
Installation Time per Ballast	32 seconds	8 seconds
Total cost per installed fastener	.121	.045
Savings per unit		0.076

Total Installed Cost Comparison



Annual cost savings \$38,000