

CASE STUDY

Electronics and IT Industry
Material Selection, Process Integration
and Innovative Engineering



VERSATILITY TOOL WORKS



Final Product: IP Speaker
with LED Display



Original Enclosure with
PEM Fastener
- Welded and Painted

Improved Enclosure with
Tapped Holes
- No Welding or Painting

*Versatility's approach
is thorough and innovative.*

Their dedication and personal commitment have significantly improved the speed of prototype design and the quality of final products. Versatility incorporated new manufacturing processes that we were not aware of, thereby allowing us to more readily improve upon our products.

– Sean Lantz
Product Line Lead Engineer
Advanced Network Devices

QStep Reduces Cost 34% and Shortens Lead Time from 22 to 10 Days for AND's New Electronics Enclosure.

Advanced Network Devices (AND) designs and markets sophisticated multi-media products utilizing world class video and audio technology. As a pioneer and leader in PoE (Power over Ethernet) devices, AND's IP Speaker and IP Clock technologies are widely deployed in a variety of markets around the world. AND approached Versatility Tool about using QStep to improve cost and reduce delivery time for a low volume electronics enclosure.

CHALLENGES

- **Cost Control:** AND needed a cost-effective solution for low volume production requirements.
- **Reduce Lead Time:** AND's products are often used in new construction projects where customers demand quick delivery to avoid impacting build schedules.

QStep SOLUTIONS

- **Discovery:** The original design was welded, painted, and had a long delivery time. QStep engineers met with AND to review product application, exact design requirements, and desired price point.
- **Engineering Engagement:** VTW recommended innovative design changes and submitted virtual 3D prototypes for AND's review. Design changes included:
 - A material change from raw carbon steel (requiring post fabrication finishing) to prefinished electro galvanized steel.
 - A mechanical "snap together" fastening system designed to hold the enclosure together which eliminated the secondary welding operation.
- **Tooling Experts:** VTW tooling engineers designed and tested a "snap together" shear form feature. After AND approval, the feature was incorporated into the final design.
- **Fabrication Technology:** Versatility's advanced manufacturing technology eliminated the need for downstream operations combining laser, punching, forming, and tapping into the blanking operation.
- **Fulfillment:** VTW delivered the enclosures using Just In Time (JIT) concepts allowing AND to hold no inventory and further shorten delivery time.

RESULTS

- **Flush Mount Enclosure**

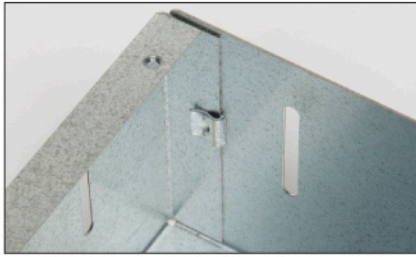
SOLUTION	RESULT	POSITIVE IMPACT		
		Quality	Cost	Lead Time
Material Change	Eliminated Welding and Finishing	✓	✓	✓
Process Integration	Reduced Secondary Operations		✓	✓
Shear Form Feature	Eliminated Welding Operation		✓	✓
Material Gauge Change	Reduced Usage		✓	

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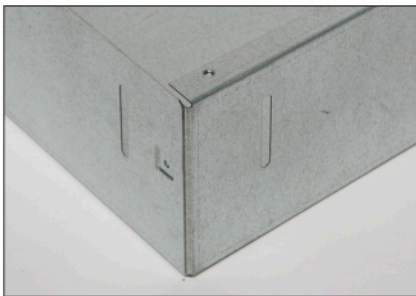
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Snap Together Redesign



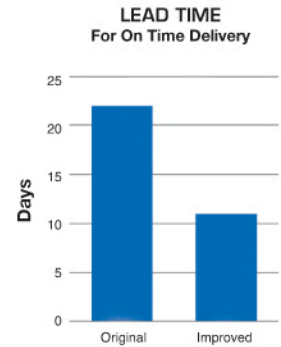
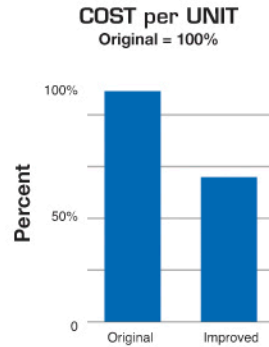
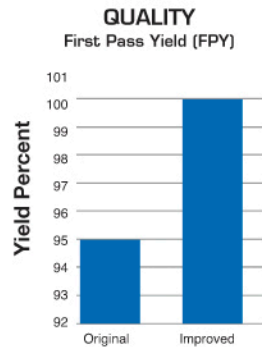
Shear Form Feature



Done in One Fabrication, Tapping Performed
on Versatility's Laser Turret

BUSINESS VALUE and BENEFITS

- **Quality:** First Pass Yield Quality improved to 99%.
- **Cost:** Unit Cost was lowered over 34%.
- **Lead Time:** Delivery time was compressed from 22 days to 10 days, a 54% reduction.



SUMMARY

VTW developed a snap together enclosure design that did not require painting, welding or hardware insertion. The improved design was fabricated from galvanized material and added an innovative shear form feature.

The new enclosure is formed in the Press Brake and snaps together, eliminating the entire welding secondary operation. Utilizing VTW's advanced manufacturing capabilities, holes were extruded and tapped during the blanking process, eliminating hardware insertion (PEM Fasteners), another secondary operation.

The new enclosure met all of AND's exact design requirements while significantly reducing cost, delivery time, and improving quality.

VTW's QStep® Process



QStep is Versatility's trademarked collaboration process which engages the customer from project conception through ongoing fulfillment operations. The process has a demonstrated history of adding value to our customer relationships by positively impacting quality, cost, product performance, delivery and lead time. The Qstep Process incorporates Versatility's engineering expertise and experience, cutting-edge design capabilities and advanced manufacturing technology. QStep provides our customers with a clear, competitive advantage.

*Call Versatility Tool Works today
for a no obligation QStep Review of your problem project!*



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