



Delivering Results

Case Study: Client C

Client Relationship Development

Situation:

This manufacturer of transformers and related systems initially performed all associated processes – including fabrication – in-house. In time, however, the company experienced such a rapid surge in growth that it needed to decide how to best allocate its capital and other resources.

Objectives:

- Free up capital to pursue its core competencies, i.e., the development and manufacture of transformers and related control systems
- Increase floor space to accommodate production growth
- Expand fabrication capabilities to match associated growth in core product lines
- Fabricate customized products in a timely manner

Challenges:

- In-house fabricating equipment was tying up capital and space needed to pursue more lucrative business
- While drawings were excellent, they often did not reflect subsequent modifications
- Many projects required a certain amount of customization
- Lead times were generally short, an average of 3-4 weeks

Strategies and Solutions:

- KMI demonstrated that it had the expertise, capacity, and quality systems in place, which would allow the sale of all equipment used for fabricating
- Drawings that were in paper form only were redrawn using CAD integrating all revisions to date, and returned to client reflecting “as built” status
- KMI filled a void in fabrication expertise by providing input early in design stages

ROI:

- Immediate infusion of cash through the sale of equipment
- 15,000 square feet opened up for the production of more lucrative product lines
- Early input in the design phase reduced fixed costs while increasing quality. Client realized average savings of 10% per unit
- KMI's design input also resulted in a reduction in the number of parts, and improved assembly times resulting in additional cost and cycle time savings
- Close coordination with Client C drafting department resulted in shared economies, reduced drafting time on both ends and allowed quicker cycle time to production. This reduced overall lead-time, improved quality, reduced quality checking and took cost out of the process at both companies. By sharing AutoCAD macros-reduced design time as well as fabrication time

Delivering Results

Case Study: Client C *continued*

The following projects represent just a few examples of how KMI continues to provide significant ROI to Client C

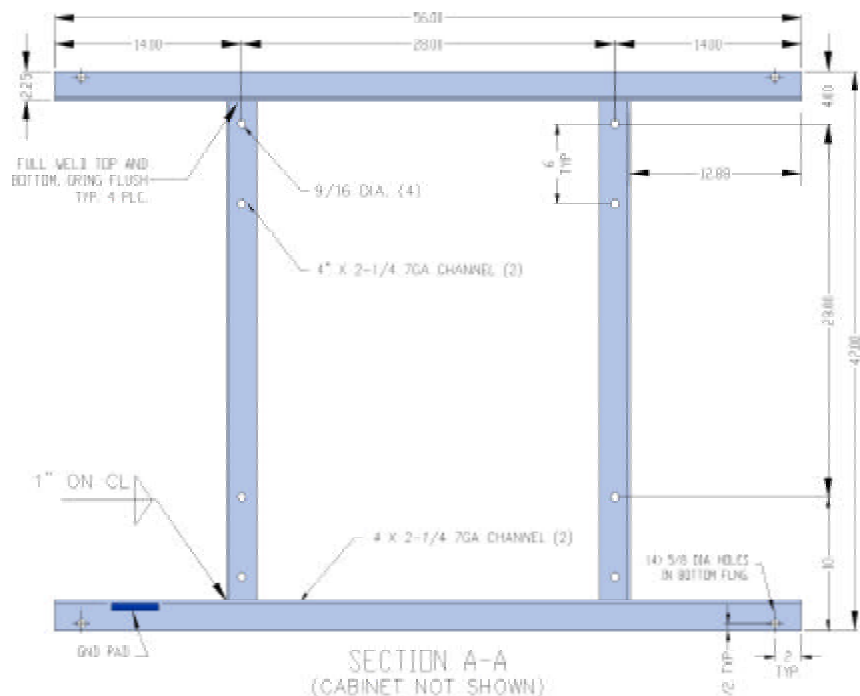
Project I

Situation:

As originally designed, this 90 X 56 X 42 enclosure with base required a tedious, time consuming, and expensive fabrication process. This enclosure was presented on 2 very busy and detailed D-size drawings along with numerous supplementary details, the device layouts, mounting studs, and components were nothing short of labor intensive to fabricate, QC, and assure all was built per print. A hand cut and drilled structural steel base, structural lifting supports, lifting eyes, hinges, and lots of corner welded and ground joints all drove the cost of this unit to a nearly un-competitive level for Client C's market.

Objectives:

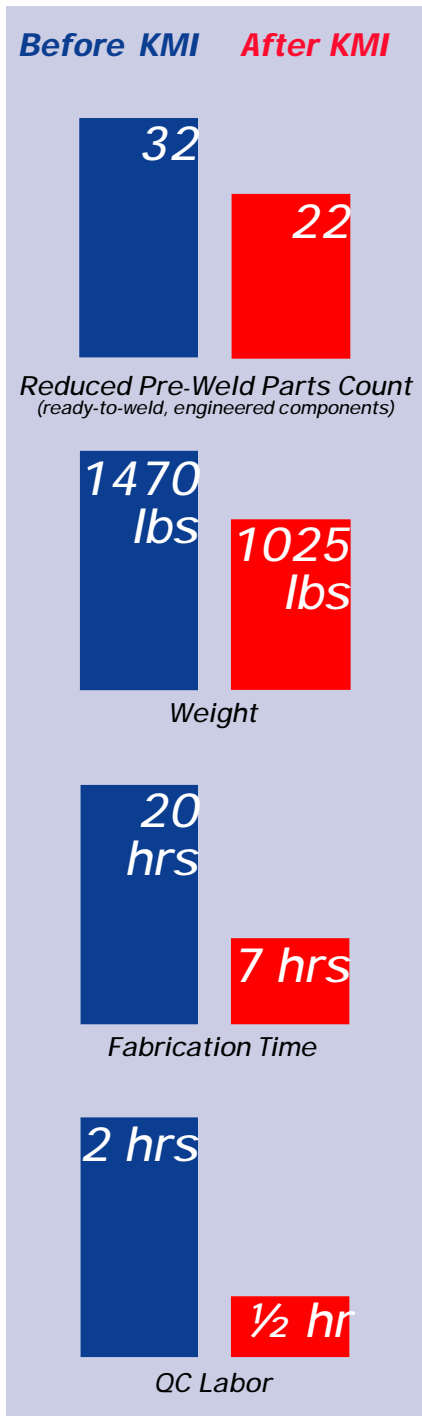
- Simplify Construction to reduce cost
- Eliminate inconsistency in the fabrication by changing design and construction methods
- Maintain or improve aesthetics
- Improve cycle time from 5-6 weeks to 4 weeks, sometimes less





Delivering Results

Case Study: Client C *continued*



Challenges:

- Maintaining Nema integrity with major design change
- Reduce total product weight while maintaining structural capacity
- Improve part design and reduce part count in order to speed fabrication process

Strategies and Solutions:

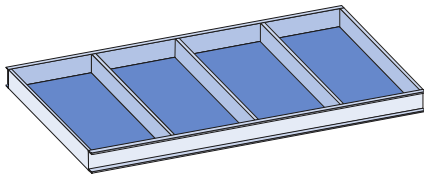
- Designed a self jiggging fabrication which reduced fabrication and QC time
- Replaced weld on hinges with a precision located bolt on design, allowing for easy door removal which saved assembly labor and made future door modification or replacement easy
- The Structural base was replaced with an engineered formed version that is now integrated into the cabinet body which eliminated all hand cut, drilled or notched parts
- All corner welding and grinding eliminated without sacrificing Nema integrity

ROI:

- Self jiggging construction and the elimination of corner welding and grinding reduced welding and QC labor by 70% and 75% respectively
- Electronic file sharing eliminated redundant drafting, assured accurate production and as-built history, saving 20-30 hours per project
- Pre-weld part count was reduced from 32 items to 22 ready to weld engineered components
- Unit cost reductions ranging from 15-30% depending on details of each project
- Unit Savings of \$400 to \$700 result in annual reduction of up to \$10,000
- Cycle time reduced as a result of coordinated drafting effort and time saving construction techniques.
- Other efficiencies and savings because of KMI's redesigns (see chart at left)

Delivering Results

Case Study: Client C *continued*



Project II

Situation:

The client had an expensive problem with rust and corrosion on a structural base for one of its transformers. The sheer weight of the transformer – 18,000 pounds – had always stalled efforts to use a more corrosion-resistant material due to the cost of structural materials made of stainless steel. KMI demonstrated that a base could be fabricated from stainless steel sheet that would support the transformer's weight.

Objectives:

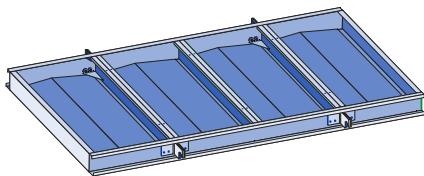
- Eliminate the rust problems caused by a design that trapped unpainted metal between the structural steel base and the cabinet, which surrounded the transformer
- Maintain or reduce the total weight of the base and enclosure
- Maintain or improve aesthetics
- Maintain if not reduce product cost
- Improve cycle time from 7-8 weeks to 5-6 weeks max

Challenges:

- Determining a cost effective way to eliminate rust potential
- Special materials or treated structurals added cycle time
- Base had to be capable of safely handling 18,000# load without deflection

Strategies and Solutions:

- KMI demonstrated that it was possible to design a base made of formed stainless steel sheet that could handle the payload without deflection
- The formed stainless steel base reduced total weight, reducing structural steel costs
- By designing the stainless base of formed material, holes and notches were made on a Programmable laser cut in advance of welding, significantly reducing fab labor
- New base did not need paint thus reducing cost and providing an attractive uniform appearance to the base



ROI:

- Stainless steel base eliminated unpainted material thus all but eliminating the potential for rust in the field
- Weight of the base reduced by 50%, total housing weight by 15%
- End customer satisfaction increased dramatically, through improved appearance and elimination of base maintenance
- Total project resulted in 10% price reduction with a 100% quality improvement
- Reduced cycle time by eliminating need for special purchased structural materials