

Delivering Results

Case Study: Client A

Client A focuses primarily on the development and application of power conversion solutions for process control. These include power supplies, drives and related products.

Over a period of 15 years, Client A, as well as many other KMI long-term established customers, have come to rely exclusively on KMI for its expertise in designing and fabricating small parts and enclosures. In turn, KMI has helped Client A solidify its position in the marketplace with products that are cost-effective, durable, aesthetically pleasing, and in compliance with government and industry standards.

Case in Point I

Product finish and material – especially paint – often have a direct impact on that product’s aesthetics, longevity and durability. With direct industry experience, KMI is able to recommend paint types and chemistries that will withstand environmental conditions and meet the end client’s performance specifications.

Case in Point II

Reducing the time to market is an important goal at Client A. As a result of joint DFMA activity the process for one transformer line was found to be extremely inefficient: the enclosure was being delivered to Client A by KMI, while the transformer (built by another supplier) had to be packaged and shipped separately. The transformer supplier separately packaged each transformer, taking great care to protect them from environmental and transportation damage. Client A unloaded the cabinets and transformers separately, stored them using twice the floor space, and then un-packaged both in order to install the transformer in the KMI cabinet. KMI devised and then implemented a program that saved Client A significant amounts of floor space, handling time and money. Now, KMI follows a weekly schedule whereby it ships enclosures on its own trucks directly to the transformer supplier, who loads the transformers into the cabinets, which are then picked up the following week also by KMI for delivery to Client A.

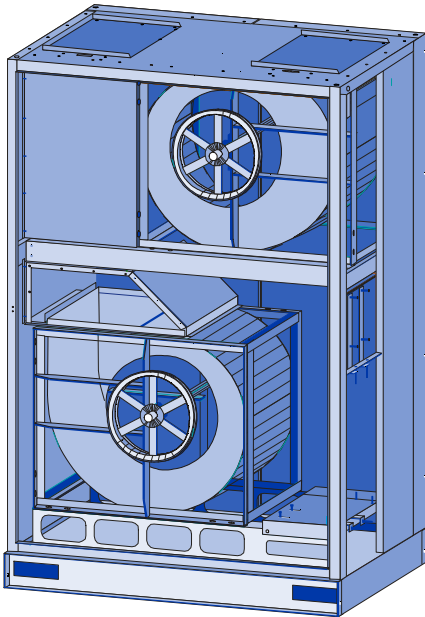
Not only has Client A realized tremendous savings in time and transportation costs, it has also saved by reducing unloading time, and plant floor space consumption by 50%. In addition, the crating cost previously associated with transporting the transformers was eliminated as well as the uncrating cost and packaging material disposal cost previously incurred by Client A.

**Client A
Improved
Information
Flow**



Delivering Results

Case Study: Client A *continued*



The following projects represent a few examples of how KMI consistently delivers a significant ROI to Client A.

Project I – Dual Blower Assembly

Situation:

This assembly involved a tedious, time-consuming process of placing two blowers within one enclosure – this process proved to be problematic both from an efficiency and ergonomic perspective.

Strategies:

KMI redesigned the unit so that the components could be assembled on a bench and dropped easily into pre-configured positions.

ROI:

- Turnkey assembly reduced assembly time by 50%, resulting in cost savings of \$35,000 per year

Project II – Enclosure Design for High Horsepower Drives

Situation:

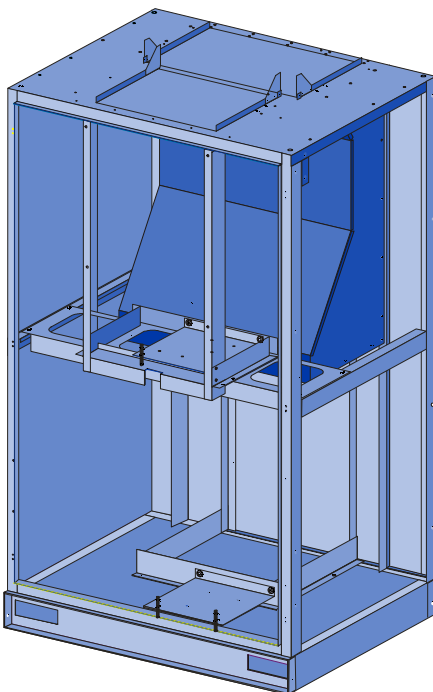
Client A designs resulted in various size enclosure bases for a line of high horsepower drives. The multiple sizes were needed because equipment weight increased as drive units increased in size. In addition, end-users differed in how they transported the drives: some used forklifts; some used sling lifts; and others needed to roll them on bars where height constraints existed.

Strategies:

Client A envisioned a lower cost enclosure with increased handling flexibility. KMI worked with Client A design engineers to develop a standardized base design that achieved the vision while designing in features to speed fabrication and assembly. The new base featured a compact footprint.

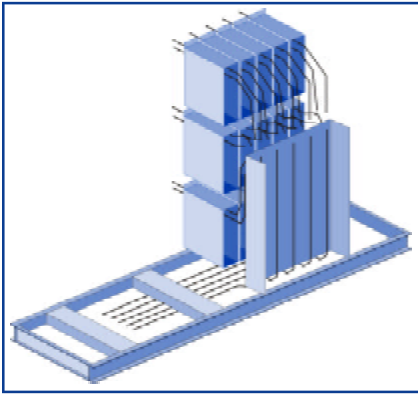
ROI:

- Elimination of structural steel reduced base cost by 40%
- Weight cut by 40% enhanced handling by end-users
- Turnkey design features reduced assembly labor at Client A by 25%
- Fabrication labor at KMI resulted in a reduced price, saving Client A \$20,000 in acquisition costs



Delivering Results

Case Study: Client A *continued*



Project III – On Site Project Management

Situation:

By enhancing the fabrication process, Client A is able to directly shorten the time to market for all of its product lines. While some products follow standard, long-standing specs, many involve a certain amount of customization to meet end-client requirements. Moreover, many changes occur “on the fly” during fabrication.

Objectives:

- Improve the manufacturability of all product lines
- Improve forecasting ability to deal with fluctuating demand
- Reduce lead times, especially for products that required customization

Challenges:

- Clients make frequent changes, often during the fabrication process
- Prototypes add to cost and time
- Previous changes made “on the fly” were often not documented on drawings

Strategies:

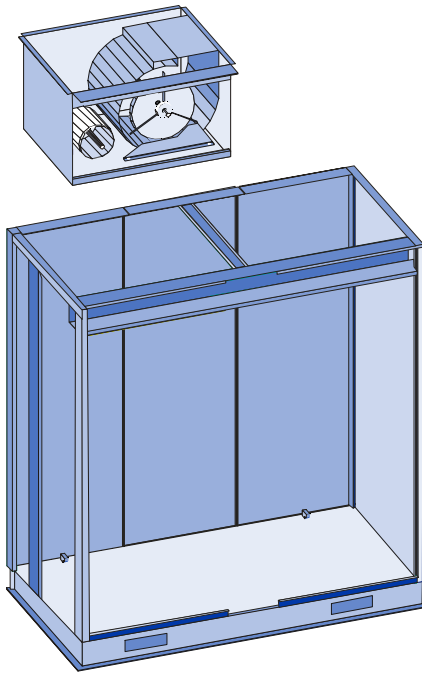
- KMI placed a full-time employee on-site to work with Client A’s design engineers and production, and supply management employees
- KMI is able to provide immediate guidance and solutions to problems as they arise
- Immediate response to changing specifications saves on lead times and associated costs
- Familiarity with a product’s ultimate fit and function enables KMI to recommend cost-effective design changes from the start

ROI:

- Enhanced daily productivity and minimized disruptions
- Reduced dependency on prototyping – majority of “one-offs” manufactured without any prototype at all
- Significantly shortened design cycle time
- Improved forecasting ability – Client A is better positioned to respond to extremely time-sensitive market demands
- Reduced lead times from 6-8 weeks to 3-5 weeks
- Reduced manpower in supply management department at Client A by offloading procurement and expediting responsibilities directly onto KMI

Delivering Results

Case Study: Client A *continued*



Project IV – Product Redesign to reduce cost

Situation:

Initial product designs for a 600 HP drive system resulted in a 5-cabinet lineup. The 5 units were all built, ordered, inventoried, transported, and assembled separately. Client A costs were significant across all disciplines, from purchasing and inventory control to production, storage and assembly.

Objectives:

- Reduce the number of cabinets needed in order to accomplish the same performance with fewer parts and cost
- Achieve a single unit configuration that could be assembled quickly, handled efficiently both at Client A and its customers' sites, and reduce overall space required
- Reduce assembly time for Client A personnel

Challenges:

- Design the unit for both top (eyebolt) and bottom lifting
- Configure all compartments within the unit such that the required airflow was maintained for cooling
- Doors and covers needed to achieve compliance with codes requiring special interlocking
- Base had to support up to a 12,000-lb. transformer while maintaining product balance upon completion

Strategies:

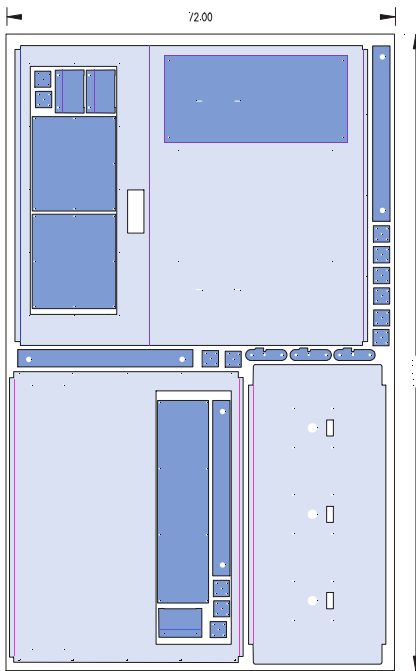
- KMI worked directly with Client A's Integrated Product Development department to understand basic requirements before offering solutions
- KMI designed special interlocking mechanisms that achieved specifications despite special door configuration requirements
- Airflow tests were actually performed at KMI with Project engineers present to witness
- Compact design was developed which maintained the “look and feel” of other Client A product lines

ROI:

- Single unit design resulted in savings of \$950 per unit or an average of over \$45,000 per year
- Reduced assembly time at Client A saved nearly \$10,000
- Part quantity reduction from 5 to 1 reduced acquisition, storage, inventory management costs for both companies

Delivering Results

Case Study: Client A *continued*



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Project V – Product Redesign to Reduce Cost

Situation:

Early in the KMI-Client A relationship, KMI began building cabinets for an AC drive, which was built in large quantities. Not far into the project, KMI was experiencing losses which were the result of poor material utilization, causing the presentation of two alternatives to Client A. The first was a significant price increase, the second a product redesign effort to reduce waste

Objectives:

- Improve the material utilization and therefore cost of the enclosure
- Avoid price increases while providing the same or better product performance and aesthetics
- Reduce assembly time for Client A personnel

Challenges:

- Units required a certain amount of door opening and equipment mounting space
- Overall size and configuration could not be changed drastically
- Large variety of options that was available made managing variables difficult for Client A drafting department and KMI production

Strategies:

- KMI developed a design that actually narrowed the enclosure, while maintaining total usable space
- The narrower unit resulted in nearly 100% material utilization
- Features previously provided as separate components were integrated into the fabrication saving assembly time both for Client A and for KMI, reducing total cost
- KMI designed a logical options program, which included a binder of drawings, and system structure matrixes that provided product-ordering guidelines that all but eliminated the need for drafting of modified enclosures by Client A

ROI:

- Material utilization improvement of over 30% allowed KMI to maintain price level
- Reduced assembly time at KMI resulted in a price reduction of \$25.00 per unit or over \$10,000 per year
- Reduced assembly time at Client A resulted in direct cost savings and increased throughput
- Eliminated drafting requirements at Client A saving thousands of dollars of direct cost each month