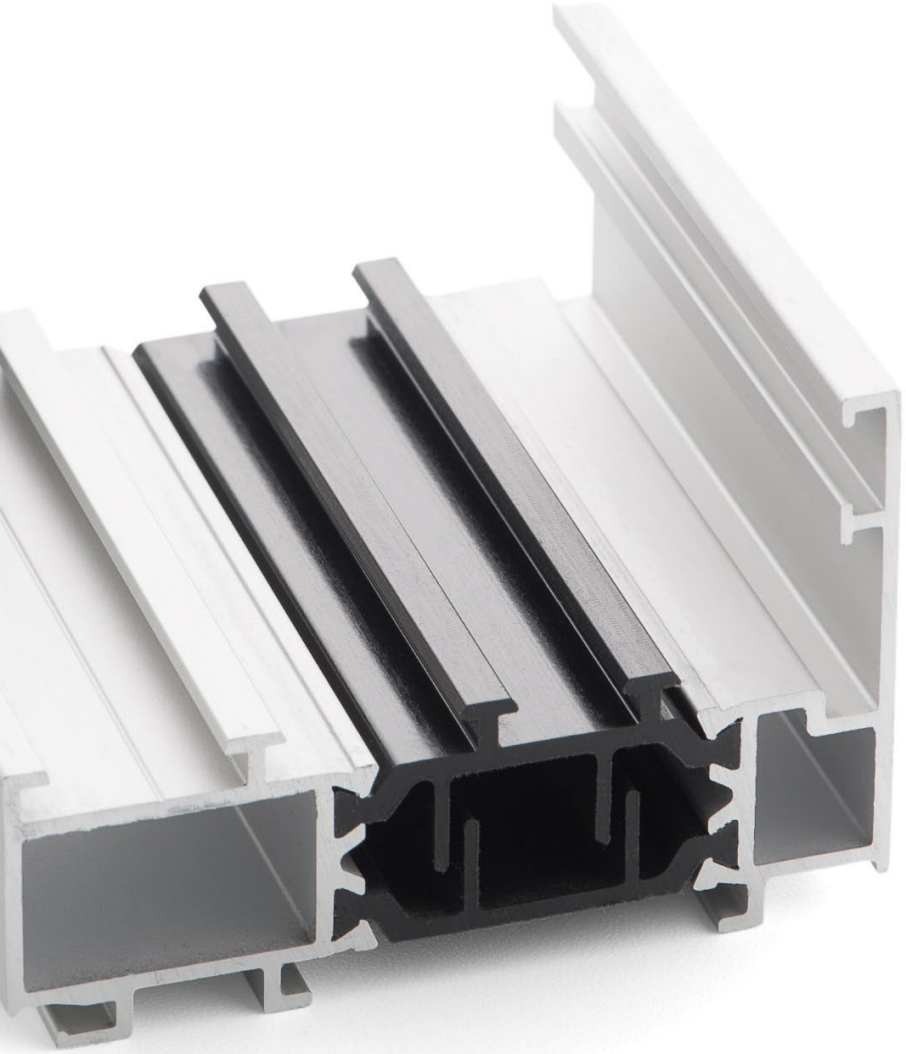
Product Manufacturing

5 Ways to Reduce Your Manufactured Product Costs

Momentum™ Manufacturing Group

Engineered Extrusions

Introduction



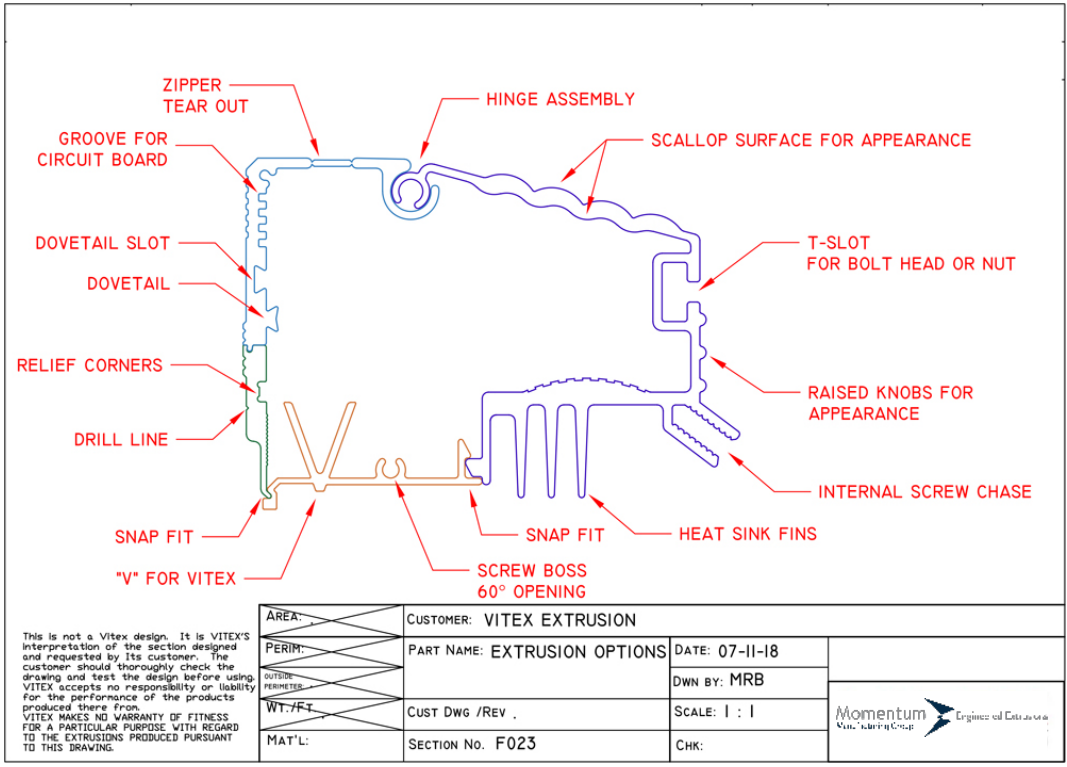
For many years, manufacturers have faced intense pressure to reduce their costs to be more competitive and profitable. Since the 1970s, businesses around the world have used outsourcing for functions unrelated to their core business, such as clerical, data processing, security and plant maintenance, to improve their bottom lines. Outsourcers can often do the work at a fraction of the cost of what companies spend to maintain themselves, helping fuel the growth of the outsourcing industry.

Today, many OEMs and product manufacturers prefer to focus on their core competencies—product research, design and sales—and leave production to the new specialists: contract manufacturers. Beyond the production cost savings, best-in-class contract manufacturers can help companies achieve enhanced results—and lower costs—by handling additional steps in the supply chain process.

Here are five ways you can lower your costs and improve your bottom line by working with a strategic manufacturing partner.

1. Design for Manufacturability

According to Design for Manufacturability & Concurrent Engineering, a product's design determines 80% its costs. Once this cost is locked in, it is difficult for manufacturing to remove it. This reality has led to the adoption of an improved design methodology: design for manufacturability.



Designing for manufacturability is the process of proactively designing products to (1) optimize all the manufacturing functions: fabrication, assembly, test, procurement, shipping, delivery, service, and repair, and (2) assure the best cost, quality, reliability, regulatory compliance, safety, time-to-market, and customer satisfaction. In short, it means to design a product with the creation process in mind.

Before the design for manufacturability method, design engineers worked independently or with other design engineers and maintained a point-of-view that

if their designs were not “manufacturing friendly” it was the manufacturer's problem to deal with. Often this extended the product launch timeline and dramatically increased the manufacturer's time to ramp up to full production.

Today, product manufacturers work closely with their contract manufacturers to prototype components and gather input on ways to improve performance and bring down costs. For example, if a product or part is to be manufactured from extruded aluminum, the design needs to be as production-friendly as possible to achieve optimum cost-efficiency. If you have the right aluminum extrusion manufacturing partner, they will review the design profile for:

- uniformity
- simple, soft lines and rounded corners
- profile symmetry
- circle size
- tongue ratios

Additionally, you can use this type of strategic collaboration to discover other areas to optimize, such as delivery, quality, reliability, ease of assembly, testability, and opportunities where standard profiles versus custom can be used.

2. Reduce Product Complexity

Complicated product designs and configurations produce complex development requirements. In turn, complex requirements often mean more steps and hands are involved in manufacturing a product and bringing it to market, greatly increasing the chance for error.

Elegantly simple designs—those with the fewest parts, interfaces and process steps— result in fundamentally high quality products that cost less to make. For example, an aluminum extrusion part originally designed to require machining could, with a minor design modification, be produced using a punch die to get the same end result. The part now uses a less expensive fabrication method and improved efficiency resulting in reduced cost and improved throughput.

Additionally, too often designers specify manufacturing tolerances (or accuracy) that are unachievable. This is because many designers are unfamiliar with how to determine a proper tolerance, often assigning tolerances arbitrarily or defaulting to a tighter than necessary tolerance. Tighter tolerances create longer production timelines, increase the cost of production and often cause issues with assembly and product quality.

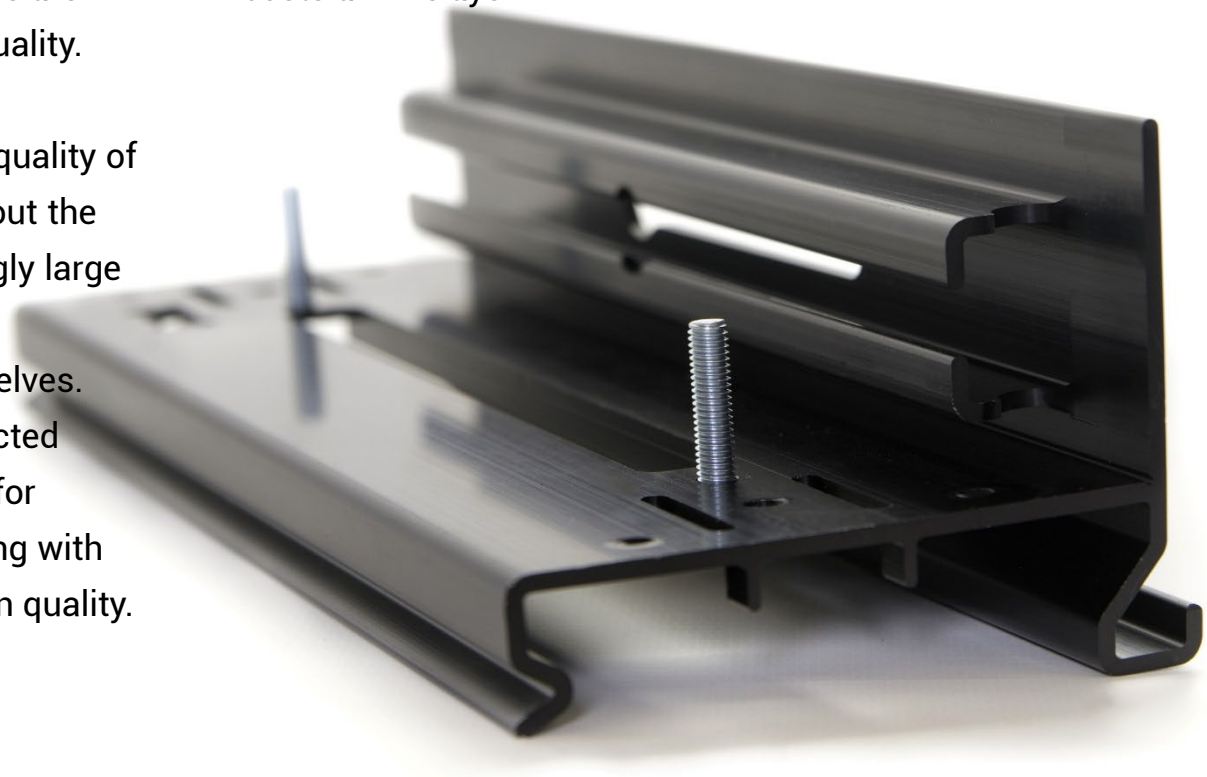
Including your manufacturing partner early in the design review process can help you set tolerance specifications that are realistic. Establishing tolerance limitations and directional build-up during the design review also improves a product's functional performance and may reduce the need for additional machining, which decreases production costs.

3. Reduce Poor Quality Costs

It is estimated the cost of poor quality can be 5% -30% of gross sales for a manufactured product. Dealing with customer complaints, refunds, returned goods, rework, re-qualifications/re-certifications costs, and overhead demands to sort out quality problems are just a few of the costs associated with poor quality.

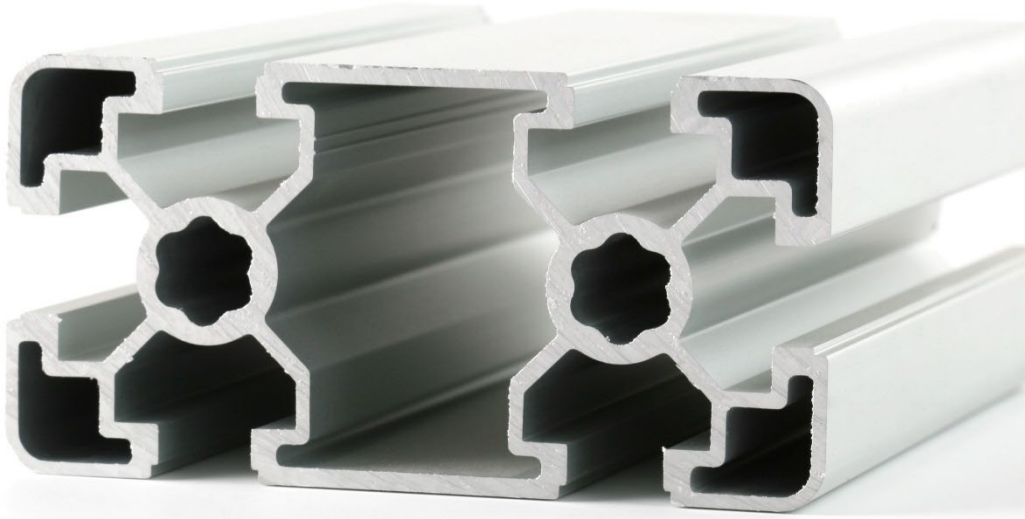
In order to produce high quality products, the quality of parts and materials must be assured throughout the entire supply chain. Unfortunately, an alarmingly large percentage of quality problems are caused by outsourced parts or the manufacturers themselves. This is often the case when suppliers are selected based on low-bidding instead of a reputation for quality production, and worsened when working with overseas suppliers that have differing views on quality.

Attempting to control the quality of outsourced production indirectly through specifications, which are usually too basic to assure all aspects of quality and reliability are met, often fails and adds more production costs and delays.



Leading manufacturers don't achieve quality simply by stating it as a core value; rather they implement a quality management system (QMS)—organizational processes, people, internal controls, resources, and goals focused on achieving customer requirements. Of all QMS systems, the ISO 9000 family of standards is the most widely implemented worldwide. Aluminum extrusion manufacturers committed to quality standards will implement and maintain an ISO 9001:2015 QMS.

To achieve consistent quality, a manufacturer will also invest in data-driven management information systems, real-time plant floor reporting systems, automated quality check systems, operational audits, and continuous training of its specialized staff. Engaging with a manufacturing partner with the proper QMS certification and one who invests in advanced technologies, continually maintains their equipment and has set quality assurance best practices in place will deliver consistent quality. Additionally, having your design engineers work closely with your manufacturing partner from the earliest design activities through development to product launch offers several advantages to improve product quality and reduce a product's cost.



4. Streamline Your Supply Process

Another costly component for product manufacturers is storing and managing inventory. Inventory consumes space, gets damaged, and over time, massive amounts of unused or obsolete inventory translate to waste and loss. The bottom line is that carrying surplus inventory costs organizations.

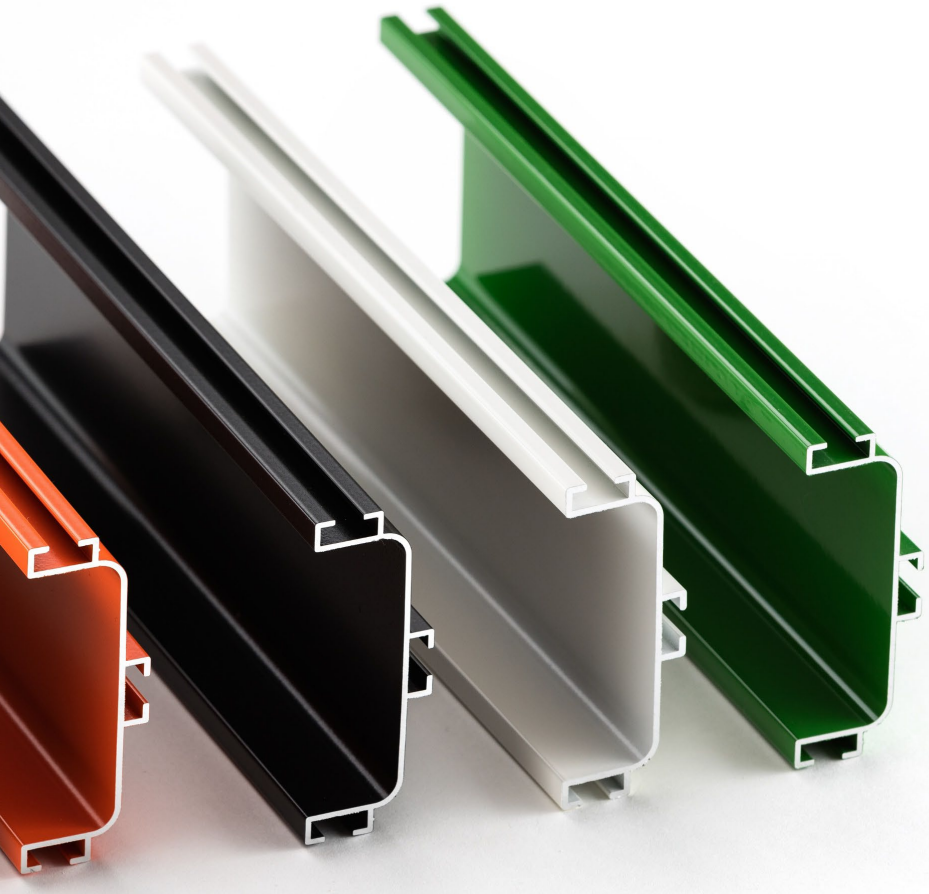
As a result, manufacturers are finding considerable cost savings and improved efficiencies by outsourcing their downstream supply chain functions. Since a contract manufacturer has more production capacity (the ability to produce more goods) than your company may have, it can respond to increased production requirements faster. Rather than making a capital investment in new equipment to increase your own production capacity—an investment that could sit idle if demand falls—you can partner with a manufacturer who can easily handle production volume changes.

A partner who offers a complete supply chain solution can also streamline many of your business operations by assuming partial or, in some cases, complete manufacturing responsibilities for specific components or product lines. This is achieved by designing a program that ensures parts are always available when needed. Programs your manufacturing partner may develop include:

- Custom, mechanical assembly systems
- Single, multi-level and configurable bill-of-materials (BOM) assemblies
- Customized kitting and component packaging
- Kanban programs

Additionally, working with a manufacturer who has invested in automation and advanced technologies will provide the most efficient and cost effective inventory replenishment programs.

5. Work With Fewer Partners



If you outsource some or all of your product or component production process, take a look at how many vendors are involved. While outsourcing can generate significant cost savings for product manufacturers, those savings are cut significantly when different production aspects or individual components of a product are outsourced to multiple suppliers. The more outsourcing partners involved, the greater the costs and production timeline.

Additionally, managing a complex web of suppliers can be challenging and time consuming. While the saying “don't put all your eggs in one basket" may hold true for some areas of business, it doesn't necessarily hold true for manufacturing. For example, product manufactures who use extruded aluminum products or parts may work with as many as three or four different vendors to produce a finished product. With each hand-off, overhead costs are incurred and the production timeline increased.

Instead of having different suppliers for each task, consider partnering with a manufacturer who offers a greater number of services, such as manufacturing expertise and value-added services like engineering and design assistance and fabrication processes, including machining, finishing, or welding. Additional savings can be achieved by selecting a manufacturer who has a vertically integrated supply-chain solution—provides assembly and supply solutions and strategic shipping.

Working with a contract manufacturer who can take on a greater role in the product creation and distribution process ultimately leads to fewer suppliers and greater time and cost savings.

Bottom Line

Faced with increased competition and rising customer expectations for faster response times and lower prices, product manufacturers need ways to reduce costs without jeopardizing product quality. By working with a best-in-class manufacturing partner—one that can collaborate with your design team, has quality controls and best practices in place, has a reputation for quality work, and can support your additional supply chain needs—you can improve your products, your processes and your bottom line.

Momentum Manufacturing Group Engineered Extrusions is a leading, fully integrated aluminum extrusion manufacturer serving the needs of system integrators, OEMs and product manufacturers since 1986. In addition to producing aluminum extrusions, we provide design support and prototyping, fabrication, machining and tooling, as well as parts assembly, packaging and supply chain solutions. Whether you need an extruded component, outsourcing of crucial parts or to launch a new product line, Vitex is the ideal partner, offering shorter lead times, consistent quality and exceptional service.

Contact us today about your next project. We have the best people, processes and machinery to meet the most demanding industry requirements, while delivering shorter lead-times and consistent quality for even the most complex extruded aluminum shapes.

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