

DESIGNING
WITH FASTENING
IN MIND



Checklist for Successful Product Development

Market Research Y

Viable Solution Y

Design Validation Y

Supply Chain Management Y

Consulted an Assembly Solution Expert N →



Problems derived by non-optimized assembly methods can jeopardize what would otherwise be a successful new product development. Inefficiency, underproduction, new component availability, downtime, and no-build conditions all threaten revenue and profits.

Far too often, the manufacturer will focus on the functional aspects of its product. As long as the product does what it is supposed to do, looks like it is supposed to look, and fits in a basic package, the design is deemed successful. Unfortunately, successful validation of new products manufactured via prototype or low volume production tooling can give the manufacturer a false sense of security. Collaboration with a fastener company can be valuable at any stage in the manufacturing cycle. However, consultation with the right fastener specialist early in the design cycle provides the best opportunity to optimize the assembly process. Unforeseen assembly issues can be avoided and overall cost can be reduced. The primary purpose of this paper is to define the benefits of collaboration with a customer focused fastener supplier.

Early Consultation is most beneficial

There are several benefits to involving fastener companies early in the design cycle.

It increases available options. The later the assembly method is selected in the design process, the fewer options the manufacturer will have. Companies may find they are limited to more expensive solutions, or will require a new fastener with expedited tooling costs. Product launch deadlines become jeopardized and total cost of ownership (TCO) escalates.

It raises the chances of finding a standard solution. Standard fastening solutions are the preferred option for a manufacturer. The earlier the collaboration with a fastener specialist occurs, the greater the chances they can offer design guidance to accommodate standard products. The specialist can recommend modifications to the design that would enable the manufacturer to avoid a customized solution, helping to save both time and money. If a custom solution is required, the earlier the consultation, the less likely fastener development will cause costly delays.

It allows for concurrent validation processes. For new developments, both product performance and assembly processes must be validated. Early consultation with a fastener specialist can position a manufacturer to be able to validate the assembly process concurrently with product performance, eliminating validation delays and leading to significant cost savings.

It optimizes the assembly method or process. A fastening specialist has the experience needed to determine if a better solution can be found. Design engineers may not be experienced in assessing the project from a fastening perspective and may overlook specific requirements that can negatively impact the assembly and production. A fastening specialist can also identify if there are problems in the planned assembly process, pinpointing potential areas for production bottlenecks or flawed processes that may lead to costly rework, and discover assembly tasks that may be difficult for the operator to perform.

Cultivation of a Strong Relationship - Extended Benefits

Design Consultations: Frequent consultations with a fastener supplier will improve the overall assembly health of the manufacturer. Both companies can share pertinent information about their respective industries. The fastener specialist can introduce new fasteners or joining technology. The manufacturer can advise on new industry requirements that may affect assembly methods. Together they can develop innovative fastening solutions.

The fastener specialist can review existing and new product designs to evaluate the planned attachments. Production samples can be offered to validate design. If possible, the consultant will help the manufacturer find a way to make simple modifications to existing fasteners fit its production process. Frequent consultations allow the fastener specialist to anticipate the manufacturers fastening needs.

Continuous Improvement: The fastener specialist is frequently invited to evaluate existing assembly processes by walking the manufacturer's production line. Upon completion, alternative assembly methods are recommended and its implementation strategies are discussed.

Best Practices: One of the most valuable outcomes of working with a fastener manufacturer is the creation of best practices. By identifying products or assembly methods that work best for their assembly requirements, manufacturers can make them a standard for future designs. Even across different product lines, assembly methods can be standardized. Best practices for fastening and assembly can lower costs, cut assembly time, and reduce inventories for the manufacturer.

Training and Resources: The fastener company can provide training and resources to raise awareness that designing with fastening in mind can lead to positive benefits for the company. Topics of training include part function, demonstrations, benefits of each part and selection criteria.

Conclusion

Proactive thinking with regard to design solutions can protect a company's speed to market, boost efficiencies, reduce costs and establish best practices for the design and manufacturing processes. It can also lower the total cost of ownership (TCO) for customers, and provide manufacturers with a solid edge over their competition.

About ARaymond Tinnerman

ARaymond Tinnerman, part of the ARaymond Network, is a global supplier of fastening solutions. The company collaborates with its industrial customers on a day-to-day basis, combining its technical expertise with the customer's market sector skills to enable the development of customized solutions within long-term partnerships. Engineers analyze the production lines, identify potential areas of improvement, and propose solutions to simplify the processes and cut costs. This strategy of collaboration is at the source of the major innovations or improvements that target one essential objective: the reduction of the total cost of ownership.

ARaymond's standard product portfolio includes stamped metal fasteners, plastic fasteners and molded wire and cable management systems. ARaymond has equipped 220 engineers, located at 12 R&D centers, with the latest design software, in house SLA modeling and fast prototyping capabilities. Collectively, these resources provide the capability to design innovative products to meet application needs.