

Outsourcing Magnetic Assembly Manufacturing in China: The Challenges and Pitfalls

Rising costs in the US is forcing companies to outsource the production of magnetic assemblies abroad, mostly to China. Although considerable savings are achievable, US companies face numerous difficulties outsourcing this critical function.

The Chinese manufacturing culture poses many challenges besides from language barriers. US companies face strong cultural resistance to accepted practices in the West. Despite China's strides towards adopting Western manufacturing standards in principle, implementation on the factory floor may be vastly different in practice. We'll review 10 key areas affected by this cultural challenge. We'll dissect the thought processes behind the underlying principles that govern how and why manufacturers operate the way they do. Finally, we'll review selection criteria that can be critical to finding the right assembly partner in China.

Pitfalls of Outsourcing

Outsourcing magnetic assemblies in China is fraught with danger. We have identified ten common problem areas experienced by US companies.

- **Inconsistent materials:** The availability of raw materials and parts in China that match US specifications is sometimes limited and most manufacturers lack a true sourcing expert on materials. The result is that a factory could buy steel or screws from three different companies on three separate occasions with no conformity or consistency in the material specifications or quality.

- **Obtaining Certification:** While it is a standard practice in the US, trying to obtain materials certification to check for conformity is akin to extracting teeth from a spitting cobra (while it is spitting). In fact, most certification (MSDS, material properties, RoHs, ISO standards) is difficult to obtain because many manufacturers do not even deem it necessary to have material or parts traceability. Some manufacturers go as far as to fabricate whatever certification is required after-the-fact.

- **Third Party Suppliers:** The underlying root cause of the first two problems is often the undeclared use of third parties who provide key parts. Culturally, it is acceptable for a manufacturer, distributor or even broker to claim they own the manufacturing facility even if multiple third parties are involved. Reliance on sourcing through third party companies is seen as a weakness, allowing the manufacturer to be bypassed completely. Therefore, few manufacturers will own up to this fact. The result is that traceability and consistency of the parts is often impossible guarantee.

- **Quality Control Inconsistency:** Quality Control through the entire production process is a mandatory requirement in the US. However, Quality Control is often defined as only those aspects a factory directly touches upon: any part the factory does not directly make is someone else's Quality Control problem. This means that often incoming parts are not checked because it is assumed they should be correct. Subsequently, incoming parts may carry minute errors into the next production phase. Like an oil tanker veering off course at the start of its journey by a mere half degree, the end product amplifies an undetected error that is now larger by orders of magnitude.

- **Implementing Standards:** While many manufacturers seek to obtain formal certification, such as ISO9000 or TS16949, most manufacturers pay mere lip service to the real world implementation of these standards on the factory floor. Certified documentation will fill the office shelves but adherence to the documented standards in practice is followed only by the elite manufacturers in China.

- **Inadequate Testing and Inspection:** The term "inspection" mostly refers to a visual look-over just before products are packaged. Good manufacturers will perform sampled dimensional measurement checks. Testing is a more formal process of checking performance of properties. Unless the customer clearly stipulates the actual test conditions and inspection reporting requirements, only the minimum conditions will be tested. Test records and inspection reports are often not even maintained for future traceability. Inspection is sometimes considered to be the only Quality Control process needed.

- **Poor Deliverables:** Because shipping is considered part of the packaging process, not the production process, it is often classified as a pure cost function and therefore, receives minimal attention. Chinese factories are unaccustomed to shipping metrics being applied to deliverables and hence, meeting agreed delivery schedules and production lead times is regarded as less important than manufacturing the product.

- **Advanced Warnings:** Manufacturers consider production problems or delivery delays as bad news which should not be communicated voluntarily. Unless the customer pursues a delivery or production delay, updates are not forthcoming. Lack of advanced warnings or customer problem alerts are still the biggest communication downfall for US customers in China.

- **Customer Aftercare:** Lack of post-production customer service is commonplace among Chinese factories. Once the product is manufactured and shipped, any future problems resulting from product failure become an exercise in find-

ing a scapegoat; poor materials from third party suppliers, damage during shipping, unclear customer specifications, unconfirmed change orders and fixing unforeseeable design problems. Basic accountability is non-existent. Locating live customer service during normal US office hours is impossible. Seeking responsiveness to resolve a dissatisfactory product issue is extraordinarily difficult at best.

- **Product Guarantee Policies:** Addressing warranties and product recalls is the most difficult aspect of working with Chinese manufacturers. Money-back guarantees or refunds do not exist as a concept in manufacturing. At best, some manufacturers are willing to rework the product if they have not received full payment for the product. Almost none are willing to agree to a product warranty, in writing. Product recalls are almost unheard of except by the top companies. Understand your manufacturer's product guarantee policy and the extent of how far they will go to make amends. The customer is not always right in China.

The Cultural Paradigm

The Chinese manufacturing industry culture is summed up in four phrases: no problem; promise now, worry later; the customer did not complain; and communicate only the good news. As a consequence, all product quality and delivery problems that ensue can be tied back to one of this four thought processes.

- **No Problem Syndrome:** Nothing is ever a problem to Chinese factories because quoting a project is based on inexact costing. Some factories can quote outrageously low prices without ever considering the true costs to manufacture a product or the necessary experience to do the job. It is the lack of planning and formal project analysis that leads to the No Problem Syndrome (NPS). Thoroughly analyzing and costing a project is time-consuming and regarded as a wasted of resources before the project is awarded or the PO issued. Hence, poor planning eventually leads to discovery of many unforeseen problems and new costs that undermine the final profitability of the project. Be cautious of low-bidders. Beware of companies exhibiting NPS.

- **Promise Now, Worry Later:** The adage "know your limitations" is accepted by good companies who know their limitations. They avoid projects they do not have sufficient expertise in, or will communicate this fact with customers. In China, nothing is impossible (refer to NPS) because if you run into production problems, you simply throw manpower at it. If that fails, ask for more money from the customer to buy the experience to solve the problem. If all

else fails, treat the customer as a one-time transaction and move on to a new customer. Do not return calls.

- **The Customer did not Complain:** Factories in China are mostly reactionary in nature. They react to problems and focus on pricing. They are not proactive in seeking to prevent future problems by emphasizing quality. These manufacturers will repeatedly experience production and delivery problems; knowingly use inferior materials; not perform Quality Control on third party supplied parts; apply inadequate testing and inspection procedures; constantly underbid on projects; the list goes on. Most key to their thought process is that if the customer never complained about their product, anything they do is deemed to have been accepted by the customer. The onus is on the customer to discover any non-conforming material and performance issues and bring it to the attention of the factory. The factory is not obliged to prove anything.

- **Communicate Only the Good News:** Culturally, lauding and broadcasting one's successes and capabilities is encouraged. Conversely, airing dirty laundry in public is taboo. Most manufacturers will rather wait for an irate customer to demand an update on late orders or delayed production deadlines than provide advanced warning to alert the customer of impending delays or problems. Delayed shipments will often not be communicated to the customer until well after the scheduled ship date. This reverse mindset towards communication is probably the single biggest cultural barrier to break.

Key Selection Criteria

The challenge of securing a capable magnetic assembly manufacturer involves understanding the manufacturing culture in China and having realistic expectations of your manufacturer. Know the major points of review

before committing to a manufacturer.

- China's manufacturing expertise lies in benchmarking and manpower, not creative design build or high precision engineering.
- Knowing the manufacturer's ability in sample and First Article prototyping versus mass production capability.
- Investing in factory audits, development and training of an assembly partner.
- Willingness to grade delivery performance through shipping metrics.
- Manufacturer responsiveness and availability to post-production problems.
- Understand manufacturer's policies towards warranties, customer service, reworking orders, product recalls and cancellations.

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