

10 Things Everybody Ought to Know About Custom Gearmotors



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A custom gearmotor is one that meets **your** particular application specifications. It has the correct mechanical and electrical interfaces, fits within the envelope available, meets your performance, maintenance, lifetime and aftermarket criteria while it also fits within your budget. There are many questions and considerations involved in specifying the correct gearmotor for your application. They run the gamut from AC or DC, single or three phase, PSC or split phase, PMDC or BLDC, TEFC or TENV, cord or flying leads, parallel shaft or right angle, stub or hollow shaft, keyed or splined, grease or oil lubrication, face or foot mount, just to mention a few! Determining your torque requirement, output speed, overhung load, duty cycle and environmental criteria all add up to a real design engineering challenge.

You could spend days perusing catalogs and web sites in search of just the standard product that meets your needs and your “needle in a haystack” search may still not reach a successful conclusion. Of course, if your requirement is for only one or two or a few dozen gearmotors annually and you have some design latitude that will allow you to specify a close, but “good enough”, standard product solution yours may be like thousands of other applications that can be fulfilled with an off-the-shelf, catalog gearmotor.

However, if you’re designing equipment that will likely require thousands or gearmotors per year then you should be working with a gearmotor supplier who can give you a truly custom solution that meets all your needs and for which you don’t have to pay extra for features or performance in excess of your engineered requirement.

To help you successfully specify and procure the best custom gearmotor solution, here are ten things you ought to know:

- 1) **Involve the Gearmotor Supplier Early in the Design Process**: To the extent that you engage your gearmotor supplier’s application engineers early in your design cycle, you will ensure that you meet all of your specifications as well as your budget target. Skilled and experienced gearmotor application engineers can literally save you months of time. If brought in early, they can understand, and possibly even help you design, your test protocol. The time and expense savings are significant if you are then able to avoid gearmotor iterations that may be required when you and the gearmotor supplier are not able to work together early in a team environment. A skilled gearmotor application engineer can also help improve your machine’s performance, lifetime and profitability based on what

he and his company have learned from thousands of other successful custom gearmotor applications.

- 2) **Expect Custom Engineered Samples in a Reasonably Short Timeframe:** It's not unusual to see "next day samples" touted in marketing materials. On reading the fine print, though, that only applies to a limited variety of standard, catalog products. If your application only requires slight modification to a standard item, such as shaft detail, cord or connector, gear ratio change, etc. it is not unreasonable to expect such prototypes can be turned around in a matter of a couple weeks or so. Changes to motor windings or designs, new gearheads, castings, or other truly custom solutions will take appropriately longer. However, a good gearmotor supplier will have the resources to significantly reduce leadtimes for prototypes. With today's rapid prototyping capabilities, it is no longer necessary to wait 16 weeks or more for a custom engineered gearmotor prototype.
- 3) **Can They Scale-Up to Meet Your Volume?:** If you are considering changing gearmotor suppliers on an existing high volume project, you need to know if they have a track record of successfully ramping up new, high volume business. They should also have the capability to quickly and effectively "reverse engineer" your existing gearmotor designs. A really good gearmotor supplier is capable of engineering and delivering more than a dozen different gearmotor models that a customer may require to replace his old supplier and ramp up to thousands of units per month production within just a couple of calendar quarters.
- 4) **Value-Added Capability Adds Value:** Your gearmotor supplier should be capable of working with you to provide more than just a gearmotor. Increasingly, companies are finding they can increase productivity, reduce inventories and facility requirements by working together with their gearmotor supplier to provide engineered sub-assemblies or assemblies. Your gearmotor supplier should be willing to work with you to supply your needs to level of value add you desire.
- 5) **Get to Know Your Gearmotor Supplier Team:** Your gearmotor supplier will be an important element in your company's supply chain and they should welcome a visit by you and your team. Take this opportunity to assess your gearmotor supplier's facilities, personnel and quality procedures. In addition to their sales and marketing executives, you want to get to know their engineering, operations and other key executives and managers who will become an important part of your own extended team.
- 6) **It's Your Specification and Your Business:** Your gearmotor supplier should be willing to enter into a nondisclosure agreement with your company to protect the confidentiality of your work. You'll find that the best gearmotor suppliers often dominate a particular market segment and continue to do so because of their discrete handling of confidential information while working for several competitors in a given market. In addition, the custom gearmotor specification you develop with your gearmotor supplier is your specification that is not to be offered to others in your market, nor to your customers in the aftermarket.
- 7) **Take Lead Time Out of the Picture:** A customer-focused gearmotor supplier should be able to work cooperatively and creatively with your supply chain team to develop processes that will ensure that product lead times become a non-issue for you by employing Kan-Bans and other systems.

- 8) **How Customer Continuity and Loyalty Play a Role:** You will probably want to do business with a gearmotor supplier that is not only well-established and respected, but also one that builds long-term customer relationships. Keeping customers over periods of five, ten or twenty-five years or more signifies not only the ongoing viability of the gearmotor supplier but also his commitment to continuous improvement and performance excellence. In today's business world, multinational companies expect long-term supplier relationships that offer ongoing productivity improvement and insulation from erratic commodity markets.
- 9) **The Benefits of an Expanding Product Portfolio:** While your short-term focus with a gearmotor supplier may be very well-defined and limited, you will undoubtedly want to align yourself with a supplier whose business model is based not only on performance excellence, but also an expanding portfolio of new products resulting from their own voice of the customer research. Such a gearmotor supplier is more likely to have the more sophisticated, energy efficient gearmotor solutions you may need for your own next generation products.
- 10) **You Deserve a Gearmotor Supplier Who Shows Appreciation and Expresses Thanks for Your Business:** The best customer and gearmotor supplier relationships are based on knowledge and understanding of each other's businesses. The gearmotor supplier should build a strong, personal relationship with the customer that fosters open creative and constructive dialogue that helps ensure long-term success for both parties. The customer should expect to be able to call on any member of the gearmotor supplier team to solicit input, discuss issues and work on joint projects without reluctance.

[Link to Bison Gear audio interview/podcast on this subject](#)