7 Factors When Sourcing Your Medical Enclosure

Precision Sheet Metal Fabrication = High Volume Forming Process

Manufacturers of medical diagnostic equipment are often pressed to find ways to keep the manufacturing cost of their equipment low. With hospitals, clinics and other medical facilities more cost-conscious than ever, equipment manufacturers may be tempted to be more sparing on the quality of the enclosure in which the electronics are housed. After all, it's the "guts" of the equipment that are most important, right?

Not necessarily. Trying to reduce production cost with the least expensive sheet metal fabrication may save on the per unit price. But any minor savings can evaporate quickly if that low-quality fabrication leads to production delays and missed deliveries. There are several reasons why opting for high quality, high precision sheet metal forming can result in improved sales for the product line, cost savings throughout the production process and more reliable delivery.

1. Medical equipment is often highly specialized

Medical equipment tends to be highly customized, featuring a unique form factor designed around specific components. Rarely will medical instrumentation fit in a standard square cabinet. Tight tolerances are often required to keep the design compact and aesthetically pleasing.

Such complex designs can place demands on sheet metal formers to adhere to tight tolerances to ensure that everything fits perfectly. An enclosure may require a number of operations to be carried out in series, and each be performed quickly and accurately.

Delivering finished pieces that are precisely formed time after time also requires a manufacturer that conforms to rigorous quality control standards. If a manufacturer falls short, an unacceptably high failure rate, additional production runs or missed deliveries may result.

2. Meticulous engineering required inside and out

Medical device design typically requires integrating a number of complex elements: electronics, controls, wiring, and hardware must all work together seamlessly. That means medical devices benefit greatly from a focus on high-quality metal forming and design that allows for quick, trouble-free assembly, and easy maintenance, cleaning and repair. Using inferior materials or manufacturing methods when a rigorous approach is so vital can put entire production schedules at risk.

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3. Medical devices often have to take a beating

Some medical devices enjoy a quiet existence and never leave the lab. Others, however, must be able to take a beating. After all, they don't call them "crash carts" for nothing. Mobile medical equipment can be subjected to bumper car-like conditions in crowded hospital rooms and busy hallways, pushed by people in a hurry. Combine this with sensitive electronics and you have a recipe for a lot of potential downtime. Those who buy equipment for medical and clinical settings are aware of these challenges and look for devices that they feel will be highly dependable and offer a long service life despite tough conditions. Higher quality manufacturing methods can be an advantage here. Higher end sheet metal fabricators can work comfortably with high strength materials like cold rolled steel or stainless steel without sacrificing rapid, accurate production.

4. The right finish offers better appearance and usability

Hand-in-hand with durability is the type of coating used on medical equipment. Medical devices must hold up to repeated cleaning and scrubbing as well as not-always-gentle handling. Selecting the correct finish is an important part of medical equipment design, and precision metal formers can help you choose the powder coat, plating or another finish that can be applied consistently and accurately.

5. High volumes stress the supply chain

All the challenges associated with manufacturing medical equipment are amplified by high volumes and compressed production schedules. Any weaknesses in the production process can lead to delays and backlogs. You'll want to work with a metal fabricator that can handle such stresses, and can work with high strength materials without sacrificing speed or accuracy. Look for a fabricator with extensive experience using automated robotic welding, automated laser cutting and automated finishing that can withstand high-volume production without a reduction in quality.

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6. Don't underestimate aesthetics

An important advantage of using high-quality materials that can be easily overlooked is their aesthetic appeal. When you're in the market for a new car, you want a vehicle with a deep rich paint finish, close tolerances on the trim pieces, and doors that close with a solid, satisfying thump. That's because these details indicate high-quality engineering, design, and construction throughout. Medical equipment buyers are the same. They want to be reassured that the equipment they buy will perform well, without issues, for years. Higher quality construction materials and production processes help deliver that peace of mind, and, for very little additional per unit cost, boost the attractiveness of your product to potential buyers.

7. Higher quality = lower risk and lower cost

There are applications where the least expensive option makes the most sense from a production standpoint. However, medical equipment often requires parts that must be made according to exacting standards that are durable and perform dependably. By using lower grade materials or fabrication techniques, manufacturers trying to save a small percentage per unit may increase the chances of production delays and missed delivery deadlines. In such cases, opting for higher quality parts can actually be much cheaper over the long run by ensuring trouble-free, accurate assembly and on-time delivery.