

Industry SPOTLIGHT

Chicago White Metal



MEDICAL

The Medical Device Industry: Today

The medical industry is breaking through technological barriers at a rapid rate. This perpetual state of change has revolutionized the way the medical profession delivers healthcare. The way in which surgical procedures are done, replacement parts are made, medical data is obtained or analyzed, and various other aspects of healthcare is changing rapidly. As new ideas are developed and marketed, traditional methods are giving way to new approaches. All industries that are involved with the medical device market today have to be ready to adapt to this “moving target.” Project managers need to place more emphasis on shortening design and launch cycles so that products take advantage of the new technologies and get to market sooner.

While the medical manufacturing industry in general has made amazing technological advancements, the demand for these products also increases every year. The 2018 revenue projections are \$41 billion and continued strong growth of roughly 12% is anticipated so long as the supply can keep up with the demand.

The increasing demand is most likely due to the following factors:

- 1) More advanced and personalized treatment (i.e. portable oxygen concentrators, chemotherapy travel kits, heart monitors, etc.)
- 2) An increase in the availability of healthcare (healthcare insurance reform includes those with a pre-existing condition, covering certain items within their treatment)

3) An aging population

- 4) An increase in device recalls (urges medical manufacturers to proactively invest in additional testing and validation for parts)

Since devices are increasing in demand, the industry has many medium to higher volume applications, ideal for using high pressure die casting as an efficient, high quality solution. When searching for a die caster, it is important to select a company that has a certified quality management system in place and an approach that allows all engineering teams to work collaboratively on the part design.

Medical Device Manufacturing & Die Casting

Medical device manufacturers are now outsourcing services such as product design/development, regulatory consultation, product testing, product implementation, upgrade, and maintenance. Since product design is the most outsourced service of the medical device industry, it is important to get in touch with the engineering teams of various manufacturing processes to explore which method of production would be most suitable for your project.

The ideal process for product development should include collaboration with engineering along with a dedicated project manager or project team who will oversee the entire aspect of the planning and production of the parts. The Chicago White Metal (CWM) Engineering Team is a prime example of a die caster that gets involved during the concept stage where the best options for Design for Manufacturability (DFM) are determined.

A few of the questions that CWM asks early on are:

- 1) *How would this part design fit in the end product as a whole (the bigger picture)?*
- 2) *What are the requirements for the end product that need to meet the stringent medical standards and codes?*
- 3) *Depending on the medical product class and the part function, how will this affect or constrain design options for the potential die cast part?*

It will be vital to work with a die caster that has the experience and knowledge of manufacturing for the medical industry, and that will respond quickly to rapidly evolving design and regulatory changes.

Die casting can facilitate low volume (1,000) to high volume (1,000,000+) production, depending on project requirements. Zinc die casting is generally be used for parts that require tight tolerances and/or smaller parts. Magnesium is known for its lightweight properties and is increasingly being used in place of previously plastic parts. Aluminum is the most widely used die casting alloy and is lighter than zinc, but still maintains great tensile strength.

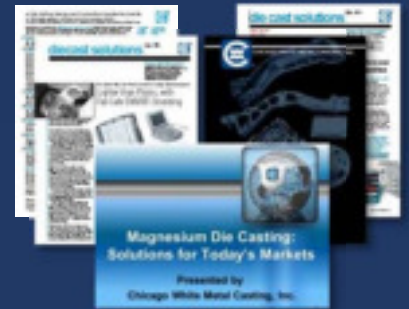
CWM is a team that has proven experience and success in die casting for the medical industry. There are several case studies available in the Die Cast Design Center (DC2), which is the leading FREE online resource library for die casting available today. The case studies below discuss a few of the many parts that we have produced.

The medical device industry has a rapidly increasing need for a high level of quality, manufacturability, efficient production and the ability to meet strict medical standards. Chicago White Metal is a die caster that has the capabilities to collaborate on design and quality and has the experience specifically within the medical industry to handle the increasing demand and the progress of medical innovation.

For more information, register for our DC2 and have access to over 90+ design aids and resources... all at no cost to you.

Die Casting Design Center

Browse through our "Magnesium" section for more white papers, webinars, case studies, guides, and many other resources!



www.cwmdiecast.com/design-center.html



MEDICAL



Case Studies

At CWM, we manufacture millions of medical parts across various industries, accounting for almost half of our overall sales each year.

Case Study #1

OXYGEN CONCENTRATOR MOTOR

The end product was a portable Oxygen Concentrator. Six different parts were used to encase the motor of the concentrator, which were required to be as lightweight as possible for optimal portability. CWM cast the parts using Magnesium AZ91D alloy and finished the parts in an e-coat finish for corrosion resistance.



Case Study #2

VITALS MONITOR HEATSINK

The end product was a health monitor with multi-departmental functionality within a medical setting. This heatsink part prevents the CPU from overheating, which will ultimately result in preventing malfunctions or faulty readings. CWM cast the parts using an Aluminum A380 alloy.



Case Study #3

INFANT WARMER LAMP HOUSING

The end product is a warming lamp for neonatal and birthing departments in a medical setting. The warming bulb maintains a comfortable temperature for the newborns. The cast part is a lamp housing made with an Aluminum A380 alloy and coated with a 24-karat gold surface finishing. The finished casting helps guarantee reflectance, protect the bulb and draw heat away from other internal components within the machine.



Case Study #4

HIGH-END DENTAL LED LIGHT PARTS

The end product is a high-end dental LED light, which is mounted to a base and is located above the patient chair to provide lighting for dental examinations and other related procedures. The back plate and rear driver castings are made from Magnesium AZ91D alloy due to its lightweight properties.