

Success Story

Kollmorgen and ReliantHeart Team Up to Produce Energy Efficient, Wireless LVAD

Brushless DC Stator optimizes Left Ventricular Assist Device (LVAD) for maximum efficiency and reduced power consumption

Challenge

ReliantHeart, Inc., an innovative supplier of advanced mechanical circulatory assist technologies, sought to advance Left Ventricular Assist Device (LVAD) technology by improving power efficiency of its drive system and charging components eliminating drivelines that exit the patient's body and attach to an external controller.

Solution

Kollmorgen and ReliantHeart partnered to co-engineer a custom energy efficient motor stator designed to cut the power consumption of the HeartAssist5® LVAD by 50%.

Energy efficiency is key to removing the driveline or external cable from an LVAD. Drivelines that exit the patient's body and attach to an external controller are the source of adverse events and infection. Driveline infections are one of the most serious complications associated with LVADs. This will also allow the LVAD to become a Transcutaneous Energy Transfer (TET) wireless device, with no wires exiting the body and an internal battery that can provide power to the patient for as much as four hours without recharging.



TET Controller

"The change in the manufacturing process to reduce power consumption of the HeartAssist5® has no adverse impact whatsoever on the blood path of the pump. It is startling how much the physics of motors has advanced in the last ten years and the output achieved by so little power," said ReliantHeart CEO Rodger Ford.

Kollmorgen and ReliantHeart's collaboration on the new HeartAssist5® utilized advanced material selection and motor design tools resulting in a state-of-the-art Custom Brushless DC (BLDC) stator design which is optimized for maximum efficiency, lower power consumption, smooth flow and increased longevity.

Tom S. Wood, Custom Motor Specialist at Kollmorgen stated: "Kollmorgen will continue to provide reliable, state-of-the-art implantable motor technology to ReliantHeart for their LVAD devices."

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Because Motion Matters™

FAST FACTS

Challenge:

Improve energy efficiency of Left Ventricular Assist Device (LVAD) to remove driveline preventing patient infection.

Solution:

Incorporate Custom Brushless DC Motor Stator in LVAD design.

Benefits:

- Reduced power consumption
- Provides battery power to patient up to four hours without charging
- Eliminates source of infection to patient

Have Similar Challenges and Want to See Real Results?

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About Kollmorgen

Kollmorgen is a leading provider of motion systems and components for machine builders around the globe, with over 70 years of motion control design and application expertise. Through world-class knowledge in motion, industry-leading quality and deep expertise in linking and integrating standard and custom products, Kollmorgen delivers breakthrough solutions unmatched in performance, reliability and ease-of-use, giving machine builders an irrefutable marketplace advantage.

For more information, visit kollmorgen.com, reliantheart.com email support@kollmorgen.com, or call Kollmorgen at 540-633-3545