HKP Motors, Gearboxes and Encoders provide the Motion Solutions Needed for Blood Collection and Transfusions

Blood transfusions are a critical component of healthcare, providing life-saving treatments for a variety of medical conditions. According to the World Health Organization, almost 120 million blood donations and approximately 100 million blood transfusions take place each year worldwide.

Many surgical procedures require blood transfusions to replace lost blood, to treat certain cancers, or to treat chronic conditions such as sickle cell disease and severe anemia. Transfusions would not be possible without safe and efficient blood collection.

The Need for Motion Solutions:

Blood collection can be optimized by using a single machine that can separate the blood components as they are drawn. Such a process requires multiple motors running at different operating points.

As blood can be separated, its components can also be combined before reintroducing it to the human body in procedures such as in blood component therapy. Using separate components provides added flexibility in therapy while ensuring quality and maintaining traceability of donor blood components.

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Application Challenges:

- Small size: several units are used in a single machine, so physical space is limited.
- Quiet operation: many procedures are done in hospitals or quiet rooms, so minimizing audible and electrical noise is important.
- Simple purchasing, installation and service.
- Serial number traceability: a standard practice in the medical device industry.

Typical Motion Solutions:

- Brush motor with helical gears for minimal audible noise.
- Integrated capacitors to reduce electrical noise.
- Short gearbox with custom output shaft for a precise fit.
- Encoder with custom wire harness to connect to the drive electronics.
- Terminal tab connection to motor.
- Custom part number for customer to track and control revisions.

HKP brush commutated DC motors have a wide range of frame sizes and magnetic technologies from 26 to 54mm diameter and power ratings up to 100 watts. These motors are designed to offer smooth low speeds, quiet operation and long life. Features include:

- Spur and Planetary gears
- Optical Encoders
- Fail Safe Brakes
- Fully customizable to any customer requirement

Encoders provide position and speed feedback for the moving parts of a machine collecting and processing a blood donation or transfusion. This feedback is important to ensure that machines are providing the highest levels of accuracy, productivity and efficiency. Feedback on the motion solutions is important not only to the healthcare providers, but also to the equipment providers that serve this industry.

In Conclusion:

Blood transfusions are a vital part of modern medicine, supporting various treatments and emergency interventions. With millions of transfusions performed each year globally, ensuring a safe and sufficient blood supply remains a top priority for healthcare systems worldwide.

The machines that collect and separate blood samples play an equally important role in the healthcare system, and companies like HKP continue to innovate to deliver efficient and reliable motion solutions for these machines.

For more information contact us today.

Headquarters
Haydon Kerk Motion Solutions, Inc
Haydon Products Division
1500 Meriden Road
Waterbury, CT 06705 USA

+1 800 243 2715 (Toll Free)
+1 203 756 8724 (Fax)
+1 203 756 7441 (International)
info.haydonkerk@ametek.com
www.HaydonKerkPittman.com

Locations
Waterbury, CT
Milford, NH
Harleysville, PA
New District, Changzhou, China
Jiuting, Shanghai, China
Bouguenais, France
Pegnitz, Germany
Bangalore, India
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