



Photo courtesy of United Imaging Healthcare.

Renishaw supports Shanghai United Imaging Healthcare with encoders to build world-class medical equipment

Case study: Medical and healthcare



Background:

Due to an ageing global population and the growing demand for early-stage diagnosis of chronic disease, the demand for medical/diagnostic imaging equipment and solutions has been increasing rapidly over the last decade



Challenge:

To identify highly accurate and reliable encoder products for high-performance computed tomography (CT) scanners



Solution:

RLS magnetic encoders provide accurate, stable and reliable position feedback for UIH's medical imaging equipment



RLS magnetic encoders provide accurate and reliable measurement that meets our manufacturing and cost requirements. During the difficult pandemic period, many suppliers' production capabilities were severely impacted.

Shanghai United Imaging Healthcare Co., Ltd. (China)





Over the last decade, demand for medical/diagnostic imaging equipment and solutions has been increasing rapidly. This is mainly due to an ageing global population and the growing demand for early-stage diagnosis of chronic disease. Medical imaging equipment, such as computed tomography (CT) scanning, is widely used to diagnose and analyse patients to generate a sequence of internal body images.

Shanghai United Imaging Healthcare Co., Ltd. (UIH) is committed to making the most innovative, advanced imaging technologies. With its long track record of dedicated research and development, UIH has achieved major innovation breakthroughs, introducing over 80 innovative high-end medical imaging and radiotherapy products. The company's products have been adopted by more than 9,200 clinical and scientific research institutions around the world, including the USA, Japan and Europe, as well as close to 900 hospitals in China.

In order to reinforce the accuracy, precision and high-speed performance of their CT scanners, UIH uses the magnetic encoders manufactured by RLS, an associate company of Renishaw. Sharing a similar corporate philosophy on innovation and manufacturing transformation as UIH, Renishaw invests significantly in research and development, providing encoders with best-in-class quality to meet its customers' requirements.



UIH's innovative technologies

In 2021, UIH released China's first ultra-high resolution 640-layer CT scanner, featuring 16 cm z-axis detector coverage, 0.25 second rotation speed, and an ultra-wide 82 cm bore. This scanner offered precise imaging and ease of use throughout the entire clinical application and started the new era of advanced intelligent.

Mr. Lu Yunlei, Vice President of UIH said: "Our uCT CT scanner series, incorporated with an imaging chain based on the revolutionary Z-Detector and the cutting-edge 5G and AI technologies, aims to offer customers a highly-efficient and automated workflow, crystal-clear image quality with low radiation dose and comprehensive applications. This ensures operational excellence and simplifies the clinical workflow."



RLS encoders meet the majority of industry standards



Mr. Lu Yunlei, Vice President, Shanghai United Imaging Healthcare Co., Ltd.

Benefits of RLS magnetic encoders

The manufacture of medical equipment is subject to extremely strict rules and regulations worldwide, including IEC60601-1, the standard for the basic safety and essential performance characteristics of medical electrical equipment. All components and materials used in such equipment have to comply with relevant international industry standards and certifications to prevent harm to the environment and in particular to the human body. Magnetic encoders, as one of the key components, must obtain a number of certifications including NRTL, ISO 9001, CE, RoHS, REACH, POPs and PWP, before they can be used in any medical device. Magnetic encoders are certified to most industry standards required in medical and healthcare technology, and provide robust and reliable capabilities to ensure high-level positioning accuracy for a medical system.

Mr. Lu explains the reason for selecting RLS magnetic encoders for UIH's CT scanners: "RLS magnetic encoders provide accurate and reliable measurement that meets our manufacturing and cost requirements. During the difficult pandemic period, many suppliers' production capabilities were severely impacted. Renishaw was also able to maintain an optimum stock level and lead time to fulfil our production needs even during the difficult pandemic period when the production capabilities of most of our suppliers were impacted. In addition, Renishaw always provides us with excellent pre-sales and after-sales service and support. We can turn to Renishaw's sales and engineering team with questions and needs, and they are always quick to provide advice, recommendations and solutions."



Solution

Shanghai United Imaging Healthcare Co., Ltd.

RLS magnetic encoders are well designed to meet the demanding medical industry. They offer precision positioning measurement for a wide range of applications: from robots for sample processing in laboratories, position adjustment of patient tables, to control of the rotational speed and position of the gantry of CT scanners and surgical robots. Available with rotary and linear options, RLS magnetic encoders offer numerous configurations that allow customers to choose from different communications protocols, sensor sizes and interfaces. Custom solutions are also offered, providing flexibility to meet any specific industry requirement.





Future industry trends

The medical imaging market in Asia Pacific is expected to grow at a fast pace, and China, with its large population base, is one of the key growth drivers. Mr. Lu commented: “With the improvements in the country’s overall economy, and enhanced living standards, China’s medical imaging industry is expected to expand significantly. With the Government’s direction on attracting strong research and development teams and investing in efficient technology, the development of the innovative technologies and premium imaging devices within the country is expected to be strong.”

About UIH

Shanghai United Imaging Healthcare Co., Ltd. Is dedicated to providing, developing and producing high-performance advanced medical imaging, radiotherapy equipment, life science instruments and offers intelligent digital solutions to customers worldwide. UIH is committed to creating more value for its customers and constantly improving the global accessibility of high-end medical equipment and services through in-depth cooperation with hospitals, universities, research institutions and industry partners. United’s innovative products have been adopted by more than 9,200 clinical and scientific research institutions in more than 50 countries and regions around the world, including the USA, Japan and Europe, as well as close to 900 hospitals in China.

*Extracted from data prior to August 25th, 2022.








For more information visit, www.renishaw.com/unitedimaging



Renishaw plc

New Mills, Wotton-under-Edge, Gloucestershire,
GL12 8JR, United Kingdom

 +44 (0) 1453 524524  +44 (0) 1453 524901  uk@renishaw.com

For worldwide contact details, visit  www.renishaw.com/contact

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