Application of Rotary & Linear Sensors in MRI

Magnetic Resonance Imaging (MRI) is a non-invasive imaging technology that produces three dimensional detailed anatomical images. It is often used for disease detection, diagnosis and treatment monitoring.

Working Principle:

MRI's employ powerful magnets which produce a strong magnetic field that forces protons in the body to align with that field. When a radiofrequency current is then pulsed through the patient, the protons are stimulated, and spin out of equilibrium, straining against the pull of the magnetic field. When the radiofrequency field is turned off, the MRI sensors (the tools that detect specific biological, chemical, or physical processes) are able to detect the energy released as the protons realign with the magnetic field. To obtain an MRI image, a patient is placed inside a large magnet and must remain very still during the imaging process in order not to blur the image. MRI scanners are particularly well suited to image the non-bony parts or soft tissues of the body. These devices used in the healthcare demand advanced technology for precise positioning and the precise positioning is achieved by using Rotary encoders as well as Linear sensors. As they are better in precision and have longer life, they are mainly used in critical position-detecting applications.

1. Rotary encoders for Angular Positioning of the Scanner

2. Linear Sensors for Horizontal Positioning of the Table

3. Rotary Encoders as well as Linear sensor's are used for Height Positioning of the Table

Rotary encoders for Angular
Positioning of the Scanner
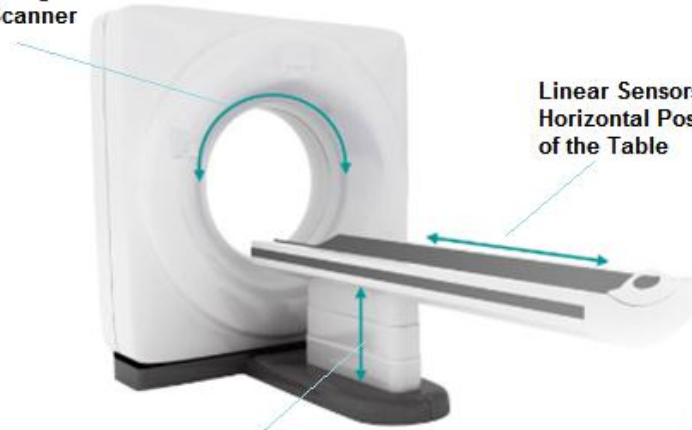
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