



Product

ERS-42 Spring-Set, Electrically Released Brake

Application

Standing Paraplegic Omni-direction Transport

Highlights

- Electrically released, spring-set brakes
- 84 in.lb. static torque rating
- Space saving compact, low profile design
- Spline drive for high torque, minimal backlash and long life

A team of UW-Madison engineering students were working on a design project to help a recently disabled orthopedic surgeon overcome his disabilities so that he could work again. The students contacted Warner Electric to request four ERS-42 spring-set, electrically released brakes which they needed to build a sophisticated, one-of-a-kind device that would enable the gifted physician to reclaim his career, and with it, his quality of life.

Gary Haasch, product and engineering manager at Warner Electric, decided to donate the brakes and contribute to the success of the project. "We were really impressed with what the students were trying to accomplish," Haasch said.

The SPOT (Standing Paraplegic Omni-directional Transport) device consists of a sit-to-stand frame mounted on a robotic base. SPOT's four mecanum wheels enable movement in any direction. Each wheel is powered by its own stepper motor, a Warner ERS-42 brake is mounted directly to each motor. The ERS-42 brakes were crucial to the success of SPOT, since movement of the device must be absolutely precise and stable. And, because the device is battery-powered, conservation of power was a primary consideration.

Warner's ERS-42 brakes are electrically-released, spring-set brakes widely used in personal mobility devices, and the UW team decided that they would be perfect for SPOT. The ERS-42 brakes provide both holding stability and emergency stopping capability. The compact, low profile design of the brakes help to minimize design footprints, as was critical with SPOT. The spline drive design of the brakes and their corrosion-resistant construction contribute to the reliability and durability of the brakes.

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