

A safer, more user-friendly wheelchair thanks to THK technology



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Our firm, Imasen Engineering Corporation, started out as the healthcare division of Imasen Electric Industrial, an automotive parts manufacturer; we became an independent corporation about 30 years ago. Imasen Engineering introduced the Model EMC-3, a groundbreaking electric wheelchair made in Japan, and since then has grown steadily while focusing on two areas: electric wheelchairs, in which our products make up 60% of the domestic market, and prosthetic limbs. A new Planning and Development Department has recently been created, and we're now developing a non-powered assisted-gait device and doing related clinical testing, which will be our third area of activity.

The people who use our wheelchairs are mainly people with disabilities. When you have to sit in the wheelchair for extended periods of time, it often becomes very difficult to shift your backside. If the weight of the upper body is concentrated on just one area of the backside, it can cause pressure sores, or bedsores. To prevent this, we provide wheelchairs equipped with a function that enables the entire chair to be tilted back at an angle.

To shift the pressure from the backside to the back, you have to be able to tilt back at an angle of at least 40 degrees. If the chair's center of gravity doesn't move, however, you're in danger of tipping over backward. For this reason our development team wanted to find a way to move the center of gravity forward only when the chair is tilted back, and THK's Model UGR Utility Slide enabled them to do so. By incorporating the UGR, they were able to arrange for the wheelchair's weight, ordinarily concentrated in the rear of the chair, to be redistributed in a forward direction as the seat slides forward, allowing the chair to tilt back without tipping. Previous models could only tilt up to 30 degrees, but the model equipped with the UGR can tilt back safely at a 40-degree angle. In combination with another function that enables the backrest to recline to a nearly horizontal position, this enables wheelchairs to be used much more comfort-

ably than before.

Incorporating slides to enable the center of gravity to shift forward also allowed the development team to reduce the chair's wheelbase by 5 centimeters and its turning radius by 10 centimeters, making it easier to maneuver in elevators and other tight spaces, which wheelchair users really appreciate.

THK's Model UGR Utility Slide was chosen because it's so sturdy and durable. It will stand up to a very heavy load—the chair itself will buckle before the UGR will. The threaded mounting component is especially well-made, which is very helpful. Our chair has been on the market for two years, but we've never had one returned due to a problem with the slide mechanism. The UGR is a very user-friendly product and a highly useful one.

In light of the rapid aging of Japan's population, Imasen Engineering intends to provide support not only for people with disabilities but also people coping with reduced mobility due to advancing age. In care-giving situations, for example, caregivers often suffer back problems incurred when they help people move from a bed to a wheelchair. To address this, our firm is developing a system to assist with this kind of transfer, and we're hoping that THK will show us some more helpful products to use in the new system. Through lots of mutual interaction and give and take, we expect to find more THK products that meet our needs, just as the UGR has done.



With tilt and recline functions both in use.



Normal position.