karma A Better Wheelchair, A Better Fit

Flexx Clinical Justification

Taller user

To accommodate the specific needs of taller users, this approach focuses on providing extended seat depth without increasing seat width to maintain proper lateral support.

Taller user requires a **longer seat depth** without a wider seat width.

2 positions of backrest height to tailor user performance.

- **510 mm** provides stability for users with less trunk control.
- **430 mm** allows users to self propel without backrest blocking scapula motion.

Accessory / Feature	Clinical Application for Amputation
Adjustable Seat Depth	Proper seat depth helps the user sit securely and comfortably by minimizing movement on the seat, which reduces pressure and shear forces. Fine-tuning using extension tubes can be performed to maintain approximately 2-3 finger-widths of clearance behind the popliteal fossa. This ensures the user's back remains in full contact with the backrest, avoids compression of the sensitive neurovascular structures in the popliteal region, keeps neutral pelvic alignment, and reduces the risk of the pelvis sliding forward.

Adjustable Seat-to-Floor Height	Adjusting seat height so the wheelchair is level with the bed or toilet surface (or slightly higher) achieves level transfers, substantially reducing the effort required during transfers. Adjusting seat height to match the home environment (e.g., kitchen counter, desk) better accommodates daily functional needs. Resolves environmental accessibility issues (Wheelchair users frequently encounter the problem of being unable to fit under tables.)
Adjustable Backrest Height	Raising the backrest height increases the support of the back, reducing muscular fatigue. This is particularly important for early-stage rehabilitation patients or frail elderly users.
Adjustable Backrest Angle	Slight recline utilizes gravity to rest the trunk against the backrest, reducing the force needed for trunk control, thereby reduce the risk of kyphosis and respiratory efficiency. Combined with seat angle adjustment, it effectively prevents anterior pelvic sliding. The Flexx HD offers 4-degree increment adjustments, enabling therapists or caregivers to precisely identify the optimal balance between stability and mobility. This ensures adequate spinal support (stability) while preserving the range of motion needed for upper extremity wheelchair propulsion (mobility) - particularly critical for users who rely on their upper limbs for activities of daily living (ADLs).
Adjustable Rear Wheel Axle	Repositioning the rear wheel axle posteriorly increases the wheelchair's base of support, significantly enhancing stability. This adjustment is critical for new wheelchair users. Lowering the rear axle position (reducing the rear seat height) creates a posterior seat inclination (seat dump). This allows the pelvis to settle deeper into the seat, using gravity to anchor the pelvis to prevent sliding forward.

Flip-Back Armrests	Ideal for lateral transfers when the lower extremities are non-weight-bearing or when caregiver assistance is required. With the armrests flipped back, the wheelchair seat surface aligns seamlessly with the bed surface or transfer board. This eliminates barriers to lateral transfer, significantly reducing energy expenditure and fall risk during transfers.
Quick-Release Swing In/Out Legrests	The entire support structure can be swung outward and detached. Swinging the legrests away allows the wheelchair to be positioned closer to the target surface (e.g., toilet or hospital bed), shortening the physical transfer distance and reducing risk for both the caregiver and the user.
Push-Lock Brake with Brake Extension Lever	The extension lever increases the lever arm length. The longer the lever arm, the less force required, making wheelchair locking effortless. The push-lock brake design allows the user to leverage body weight for braking.
Anti-Tipper	Anti-tipper provide the protection during sudden center-of-gravity shifts, preventing the wheelchair from tipping over.

The clinical recommendations provided in this document are for professional therapists' reference only and should not replace individualized clinical assessment. The actual prescription should be determined by healthcare professionals based on the user's physical functions, home environment, and individual needs. Karma Medical reserves the right to change product specifications.

KARMA MEDICAL PRODUCTS CO., LTD.
globalsales@karma.com.tw
www.karmamedical.com