

Spex Seating System Technical Description

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Construction and Modularity of the Spex Seating System

The **Spex Seating System** is a clinically advanced and highly modular seating solution, developed specifically for users with complex postural needs. The design ethos behind Spex is to provide **maximum postural support, ease of adjustability, and long-term adaptability** — key requirements for municipal welfare and assistive technology programs.

Core Construction Overview

Spex seating components are comprised of several key parts, each engineered with a modular framework:

- **Spex Back Support Systems**
- **Spex Cushion Systems**
- **Postural Accessories** (lateral supports, head supports, pelvic belts, etc.)
- **Mounting Hardware Interfaces** (universal compatibility with most wheelchair frames)



Each component is built using high-strength yet lightweight aluminium or alloy shells, covered with Spex's signature layer of configurable **foam cube contouring technology**, followed by a multi-stretch breathable cover system for skin integrity and user comfort.

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Modular Design Features

The entire Spex portfolio has been designed around **interchangeability and tool-adjustable features** to promote flexible prescription, fit, and reusability across user groups.

Key aspects include:

- **Adjustable Contour Systems:** The patented **Spex cube system** allows clinicians to modify the surface shape of the backrest or cushion by adding/removing foam cubes or wedges, accommodating kyphosis, scoliosis, pelvic obliquity, windswept posture, and more.
- **Shell Adjustability:** Both back and seat shells come with multi-slot channels to support **width, height, depth, and angle adjustments**, which can be made independently and easily.
- **Hardware Modularity:** The system uses **universal mounting brackets and interface hardware** to allow attachment to nearly all adult and pediatric wheelchair bases (manual or powered). This enhances flexibility and removes limitations for municipality clinicians working across a range of manufacturers.
- **Component Interchangeability:** Seats, backrests, and accessories are not integrated or welded together; they are always **removable, replaceable, and adjustable independently**.



This modularity provides **lifespan value** to municipalities: components can be reissued, repaired, or adjusted to meet the changing needs of the user, or to serve new users over time.

Clarification on Fixed vs. Independent Components

Understanding which elements are independent versus fixed is critical for the clinical setup, maintenance, and potential re-issue of products. Below is a clear breakdown:

Back Support

- **Independent** from the wheelchair frame.
- Mounted using **Spex Quick-Release Hardware** that clamps to the vertical back canes of a wheelchair.
- **Removable within seconds** by pressing quick-release levers.
- Can be **adjusted for height, angle, depth, and lateral placement**.
- **Compatible** with most wheelchair frames



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Seat Support (Cushion)



- Also **independent** from the wheelchair.
- Typically sits on the **existing seat base of the wheelchair**, secured using Velcro.
- For more advanced needs, a **Spex seat base** (rigid shell base) can be used, mounted using hardware brackets to the wheelchair frame.
- The cushion itself is removable and features **modular contouring** for pelvic positioning.

Postural Accessories

- All postural supports (e.g., lateral supports, pelvic belts, headrests, etc.) are **independently adjustable and mountable**.
 - Most are mounted via the Spex backrest shell or frame hardware, however we recommend every pelvic belt to be fixed to the wheelchair chassis.
- These components can be **adjusted or removed**, depending on the needs of the wheelchair user.

Hardware

- **Universal and non-permanent:** All hardware clamps are mounted without welding or invasive modifications.
- Designed for **multi-use, adjustment, and removal**.
- Hardware allows **Spex seating to be transferred to other wheelchair frames** without purchasing new components.

Summary for Consideration

The Spex Seating System aligns strongly with Municipality's values around welfare technology through:

- **Clinical adaptability** to changing user needs
- **Compatibility and reusability** across equipment pools
- **Modularity** enabling clinicians to provide fast, user-centered care
- **Cost efficiency** through reduced need for custom builds or new purchases
- **Reissuability** to multiple users saving resources and money over time.

We are confident that Spex will provide exceptional clinical outcomes for your service users while aligning with welfare frameworks who focus on long-term value and modular innovation.

Please let us know if you require physical product samples, or demonstration sessions for deeper evaluation.

Contact for Further Information

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