



Full Width (FW) vs. Between Bars (BB) Design

What's the difference for a Solid Back Insert?

In simple terms a FW design Solid Back Insert of any type manufactured by **CUSHMAKER.com** is 3" wider than a BB design. In deciding which is best for your client, you have to consider both their functional needs and the type of wheelchair the Solid Back Insert will be installed to. There are a total of five points to consider:

- Client's center of gravity over the w/c frame**
- Amount of shoulder/arm support required**
- Tilt frame vs. standard uprights**
- Client's chest width**
- Wheelchair width**

The preferred scenario is to have a w/c frame wide enough to accommodate a BB design Solid Back Insert and yet provide adequate shoulder/arm support for your client, especially in a tilt-in-space w/c frame. The single biggest advantage for the BB design is that by placing the Solid Back Insert between the push handles (uprights) you are able to move their center-of-gravity posteriorly and closer to the rear axle. You see, conventional sling upholstery is quite thin and actually allows a portion of the upper body to actually protrude behind the push handles where as a Solid Back Insert is on average at least 1½" thick or thicker. Take that thickness and place it in front of the push handles and you have in essence pushed the client forward almost 3". Their body weight is now being shifted more to the front castors making it more difficult for anyone to propel, steer or maneuver in either flat or inclined terrain and even more difficult when attempting to step-up onto a curb.

There are many other potentially negative consequences of moving a person's body forward on the frame but we need not discuss them here. These days most Rehab, Tilt-in-Space wheelchairs are both width and depth adjustable and the average funding-source expect the frame to last from three to five years. For the growing adolescent that uses a Solid Back Insert the question becomes when is a wider back more important? If the wheelchair was initially outfitted with a FW Solid Back Insert but the frame must be widen 2" because of expanding pelvis/hip width, it is plausible that a planar or slightly contoured insert can be reconfigured as a BB design simply by realigning the suspension hardware.

Another consideration is that as an individual's body widens so does the posterior shoulder width expand. Therefore a FW insert reconfigured for BB may not offer as much posterior shoulder/arm support as it once did. When used on a tilt-in-space w/c the arms may come to rest on the push handles or fall off to the sides entirely. You must assess whether this creates a problem before making your final decision. However, if this is your only concern then adding posterior arm pads onto the seating system or w/c frame is an easy and less expensive option.

You find the tush...We'll make the cush!!!

Of course with a molded back insert there are many more considerations due to the typically irregular profile and intimate fit of the cushion. **CUSHMAKER**.com has addressed many of these issues by introducing their unique, adjustable lateral hardware option for built-in laterals (part #: KBHLH) on their Kinetic Back Insert. The added hardware and included modifications allow the contoured lateral to be adjusted in the field by the dealer either inward or outward up to ¾” on each side. Using an Allen wrench this easy adjustment can be used to accommodate weight changes or minor postural realignments. With this option the dealer does not have to remove or add foam to make these quick changes.

In conclusion, a full width, Solid Back Insert offers the most support for the upper arms when the upper body is in the tilted or reclined position in a wheelchair. When a seating system or wheelchair must be adjusted for growth and assuming you can accommodate for the width and height of the client the questions must be asked again, “Do the back of the arms need to be supported in the tilted or reclined position and if yes, is the insert wide enough to do the job?”