

Wheelchair Assessment: Simulation and Body Measurement Lab

How to measure:	Wheelchair component:	Comments:
A: Hip width	Seat (width)	
<p>Check there is nothing in the wheelchair user's pockets before measuring. Measure the wheelchair user's hips or the widest part of this/her thighs.</p> <p>Hold two clip boards against each side of the wheelchair user to help to get an accurate measurement. Calipers can also be used.</p>	<p>Hip width equals the seat width or the distance between pelvis side pads.</p>	<p>If pelvis side pads are provided, the wheelchair seat width may need to be wider.</p> <p>Always try to keep the wheelchair width to a minimum.</p> <p>In countries with cold climates where thick clothes may be worn, some allowance may be needed.</p>
B: Seat Depth	Seat (depth)	
<p>Place a clip board at the back of the wheelchair user to help get an accurate measurement. Measure from the back of the wheelchair user's pelvis to the back of his/her knee in a straight line.</p> <p>Always measure both legs. If there is a difference between the left and right side, check that the wheelchair user is sitting upright with their pelvis level. If there is still a difference, make the wheelchair prescription for the shorter side.</p>	<p>Seat depth less 30-50 mm equals the depth of the seat of the wheelchair.</p>	<p>For a wheelchair user whose knees are bent a lot less than 90 degrees, the seat depth may need to be slightly shorter.</p>
C: Calf length	Footrests (height)	
<p>Measure from the back of the wheelchair user's knee to the base of his/her heel. Make sure the wheelchair user's ankles are bent at 90 degrees (if possible). Always measure both legs. If the wheelchair user wears shoes, measure with the shoes he/she wears most days.</p> <p>If the foot is fixed in plantar flexion (pointing downward), measure to the toe.</p>	<p>The calf length height equals the top of the cushion to the footrests OR the top of the cushion to the floor if the wheelchair user is foot propelling.</p>	<p>The exact footrest location will change slightly depending on how much the cushion compresses when the wheelchair user sits on it. Final adjustment is always needed at fitting.</p>
D, E and F	Backrest (height)	
<p>D: Seat to bottom of rib cage: Measure from the wheelchair user's seat to the bottom of the rib cage. To help find the bottom of the rib cage, place hands on both sides of the</p>	<p>Measures D, E, and F help decide the height of the backrest.</p>	<p>If backrest recline or tilt in space is needed, the backrest height must be at least standard (up to the bottom of the wheelchair user's shoulder blades);</p>

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<p>pelvis. Gently squeeze hands inwards and slide hands upwards. The bottom of the rib cage is just above the waist.</p> <p>E: Seat to shoulder blade: Measure from the wheelchair user's seat to the bottom of the shoulder blade in a vertical line.</p> <p>To help find the bottom of the shoulder blade ask the wheelchair user to shrug their shoulders.</p> <p>F: Seat to top of shoulder: Measure from the wheelchair user's seat to the top of the shoulder.</p>	<p>The height depends on the needs of the wheelchair user. The information from assessment will guide wheelchair service personnel to decide how high the backrest needs to be to provide the right support for the wheelchair user.</p>	<p>Remember to consider if the wheelchair users will be propelling the wheelchair themselves. If so, they need freedom to move their shoulder blades.</p>
G: Trunk width	Trunk side pads or wedges (distance between)	
<p>Measure the width of the wheelchair user's trunk just below the axilla (armpits).</p>	<p>Trunk width is the distance between trunk side pads or wedges.</p>	<p>The final position of the trunk side pads or wedges may change during fitting, if they are to be placed lower than just below the axilla.</p>
H: Seat to axilla (armpit)	Trunk side pads or wedges (height)	
<p>Measure from the seat to the axilla (armpit).</p>	<p>The seat to axilla measurement less 30 mm is the maximum distance between the top of the cushion and the top of the trunk side pads/wedges.</p>	<p>This measurement is a guide. The final height depends on the assessment and fitting.</p> <p>Trunk side pads should never be high enough to put pressure into the axilla (armpit). This can be uncomfortable and because permanent nerve damage. There should always be at least 30 mm clearance between the top of the trunk side pad and the axilla.</p>
I: Seat to the top of the pelvis (PSIS)	Rear pelvis pad (mid-height)	
<p>Measure from the seat to the top of the pelvis (PSIS)</p>	<p>The seat to the top of the pelvis (PSIS) measurement is used to locate the mid-height of the rear pelvis pad.</p>	<p>The depth (thickness) of a rear pelvis pad depends on the results of assessment.</p>

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J: Distance between knees	Knee separator pad	
Measure the distance between the two knees – with the knees placed as close to neutral as is comfortable for the wheelchair user.	The distance between the two knees equals the width of a knee separator pad. The distance will depend on the wheelchair user's sitting posture.	
K: Seat to base of skull	Headrest (height)	
Measure from the seat to base of skull.	The measurement from the seat to the base of the skull helps to locate the headrest.	
I: Back of pelvis to seat bones	Pre seat bone shelf	
<p>Measure from the back of the pelvis to the seat bones.</p> <p>From the side of the wheelchair user place your hand (palms up) under the wheelchair user's bottom to find the seat bones. Locate the seat bones with one finger – and then withdraw your hand to side of the wheelchair user. Measure from the back of the wheelchair user's pelvis to the finger that is located at the seat bones.</p> <p>Wheelchair service personnel may mark on the assessment bed in some way (for example with a piece of chalk) alongside the wheelchair user in line with their seat bones and measure from the mark to the back of the pelvis.</p>	The measurement from the back of the pelvis to seat bones plus 20-40 mm is the distance from the backrest support to the beginning of the pre seat bone shelf.	If a wheelchair user has a fixed posterior tilt of the pelvis or fixed forward bent trunk to the measurement may be different.