

Shape Up! Ability Based Seating™ Change position!

The possibility to rest and relax is a fundamental requirement of a multifunctional wheelchair. Essential to being active is the ability to rest. The seat tilt function is an easy way of changing position. It influences, above all, stability and pressure redistribution but has a minimal effect on the position of the body joints. But is tilt alone really the best solution?

It must be easy to change the seat and back angles, and to ensure adjustment is optimised for the user. Prio offers several functions to ensure control over both the active and resting position.

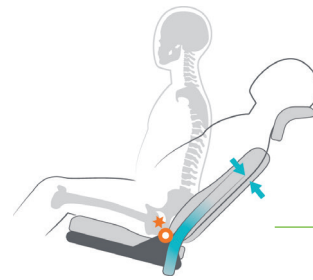


Rest and relax

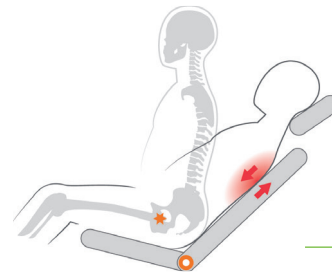
On Prio the seat to back joint is positioned higher up, in level with the top of the seat cushion. Combined with the tension adjustable back straps, which allow the user to "sink" into the back support, the user's hip joint will be correctly aligned with the seat to back joint. This enables back reclining, without the risk of the user sliding forward.

When reclining the back support, the dynamic pelvic support is automatically deactivated which allows a small posterior pelvic rotation. This leads to beneficial micro movements in the spine. Reclining the back will also affect the hip joints, which softens the muscles and ligaments.

Below we describe benefits of resting positions, that also enable repositioning of both large and small body joints.



Prio's seat to back joint is aligned with the user's hip joints.



If the wheelchair's seat to back joint is not corresponding to the user's hip joint, there is a substantial risk that the user will slide downwards/forwards when reclining the back.

Redistribute the pressure

Another important reason for actively using the wheelchair's tilt and recline functions is to reduce the pressure under the ischial tuberosities (IT:s), in order to minimise the risk of pressure ulcers.

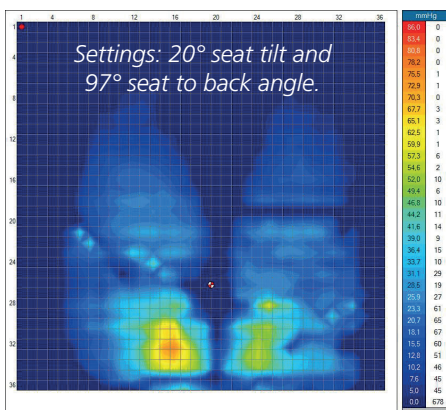
In the USA, a form of supertilt is being intensively promoted. The user is recommended to alter to a tilt of 45° daily. If the back recline function is not used, a 40° - 45° tilt is necessary to achieve effective pressure redistribution.

Supertilt or tilt and recline?

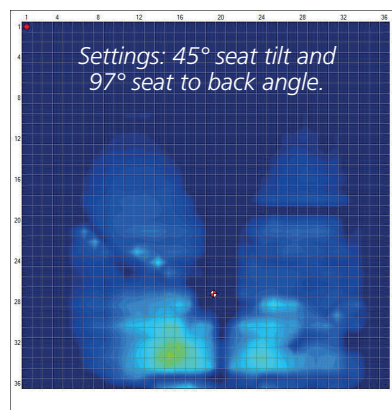
We carried out a number of pressure mapping tests to compare the effect of different back and seat settings.

We compared 45° seat tilt with moderate seat tilt combined with reclined back support. All test subjects showed striking similarities between the pressure measurements and perceived comfort.

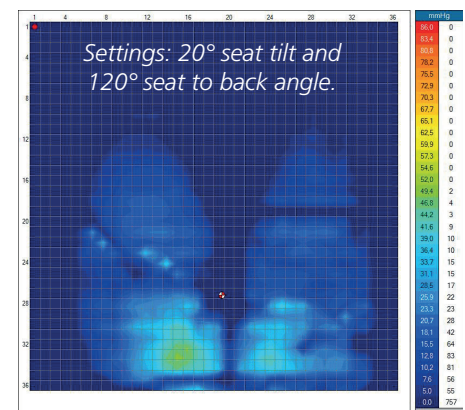
At the international seating symposium in Vancouver in 2016, it emerged that even if supertilt is an effective way of redistributing the pressure from the IT:s, there are many users who do not follow the instructions because the position feels unnatural. By using all the comfort chair's adjustment options, the user can achieve a more dignified and natural resting position, with variation for the hips and knee angles. And equally good pressure redistribution for the IT:s.



Conclusion: Results in appr. 12–15% pressure reduction under the IT:s.



Conclusion: Very low pressure under the IT:s. But in reality only a few users utilise this position.



Conclusion: A combination of tilt and back recline provides just as good pressure redistribution as the super tilt and above all, higher perceived comfort.

Test subject: Man, 173 cm, 73 kg, age 30. Wheelchair: Etac Prio. In order to test 45° tilt, the whole chair was angled and fixed.

Secure all positions

Many users of multifunctional wheelchairs are dependent on several care givers. As a result, there is a risk that the tilt and recline functions are not always correctly adjusted for the user. In order to simplify and ensure correct use, we have provided the following functions:

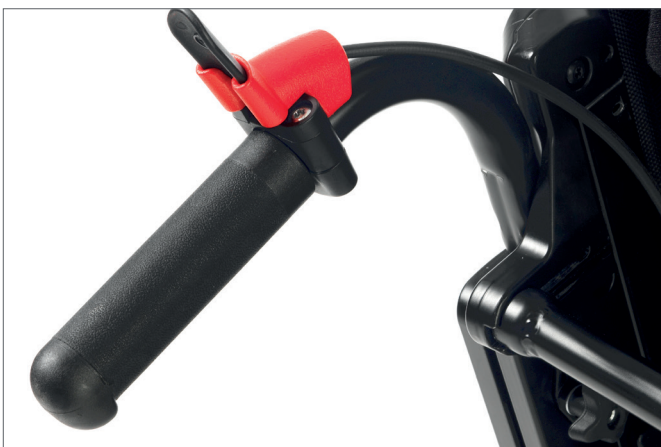


Comfort lock - find the right tilt position

The comfort lock works on the seat tilt. Choose one of four predetermined positions (0°, 4°, 8° or 12°) to achieve a predetermined tilt lock. This can be an active position (0° or 4° tilt) or the ideal resting position (8° or 12°). When the seat tilt is adjusted and reaches the desired comfort position, a clear "clunk" sound is heard and the tilting stops.

Gas piston adjustment

In order to prevent Prio angling or tilting more than the user wishes, small clips can be placed around the gas piston axels. The more clips, the more reduction of tilt and/or recline functions. Easy to add or remove, no tools are required.



Locking device for seat/back angle adjustment

The locking device is a small collar which is threaded onto the lever and prevents it from being activated. The red colour gives a clear signal. To adjust the position, pull the locking device upwards so that the lever can be activated, and then push the locking device back to the lock position.



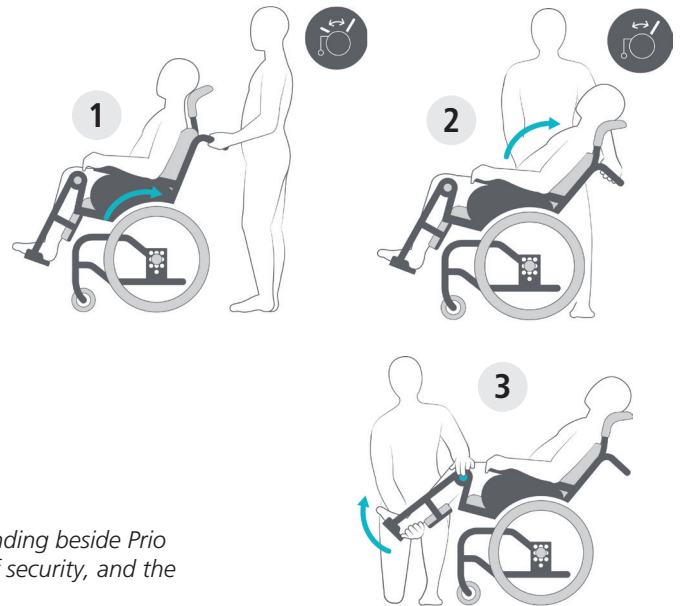
Back recline settings

A visible scale on the back support right side, indicates the adjusted angle. The picture shows 10° back recline = 100° seat to back angle.

How to operate the tilt and recline functions

1. Start with the user in a relaxed and safe position by tilting the chair 10-15°. The back shields redistributes the pressure from the sensitive areas of the thorax and shoulder blades.
2. Thereafter the back is slowly reclined. This will relieve pressure on the IT:s and open up the hip joints. The reclining of the back support will also deactivate the dynamic pelvic support which further evens out the pressure.
3. Elevating leg supports are adjusted after the back has been reclined. This to reduce the risk of the hamstring muscles affecting the position on pelvis.

Both seat tilt and back recline can be operated by the caregiver standing beside Prio to allow for eye contact with the user. This gives the user a sense of security, and the caregiver is in full control.



Resting into shape

Combining tilt and back recline provide very good pressure redistribution. Just as good as supertilt, but with a more dignified resting position. And furthermore, it also provides beneficial variation for the body joints. With a carefully adjusted resting position, the user can "rest into shape" and alternate with more and longer active moments. It is therefore equally important - in the assessment process - to ensure a functional resting position, with good pressure redistribution. This maximises sitting tolerance over time.

Once again, this is what we call Ability Based Seating™.



In our next newsletter... you can read about Prio's head supports. "Soft" that adapt to the user's head and our traditional, multi adjustable head support that can be adjusted to reach and support users with severe kyphosis. Living should be soft...



**Ability™
Based
Seating**