



Frequently Asked Questions



STEPHANIE uses the TRU-Balance® 4 Anterior Tilt for easier access to her vehicle's trunk.



EDGE 3 STRETTO® shown with TRU-Balance® 4 seating system with anterior tilt and iLevel® power elevating seat.





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General Questions

1. What bases can I get TB4 on?

Currently TB4 is available on the Stretto, Edge® 3, and the 4Front® 2.

2. Does the system need to be ordered as a complete system (tilt, recline, elevation, anterior tilt and memory seating); Can I order just tilt and recline with memory seating?

The system must be ordered as an entire TB4 power positioning system. This includes power tilt, recline, and AFP, iLevel/seat elevation, anterior tilt, and memory seating. Power tilt, recline, and AFP, and iLevel/seat elevation can only be ordered separately on a TB3 power positioning system.

3. Is the TB4 system WC19 compliant?

The TB4 system has been tested and verified as WC19 occupied transit compliant for all units it is available on.

4. Can I do memory seating with a switch box?

Yes, the memory positions can be added to the basic switchbox, the iAccess box, or any mapped IO system (i.e., keys, mode, etc.)

5. Can I program a different switch as a latch for one of my memory seating profiles?

Any memory number can be latched. When that is done it will latch the forward and reverse positions, they cannot be separated. Therefore, the entire memory seat profile (i.e., memory profile 1) will be latched for forward and reverse commands.

6. What options does the consumer receive with memory seating?

There are up to 8 positions that can be set. There are four memory slots, but each offers a forward and reverse command, which allows for a total of 8 memory functions.

7. What is the difference between synced and sequential in memory seating positions?

Synced means all actuators move at the same time within the programmed ranges to reach the saved memory position. Sequential means that each actuator will move one at a time in a specific order. The order will depend on the position of the tilt system. If the starting position has less posterior tilt than the memory position, then the order is tilt, AFP, recline and lift. If the starting position has more posterior tilt than the memory position, then the order is recline, AFP, tilt, lift. The order in which the power seat functions are performed during synced operation cannot be changed.

8. What is the difference between anterior tilt and transfer position?

Anterior tilt limits the footplates from hitting the ground. Programming a transfer position will allow the consumer to have a dedicated position for transfers so the footplates can go all the way to the floor. We recommend the footplates not be placed on the floor, and that there is a space between the footplate and the floor.

9. Can I configure a TB4 system without getting anterior tilt? (i.e. if the therapist just wants the memory seating feature?).

The system will include a complimentary 10° of anterior tilt that is not required for use by the consumer if it is not wanted/needed. There are seat presets in the system that do not include the anterior tilt functions that can be activated through programming and will allow anterior tilt not to show up in the system, yet memory seating will still function.

10. What do I order if I only need tilt and recline?

TB3 will be the power positioning system to order if the team wants tilt and recline only.

11. Can the attendant control operate the memory seating parameters?

Yes, the attendant control will operate all power seat functions, including the memory seating positions. When the attendant control is active, the seating screen on the QL3 display will show the seat function and/or the attendant can look at the lights on the attendant joystick for seat function. The memory seating functions are displayed on the attendant control via the number of blinking seat functions (i.e., one for memory one, two for memory two, etc.).

12. Is there a plan in the future to offer anterior tilt without seat elevation?

No, not at this time. The seating system must elevate in order to prevent the AFP from striking the floor.

13. Can I get memory seating on TB3?

Memory seating is only available on the TB4 seating system at this time.

14. If mechanical adjustments are made to the STF height and/or lower leg lengths, will the footplates hit the floor?

Yes, they can potentially hit the floor. It is recommended that the Teach Elevate vs AFP Articulation parameter be retaught after those changes are made. Follow the prompts of the programming and it is easily set. Once set, the footplate will no longer hit the floor in any of the taught positions.

Clinical Application Questions

15. What is anterior tilt?

Anterior tilt is a power seating function that changes the angle of the wheelchair seat in the sagittal (anteroposterior) plane where the rear aspect of the seat is higher than the front. This facilitates an anterior pelvic position and places the person in a partial weightbearing stance. This position may benefit the consumer medically/physiologically, psychologically, and/or functionally.

16. How can anterior tilt benefit an individual medically/physiologically?

Anterior tilt of the pelvis can elongate the spine, open up the rib cage and may have a positive impact on respiratory capacity/health, the ability to take a deep breath and achieve a productive cough to clear secretions. Anterior tilt may aid in effective chewing (alignment of the mandible), swallowing, digestion, and bowel function, as it can minimize compression of the internal organs often found when sitting with a posterior pelvic tilt. For some individuals, an anterior pelvic tilt may promote pelvic floor relaxation and allow the vagus nerve and bladder to do their jobs. With increasing anterior tilt angle, there is greater weight bearing on the long bones of the legs (tibia and femur), which may help slow bone loss.

17. How can anterior tilt benefit an individual psychologically?

A neutral to anterior pelvic tilt position facilitates spinal alignment, allowing the head to sit naturally on the cervical spine and minimizing the amount of energy expended to maintain a horizontal eye gaze, which may promote social interaction. An upright seated posture can maintain self-esteem, promote a positive mood, and help build resilience to stress. Alternating between sitting and standing positions increases the release of hormones like serotonin, which is a mood booster.

18. How can anterior tilt benefit an individual's functionality?

The “ready to work” position occurs when the pelvis shifts anteriorly, facilitating trunk and lower extremity extension, or co-activation for increased stability and weight bearing proximally to promote movement and function distally.

Anterior tilt shifts the individual to the front edge of the wheelchair base, which may allow them to get closer to the tasks they need to carry out. Anterior tilt may facilitate safer and/or more independent sit-to-stand and sit/squat-pivot transfers due to the biomechanical position of the individual with the shoulders over the knees over the feet position.

19. Are there clinical criteria for an individual to be considered a candidate for anterior tilt use?

The person would benefit from assistance due to impaired trunk control to complete reach needed to perform functional activities they want/need to perform (with appropriate positioning straps as needed). The person has the necessary range of motion in their lower extremities in order to utilize anterior tilt safely and properly.

The person can tolerate the more upright body posture the anterior tilt seating function places them into. The person can tolerate the partial weight bearing the position will place them in. The person has the functional need for the position to achieve mobility related ADL's.

20. Are there physical contraindications/cautions to using anterior tilt?

Yes, since the anterior tilt is increasing weight bearing through the lower extremities and increased pressure from the potential secondary devices (knee blocks), a medical professional should make the judgement call as to whether anterior tilt is appropriate. If someone has not done any weight bearing for a long time, they could have bone density issues. This could lead to a fracture or broken bone occurring with use of anterior tilt, so clearance by a qualified healthcare professional should be sought out before trying anterior tilt.

If an individual has not achieved a more upright posture since their diagnosis, injury or in a long time, then their blood pressure should be monitored while using anterior tilt. Anterior tilt could potentially cause a drop in blood pressure which can cause an individual to pass out. If their blood pressure starts to drop and they get lightheaded, then the team should lower them into a posteriorly tilted posture as quick as possible until their blood pressure is stable again, then bring them back to an upright seated posture again.

If a consumer has restrictions in lower extremity range of motion (tight hamstrings, tight heel cords in particular) then a clinician should check that the individual has the range of motion needed to properly utilize anterior tilt.

For individuals that do not have the accessory muscles for respiration, and use a diaphragmatic breathing method, anterior tilt may be contraindicated as it could reduce abdominal pressure. An abdominal binder may minimize this risk.

21. Can I setup a memory seating profile that takes my client into a specific anterior tilt or transfer position but then hide anterior tilt in their seating menu, so they don't accidentally push it forward themselves when in their tilt screen?

You can set positions in memory and hide the anterior tilt seat function but hiding anterior tilt will also hide the posterior tilt function as well. Posterior tilt and anterior tilt are the same function and cannot be separated. When coming out of posterior tilt the system will stop once 0° (the neutral position) is achieved. An additional command is required to go into anterior tilt. The user must return the input device to a neutral position, then provide another forward command (on the tilt screen) to go into anterior tilt. This prevents the individual from going into anterior tilt accidentally while coming out of posterior tilt.

22. Where is the best place to position the chest bar and knee blocks so the consumer can maximize their reach?

Reference the TB4 setup guide included in each TB4 order.

Technical Questions

23. If an actuator fails in a position, can the seating be manually moved to a safe driving position?

If an actuator fails while in anterior tilt, and the failure is feedback related, and the actuator still moves, the system will allow a reverse movement to get out of anterior tilt. The system will then no longer allow movement into the anterior tilt position. In this scenario, the system will revert to a TB3 type of function.

If the person is stuck in posterior tilt and the actuator will not move, please refer to the TB4 troubleshooting guide.

24. What happens if one actuator breaks, does the entire system need to be replaced?

TB4 will go into limited operation mode. If it is only a feedback issue and the actuator still moves, the system will function as a TB3 power positioning system; anterior tilt and memory seating will not function. Only the recline and AFP elevate actuators are replaceable. If the AFP articulation actuator fails, the entire AFP must be replaced. If the lift or tilt actuators fails, the entire cartridge needs to be replaced.

25. If an actuator fails/malfunctions, is there a default program the system will automatically revert to?

The system will function as TB3, with no anterior tilt or memory seating.

26. Are TB4 actuators specific to the system or are they universal across the board?

TB4 actuators are specific to the TB4 seating system. They cannot be swapped with TB3 actuators in any situation.

27. A competitor can swap out their smart actuators but require programming and attention to do it correctly. Does Quantum offer serviceable actuators, and if so, will they require significant programming?

Not every actuator is replaceable. The ones that are replaceable need a system recalibration after they are replaced. Programming is required for recalibration but is automatic once started.

28. Can TB4 be retrofitted on a system that has TB3?

TB4 cannot be retrofitted on any unit that has TB3.

29. Do we need knee blocks and a chest bar for 10° of anterior tilt?

Knee blocks and a chest bar are optional with 10° of anterior tilt. For 30° of anterior tilt packages, knee blocks are required. A chest support is required with anterior tilt functions over 10°. Omitting a chest support selection requires the provider to facilitate aftermarket chest supports that best fits consumer needs.

30. Is the speed reduced when the chair is in anterior tilt?

At 10° (up to full seat elevation/lift) the chair will move at 3.2km/h. From 10° to 20° (up to 15cm of seat elevation/lift) the chair will move at approximately 0.8km/h. Anything over 20° of anterior tilt and the system goes into drive lockout.

31. How much does the full TB4 system on power base weigh?

The weight of the TB4 system by itself is approximately 95.7kg.

32. Can an actuator be restricted?

Yes, there are several ways anterior tilt can be restricted:

- You can set restrictions, so the seat function is always restricted, but only with how far back posterior tilt can go.
- If you set posterior tilt to never be more upright than 10° of posterior tilt, then anterior tilt will never be available for the user because tilt never reaches the neutral (0°) position for the cam to switch over.
- Anterior tilt can be restricted based on the “set anterior and transfer position” functions and be restricted separately from posterior tilt.

Instead of using restrictions, you could also use a memory position, which provides restricted positions based on the pre-set positions the team may be looking for from a tilt and recline perspective. Restricting the recline function from coming forward (i.e., to always have a 5° - 10° seat-to-back angle) will not affect anterior tilt.

33. Can the memory seating be bypassed if needed?

The provider sets the memory seating. If they don't set any memory seating positions then yes, memory seating can be bypassed. The consumer will not be able to control memory seating.

34. Are all current seating adjustments available on the TB4 system?

Yes, all current adjustments are available on the TB4 system. With certain adjustments, additional programming will be required. Refer to the TB4 setup guide for all instructions. The setup guide goes through the programming steps from start to finish.

35. Are there any new seating adjustments on the TB4 seating system?

Not at this time other than the initial programming setup steps and chest bar and knee block adjustments.

36. What setup is required when the unit arrives at my location?

TB4 will come with 10° of anterior tilt, which does not require additional setup. If more than 10° of anterior tilt, a transfer or memory position is needed, the provider will need to set the anterior tilt and transfer positions as well as enable and set the memory positions as desired through the initial programming. This is performed easily by following the programming setup steps in the system. If the provider follows these steps the setup goes very smoothly. With some adjustments additional programming will be needed. Refer to the TB4 setup guide for all setup instructions. The setup guide goes through the programming steps from start to finish.

37. What if I do not need a transfer position, only anterior position?

This can be done during the teaching process of the anterior tilt. If a transfer position is not needed, at the prompt, leave the unit in the anterior tilt position that was programmed in the previous step and save that position again. This simply prevents any transfer position from being programmed. The individual can still go into anterior tilt by using the anterior tilt feature manually or with a memory position being programmed for anterior tilt.

38. Can I program anterior tilt position to stop at a lesser angle than the anterior tilt switch (i.e. 10° if chair is configured with a 30° anterior tilt capability)?

This can be done by:

- Using a memory seating position
- Setting the anterior tilt function when taught during initial programming

39. When I use the articulate only feature on the Dual Actuator AFP, the lift will not go all the way down if the articulation is extended out. Why is that?

If the articulation is too close to the ground (this position would be set up during the initial programming stage), the lift will not move into the home position due to the chance of the footplates hitting the ground. The Dual Actuator AFP needs to be in the home position, or a position close to the home position before the power lift can be brought all the way down.

40. When should I perform an actuator calibration?

If an actuator is replaced, then the calibration must be performed. Please refer to the troubleshooting guide for all requirements for calibration.

41. How can I tell if the TB4 seating is in anterior tilt?

Look for the "A" on the tilt screen. The "A" stands for anterior tilt. If the A is not present, then the system is not in anterior tilt.

42. If my consumer's TB4 has an error message, will Seat Override Mode fix it?

Seat override is only available with a programmer (ECON-W, ECON-I or handheld). The dealer can use Seat Override mode to test the actuator movement but using that will remove the feedback from all actuators, so it must be used with care because the actuators can be permanently damaged. Great care must be exercised when the end range of the actuator is reached as the actuator must be stopped or damage can occur. It is likely the actuator will need to be replaced due to the error message and need for the seat override.

43. What does the drive status "A" mean?

The "A" in the status on the seat profile screen always means that anterior tilt is not at 0 degrees. The "A" disappears when the seating system is returned to a tilt-neutral position.

44. Why, when I operate a memory seating position, do I get the error message "Memory Position Invalid?"

This appears when trying to operate a sequential position when the system is in an anterior tilt position. The anterior tilt must be returned to 0° and the "A" must be off of the seat profile screen. Then the system will work correctly. This error message is because the sequential position function does not work with anterior tilt.

45. Why can't I get to a memory position that I programmed?

The system is calculating that when the chair comes to an upright position (this can happen when going for a posterior position to an anterior position), that the AFP will hit the ground. This is due to an error in the initial setup steps to prevent the AFP from striking the ground. There are other scenarios that this could occur, but this is the most likely situation.

46. Why am I in drive lockout in a home position?

When this occurs, first check the articulation of the AFP, it is likely the footplates are too close to the ground. The chair is initially set up to prevent the chair from driving when the footplates are too close to the ground, so it will not let the chair drive.



If there are any questions, comments, helpful hints, or tips and tricks that come up that are not addressed in the FAQs, please reach out to a member of the Quantum® Education Team or your local Quantum Rehab® Product Specialist.



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