

FREEDOM ERGONOMICS

Freedom of movement is our guiding principle



A Comparative Study

The archaic design of standard keyboard layouts create many unhealthy stressed positions for hands and wrists. Prolonged use of the keyboard in these stressed positions frequently result in harmful injury, slowing productivity and - in the worst case - altering careers. The Zergotech Freedom solves these stressed positions to produce the most innovative, intelligent, and comfortable keyboard available.

Standard Keyboard



Zergotech Freedom



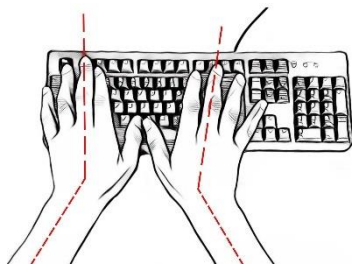
Solving Vertical Reach

The main feature of the Freedom keyboard is the patented Sliding Palm Rests. Simple yet effective, the sliders allow your hands to move freely around the keyboard providing a hover like experience to your fingers - and a joy to use.

Standard keyboards and fixed palm rests limit the position of your hands and wrists to one single position, meaning most of the reach needs to be performed by limited -finger movements. Reaching the top numerical and function rows, fingers need to be completely outstretched to reach the desired keys. Likewise, the "ZXCV" row requires compression of the fingers to strike keys.

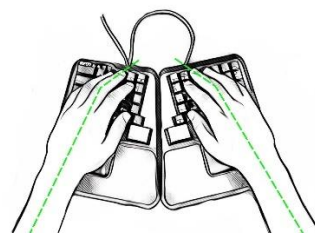
The room provided in the slider bay allows our Sliding Palm Rests to move your hands to a more comfortable position giving your fingers enough room to strike any key on without over stretching or uncomfortably compressing your fingers.

Strained Vertical Reach



Standard keyboards require outstretched hands to reach the top rows, while compressed fingers to reach the bottom rows.

Strain Free Reach



The sliding palm rests allow your hands to hover to the top rows without your fingers over-stretching. Your fingers remain in a comfortable and natural position.

Home Position



The Freedom retains a comfortable starting position on the home row.

Easy Bottom Reach



There is no need to compress your fingers to reach the bottom "ZXCV" row. Slide down to allow your hands an easy and natural reach.

Solving Horizontal Deviation

Repeated deviations and extended periods of over-reach place excessive strain on the wrist and hands, are the largest source of RSI pain.

A neutral and comfortable position aligns the fingers, wrist and forearms in a straight line. Standard keyboards are asymmetrical in width, with the right side of the keyboard has an extra inch of width from the centre. Three of the most used keys are the Enter key, Backspace key, Right Control key, and Delete key, and are all located to the far right, which helps balance the amount of work distribution between the left and right hands.

At the same time, the Navigation Keys and Numerical Pad are integrated into the main key sets to save the excessive hand movements and increase your productivity.

No Horizontal Deviations



The Freedom places the Enter key (swappable with the Spacebar key), the Backspace Key and the Delete key to the left hand.

Unhealthy Wrist Deviation



Reaching for the Backspace, Enter and Delete keys while your palms are fixed in position on desk results in very damaging movements under prolonged use.

Poor Placement - Navigation Keys



Reaching for the Navigation Keys.

Poor Placement - Numpad



Reaching for the Numpad.

Solving Asymmetry of Reach

Standard issue flat keyboards have asymmetrical offset rows of keys. This creates an asymmetry of finger reach. The "ASDF" row is the starting home row for typing. The bottom "ZXCV" row has keys that are exactly offset to the centre of the home row and has symmetrically offset reach. The top two rows, however, namely the number row and the "QWERTY" row, are asymmetrically offset from centre and to the left of the home row. Hence, fingers on the left hand have a tighter and uncomfortable under-reach to the keys above, while the fingers on the right hand need to extend further with an over-reach.

Asymmetrical Finger Reach



Asymmetrically offset top rows cause fingers to reach left.

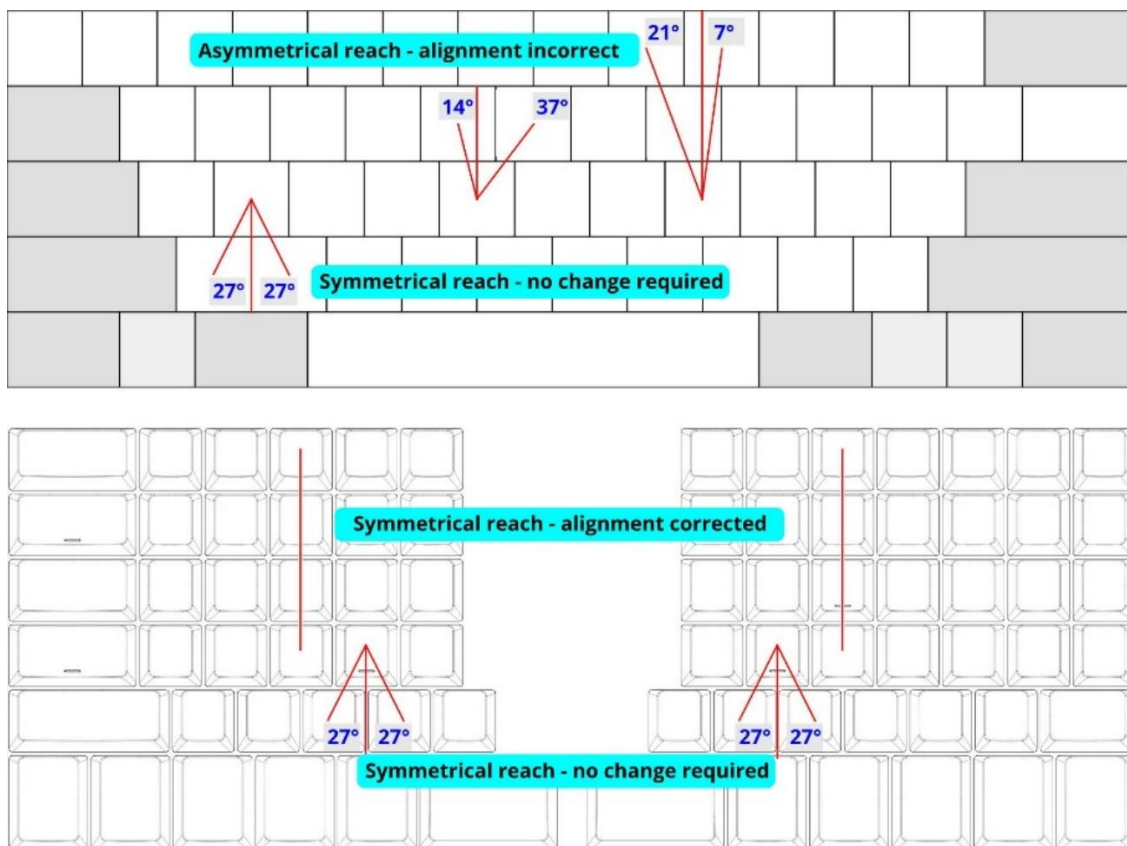
Symmetrical Finger Reach



The Freedom's semi-orthogonal design corrects the top rows leaving the home and bottom typing row unchanged.

Behind Our Semi-Orthogonal Design

The Freedom has a familiar, yet unique, design registered semi-orthogonal layout. The top four rows have been aligned vertically to completely remove any asymmetry of reach, while the bottom "ZXCV" row remains unchanged as it is already has symmetry of finger reach. Maintaining this row unchanged gives the user a more familiar experience compared to other outrageous ergonomic keyboard designs.



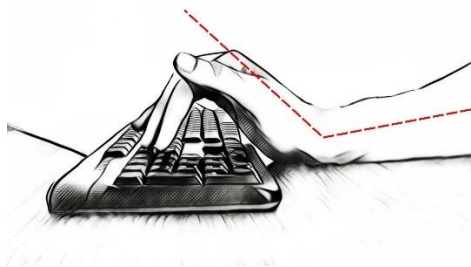
Solving Wrist Extension

Wrist extension occurs when the back of the hand reaches toward the outside of the forearm. This is a very common position for desktop users where palms are rested on the desk while simultaneously reaching for the keys at a height. Prolonged periods in this position can give rise to wear and inflammation in wrists.

A wrist neutral position places the hand aligned with the direction of the forearm. Most people resort to raised fixed palm rests to help overcome this issue. This solution is not complete as the wrists remain fixed on the desk contributing to over-reach and deviations.

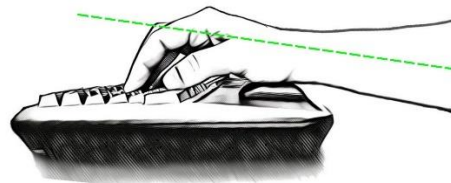
The Zergotech Freedom solves these problems by introducing Sliding Palm Rests which both raise the wrist and gives freedom of movement to your hands.

Unhealthy Wrist Extension



Wrist extension for prolonged periods is a leading cause of wrist pain. Wrist extension is most harmful the greater the height of the keys relative to the desk.

Aligned Wrists



The Zergotech Freedom lifts your wrists to be in line with the keys, while also freeing your wrists to slide around the keyboard.

Solving Forearm Pronation

Forearm Pronation is the position of the forearm which is turned inward toward the body and is a common position with standard keyboards. Pronation requires constant flexion and contraction of forearm muscles to maintain this position, exerting most of its pressure at the wrist. A neutral forearm position is one which resembles a handshake posture. It requires no flexion of forearm muscles, reducing general typing fatigue.

The Freedom's split design allows for inner tenting producing an incline to match the natural position of your arms. The Freedom is never completely flat with its default position having a small slant such that the keyboard feels natural while retaining a familiar typing experience. There is also the option of extending the feet for an increased tented angle.

Flat Keyboard - No Tenting



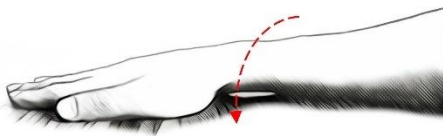
A standard keyboard requires forearms and wrists pronated flat with the desk.

Default and Extended Tenting



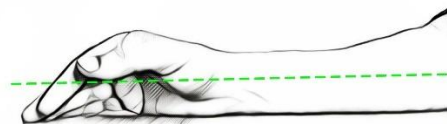
The Freedom's default position has a slight lift, while an increased angle is enabled with extendable feet.

Fully Pronated Forearm



A pronated position requires constant flexion to maintain. This is required for flat keyboards.

Natural Position



The hand rests naturally in a more "handshake" like posture. The Zergotech Freedom provides angled inner lift to match this natural position.

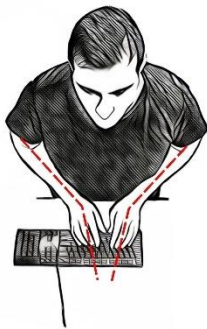
Solving Slouching and Shoulder Pain

Standard flat keyboards are the primary cause of slouching at the desk. The healthiest seated posture requires a straight back, open chest, and aligned forearms and hands.

With a flat keyboard close to your body, while you are able to sit upright, the large angle that forearms approach the keyboard result in wrists being angled outward (ulnar deviation) in a highly uncomfortable position. To relieve this awkward position, the keyboard is often pushed further away from the body and toward the back of the desk your back and shoulders slouch in an effort to reach they keyboard.

The Zergo Freedom is split to allow typing at a healthy width to give you a correct posture.

Straight Back, Bad Wrists



A flat keyboard close to your body allows you to sit upright, but is uncomfortable and unhealthy for your wrists.

Straight Wrists, Bad Back



Pushing a flat keyboard away from your body might relieve the pressure on your wrists, but this requires your arms to over-reach and produce slouching shoulders.

Correct Posture - Joined Keyboard



The Freedom's default rotated angle ensures all postures are corrected. The keyboard is close to your body allowing you to sit upright with a straight back. The angle of the keyboard keeps your arms and hands aligned.

Correct Posture - Split Keyboard



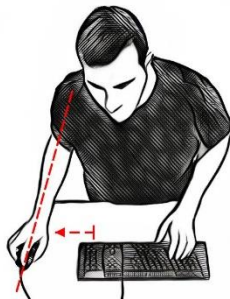
Typing with the boards at shoulder width also ensures all postures are correct. Your back is upright and shoulders square, while simultaneously opening up your chest and aligning your forearms and wrists.

Solving Right Lean

In addition to poor slouching, standard full layout keyboards have extra width to the right. Most people place the mouse to the right of the keyboard. Users must then extend their arm a significant distance to the right to operate the mouse. This produces a slouched lean on the right arm.

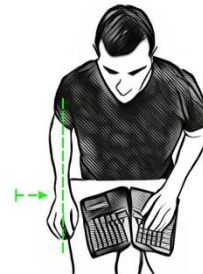
The Zergo Freedom integrates the navigation keys and numpad to produce a more compact design. This extra desk space allows the users to bring the mouse closer to the body, relieving an uncomfortable right lean.

Wide Keyboard Shoulder Lean



With the mouse located to the right, it is beyond an already extended keyboard, requiring the right arm to extend beyond shoulder width. This often results in a slouch to the right producing both shoulder and arm pain.

Correct Posture



With a keyboard of shorter width, the mouse can be brought closer the body and within shoulder width. This produces an upright and healthy posture.

Solving Finger Joint Strain

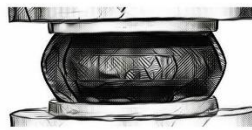
The constant hitting of your fingers against keycaps can sometimes lead to joint pain in fingers. Inexpensive standard keyboards are not responsive to light touch typing and so users become accustomed to the brute hard hitting typing style which can take its toll on your finger tips. To help prevent this injury, the Zergotech Freedom provides rubber O-Rings which dampen the impact of your fingers hitting the key caps.

O-Rings



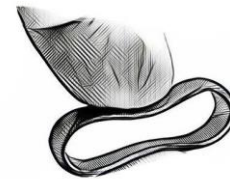
O-Rings are small circular pieces of rubber that can both reduce the sound of key "clacks" and provide excellent shock absorption on keystrokes.

O-Ring Compression



The O-Rings are inserted around the stem on the underside of the keycap. When a key is pressed, the rubber O-Ring is compressed.

Shock Absorption



The elastic nature of the O-Rings makes for a shock absorbing, impact reduced typing experience.