

Touch Screen in Retail

The increasing development and use of touch-activated screens elicits the need for guidelines concerning the location and placement of these at seated and standing workstations. The goal of retail ergonomics is to ensure that a neutral and comfortable working body posture can be maintained by operators at all times, this is critical where touch screens are concerned because of the high frequency and long duration of use. A neutral working body posture ensures that no stress or unnecessary loading is placed on joints or muscles, and avoids operator discomfort, fatigue and ill-health.

Touchscreen placement at the retail workstation needs special attention, the screen must be located within an operator's frequent use work envelope and at a position for comfortable observation. Critical factors for touchscreen workstation design are: height, adjustability, reach and visual distances. The location of the active pad must enable the user to both view and reach the screen surface comfortably and without the over-extension of any joint.

Height:

The adjustable height range should allow a touchscreen to be low enough that a short user can touch the top of the active pad without having to activate the upper arm, yet still allow it to be moved high enough that its lower edge is no more than 45 degrees below the horizontal line of sight (eye level) of a very tall user.

Table: Recommendations for height adjustable touch screen mounting

Workstation Design	Adjustable Height Range (inches)
Standing	41"-55" (above floor)
Seated	6"-14" (above work surface)

Reach Distance:

To maintain neutral body posture it is critical that the use of a touchscreen does not require the operator to lift their upper arm away from the torso. A maximal forward reach of 15.7 inches (to screen center) should allow all operators to access it comfortably and safely.

Viewing requirements:

Touchscreens must always be viewed from a position perpendicular to the screen, to eliminate any distortion. The screen location should avoid reflection from ambient lighting, as this too can lead to visual

difficulties. Providing tilt adjustment should allow manipulation of the screen to a location to suit all users.

Applying ergonomics to the retail arena and ensuring optimal design of touchscreen workstations gives benefit to operators through alleviation of discomfort and prevention of musculoskeletal disorders, and customers by providing a more streamlined and efficient service.

Table: Recommendations for angle of view of touchscreens.

Recommendation
Any touchscreen with a top of screen height less than 48" from the floor should be able to be tilted upward at least 30 degrees
Any touchscreen with a top of screen height less than 41" should be able to be tilted upward at least 45 degrees.
Screen should be perpendicular to the line of sight of user.
Screen angle should be adjustable.

