

# Keyboard alternatives

Love them or hate them, keyboards are here to stay, but there are ways of making them easier to use

**K**eyboards are the commonest way of operating a computer and yet they remain one of the most problematic parts of the man machine interface.

The complex array of keys, which has changed little since the typewriter was invented in the Victorian era, have survived into the age of the touch screen, of gesture control and voice recognition.

People who either cannot see well or have little mobility in their hands are bound to struggle with a device that has 100 different keys, many with more than one function.

Millions of non-disabled people also find operating a conventional flat keyboard a painful experience.

“Repetitive strain injury is caused by the strain of turning your wrists sideways and holding your hands flat,” says Stephen Hobday, founder of PCD Maltron, who has spent most of his long career developing alternative keyboards along ergonomic principles.

“I blame it on the technologists’ reluctance to change. When I sent my designs to IBM they said they didn’t fit with their commercial plans.”

Nonetheless, the rapid increase of computer use has lead to a wide variety of alternative keyboard designs to give more people access to IT and to reduce the physical demands on the body.

Here we review some of the most common solutions.

## Big letters

People with vision impairments can get a simple aid in the form of big characters for keytops.

These are available as cheap stick-on labels for individual keys, as so-called keyboard gloves or overlays, or built into complete keyboards.

Each character typically fills the keytop and is four times bigger than conventional lettering. Characters are available in various high contrast colour schemes, such as white on black, black on white and black on yellow.

## Expanded keyboards

Expanded keyboards, which are larger than conventional ones, are designed to help users who are either physically or vision impaired.

The PCD Maltron unit measures 62cm by 23cm, making it at least a third bigger than a typical keyboard, and robust enough to

withstand heavy use. It also has a built-in keyguard, and large characters on the keycaps, with different colours available for the letters and for the control keys.

Other features include extra space keys, a shift key which can be used with just one finger, and a facility to switch to a layout based on the most often used letters.

## Keyguards

Computer users with dexterity and other motor skills difficulties can find keyguards useful. These are plastic or metal plates that fit over a keyboard, with a hole over each key.

The holes help guide a finger to the required key, and users can rest their hands on the guard without causing other keys to be pressed.



Maltron: providing finger friendly keyboards

## Mini keyboards

Mini keyboards, based on laptop computer keyboard layouts, are aimed at users whose arm, hand or finger movement is restricted. Some might also be helpful for one-handed use.

Not all the units are designed specifically for people with disabilities. A typical mini keyboard is small enough to be used in a limited space, for example on a lap tray or wheelchair table.

## Chording keyboards

Chording keyboards are smaller and have fewer keys, typically one for each finger and possibly the thumbs.

The CyKey, for example, consists of just nine keys that are used in different combinations to generate almost any character.

Instead of the usual sequential, one-at-a-time key presses,