Basics of Hobbyist Mechanical Keyboards

Types of Keyboards

Mechanical: These have switches that are mechanical in nature, using a spring and stem to capture a key-stroke. This zine focuses on mechanical.

Optical: These keyboards use infrared light to capture key-strokes.

Hall Effect: These keyboards use magnetic fields to detect key-strokes.

Membrane: These are typically what they use in laptops or budget office keyboards.

Capacitive (Topre): Uses mechanical-like springs and capacitive sensing to produce a very unique tactile feel.

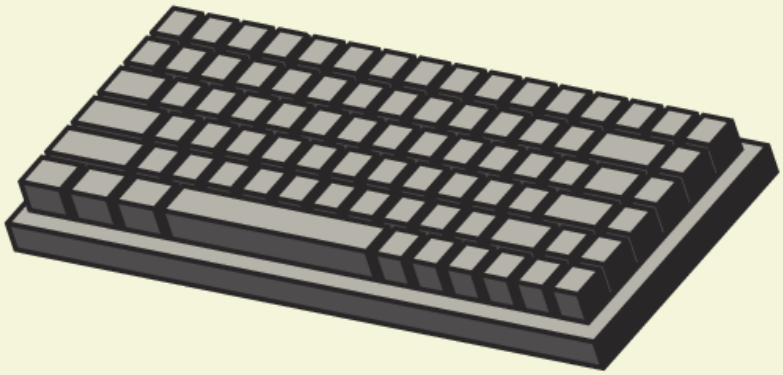
Buckling Spring: These keyboards are very old-school and retro, with a spring that buckles and hits a membrane to activate a keystroke.

QMK

I recommend keyboards that are QMK (Quantum Mechanical Keyboard) compatible. This is an open-source firmware for mechanical keyboards that allows you to remap your keys and do special functions!

You can look up how to code, build, and flash your own QMK keymap through official documentation, or you can use the popular GUIs called VIA or VIAL if the keyboard is compatible with them.

QMK can do some pretty cool things, like have layers and create simple macros that execute a series of keystrokes.



What form do you want?

Layout: Form factor, usually denoted by a percentage

100% = Full-sized keyboard

95% to 98% = Usually takes out the navigation cluster

80% (TKL) = Ten Keyless, which removes the numpad but keeps the navigation cluster

75% = Usually takes out the numpad and navigation cluster

65% = Takes out the numpad, navigation cluster, and function row

60% = Takes out the numpad, navigation cluster, and arrows

40% = Usually niche and varied; mostly has alphas, with some modifier/control keys.


Function Row
Esc
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
Print Screen
Scroll Lock
Pause Break
Backspace
Tab
Caps Lock
Enter
Shift
Shift
Ctrl
Alt
Alt
Ctrl
Insert
Home
Page Up
Delete
End
Page Down
Num Lock
Enter
(Highlighted red) Your modifier/control keys
Navigation Cluster
Numpad

Mechanical Switches

Linear: Smooth press

Tactile: Has a bump you can feel. The bump varies by different brands/models of switches.

Clicky: Produces an audible sound similar to a click.

Silent: Meant to be very quiet and can be linear or tactile. They feel mushy.

Old conventions used to have these switches distinguished by color, but this is not the norm anymore. It is my opinion that they are all *mostly* the same, and at some point, similar switches are *good*.

You might come across 3-pin and 5-pin switches. PCBs that support 3-pin switches can still take 5-pins if you cut off the plastic legs. 5-pin PCBs can support 3-pins.

credit: ThereminGoat
A famous keyboard switch blogger

The pins are the metal and plastic pins protruding from the bottom of the switch. The metal parts transmit the keystroke. The thin plastic pins are for stabilization and can be clipped off.

When looking for switches, be sure they are specifically designed for mechanical keyboards. You might also want to consider hot-swap keyboards, which allows you to swap out your switches.

Closer

There are more things you'll come across if you deep dive into the hobby. Some topics might be:

- Lubing switches (many switches come pre-lubed now)
- Sound damping
- Designer keycaps
- Group buys/pre-orders

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