How a Pin and Tumbler Lock Works

Kwikset pin and tumbler locks operate by matching the cuts on the keys with the bottom pins inside the cylinder plug. In a 5-pin system, there are two sets of five pins in each lock, top and bottom, and a set of springs. The top pins are all the same size and are flat on both ends. The bottom pins vary in length (in .023" increments) and are tapered on both ends.

For the lock to work, the cuts of the key must enable the tops of all five bottom pins to be flush with the cylinder plug. This is called a shear line.

Many Kwikset locks contain a 6-pin cylinder, which functions in the same way as a 5-pin system, with the addition of an extra top and bottom pin and spring. A comparison of 5-pin and 6-pin systems can be found on page 4.

In Figure 1, the correct key has been inserted into the cylinder, forcing all the pins to line up and form the shear line.

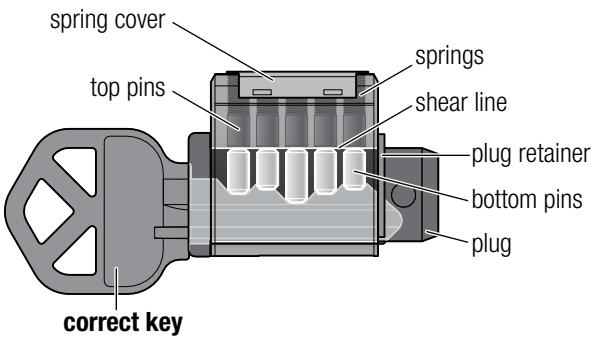

Figure 1. Correct Key Inserted

In Figure 2, the key has been removed from the cylinder. There is no shear line because the pins have settled into the bottoms of their individual chambers.

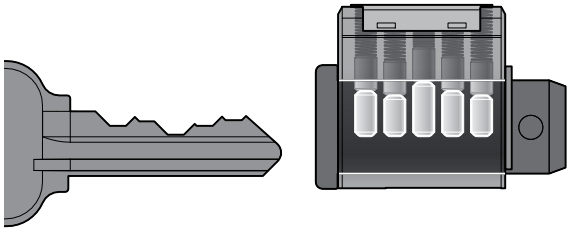

Figure 2. Key Removed

In Figure 3, there is no shear line because an incorrect key has been inserted into the cylinder. This key won't operate the lock.

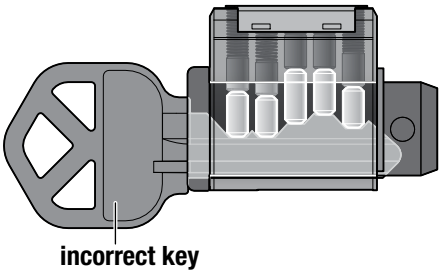

Figure 3. Incorrect Key Inserted

When you rekey a lock, you simply replace the bottom pins according to the cut combination of the key you want to use. And you can do all this with a few very simple tools.

Tools to Rekey

Among the contents of a Kwikset Keying Kit, you will find the different pin sizes you will need to rekey a lock, springs and spring covers, clips to secure the plug inside the cylinder, a key gauge for reading the cuts on a key, a cylinder removing tool (affectionately known as a “pickle fork”) and a plug follower. The plug follower is a simple device which keeps lock parts from scattering across the room when you remove the plug (which houses the pins and springs) from the cylinder. A 236 Builder Keying Kit is illustrated in Figure 4.

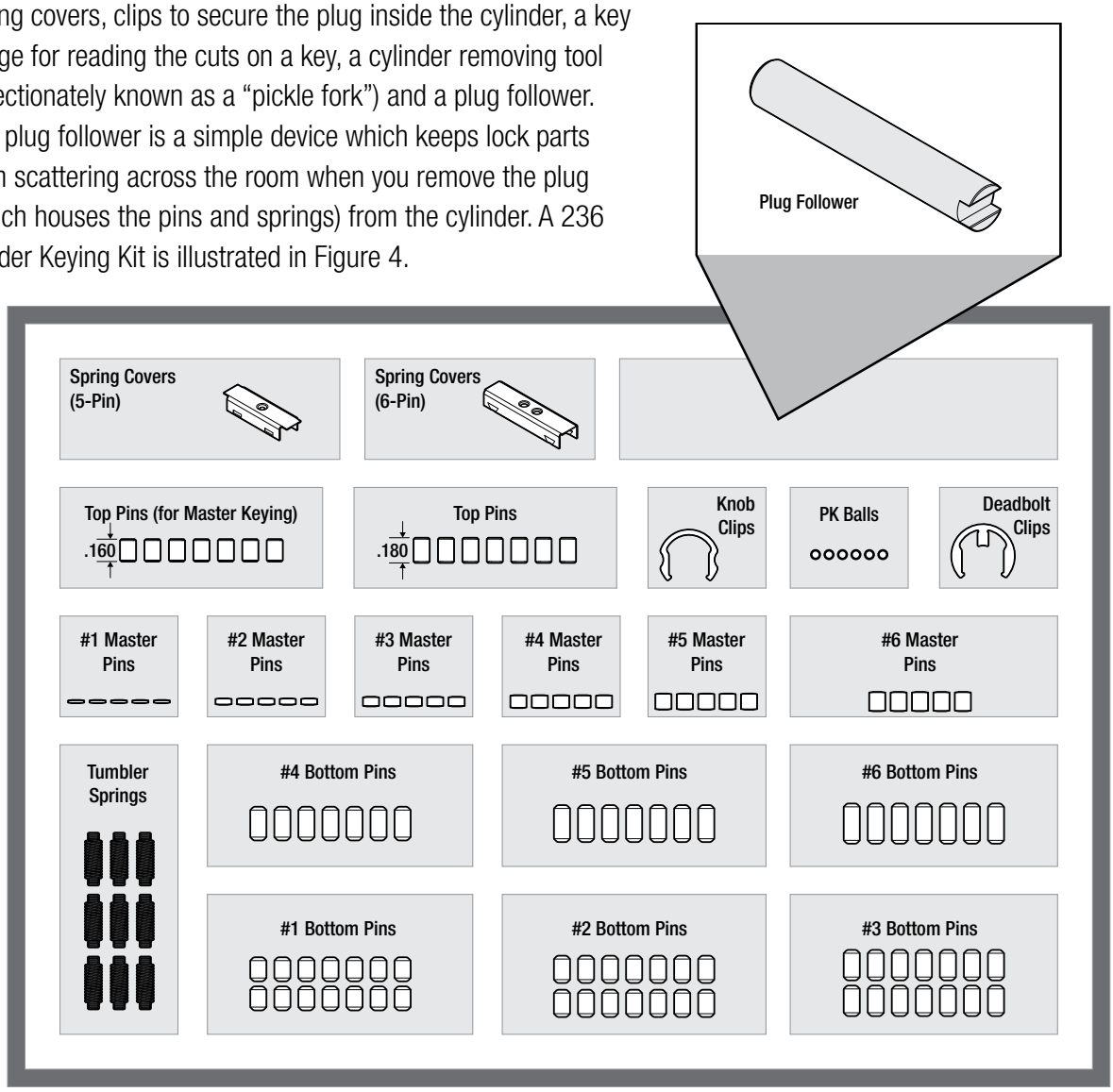

Figure 4. Tools to Rekey

How to Gauge a Kwikset Key

Before you can rekey a lock, you have to know what pins to use. For security reasons, Kwikset doesn't print key cut combinations on the packaging. A key gauge should be used to determine the key cut combinations (Figure 5).

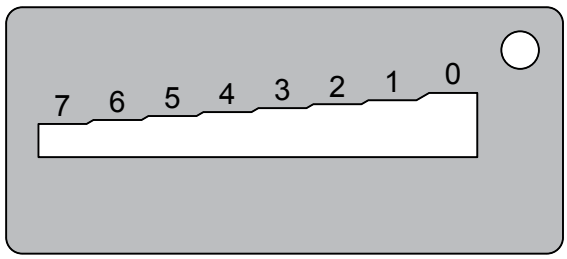

Figure 5. Key Gauge

To measure a key with a key gauge, hold the new key (the key that you want to operate the lock) by the bow and slide it into the gauge. You must always gauge a key starting with the first cut closest to the bow. See Figure 6.

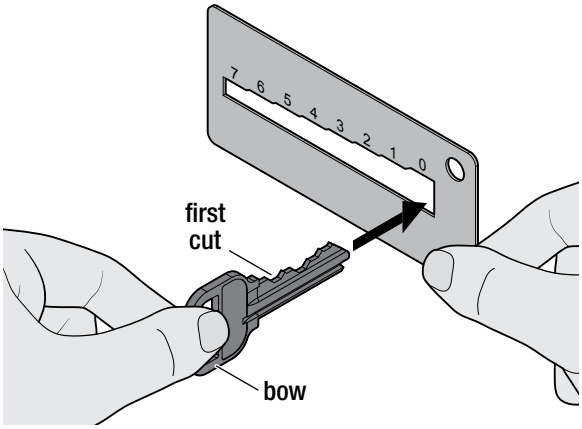

Figure 6. Gauging a Key

Position the flat portion of the first cut so it is even with the "0" position of the gauge, then slide it to the left until it stops at the correct "step" of the gauge. The number to the **right** of the key is the number of the cut. Write down this number. In Figure 7, the first key cut is a 4.

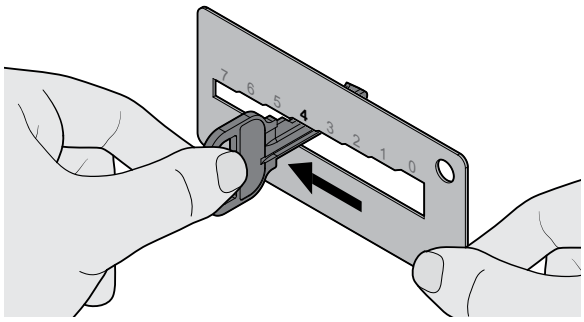

Figure 7. First Key Cut

Repeat this procedure for all the cuts of the key to obtain the 5 or 6-digit combination. The example key in Figure 8 has a combination of 4-3-6-4-3.

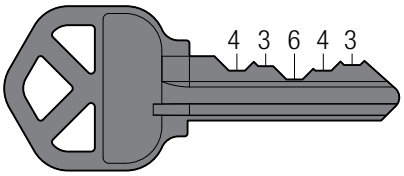

Figure 8. Key with a 4-3-6-4-3 Combination

When the time comes to re-pin the lock, use this combination to determine which bottom pins are needed. The numbers of the key cuts correspond to the numbered bottom pins in your keying kit.

5-Pin vs. 6-Pin Systems

While 5-pin and 6-pin systems essentially function in the same way, there are a few differences to note:

- When gauging a 6-pin key, the first position is called the 0-position. See Figure 9.

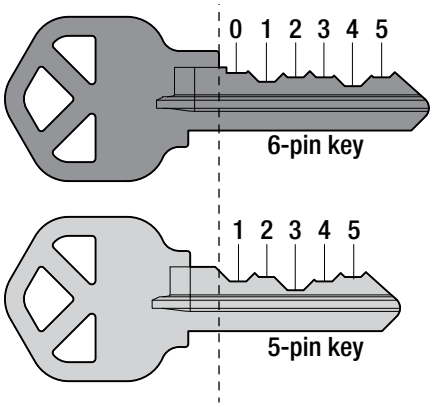

Figure 9. Comparing a 5-pin and 6-pin key

- Aside from the number of cuts on the key, it's simple to determine if a key is a 5-pin or 6-pin key at a glance: A 6-pin key has a longer keystop on top.

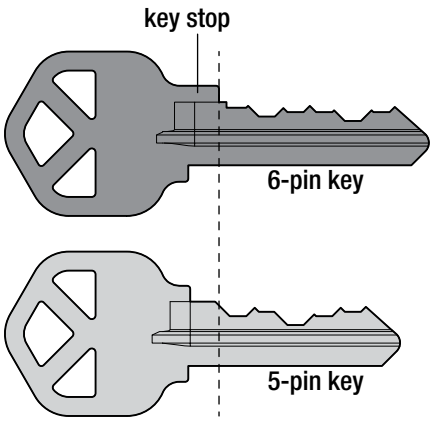

Figure 10. Longer key stop on a 6-pin key

A 5-pin plug can be repinned to accomodate a 6-pin key. In Figure 11, notice that the 0-position on the key is not used. When gauging a 6-pin key for use in a 5-pin plug, do not gauge the 0-position.

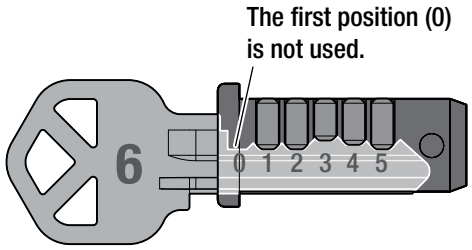

Figure 11. 6-pin key in 5-pin plug

A 6-pin plug can accomodate a 5-pin key. In Figure 12, notice that the last chamber of the 6-pin plug is not used.

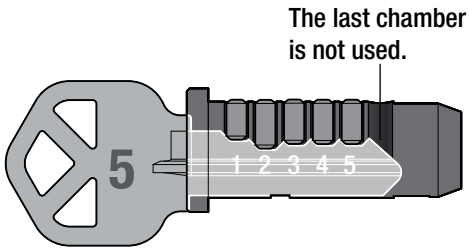

Figure 12. 5-pin key in 6-pin plug