Red Clover Components
207 Stone Farm Road
Marshfield, VT 05658
www.redclovercomponents.com

The Freewheel Key is a portable tool for removing a bicycle freewheel (not a cassette, which is a different mechanism and requires a different tool) from the hub of a rear wheel. It's not designed for continuous shop use, but for roadside freewheel removal when heavy shop tools are not available.

To prevent hub and freewheel threads from seizing together, it's good practice to separate them once a year or so, clean and grease the threads, and reinstall.

The Freewheel Key--Directions for Use

Step 1. After removing the rear wheel from the bike, unscrew the nut from the quick-release spindle, remove the small conical spring beneath, and place the correct freewheel remover for your particular freewheel over the end of the spindle, with its splines or prongs engaging the freewheel body.
Make sure the remover you're using is sized to fit a 1" wrench, since a remover with a ⅞" or 15/16" base won't fit the Freewheel Key's stationary 1" aluminum jaws. (Current production freewheel removers manufactured by Park Tool Company all have 1" bases, and are available in versions to fit most old and new freewheels)
Fit the jaws of the Freewheel Key over freewheel remover and thread the end of the spindle into its center hole.* Tighten the spindle until the assembly is snug, then back it out a turn or two.

Step 2. Place one of the Freewheel Key's 5/16" steel "dogs" on either side of a strong stationary object of appropriate size. The open bolt holes in a steel highway sign post are optimal, but countless other options exist, such as an I-beam guardrail post, storm-drain grate, utility-pole guy wire, or even a projecting lip of rock in a road cut. ***[Important! Don't use any part of your bike's frame for this unless you want to see massive dents in the tubing!]***

Step 3. While gripping the rim and tire, press down on the wheel to ensure that the dogs remain stationary as you turn the wheel counterclockwise. This can take a substantial amount of force. Once the freewheel breaks free and begins

to turn, it's often possible to remove the Freewheel Key and continue turning the remover by hand. If you leave the spindle in place throughout, you'll need to progressively back it out as the freewheel unscrews, or it will bind against the Freewheel Key body.

Step 4.
When reinstalling the freewheel, take care that it goes on straight to avoid damage to the aluminum threads on the hub. Remember to replace the conical spring before screwing the spindle nut back onto the spindle. (You did store the spring in a safe place, didn't you? Those things are easy to lose.)
The Freewheel Key can be used to tighten a freewheel as well as loosen one. But because the normal action of pedaling will tighten the freewheel body onto the hub, it's easiest to screw it on hand tight and just put the wheel back into service. You may feel some momentary slippage as the freewheel pulls tight when you first start pedaling, but that's normal and no cause for concern.

*Some old French-made spindles use a non-standard threading that will quickly begin to bind when threaded into the Freewheel Key, and damage the spindle or the tool itself if forced in for any distance. Fortunately, the threading of the spindle and nut is irrelevant to the operation of a hub, so the French spindle can be replaced with any standard spindle (which has M5 x 0.8 threads) of the same length. If you're a purist who can't stand to go on a tour with a mismatched spindle, you could always use the original on the wheel and carry a spare of the correct threading in your tool kit.