

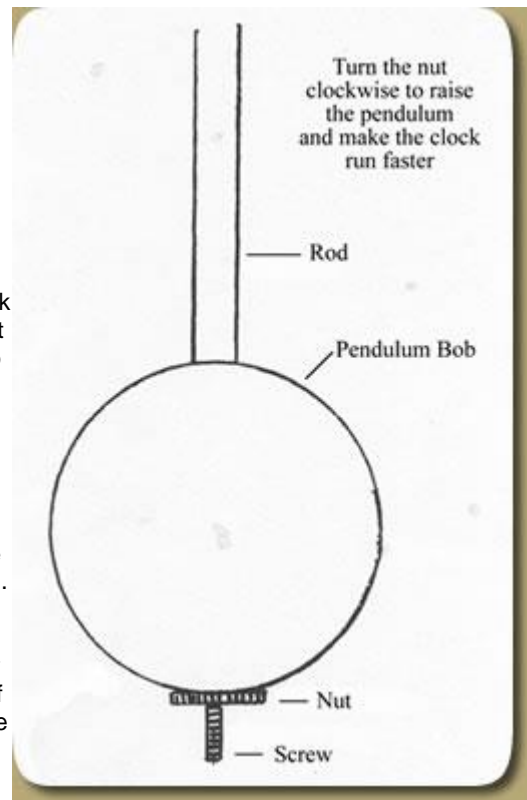
## How To Adjust An Antique Clock

Mechanical clocks are inherently inaccurate and therefore cannot be compared to electronic clocks. People have to keep in mind that antique clocks are often hundreds of years old. Each antique clock was made by hand without using electric tools and without the aid of computerized machines.

Today, modern mechanical clocks are manufactured with machines that can cut gears with incredible precision. In contrast, antique gears were cut using hand tools and often took many hours to make. With that being said, an antique clock that is accurate to within a couple minutes per week really needs no adjusting. Unless you are a clock expert, accuracy greater than that is difficult to attain. If you want that kind of accuracy, I suggest you let an expert perform an overhaul.

Every time your clock pendulum makes a complete swing back and forth, two teeth on the escape wheel are released and the minute hand advances - ultimately one sixtieth of a minute. The faster the pendulum swings, the faster the minute hand will turn.

A basic principle of physics is that the length of a pendulum will determine how fast it swings. A shorter pendulum swings faster than a longer pendulum. You can change the effective length of a pendulum by either rising, or lowering, the pendulum bob. The pendulum bob is located on the pendulum rod. If you raise the bob, the clock will run faster. Likewise, if you lower the bob, the clock will run slower. This is comparable to a dog's tail; shorter tails always wag faster than longer tails.



## Adjusting The Time

First synchronize your clock with an accurate time source - like a digital clock. After twenty-four hours, record how many minutes your clock is off. Then adjust the bob up, or down, to change the pendulum's effective length. If your clock is running fast, lower the bob. If your clock is running slow, raise the bob.

How much to adjust the bob depends upon both the error and the length of your pendulum. In general, a British grandfather clock can be changed one minute per day with one revolution of the nut.

After the adjustment, synchronize your clock and repeat the process. As your clock becomes more accurate, switch from recording every day to recording every week. Continue the process until the clock is accurate to within two minutes per week.

When you are satisfied with the accuracy of your clock, simply correct the time every time you wind your clock.

## Adjusting The Strike Count

What to do when your clock strikes a different count to the hour hand indication? A lot of the time the hour hand is simply pushed onto the hour post. It is free to rotate without a fixed gear locking it to the clock's internal hour counting mechanism. Therefore, it is possible for the hour hand to get out of sequence with the clock mechanism.

To fix this move the minute hand around until it is in the 12 o'clock position and the clock starts striking the hours. Count the numbers of hours struck and rotate the hour hand until it corresponds with the correct number of strikes. The clock hands are now in synch with the internal clockworks. Lastly, rotate the minute hand until the clock reads the correct time. If the hour hand does not move when light pressure is applied, you should consult a clock expert.

## Adjusting "The Beat"

What if your clock only runs for ten minutes then stops? Most times this happens because the clock is not "in beat". A clock is "in beat" when the time between each tick/tock cycle is evenly spaced. To determine if your clock is out of beat, start the pendulum swinging and carefully listen to the tick and tock. If the time between each tick/tock is uneven your clock will not run correctly. If the time between the ticks and the tocks is even your clock is "in beat".

If your clock is not "in beat", there are several things you can try to correct the beat. If your clock is mounted on a wall by a single point, move the bottom of the clock case left or right until the clock sounds "in beat". Professionals will set the case to be level on the wall and adjust the escapement until the clock is "in beat". A Microset clock meter would be used to amplify the sound and provide a digital readout stating the beat percentage error.

The method used to adjust the escapement is different from clock to clock. Since we are experts in British grandfather clocks, the following pertains to that type of clock. Let the pendulum hang in its neutral position and place a piece of masking tape on the case just below the pendulum. Mark the neutral point on the masking tape. Move the pendulum to the left, marking the point where the clock ticks. Next, move the pendulum to the right, marking the point where the clock ticks.

As a rough estimate the two outer marks should be evenly spaced from the center point. If they are not even, you will need to adjust the escapement until they are even. The best way to do this is to twist the "anchor pallet" on its arbor. However, in most cases, it will be difficult to do that because the anchor is often too tight. Instead, bend the pendulum crutch to achieve the same result. See the video below to help clarify this.

<http://ticktocktony.com/Clock-Repair-How-To-Articles/how-to-adjust-a-clock.html>

[https://www.youtube.com/watch?feature=player\\_embedded&v=ps6dPxoxe9c](https://www.youtube.com/watch?feature=player_embedded&v=ps6dPxoxe9c)