

Writing Instructions for Operating a Tool

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How Do CDs Work?

INTRODUCTION

The most popular way to listen to music is probably by compact disc. How does a CD work? When explaining how to play a CD, you probably think of two main steps: (1) Insert the CD. (2) Press “play.” What you may not know is that a lot goes on before and after you press “play.” It is much more complex than it seems. I looked in a few books, and this is what I found.

Topic statement

BODY

Step 1 in recording

Step 2

Step 3

First, you must record a CD. During recording, a microphone translates sound waves from live music into electrical signals. The signals are broken into segments, and each segment becomes a digital code. A laser then uses this code to cut a spiral pattern of microscopic bumps and pits into a CD.

Playing a CD is almost the opposite of producing one. First, there is a turntable drive motor. A CD sits on the

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Step 1 in playing

turntable. The motor's job is to spin the turntable when you press "play."

Step 2

Next, a low-powered laser beam focuses on the bottom of the CD where the bumps and pits are. The laser beam is mounted on a movable assembly, which allows it to move outward in the spiral pattern on the CD. The laser beam can move anywhere on the track, so you can make it read only certain parts of the CD. This forms the "skip" function on a CD player.

Step 3

The brightness of the reflected light of the laser beam changes as the beam bounces off the bumps and pits. The light hits a device that translates the differences in brightness into an electrical signal.

Step 4

Finally, the CD player decodes the signal and reproduces the original sound that you can hear through loudspeakers or headphones.

CONCLUSION

The next time you listen to your favorite CD, think about the complex process it takes to record and play it.

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Works Cited

Feldman, Leonard. "Compact Disc." Academic American Encyclopedia. 1989 ed.

Pohlmann, Ken C. "Compact Disc." The World Book Encyclopedia. 1995 ed.

