

How do headphones work?

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Sound and ears

The outer ear guides the sound waves into the ear canal, where the sound waves will strike the eardrum. When beating into the eardrum, it converts into continued vibrations to the constituent parts such as the tubular system containing fluid called cochlea. Very small hairs in the cochlea will sense these movements and turn them into electrical signals that the brain can recognize.

How does the sound go from headphones to human ears?

1. Electrical signals from the machine are put through the connecting wire.
2. The wire connects the signals to the wire that makes up the magnetic field.
3. The magnetic field of the coil interacts with the magnetic field of the magnet. They create a force that makes the rope move up and down.



4. The diaphragm is attached to the coil and moves up and down the coil.

5. The movement of the diaphragm creates sound waves. Going through a second layer of protection, sound waves will reach the listener's ears in the form of musical melodies.

The headset transfers the sound to both listeners' ears, each earpiece connected to the source with a power cable. The signal passing through the cable to the coil is wrapped around a cylindrical magnet tube. When the signal passes through the coil, it creates a change in the electromagnetic field. That electromagnetic field interacts with the magnet's magnetic field to create a force that can push the coil up and down. At the same time when the coil moves, the diaphragm part moves as well. The diaphragm creates sound waves and reproduces sound from the source.

Pilots who fly a plane do not need to hear the information and instructions in extremely loud engine conditions. Therefore, headphones will help them isolate all sounds outside and only hear the information that is broadcast.

Back: The first high-fidelity stereo headset (hi-fi stereo) was born in 1958 by American manufacturer Koss. It is designed for use with a recorder

Forward: A new generation of wireless headphones is being developed by companies. Listeners just need to wear headphones and enjoy high quality music without being entangled because of the headset's power cable

The headset works like a loudspeaker. It converts a tone that encodes music into sound waves that users can hear. However, the headset is smarter than a loudspeaker, which surrounds the listener's ears. So all noise or sounds that the listener wants to remove is completely isolated.

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