

Cables & Connections

Signal Cable

Signal Cable
Speaker Cable

Signal Cable
Speaker Cable

Balanced Cable

Signal Cable
Speaker Cable

Balanced Cable
Unbalanced Cable

Speaker Cable

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Speaker cable provides a path of low resistance between the amplifier and the loudspeaker

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2 core cable

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1 core is called the positive (+)

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Speaker cable is made up by:-

2 core cable

1 core is called the positive (+)

The other is called the negative (-)

Signal Cable

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All signal cable should be screened, shielded or grounded.

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Signal cable is made up by:-

2 core unbalanced cable

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One core carries the signal

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Signal cable is made up by:-

2 core unbalanced cable

One core carries the signal

One core is a shield against interference

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Signal cable is made up by:-

2 core unbalanced cable

One core carries the signal

One core is a shield against interference

Or a 3 core balanced cable

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Signal cable is made up by:-

2 core unbalanced cable

One core carries the signal

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Or a 3 core balanced cable

One core carries the signal known as + or hot

Signal Cable

All signal cable should be screened, shielded or grounded.

The screen removes electrostatic interference

Signal cable is made up by:-

2 core unbalanced cable

One core carries the signal

One core is a shield against interference

Or a 3 core balanced cable

One core carries the signal known as + or hot

Another core also carries the signal known as - or cold

Signal Cable

All signal cable should be screened, shielded or grounded.

The screen removes electrostatic interference

Signal cable is made up by:-

2 core unbalanced cable

One core carries the signal

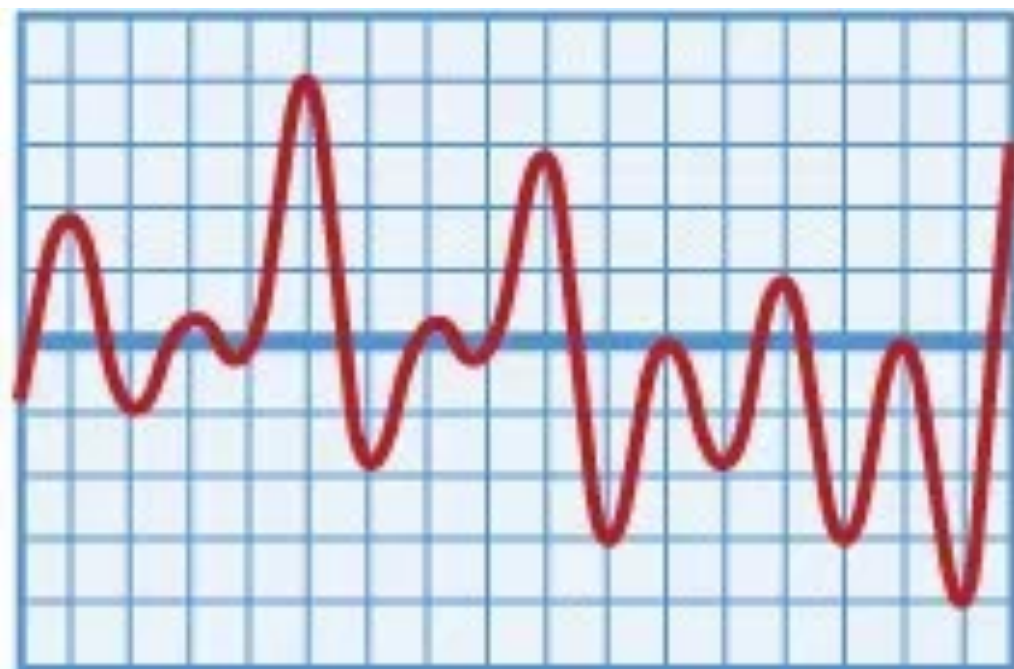
One core is a shield against interference

Or a 3 core balanced cable

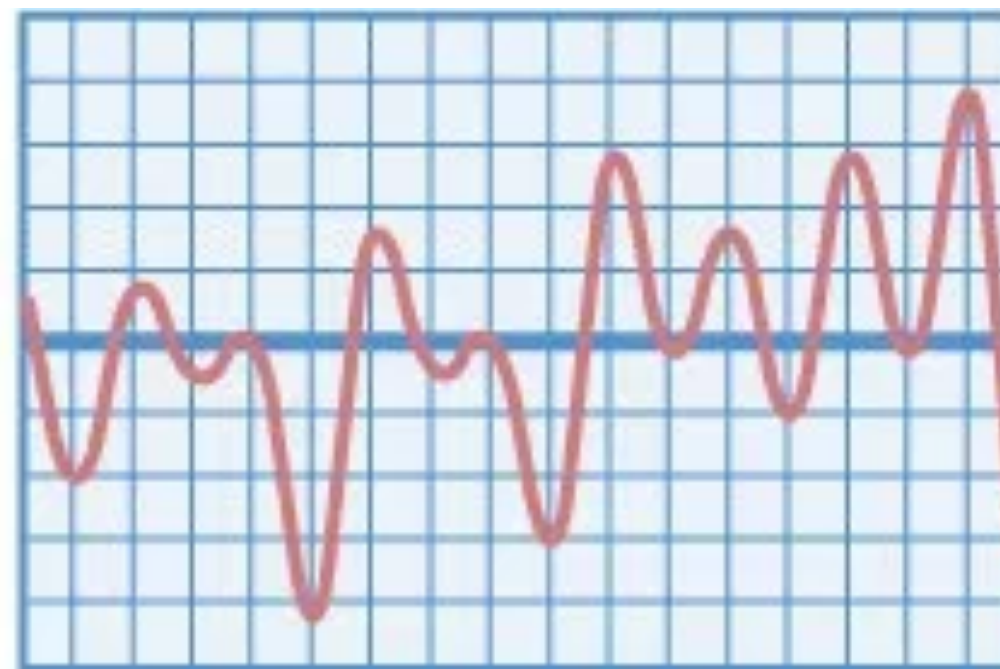
One core carries the signal known as + or hot

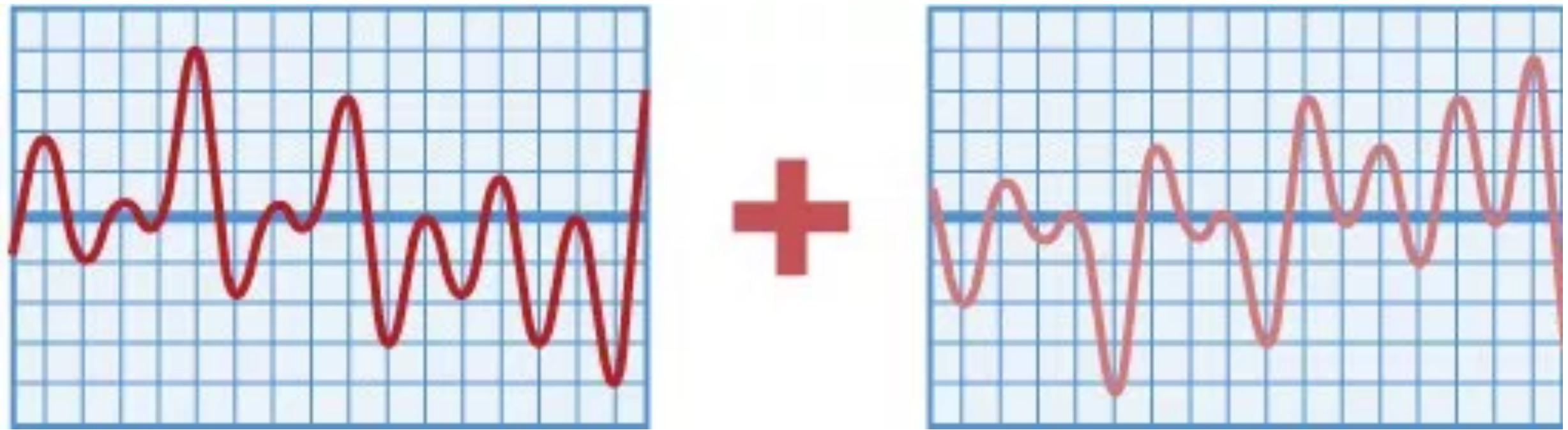
Another core also carries the signal known as - or cold

One core is a shield against interference



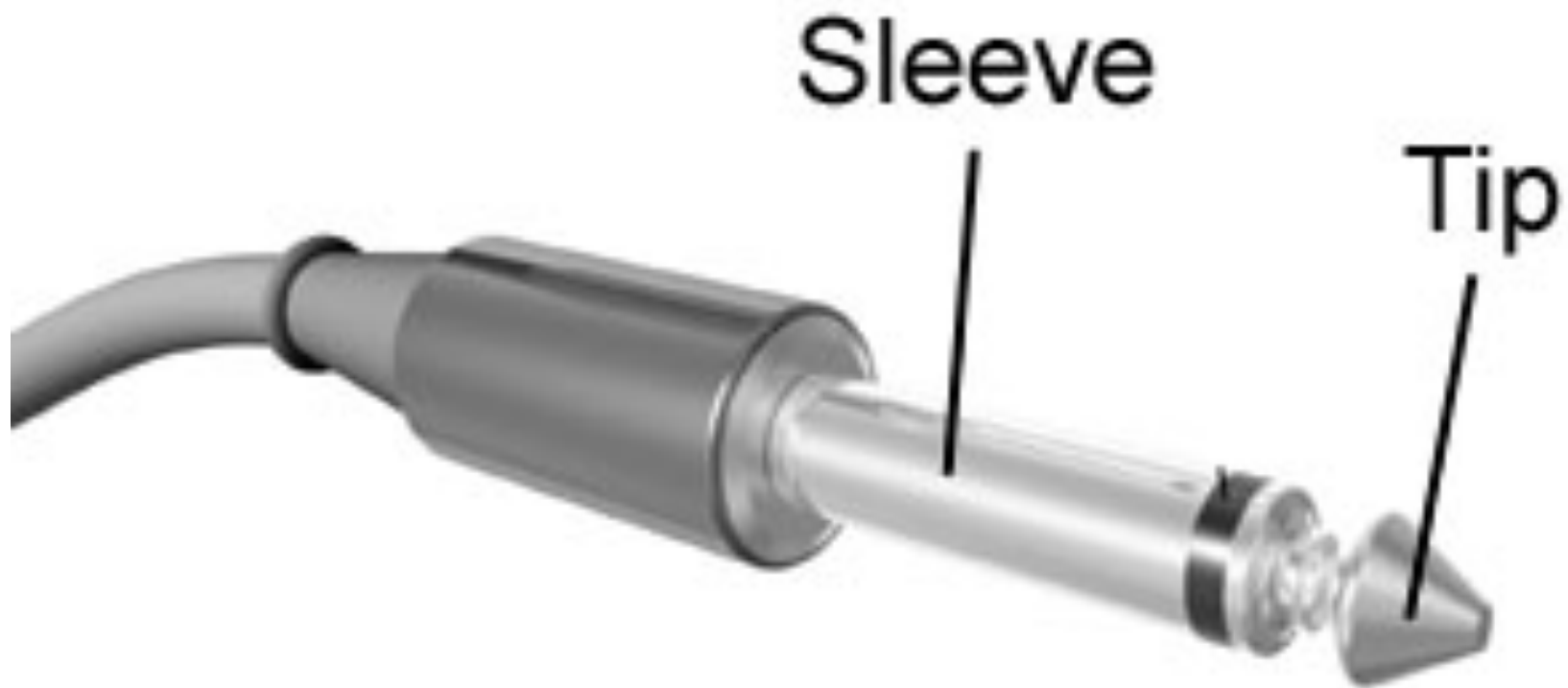
+





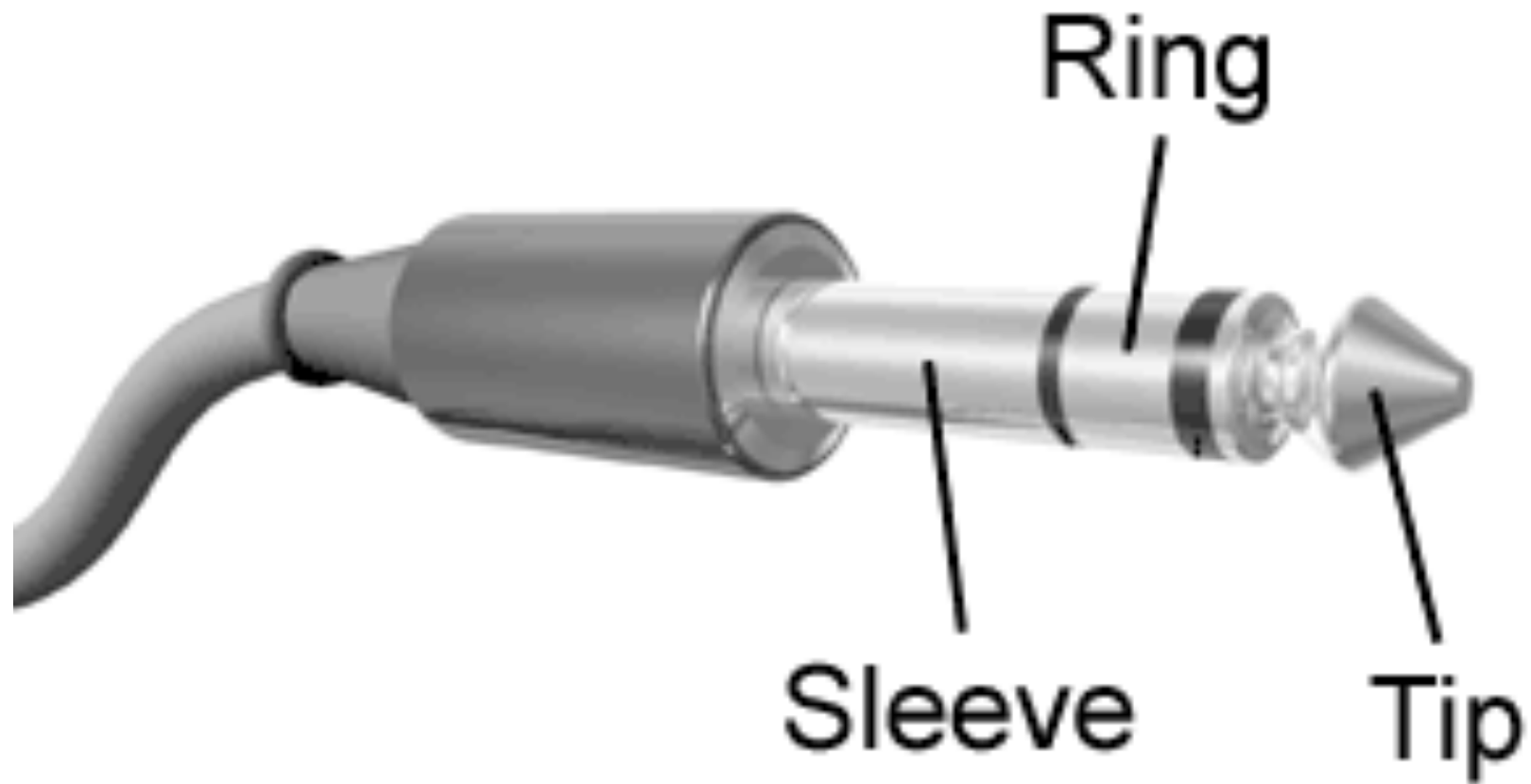
Balanced cables use two signal wires; both carry a copy of the signal, but the two copies are sent with their polarity reversed. If you send two signals that are identical but are reversed in polarity, the signals cancel out, leaving you with silence. (Just like adding positive and negative numbers: +15 added to -15 equals 0.)

Unbalanced Jack



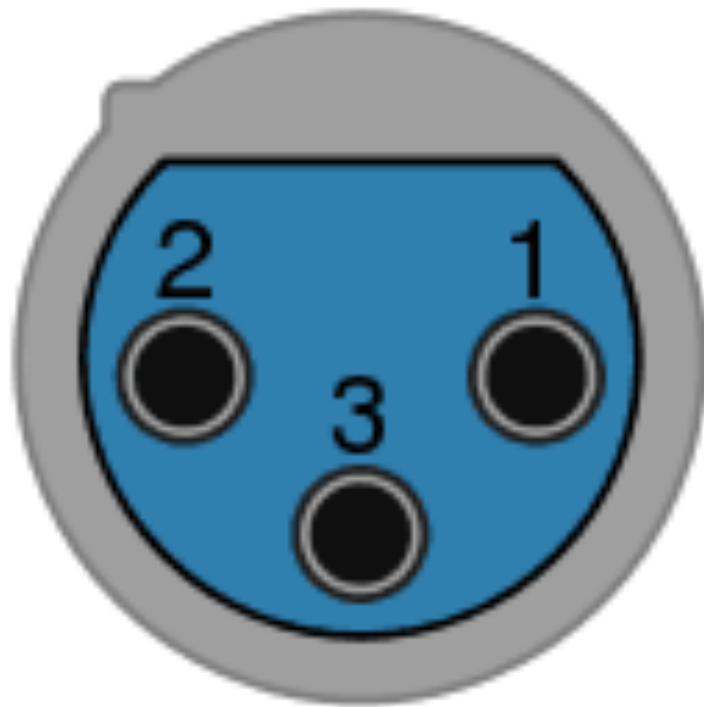
Tip = Signal
Sleeve = Ground

Balanced Jack



Sleeve = Ground
Tip = Signal +
Ring = Signal -

XLR



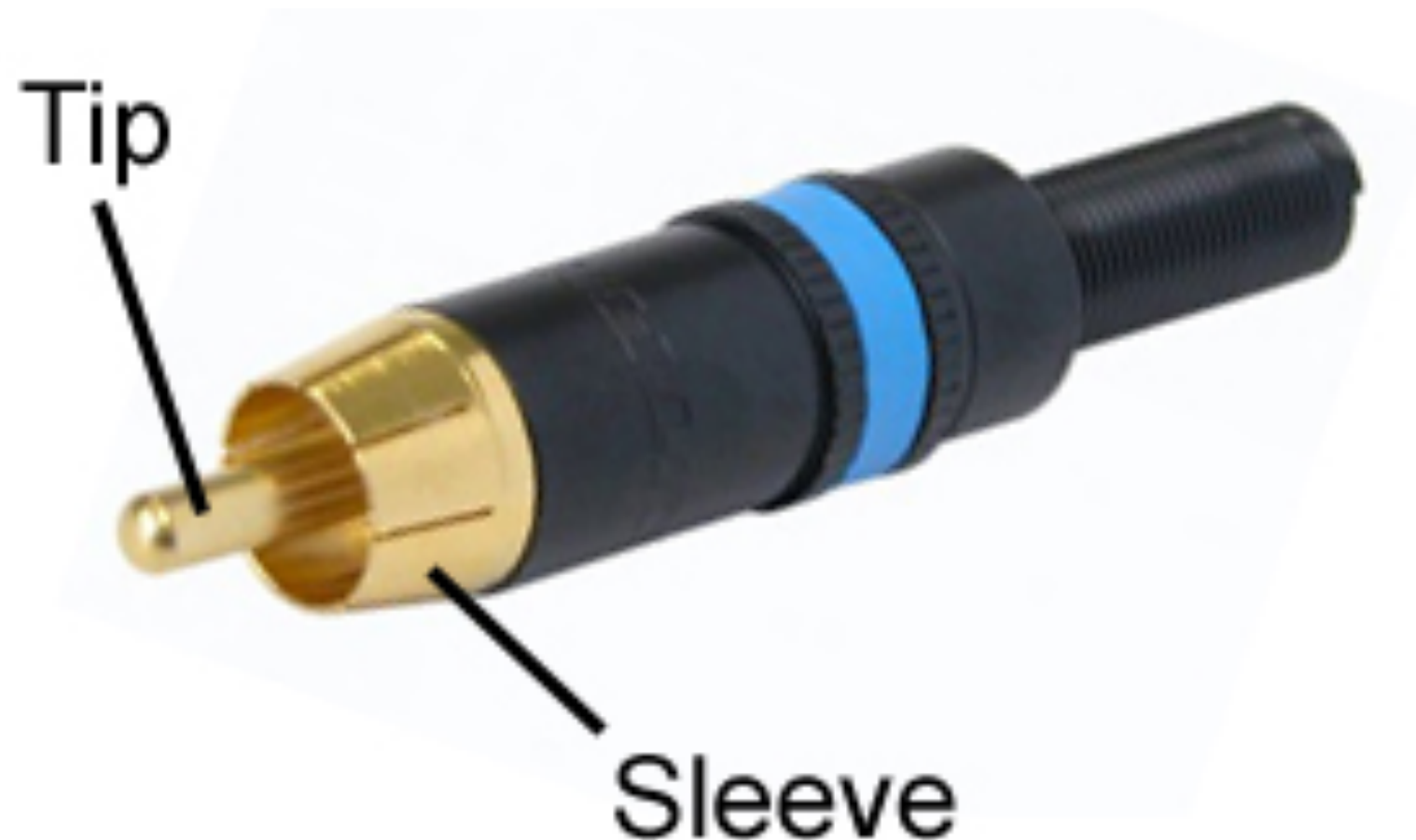
Female



Male

Pin 1 = Ground
Pin 2 = Signal +
Pin 3 = Signal -

Phono or RCA



Tip = Signal
Sleeve = Ground

Speakon



Contains positive and
negative poles

Microphones

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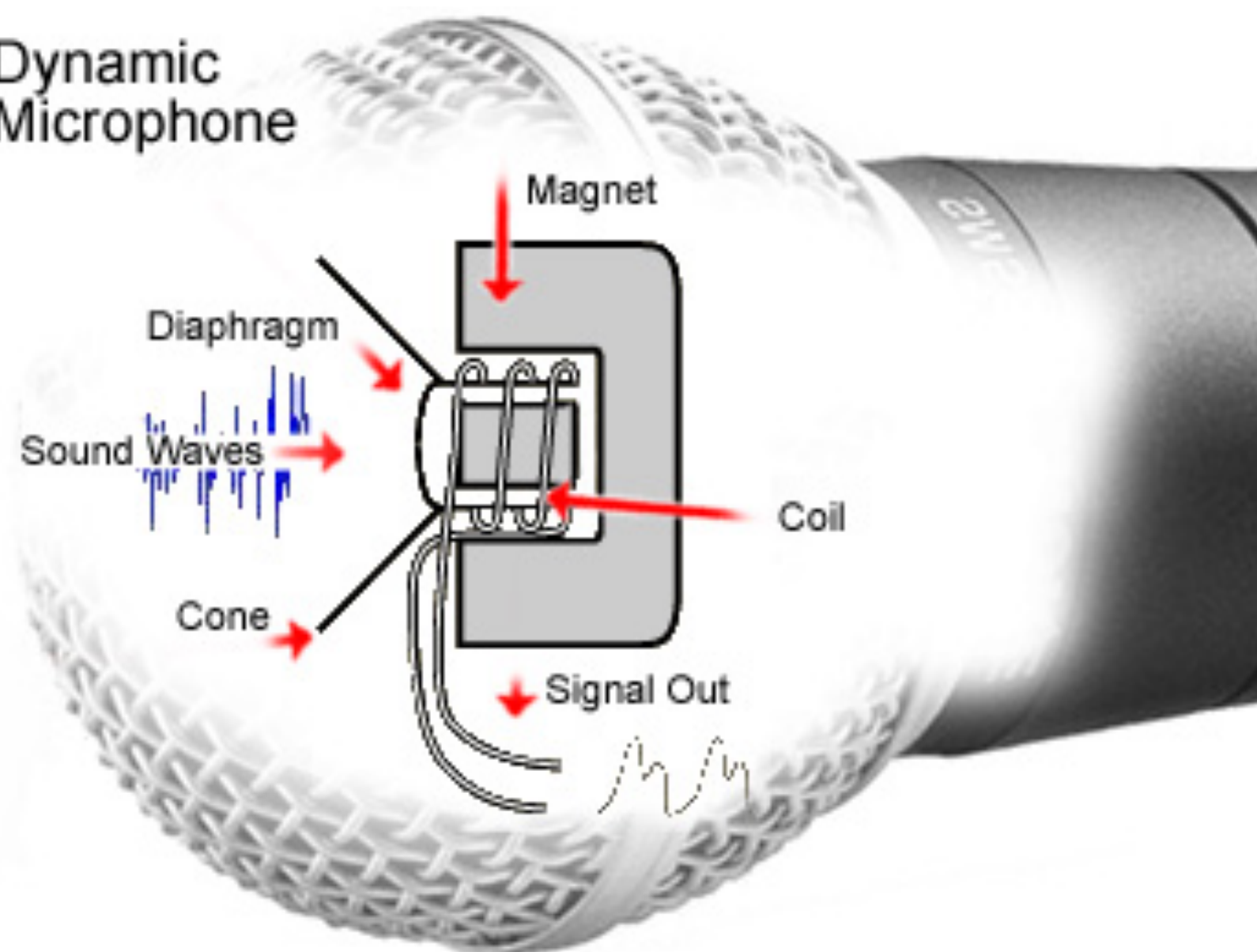
To perform this task microphones use a thin membrane, known as a diaphragm, which mimics the function of the human ear

When sound waves strike a microphone's diaphragm, they cause it to move within an electro-magnetic field, which, in turn, creates a variance in an electrical current. This signal is then transmitted to output devices, such as amplifiers and mixers, which reproduce the original sound wave and reinforce it

Dynamic Microphone



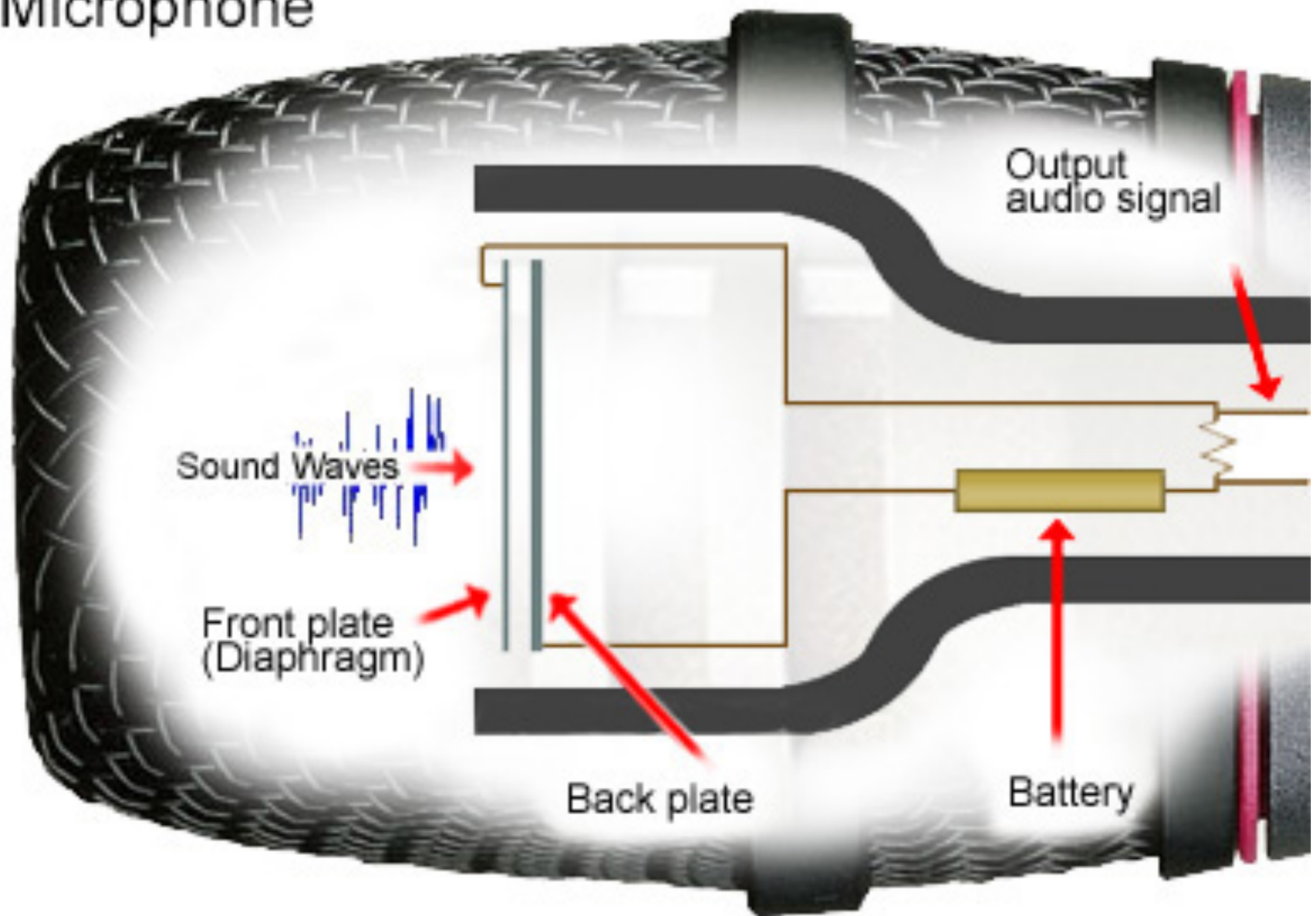
Dynamic Microphone



Microphone



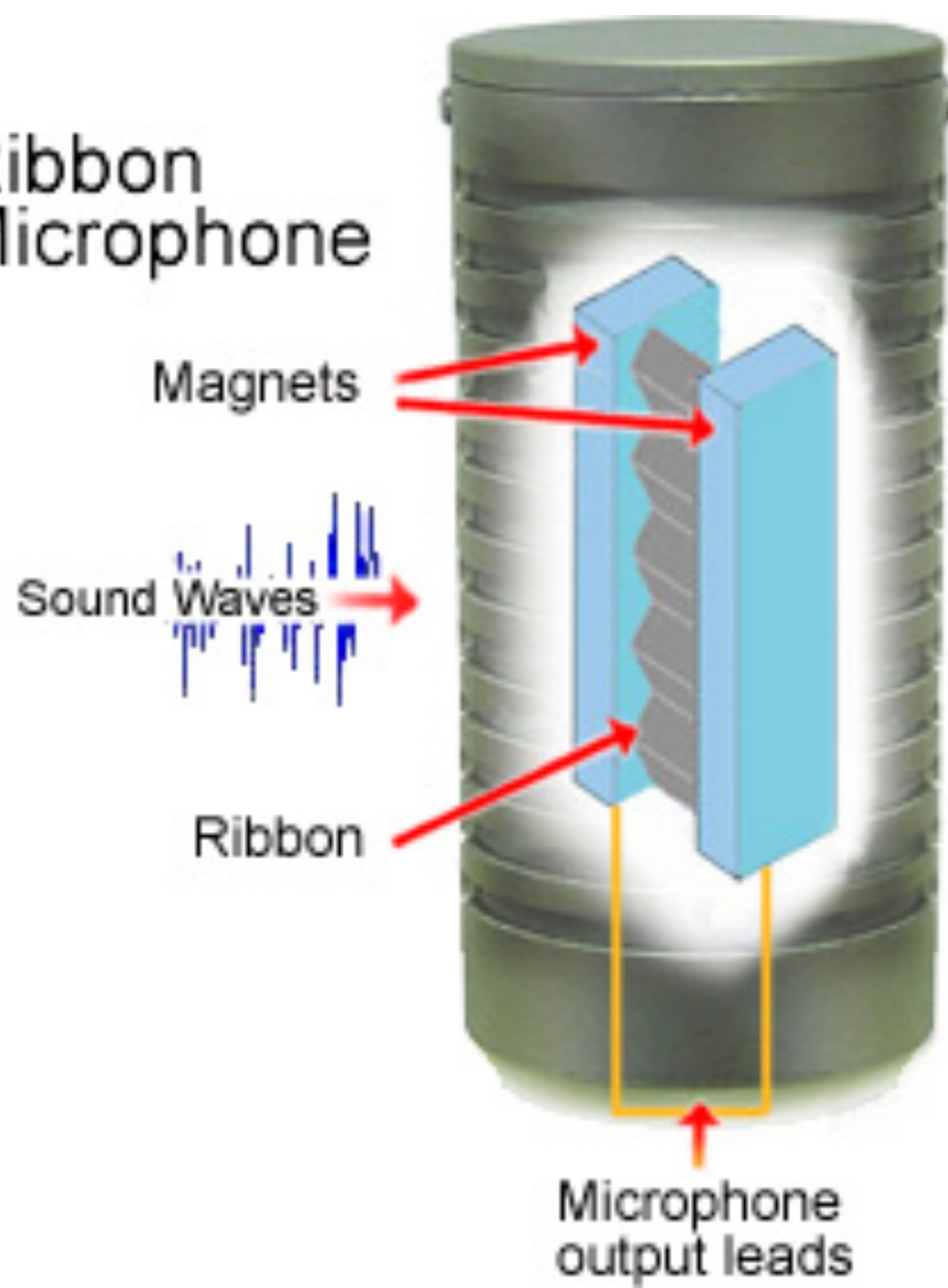
Condenser Microphone



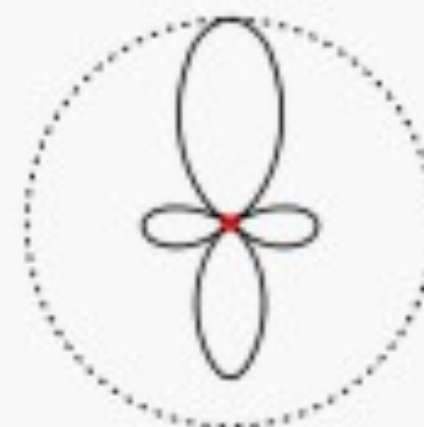
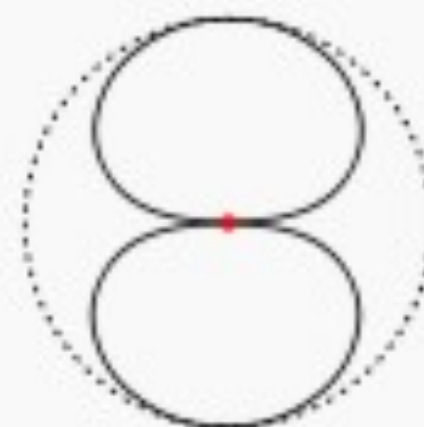
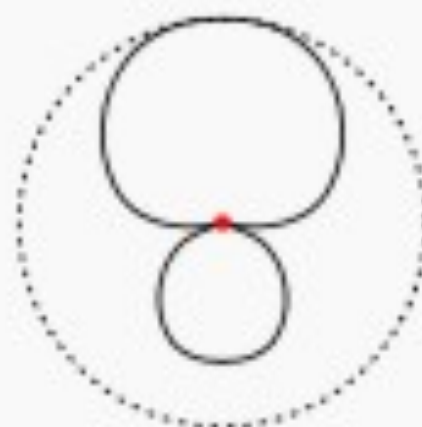
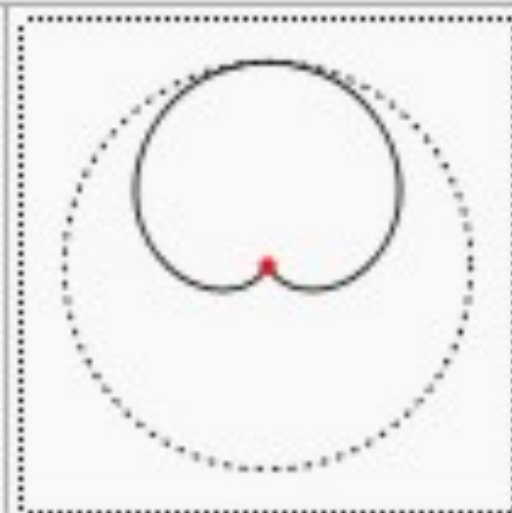
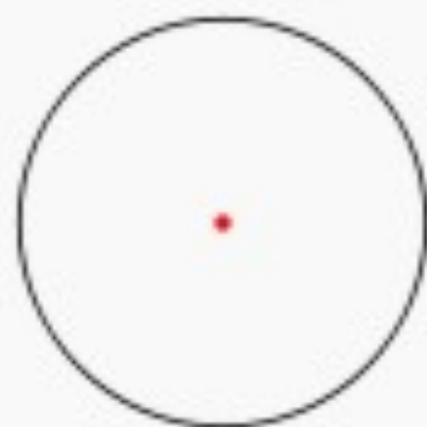
Ribbon Microphone



Ribbon Microphone



Common polar patterns for microphones
(microphone facing up in diagram)



Omnidirectional

Cardioid

Hypercardioid

Bi-directional

Shotgun

Cardioid



Supercardioid



Omnidirectional



Figure of 8 - bidirectional



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DI Box



A DI unit, DI box, direct box, or simply DI (variously claimed to stand for direct input, direct injection or direct interface), is a device typically used to connect a high-impedance, line level, unbalanced output signal to a low-impedance microphone level balanced input, usually via XLR connector



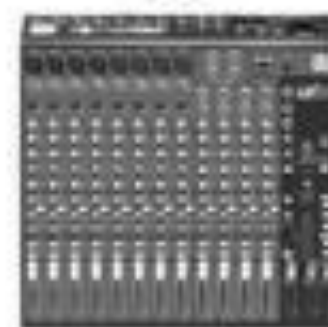
Guitar Amplifier



Speaker cabinet



**Mixing or
Recording device**



**PDI09
Thru**

**PDI09
Input**

**PDI09
Output**

