



4
MINUTES





Hard drive Teardown

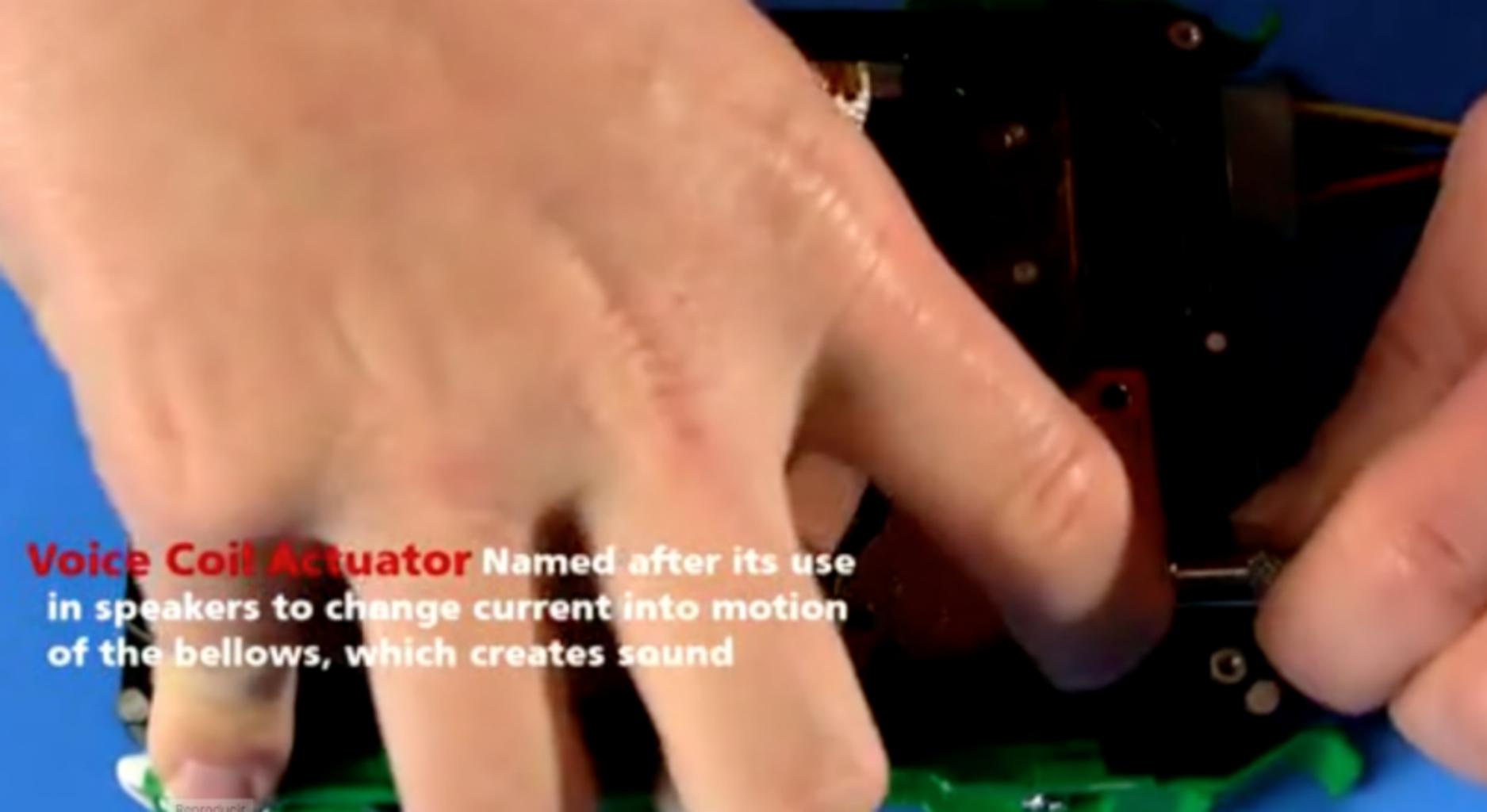
**flying heads, voice coil
motors, amazingly smooth
surfaces & signal processing**
series 3 | enginerguy videos

Platter

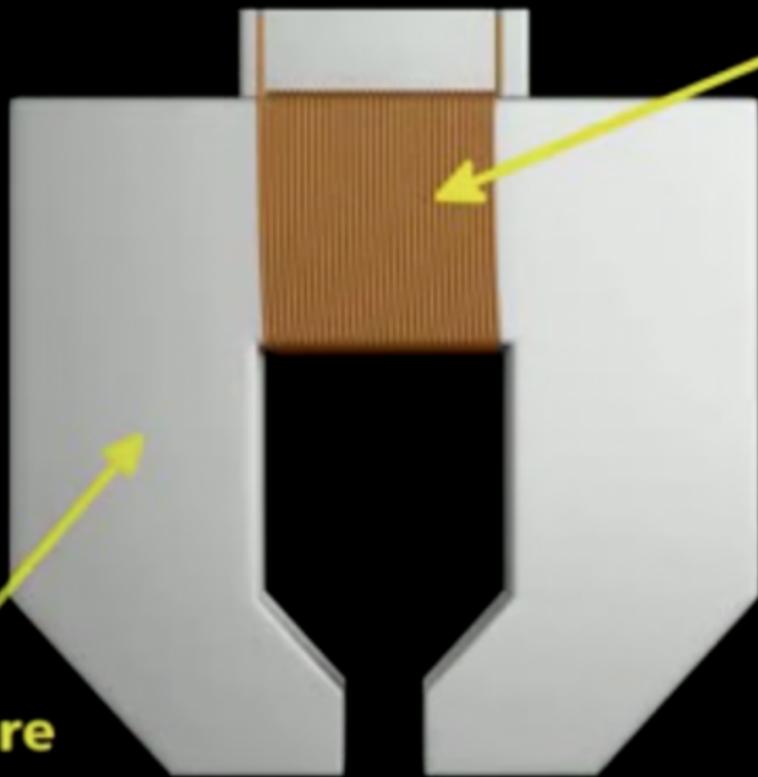
Head

Actuator Arm

Actuator



Voice Coil Actuator Named after its use
in speakers to change current into motion
of the bellows, which creates sound

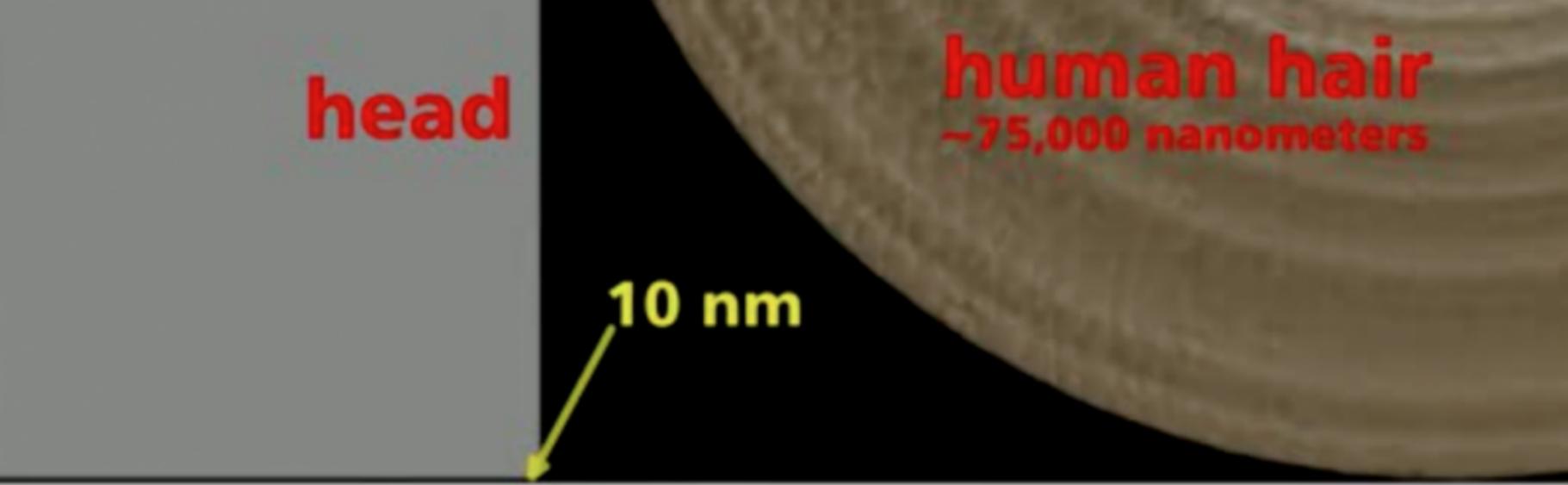


ferromagnetic core

coil



Faraday's Law The EMF (electromotive force) generated is proportional to the rate of change of the magnetic flux



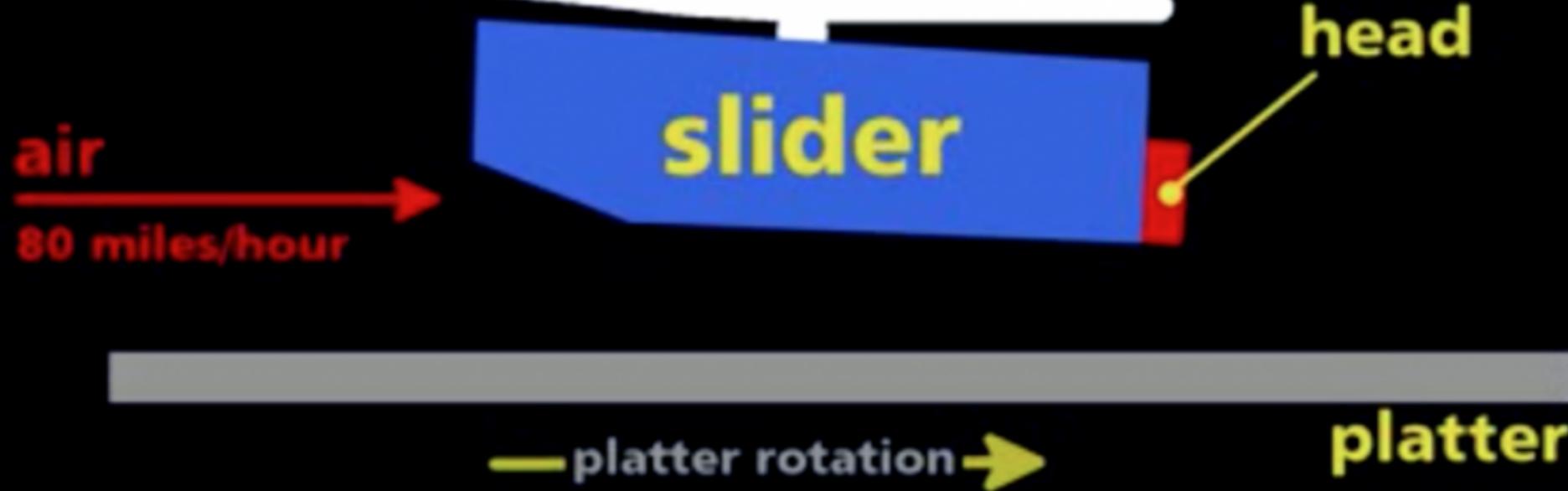
head

human hair
~75,000 nanometers

10 nm

platter

Suspension



Carbon Overcoat

tough layer with lubricant
to reduce wear



Magnetic Layer



Chromium



Aluminium

low density, rigid,
& low cost



Cobalt with platinum & nickel

Sputtered onto chromium, which provides
grained surface that is replicated in magnetic
layer, which helps reduce signal noise

Partial Response Maximum Likelihood

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001111

