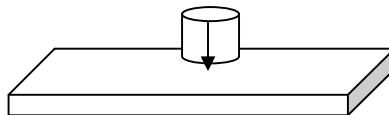


Worksheet for Eddy Current Drag

We will be working with a strong magnet and a copper slab. Read the safety note below carefully.

Safety Note: These very strong magnets can cause serious injury. They will fly to another magnet or steel object and shatter, sending sharp edges in all directions. These magnets are also capable of breaking a finger if you get your hand between one of these and some steel. Anyone with a pacemaker or other medical electronics should never approach strong magnets.

The North and South poles of the magnet are on the faces of the cylinder. Working alone, predict what you think would happen if the magnet were dropped onto the copper slab from a height of a few cm. Explain your prediction using the laws of physics.



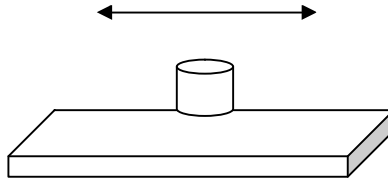
Working alone, predict what would happen if the magnet were dropped onto the slab, and predict what would happen if the magnet were lifted from the slab suddenly. Explain your prediction using the laws of physics.

Compare your answers to both questions with your lab partners and discuss. When you agree, update your predictions and reasoning in the space below.

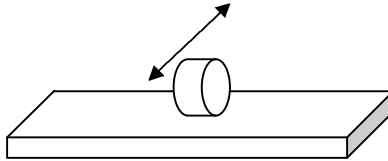
Drop the magnet onto the slab from a height of a few cm (NOT MORE). Describe the result. Does it agree with your prediction? If not, try to determine and explain where you went wrong.

Lift the magnet up suddenly. Describe the result. Perhaps you should compare to lifting the magnet suddenly from a non-conducting surface. Does your result agree with your prediction? If not, try to determine and explain where you went wrong.

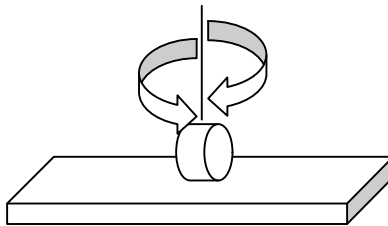
Try sliding the magnet along the copper slab a few mm above the slab.
Describe the results.



Try setting the cylindrical magnet on its edge and rolling it. Describe the results.



Try twisting the magnet, still on its edge, and describe the results.



Set the magnet face down on the copper slab and try spinning it. Describe the results. **Why is this one different? Explain.**

