Application No. 817: Adhesive force reducer made of PET

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For easy removal and attachment of strong magnets (produced with 3D printer)

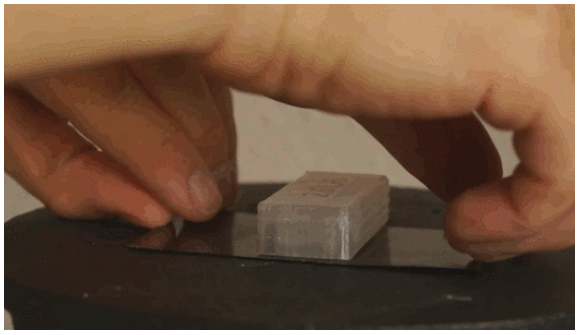
Problem: Separating strong magnets from metal

If you have used a magnet with an adhesive force of 5 kg before, you know it takes a lot of effort to repeatedly separate the magnet from a ferromagnetic surface. Even if you can get a good handle on the magnet, you still have to overcome the adhesive force.

Since the adhesive force changes exponentially to the distance, a fitful removal or attachment can happen with strong magnets, which may damage them.

Solution: Adhesive force reducer

The "HeBär" adhesive force reducer has been designed to gently remove or attach strong magnets with much less effort. It is actually an adhesive force reducer for neodymium block magnets with the dimensions 40×10×5 mm (Q-40-10-05-N (www.supermagnete.de/eng/Q-40-10-05-N)). It is produced with a 3D printer.



Functionality

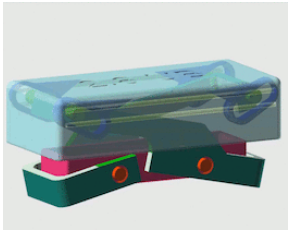
The lever transforms the last millimetres so that the adhesive force of approx. 5 kg can be overcome with a removal force of less than 1 kg. This allows for a gently and strength-saving removal or attachment.

Printing information

Download STL files (ZIP - 530 KB) (www.hackerspace-ffm.de/wiki/images/HeB%C3%A4r.zip)

In order to retain the highest adhesive force and abstain from glueing the magnet, the magnet is held by a few layers only. Printing on a smooth surface is recommended.

- PET as a material, since thin and spring-loaded elements are used
- Kapton Hotbed without raft
- 150 µm layer, 0.5Ø nozzle



Articles used
1 x Q-40-10-05-N: Block magnet 40 x 10 x 5 mm (www.supermagnete.de/eng/Q-40-10-05-N)

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