

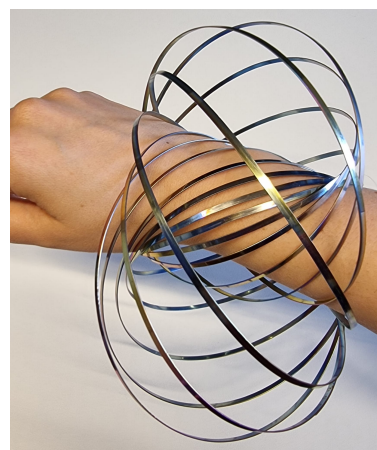
MatheMAGICAL: Flow Rings

Flow rings (in German, *Durchflussringe*; in French, *anneau d'écoulement*) are a closed metal spiral that has two main configurations. In the first one, which we call the *flat configuration*, one sees a collection of superposed rings (they look disjoint). In the second one, which we call the *toroidal configuration*, one sees some doughnut shaped and flower shaped closed spiral curve.



OPENING: One can take the flow rings out of a flat purse, clenching them in the fist so that they are in the flat configuration. Place the flow rings horizontally in the air 50 centimetres above a table (or a flat surface). Releasing the flow rings leads to the toroidal configuration. (Recommended: rehearse the “abracadabra moment” to determine the appropriate height and desired effect).

CLOSING: It's a small riddle how to close the flow rings without forcing. In fact, one can put a hand flat and horizontally on top of the toroidal configuration. By pushing gently downwards one gets the flat configuration (it's easy once one has learned how to do it).



BALL: By gently acting on the toroidal configuration and trying to make it more compact, one can get a spherical figure (yarn ball).

ROLLING: One can use the flat configuration as a bracelet, then it will naturally open up to a toroidal configuration. By raising or lowering the arm, the flow rings will not slide but roll along the arm in a rather impressive way.