Gyroscope

(45K12.10)

The following instructions were provided by the manufacturer.

The forces demonstrated in your gyroscope are the same as those first observed by Isaac Newton in the 18th Century. They are put to use today in gyro-controlled guidance and navigation systems in ships, planes and spacecraft, in accurate mapping and survey work, in oil-well drilling and even motion picture making. So, you can master and learn about these same forces behind today's (and tomorrow's) important gyro uses.

Your gyroscope should be handled with care to avoid damage to the frame and delicate wheel balance. Please notice the split in the frame. This does not mean your gyroscope is broken. It's made that way for the hand assembly and final balancing adjustments. The two ends at the split should only butt together.

An occasional drop of oil on the spindle points will keep your gyroscope in good working condition for years to come.

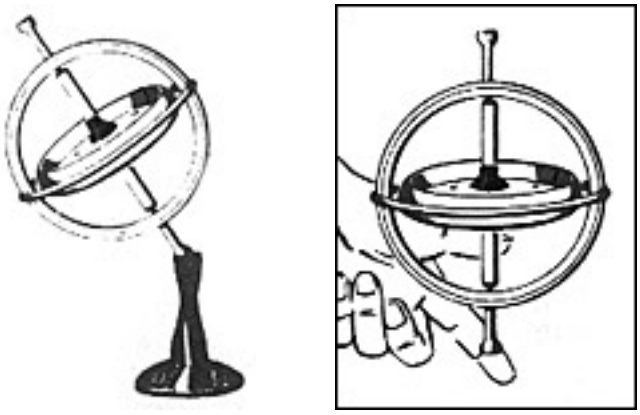
Here is the Secret

The wheel of the gyroscope must spin rapidly. To get your gyroscope spinning, hold the frame firmly in your hand. Thread the cord through the small hole near the top of the spindle. Turning the wheel, carefully let the cord wind around the spindle — from hole to hub and back again. Be sure to keep the winding as smooth and tight as possible, and be sure to keep the winding between the hole and the hub. To create the rapid spin required to master the forces, pull the cord away from the gyroscope with a quick, strong motion. Now the forces are yours.

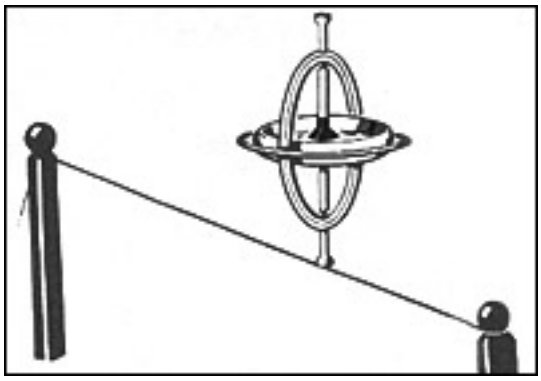
Note: *Do not spin your gyroscope with anything other than the special string supplied.*

Master the Forces

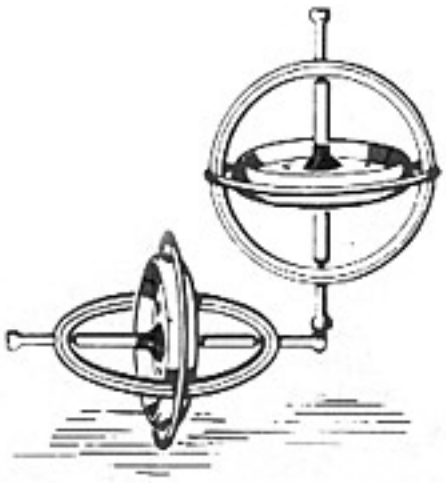
- Place the spinning gyroscope on its plastic pedestal, on the tip of your finger, on the end of a pen, or on any small upright. The gyro will seem to defy gravity and maintain its relative position in space — no matter how the base is moved around.



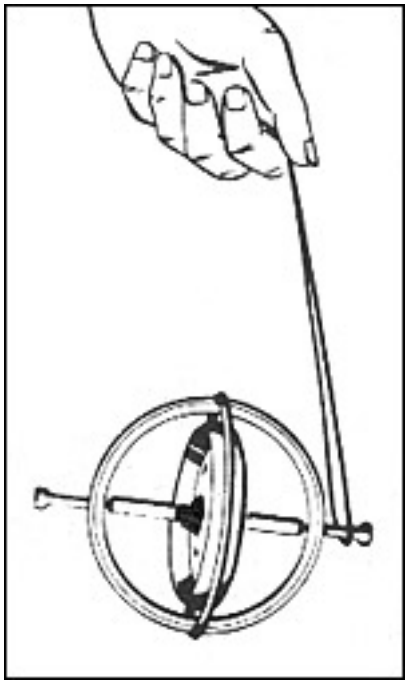
- Place the spinning gyroscope on a tight wire or string, on the edge of an unbreakable drinking glass, on the edge of a yardstick or ruler, or on the edge of any sturdy surface.



- Place the spinning gyroscope so that it balances on the horizontal frame member. Place a second spinning gyro on the end of the first and they will maintain balance and position together.



- Suspend the spinning gyroscope in a loop made by doubling the string. The gyroscope will maintain any angle above or below the horizontal at the bottom of the loop.



These are just a few ways to master the forces. Use your imagination to discover other amazing tricks.