Table 1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Into coil fast | Out of coil fast | Into coil slow | Out of Coil slow | Not Moving |
| North pole of magnet & single loop | + | - | 0 | 0 | 0 |
| South pole of magnet & single loop | - | + | 0 | 0 | 0 |
| North pole of magnet & many loops | -- | ++ | - | + | 0 |
| South pole of magnet & many loops | ++ | -- | + | - | 0 |
| North pole of magnet in other side of many loops | ++ | -- | - | + | 0 |
| South pole of magnet in other side of many loops | -- | ++ | - | + | 0 |

Table 2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Into coil fast | Out of coil fast | Into coil slow | Out of Coil slow | Not Moving |
| Slide inner coil | --- | +++ | -- | ++ | 0 |
| Slide iron | +++ | --- | ++ | -- | 0 |
| slide AL | 0 | 0 | 0 | 0 | 0 |

In AC the needle is oscillating, vibrating back and forth

3. motors

Homopolar-

Positive up- spinning clockwise

Negative up- ccw spinning

Positive up battery- flipped magnet: ccw spin

Negative up- flipped magnet: clockwise

Simple coil motor:

Coating left-

Right-

Up-

With battery positive up, the right side of the coil is pulling down and making it spin

Down- equilibrium

Electromagnet dc:

With positive lead on the bottom and negative on top, the motor spins counterclockwise. The flux is changing through the main red coil.

Generator:

DC

Split ring

Ccw is positive

Clockwise is negative

Weakest in perpendicular and parallel alignment,

Strongest at slight angles off from each of these.

Dual ring

Alternates between positive and negative for rotations.

Strongest at 45 degrees from parallel or perpendicular.

Like AC

Field from upper magnets to upper magnets the north side points to the bottom in lab orientation.

Hand crank:

Like ac, switched between positive and negative