Rotary Variable Differential Transformer(RVDT)

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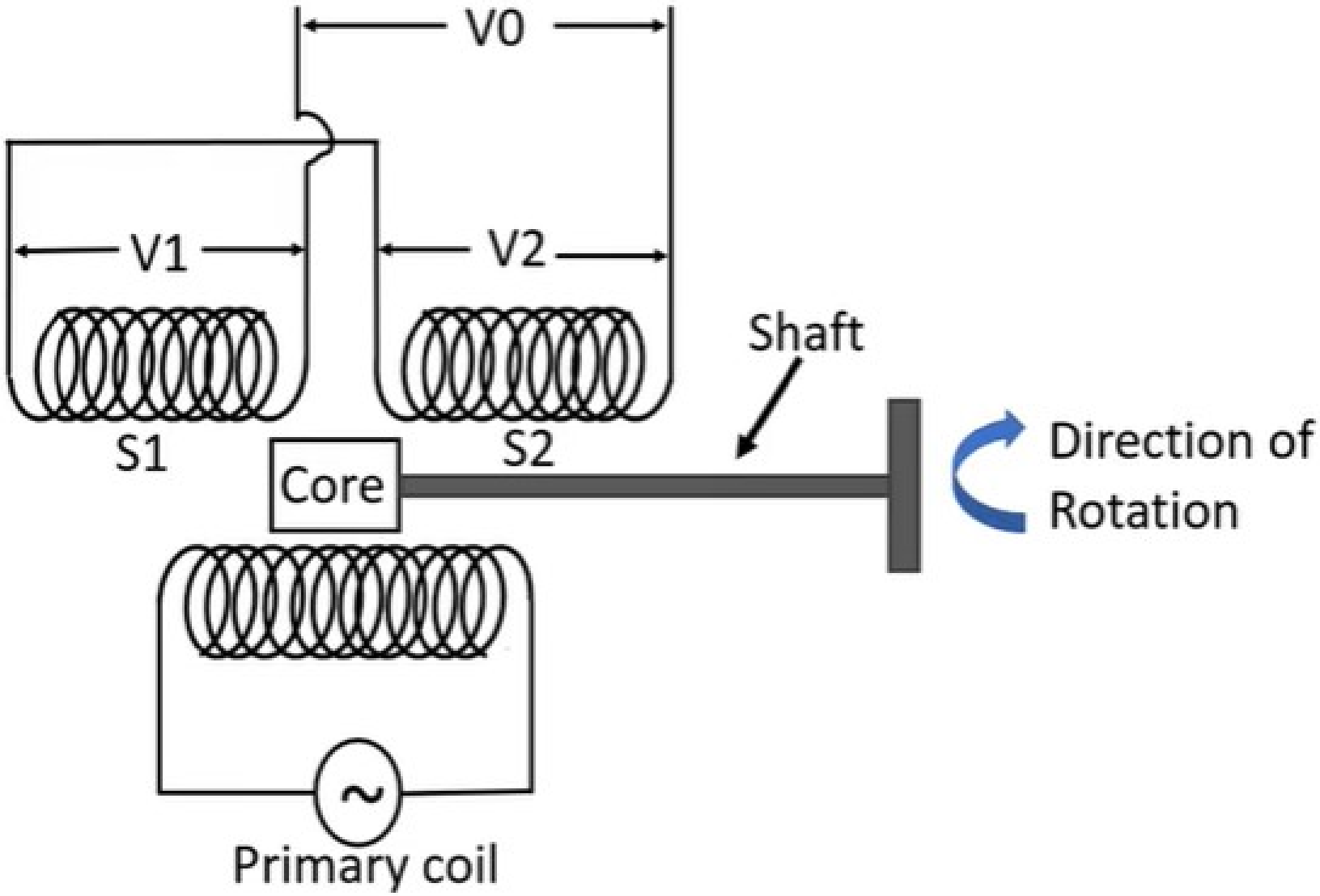
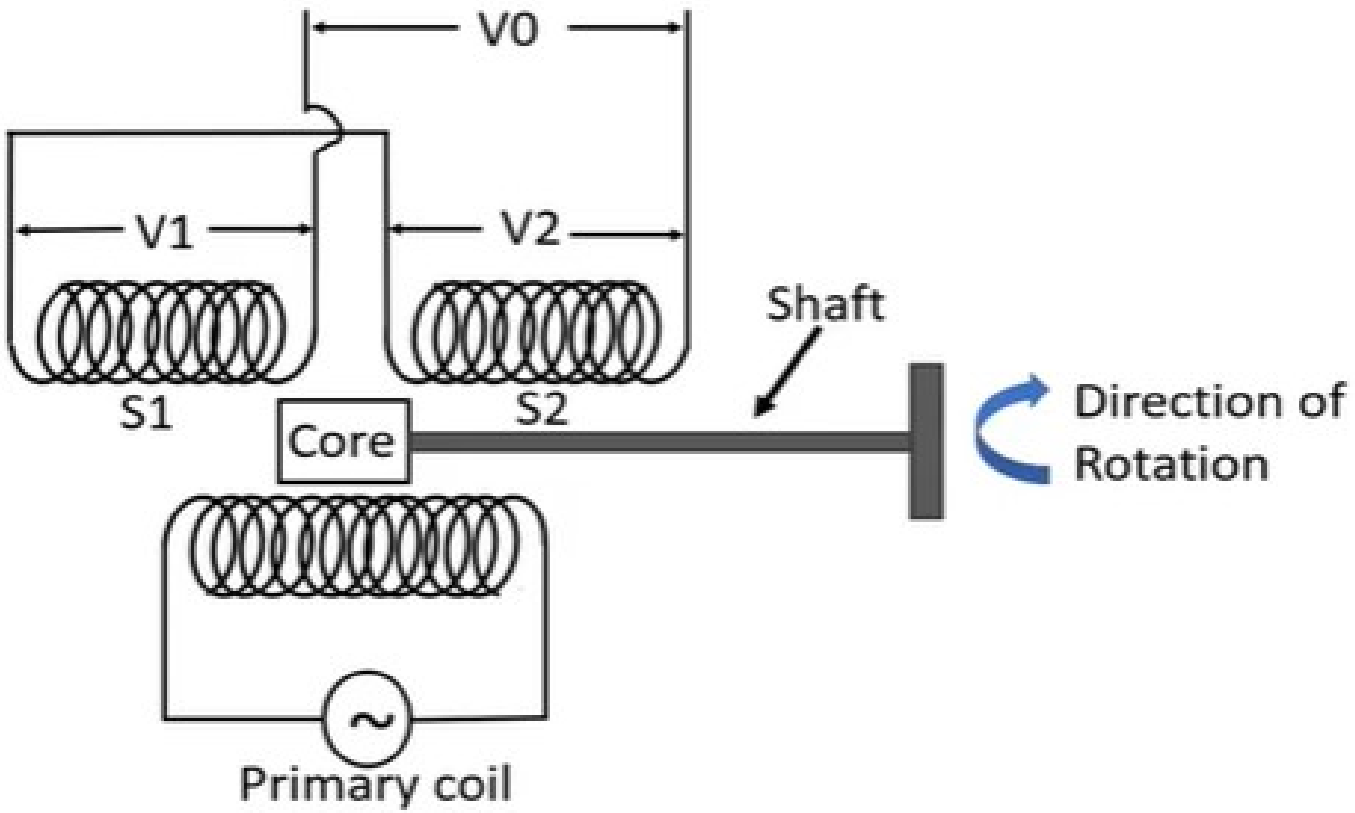
Construction

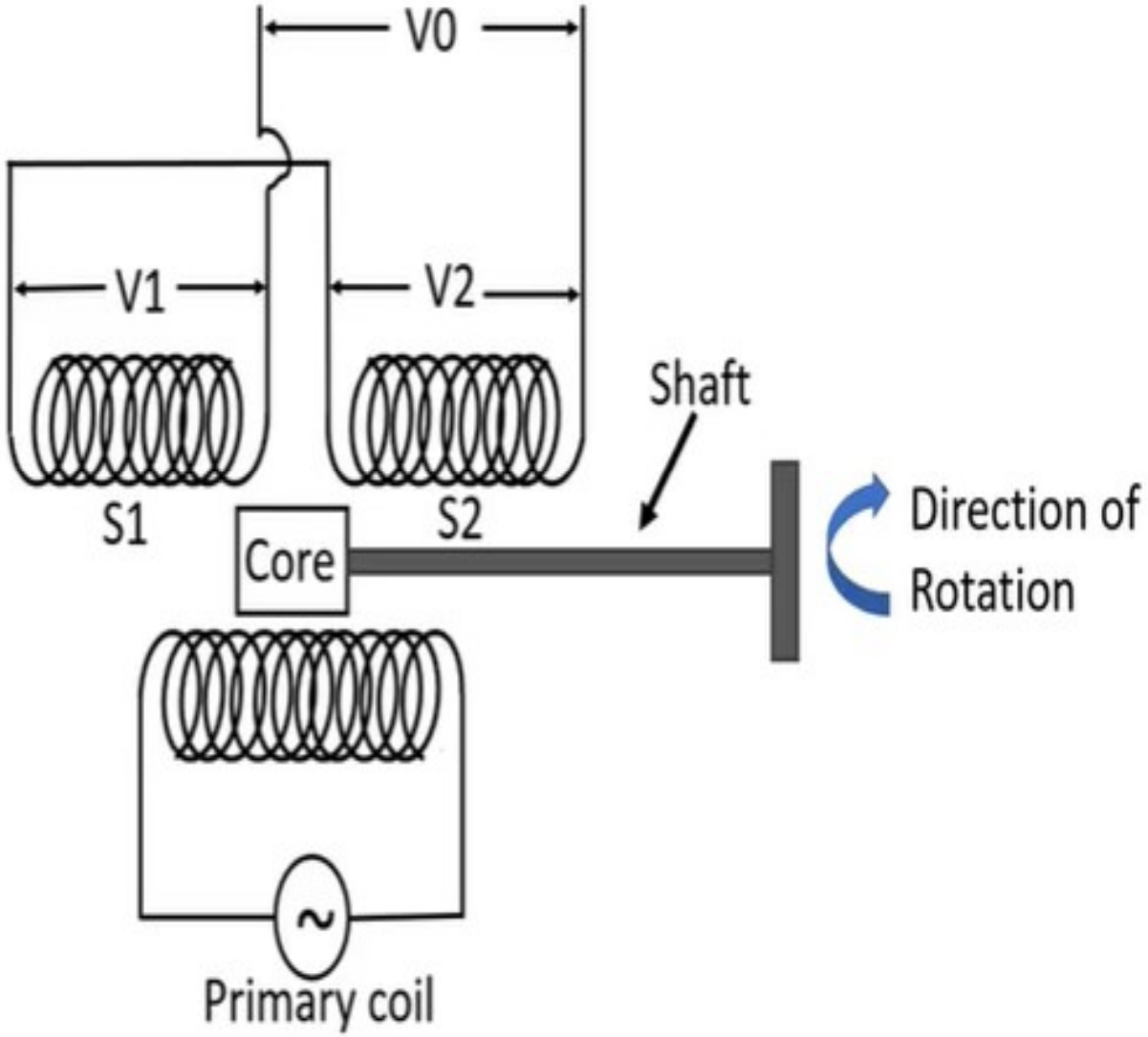


Working of RVDT



The differential output is $V0 = V1 - V2$

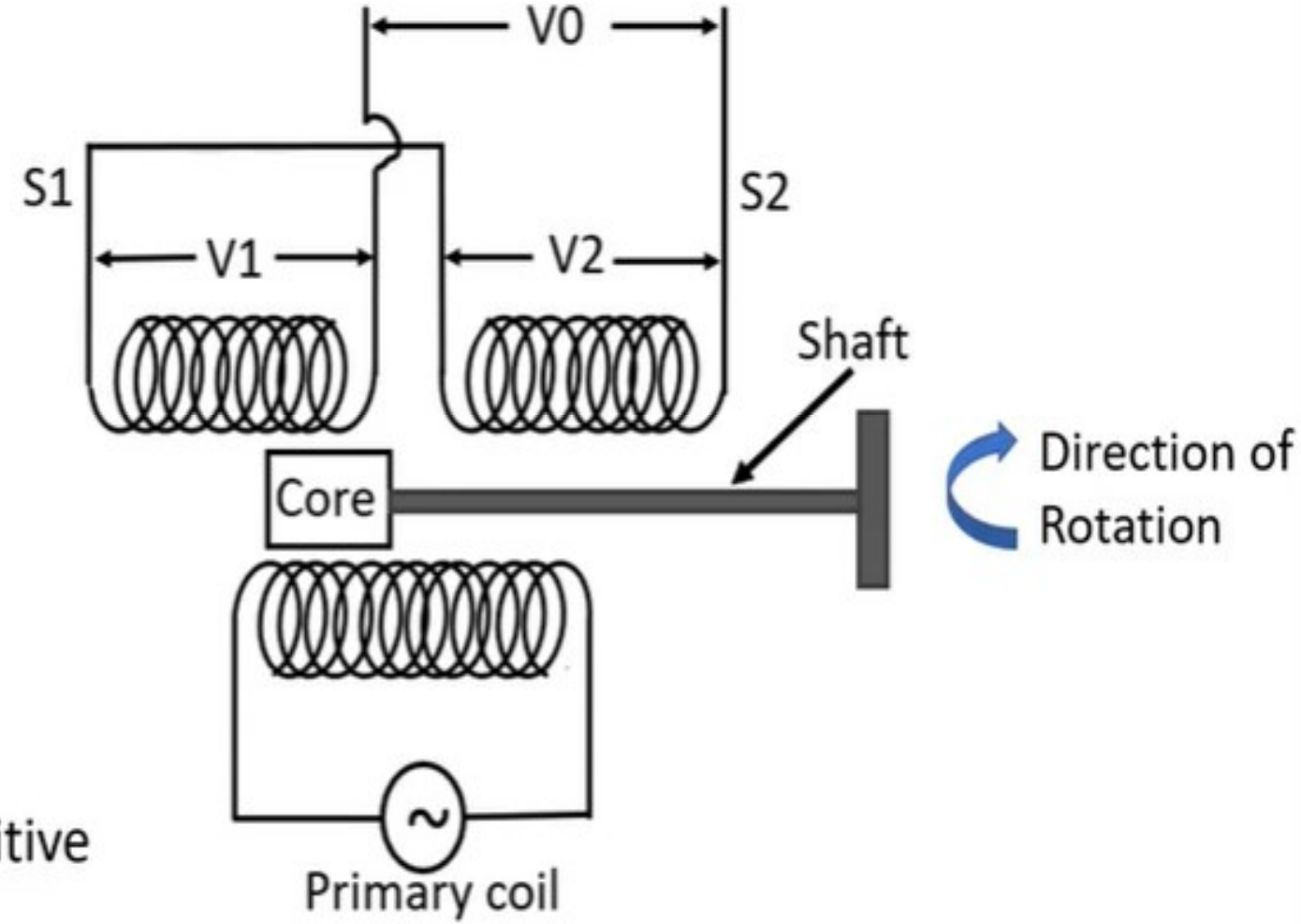
- CASE 1: The core is at centre of the secondary windings (for no displacement)



That is V1= V2

Vo = V1-V2 = 0

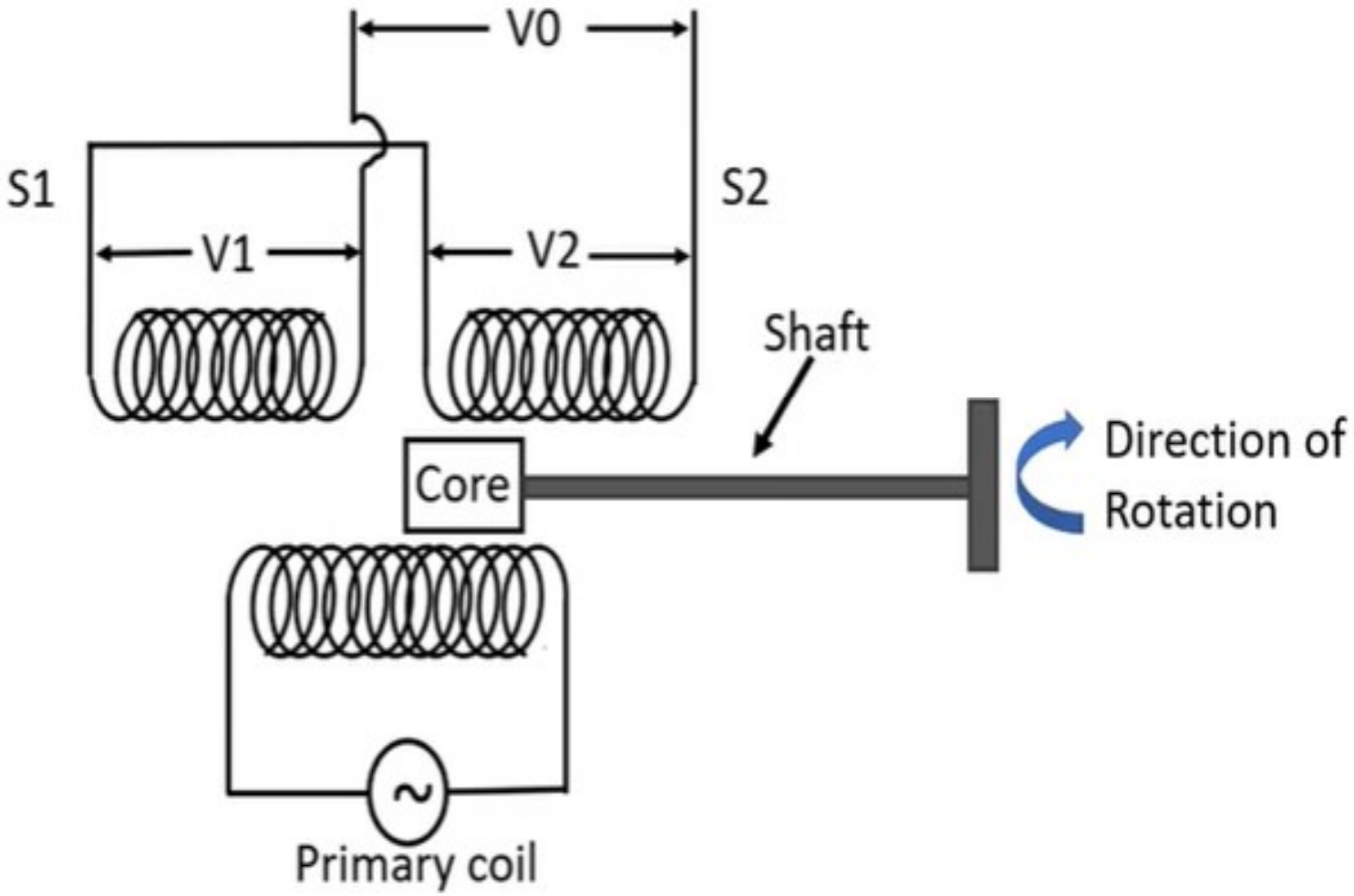
- CASE 2: The core position is towards the S1 windings of the secondary (for clockwise movement)



That is V1 > V2

V0= V1 -V2 is positive

- CASE 3: The core position is towards the S2 windings of the secondary (for anti-clockwise movement)

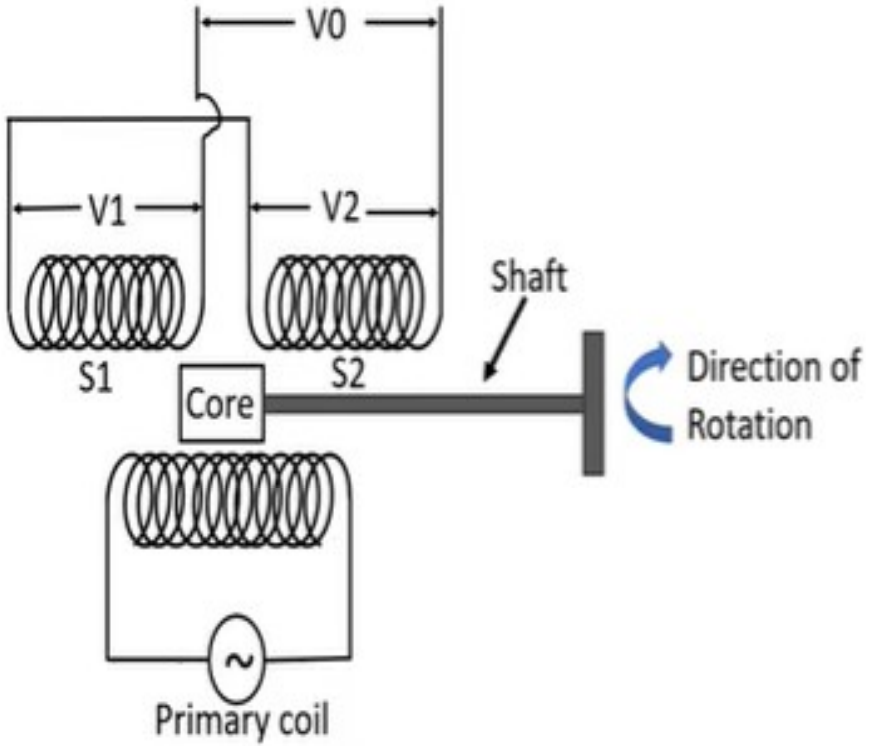


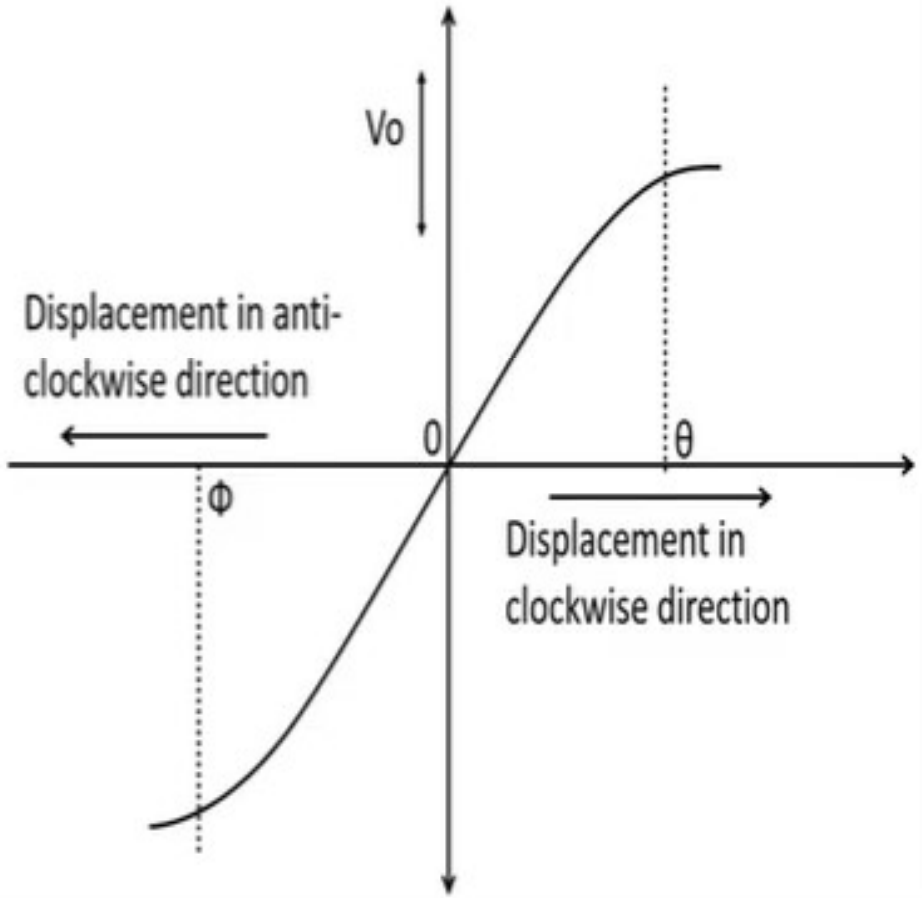
V2 > V1

V0= V1 -V2

is negative.

The displacement versus output voltage of an RVDT





- Advantages
- High stability
- Long life
- Compact
- Strong
- Low cost
- Resolution infinity
- High Linearity

- **Disadvantages**
- Screw type core- Chance for friction and leads to wear and tear
- Only detected the angles in between -40 and + 40. Other ranges will not detected.

Thank you