

Cooling Fans

Introduction to Sunon Fans and Blowers

Five major design principles:

- Lower Power Consumption
- High Torque
- High Airflow
- Low Noise
- High Air Pressure

AC Fans

New automatic motor wire wrapping technology ensures stable performance for high air flows and low acoustic noise. The larger models 37-A2179HBT and A2259MBT have thermal cut-outs and starting capacitors.



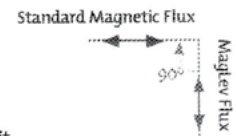
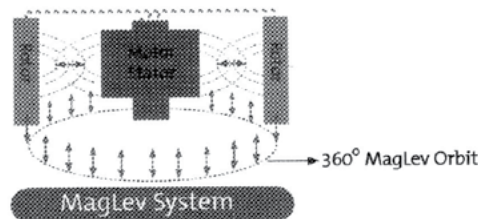
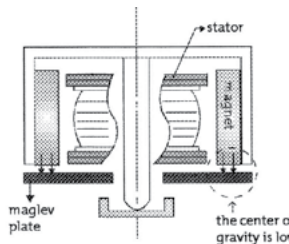
DC Fans & Blowers

The Sunon designed '**Green Motor**' pioneered fan motor design by using advanced **single phase full wave windings**.

The single phase full wave winding uses only one winding instead of two. Consequently the wire thickness can be increased to prevent breakage during mass production. The winding fill is reduced by one third which dramatically increases the air flow for ultra miniature fans. The benefits of this patented design are low power consumption, high efficiency, low starting voltages and increased torque. The bobbin which protects the coil is made of high temperature, non inflammable thermoplastic which enables the fan to operate at higher ambient temperatures.

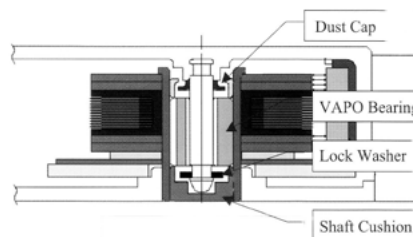
To summarize the advantages of the single phase full wave winding:

- Residual internal temperature lower, hence life span of motor increased.
- With thicker diameter wires, torque of the motor is increased 80%.
- Thinner smaller cooling fans are possible with this design.
- With motor coil area reduced and impeller size increased more air flow results.
- The power consumption is reduced to meet environmental requirements.



Another Sunon development introduced in 1999 is the '**Magnetic Levitation System Design**'

The MagLev motor fan's rotation is fully controlled by Sunon's patented 360° MagLev orbit. The resulting interaction between the MagLev plate pulls the rotor downward along the entire 360° surface. Due to the lower centre of gravity the motor runs in a more stable and consistent orbit. The shaft and bearing have no direct contact during operation, and so will experience no friction no matter how the fan is oriented, resulting in an extremely long lifespan for the fan.



The **Vapo Bearing** is a further development used in conjunction with the MagLev system to lessen friction and noise. With the addition of a dust cap, lubrication circulation inside the Vapo bearing is increased and friction reduced further. The fan can run at high temperatures in any orientation.

Brushless DC Blowers

Where spot cooling is required Sunon manufacture an extensive range of sizes in blower's from 30x30x10mm to 120x120x32mm. These incorporate the 'Green Motor' and 'MagLev' design with Vapo or Ball bearings. They can be supplied with aluminium frames for heatsink cooling assistance. The main differences between fans and blowers are in air flow and air pressure. A blower is relatively lower in air flow and higher in air pressure than a fan. Spot cooling on PC Boards is an application for blowers. The thinnest blower measures 35x35x4.8mm.

