Selecting Fans

Outer Rotor Backward Centrifugal Advantages/Tips

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Outer Rotor EC vs Inner Rotor EC

Advantages

- Compact
- Stability due to Balancing
- Perfect Bearing Alignment = Long Life (40,000+ Hours)
- Optimum Heat Transfer
- 100% Speed Controllability

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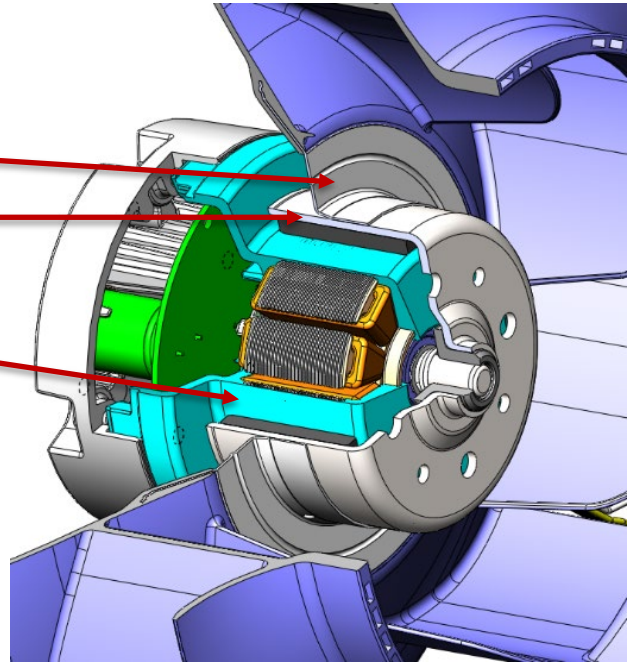
Outer Rotor EC vs Inner Rotor EC

- Impeller Mounts on Rotor
- Rotor Spins on Outside of Unit
- Stator is Fixed Inside the Unit



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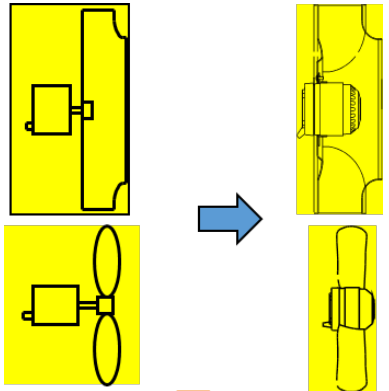
Backward Curve Centrifugal Advantages

- **High Efficiency**
  - Backward curved blades are designed to reduce energy consumption and operating costs. This reduction in carbon footprint makes EC backward curved fans the eco-friendly choice for ventilation applications
- **Low Noise**
  - Well designed blades with strong balancing processes allow backward curved impellers to reduce turbulence and noise generated by the fan
- **Wide Range of Duty Points**
  - Backward curved fans can handle wide ranges of air flow rates and static pressures. Allowing for “universal” fans across multiple applications
- **Low Maintenance**
  - EC backward curved fans are designed to achieve 40,000 + hours

  resulting in low operating costs and longer equipment life
- **Compact**
  - With outer rotor motor technology, backward curved fans can be more compact as the motor is inside the fan housing:



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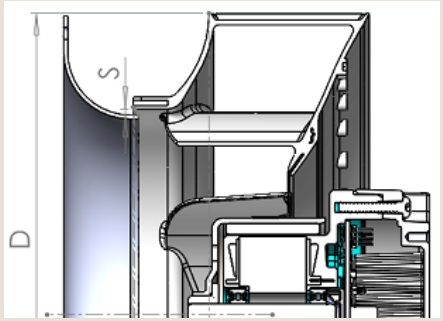
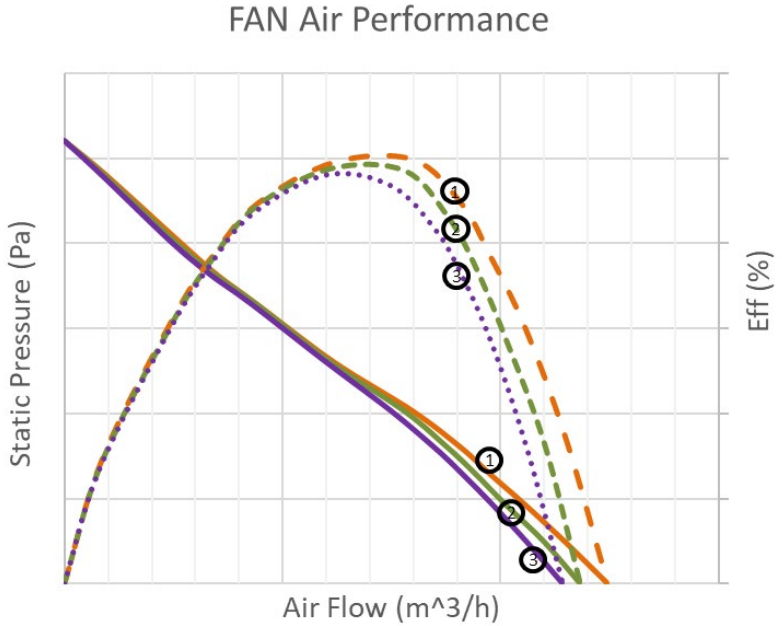
Tips – Effects of Nozzle Gap Dimensions

The centrifugal air gap between the inlet nozzle and the impeller cover plate influence the air performance and efficiency of centrifugal fans



① S/D=0.4%
② S/D=1.0%
③ S/D=-1.4%



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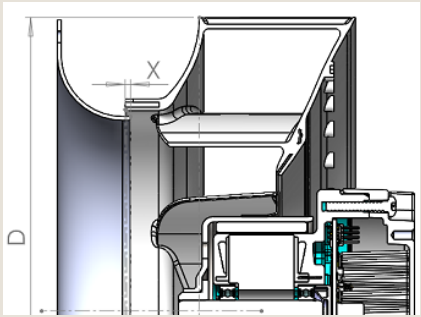
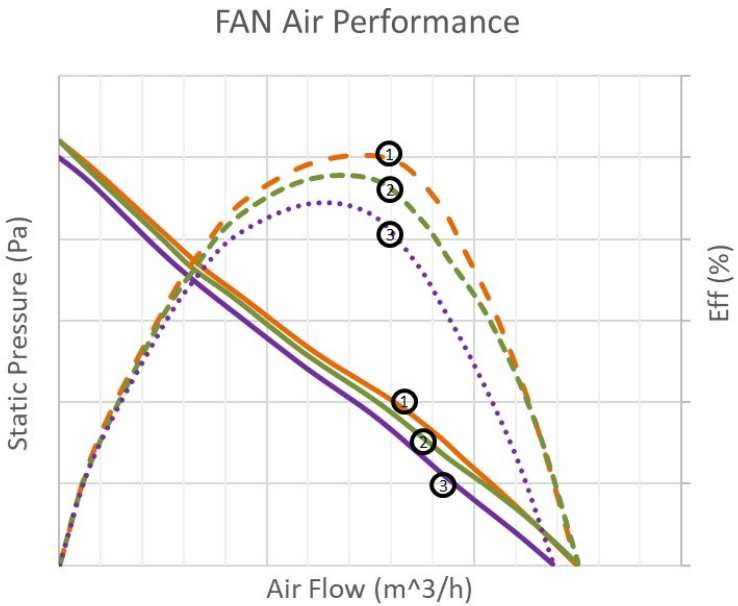
Tips – Effects of Overlapping Dimensions

The axial overlap between the inlet nozzle and impeller cover plate influences the air performance and efficiency of a centrifugal fan



① X/D=0.6%
② X/D=0%
③ X/D=-0.8%



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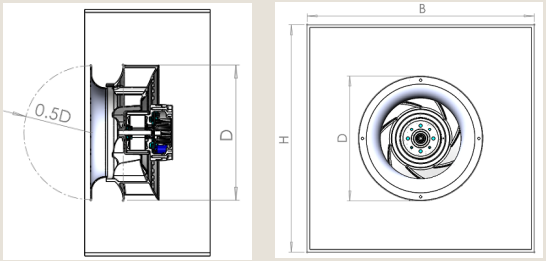
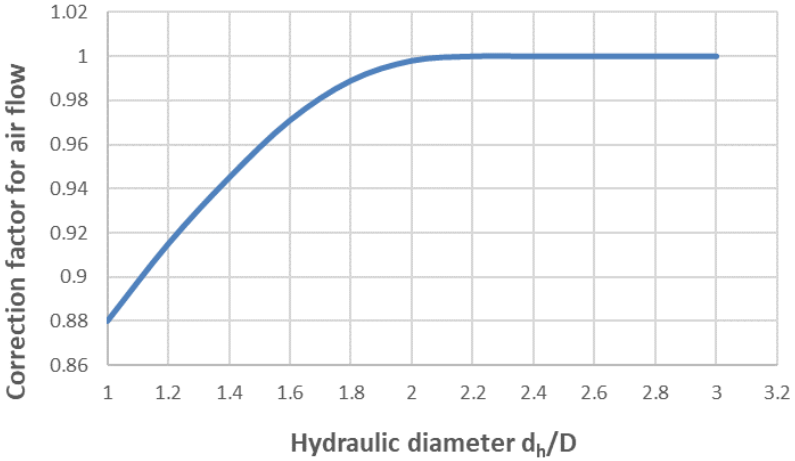
Tips – Effects of Installation Space

When mounting a centrifugal fan in a rectangular hydraulic system, air performance might be reduced depending on the application.



$d_h = 2*B*H / (B+H)$
d_h --- Hydraulic diameter
B --- Width of box
H --- Height of box
D --- Outer diameter of the fan



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Thank You

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