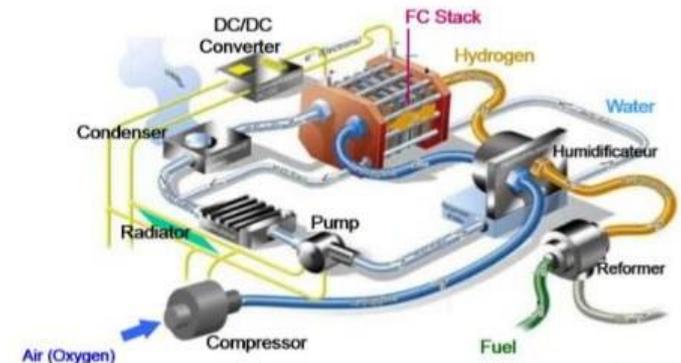
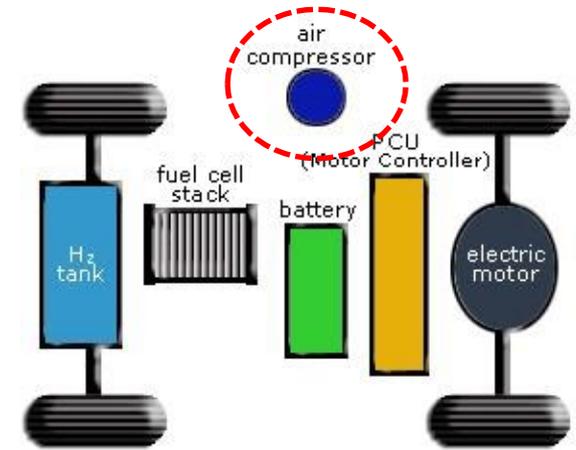


**COMPACT HIGH SPEED  
AIR COMPRESSOR**

# AIR COMPRESSOR FOR FCEV

- FCEV : Fuel Cell Electric Vehicle
  - Oxygen Supply for Fuel Cell Stack of FCEV
  - Turbo Type : Compact, Light
  - Air Foil Bearing : Oil-Free, Low Noise & Vibration
  - Application : Truck, Bus, Passenger Car

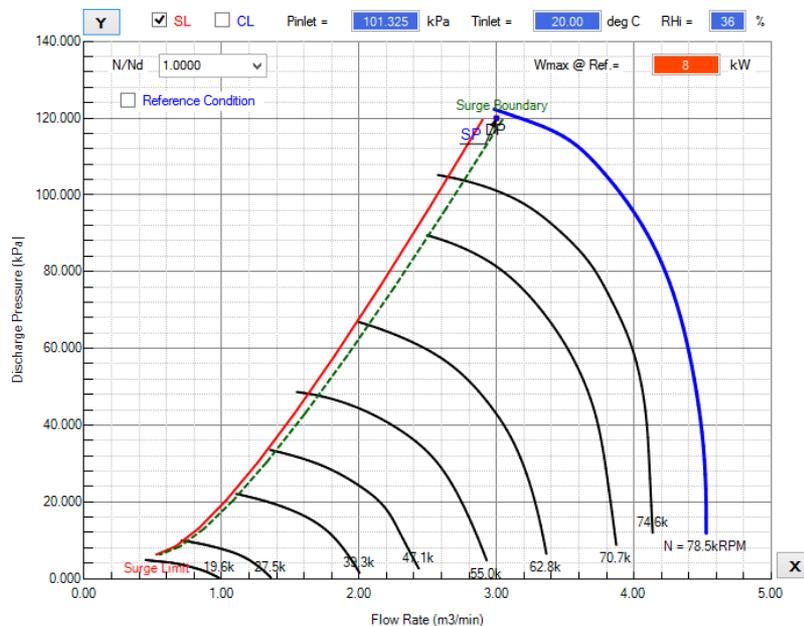
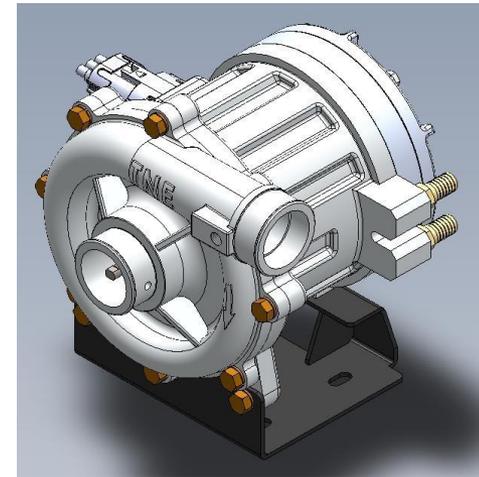


Source : PSA

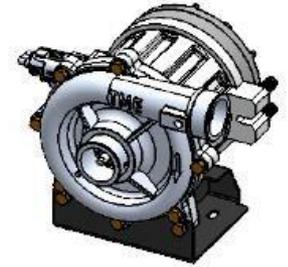
# AIR COMPRESSOR FOR FCEV

## ● Technical Specification

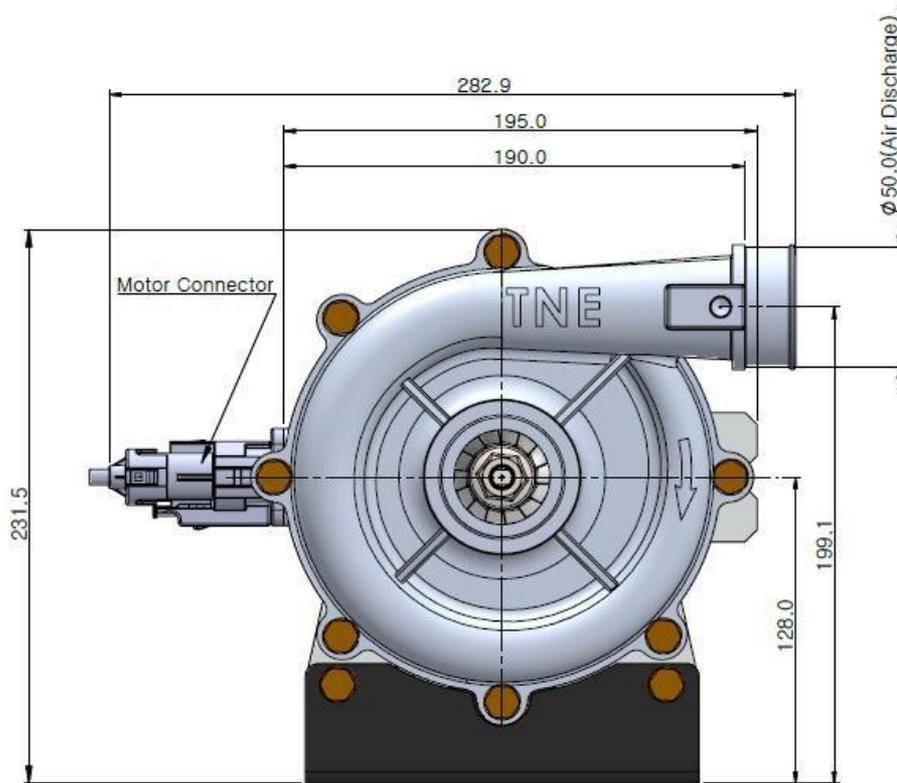
- Single Stage Centrifugal Compressor
- Impeller, High Speed Motor, Air Foil Bearing
- 8kW, ~120kPaG, 80~100kRPM
- Size & Weight : D207xL219 mm, 10kg
- IP 67



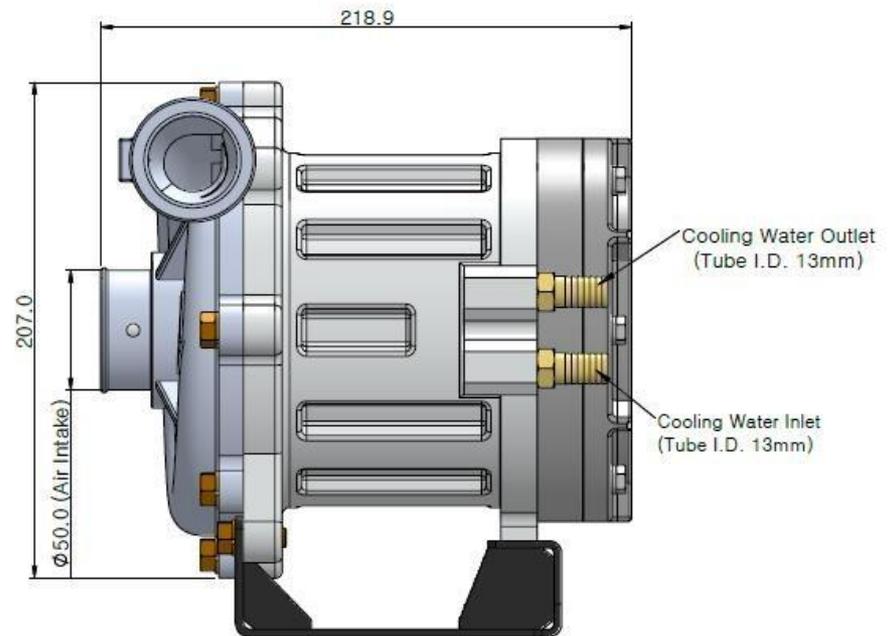
# AIR COMPRESSOR FOR FCEV



Isometric View



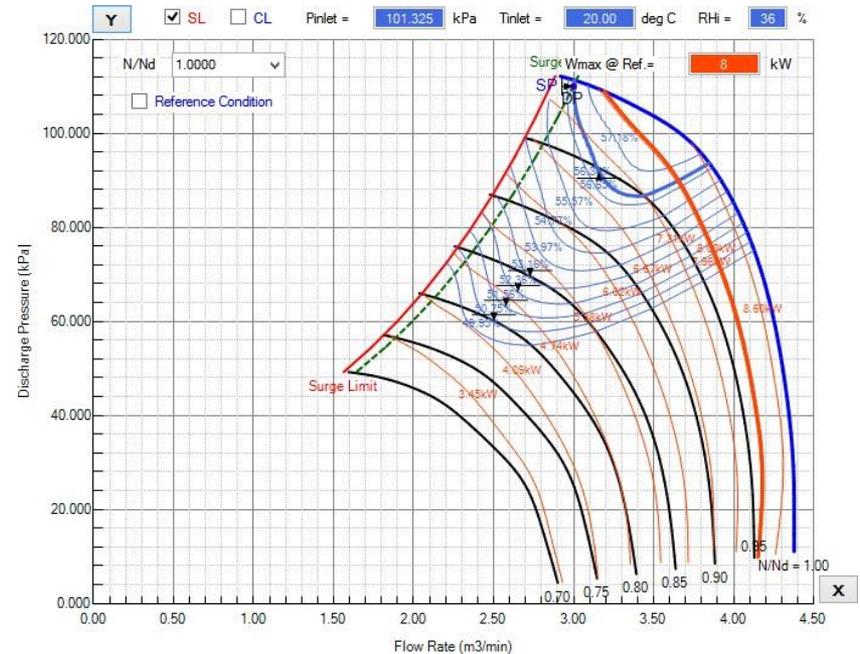
FRONT VIEW



RIGHT VIEW

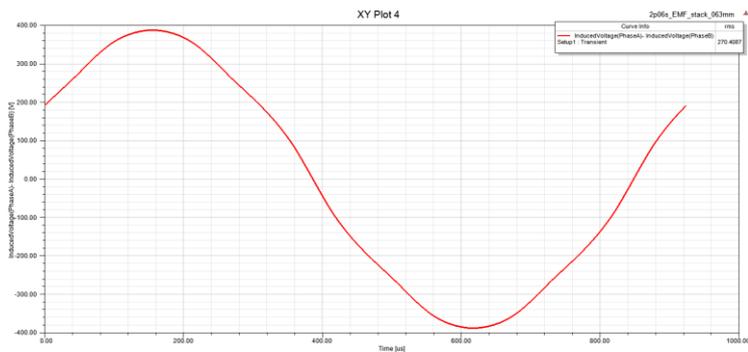
# COMPACT HIGH EFFICNECY AIREND

- Full 3-D back-swept impeller design for wide operating range
- Single/Dual vaned diffuser and volute optimized for maximum efficiency with wide operating range and maximum flow control
- Wide range of part speed with no efficiency drop

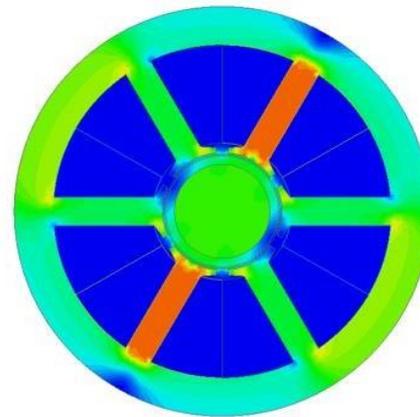
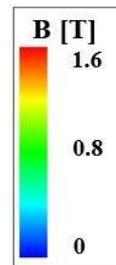


# HIGH SPEED PMSM

- High efficient *Permanent-Magnet Synchronous Motor*
- Ultra-high speed, up to 100,000RPM for high pressure Turbo Compressor application, up to 120kPa,g
- Rotor integrated permanent magnet
- Combination with air-end module in consideration of operating ambient conditions
- Wide range of part speed with no efficiency drop



Back EMF Curve

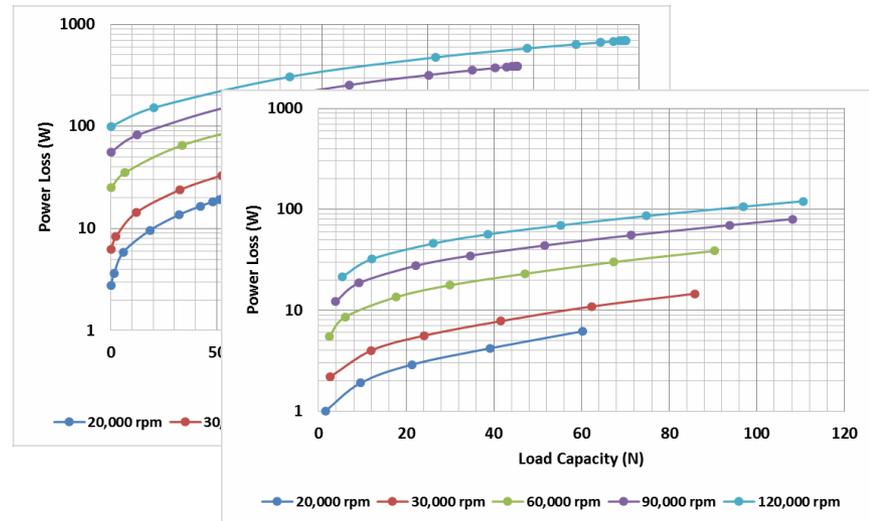


Magnetic Flux Density

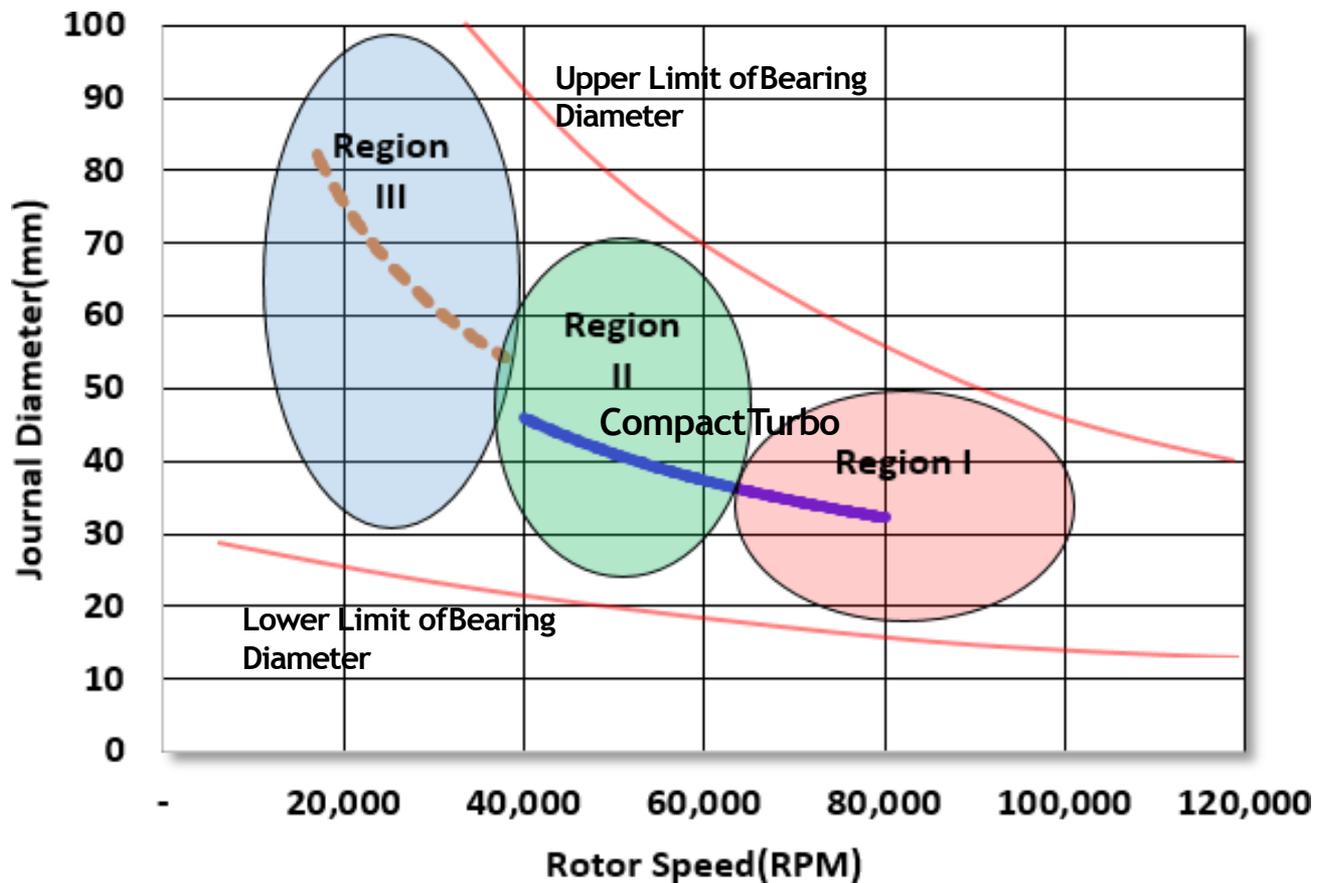


# AIR BEARING FOR MASS PRODUCTION

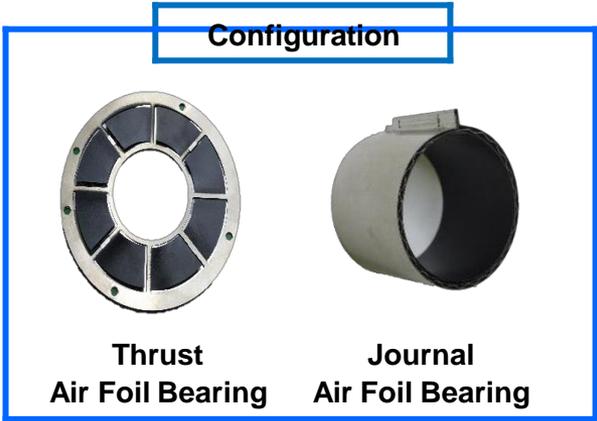
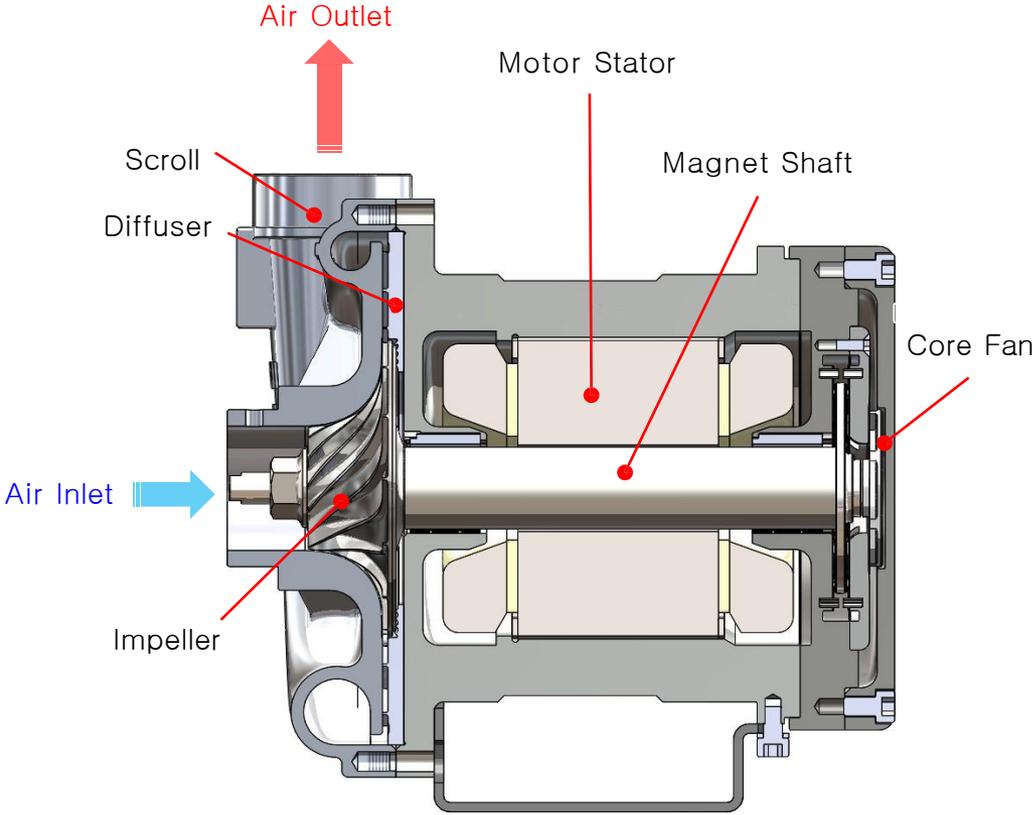
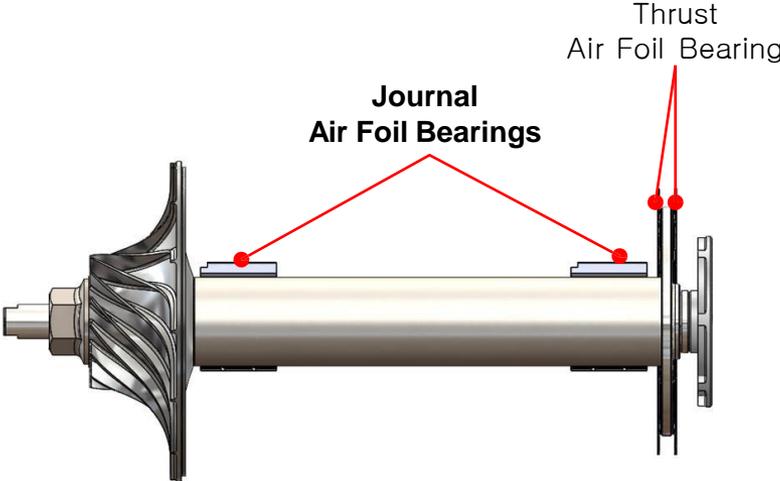
- Robust rotor design supporting the optimum aerodynamic performance
- Oil-free bearing perfect for clean air supply
- Patented bearing design for consistent production quality and total preparatory inspection
- Improved load capacity and stability make zero-load discharge condition not a factor
- Pre-installation bearing inspection at component level for high level of quality control



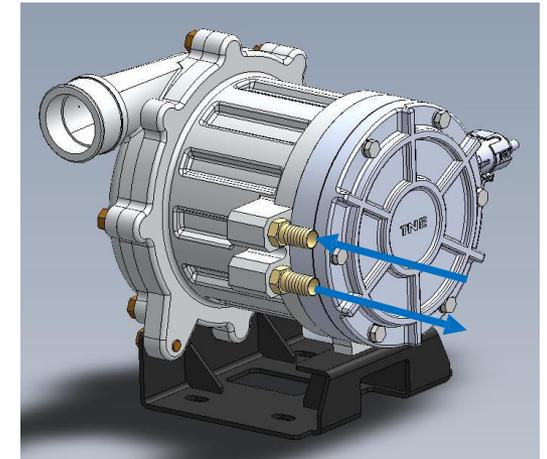
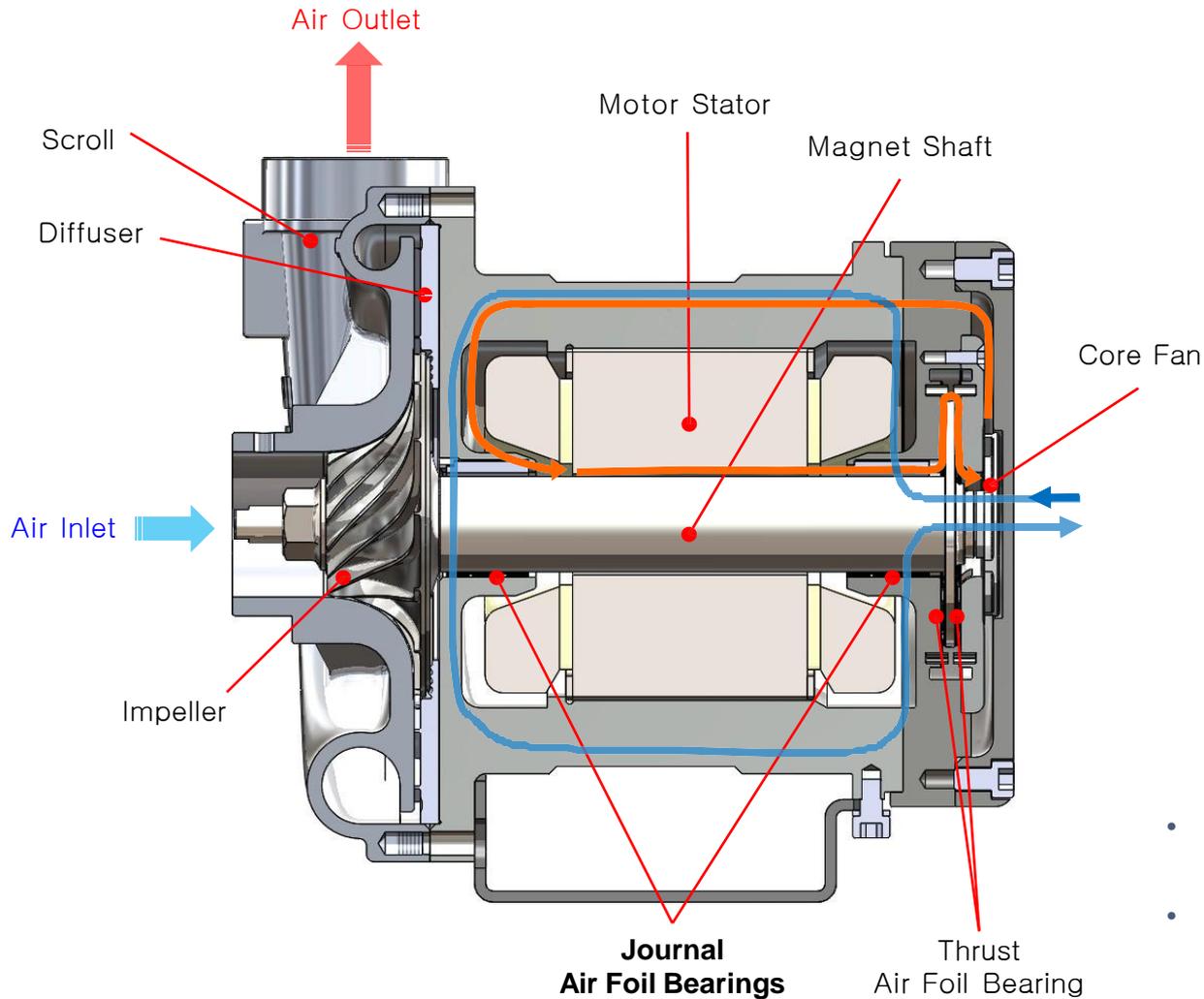
# AIR BEARING LOAD CAPACITY



# AIR FOIL BEARING INSTALLATION



# COOLING SCHEME

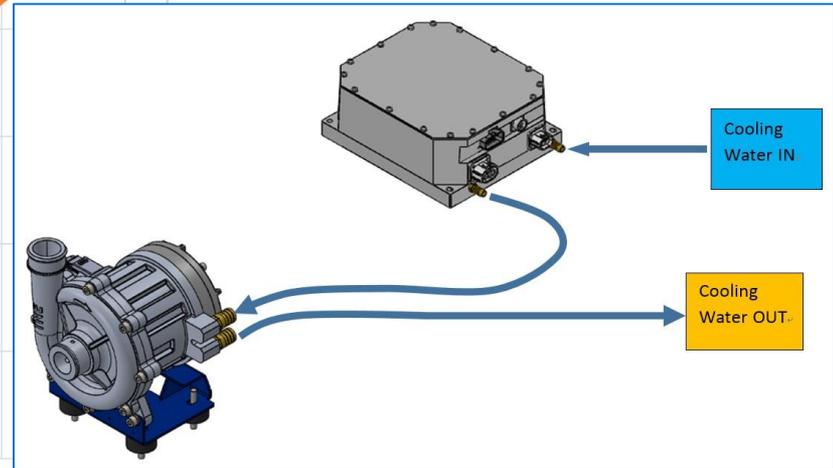
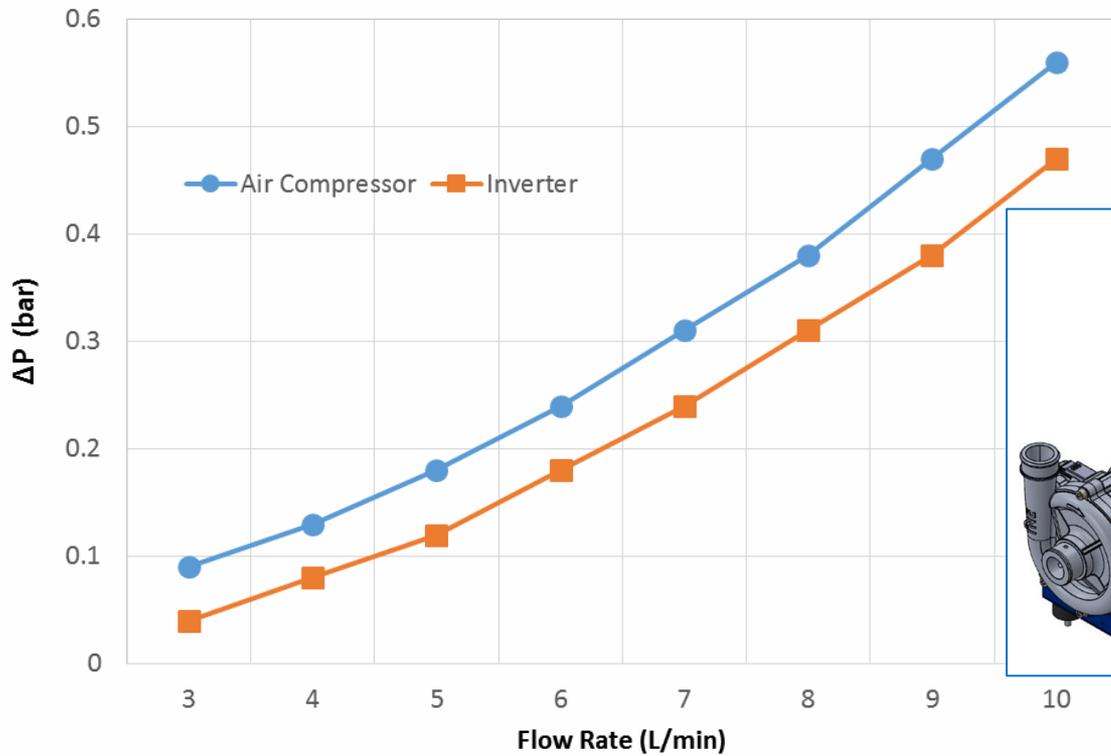


← Cooling Water Flow  
← Cooling Air Flow

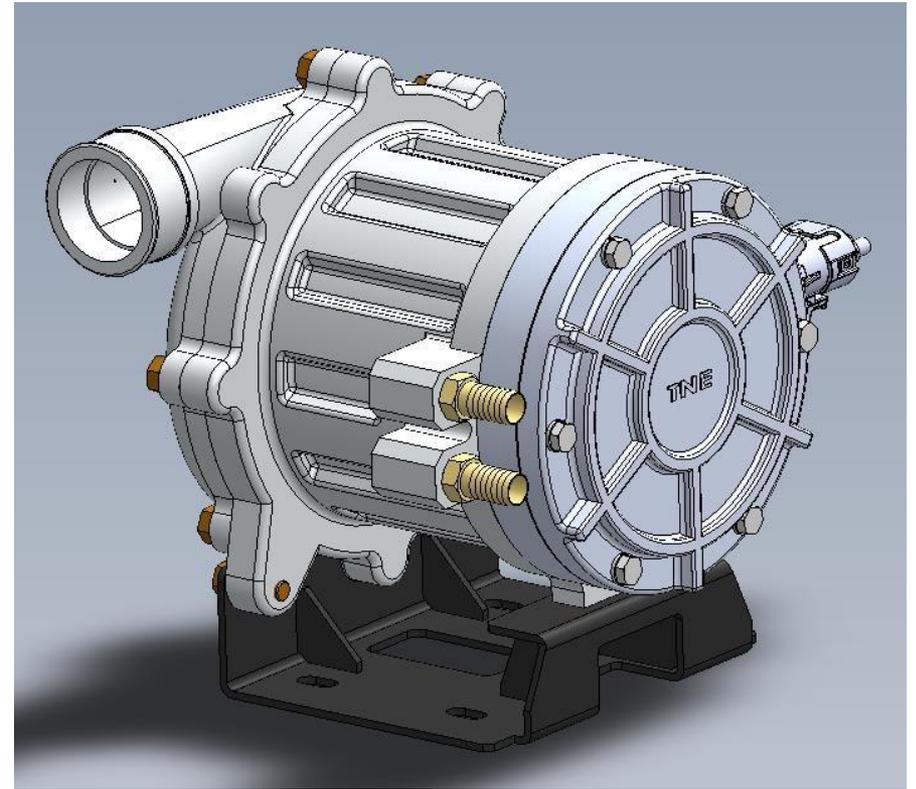
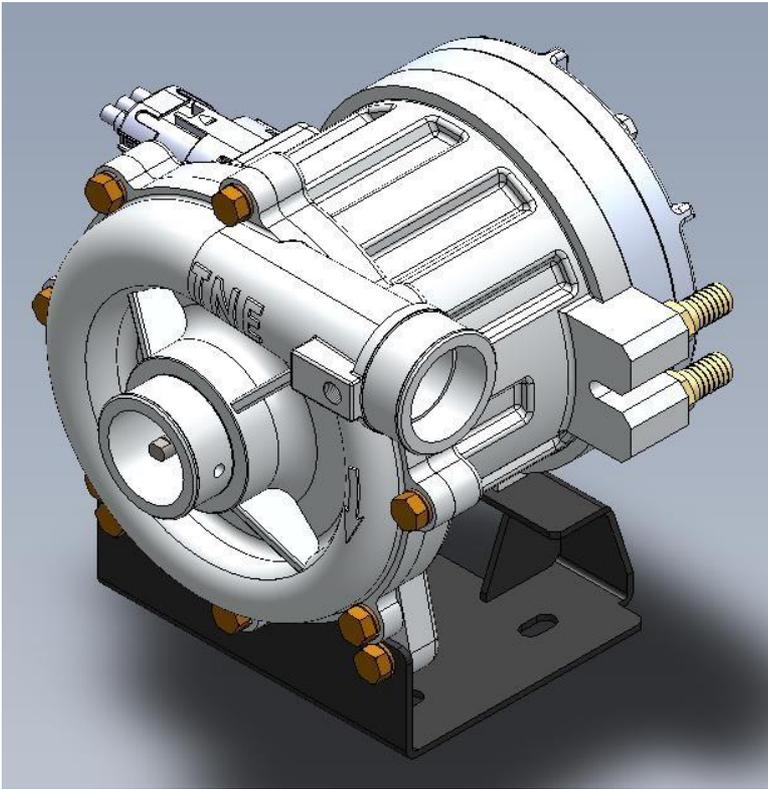
- Motor and Bearing is cooled by circulating cooling air flow
- Circulating air is cooled by cooling water at motor case

# COOLING WATER PRESSURE LOSS

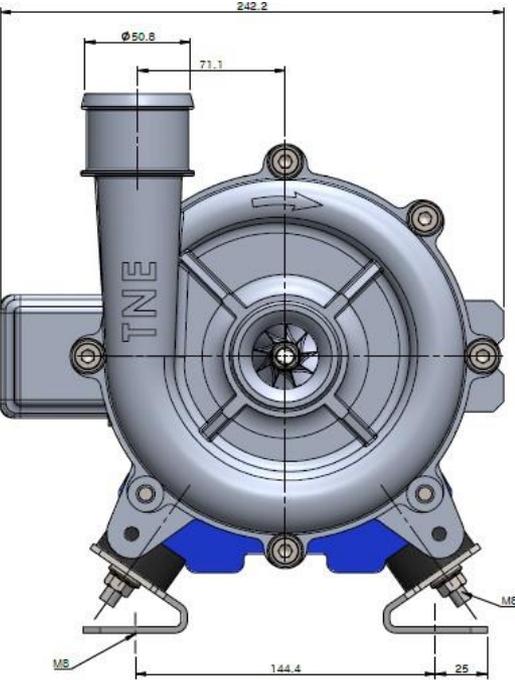
Pressure Loss vs. Cooling Water Flow Rate



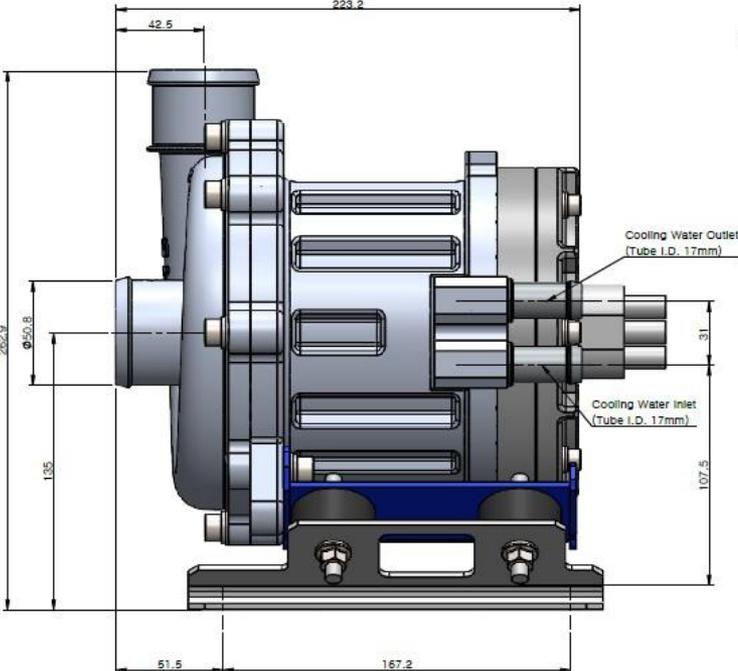
# AIR COMPRESSOR



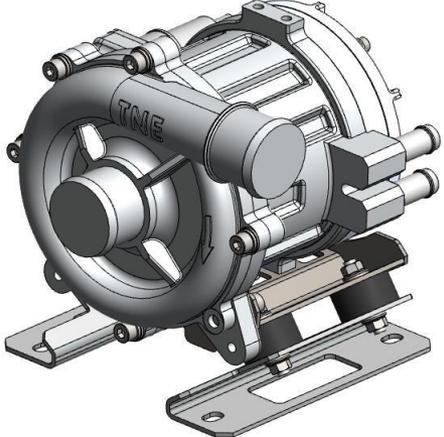
# Revised Model Mount Option : Type B (Recommended)



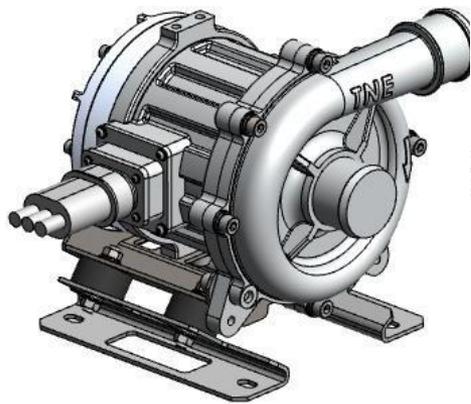
FRONT VIEW 1 : 2



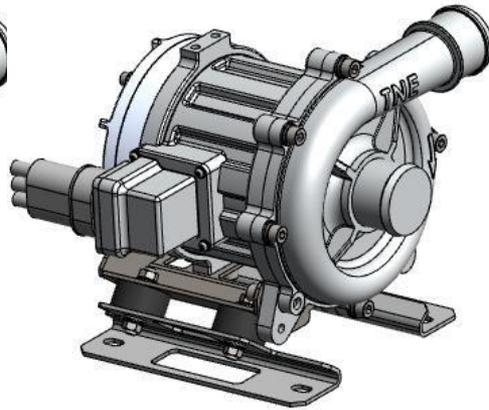
RIGHT VIEW 1 : 2



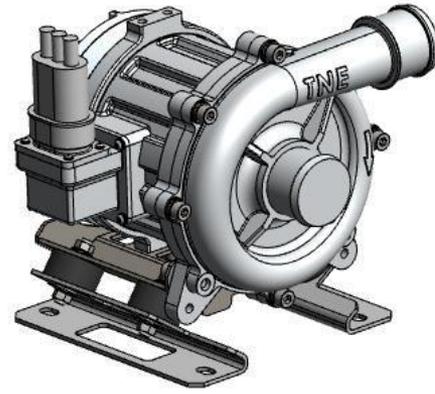
# Revised Model Cable Connector Option



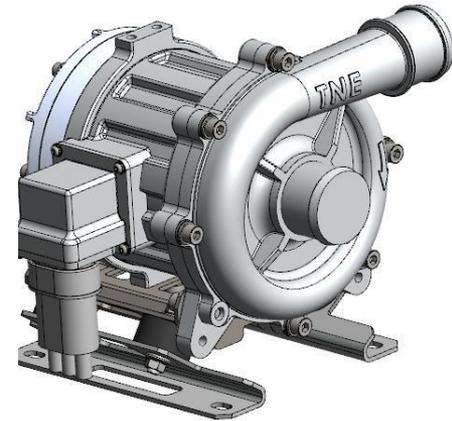
**Sideward**



**Rearward**



**Upward**



**Downward**

# Revised Model Inverter

