R&D Dynamics Corporation

PremierTurbo™

Made In U.S.A

for

Wastewater Treatment Plants

The Original Turbo Technology

R&D Dynamics Corporation designs, develops and manufactures a complete range of high-speed oil-free turbomachines supported on **Foil Gas Bearings**. R&D Dynamics is the world leader in Foil Gas Bearing technology. Principals of R&D Dynamics Corporation pioneered the development of high-speed turbomachines supported on Foil Gas Bearings which are today used in air cycle machines for all modern aircraft, civil or military.

R&D Dynamics State-of-the-Art Tubomachines
- TurboBlowers.
- TurboCompressors.
- Turboalternators.
- Turboexpanders.
- Air Cycle Machines.

Technical Highlights

☐ **High Air to Wire Efficiency**

☐ **Oil-Free Operation**

☐ **Maintenance Free Operation**

☐ **High Reliability (> 100,000 hrs)**

☐ **High Turn-Down (100% to 40%)**

☐ **Low Noise**

☐ **Vibration Free Operation**

☐ **Compact & Lightweight**

## High Energy Efficiency Achieved From

Optimized Aerodynamic Blower Design – Blower blade geometry is optimized for high speed operation with foil bearings and high-speed motor. Computational Fluid Dynamics (CFD) is applied to achieve highly efficient flow path and blade profiles.

PMSM(Permanent Magnet Synchronous Motor) – R&D Dynamics' PMSM provides higher efficiency, smaller volume and higher power density in high-speed applications.
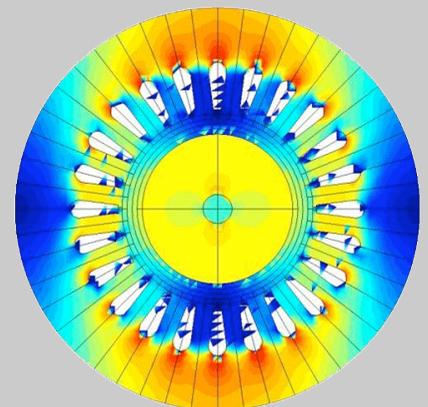
Sensorless PMSM Drive – R&D Dynamics' PMSM drive provides an optimized sensorless vector control with higher efficiency and compact size.
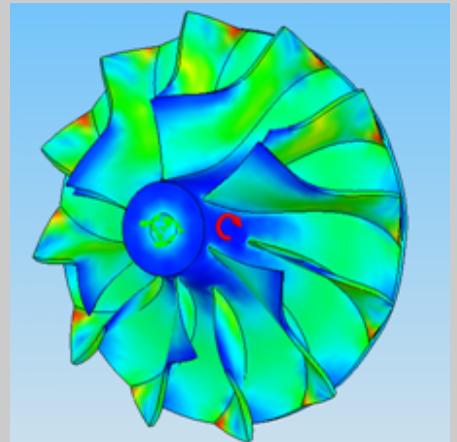
Rotor Structural Design using Finite Element Analysis

Total Pressure Contours & Streamlines
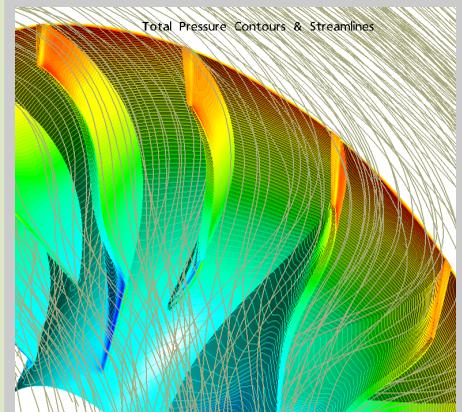
Optimized blade design using CFD

PMSM magnetic circuit design using Finite Element Analysis

Your Success is Our Success®

Technical Data

Flow: 200 to 5000 SCFM

Pressure Rise: 1 to 25 psig

Speed: 5000 to 50,000 rpm

Shaft Power: 75 – 300 hp

Supply Voltage: 380-480 Vac

Supply Frequency: 50-60 Hz

Cooling: Air / Glycol

Impeller Type: Centrifugal

Bearings: Foil Gas Bearings

Motor Type: PMSM

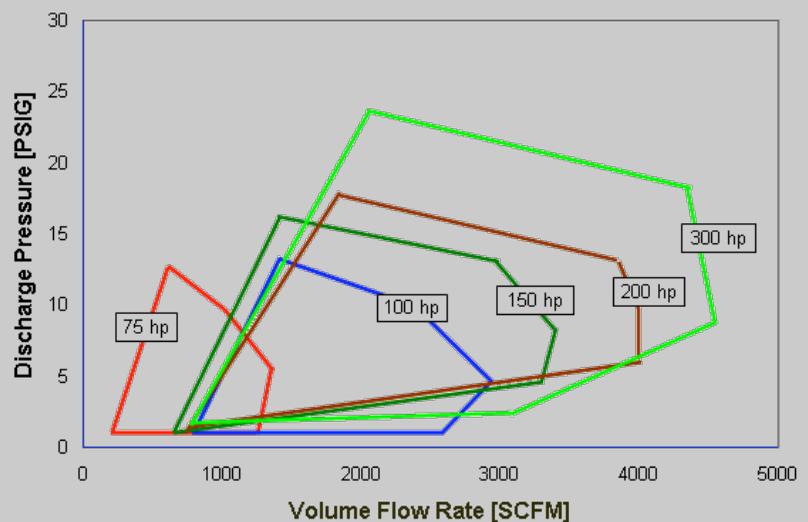Drive Type: Sensorless

Turn Down: 100 – 40%
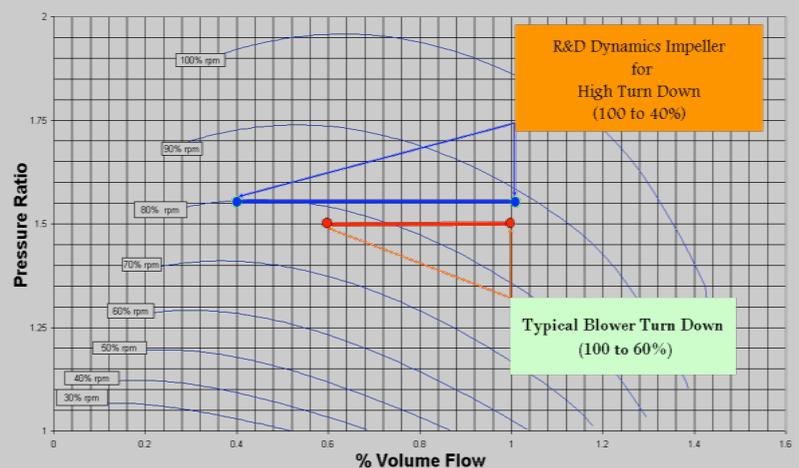
Life: > 100,000 hours

Start / Stop Cycles: >40,000

Storage: 25 – 120 F

Humidity: 10 – 90%

Inlet Filter: MERV 1 - 4

Typical Operating Envelope

Turn Down

Models	Shaft Power	Cooling	Weight	Length	Width
RD-75	75 hp	Air	300 lbs	28"	28"
RD-100	100 hp	Air	350 lbs	32"	30"
RD-150	150 hp	Air	350 lbs	36"	30"
RD-200	200 hp	Glycol	450 lbs	40"	36"
RD-300	300 hp	Glycol	550 lbs	40"	36"

Made In U.S.A

R&D Dynamics Corporation products are 100% American made.

Products are manufactured, assembled and tested in our new and modern 75,000 sq.ft facility.

Manufacturing Facility

Manufacturing

R&D Dynamics Corporation applies state-of-the-art Computer-Aided Design and Manufacturing (CAD/CAM).

High efficiency compressors, turbines and fans are manufactured in-house using CNC Lathes and 5-axis Milling Machines. Other parts such as shafts, foil bearings and seals are also manufactured in-house. Outside approved subcontractors are used for specialized processes such as heat treatment and plating.

Quality

R&D Dynamics Corporation is ISO 9001:2000 / AS9100 certified and registered.

The inspection system is approved by FAA (Federal Aviation Agency). We have state-of-the-art inspection equipment including computer-controlled Coordinate Measuring Machines (CMM) in temperature and humidity monitored rooms.

Manufactured Parts

NSF®

Registered to
AS9100
(with ISO 9001)

We believe in total customer satisfaction and quality management.

We believe in going the extra 'mile' for our customers.

We will work with you to meet your needs in every possible way.

Your Success Is Our Success®

Please call, write, e-mail or fax your requirements.

We Are Here To Help You.™

Quality Inspection

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