# WASTEWATER

Geared Centrifugal Blowers

# THE MOST RELIABLE, COST EFFECTIVE AND EFFICIENT BLOWERS

# LOWEST TOTAL OWNERSHIP COST

**Inovair's** highly efficient and durable geared centrifugal blowers deliver the industry's lowest total ownership cost. The key is a high-efficiency design that is also affordable, thanks to the use of industry standard components to avoid unnecessary complexity and cost, as well as the company's nearly 30 years of experience designing and manufacturing compact blowers. **Inovair's** proven design approach also simplifies maintenance and produces extreme durability.

# **BABA-COMPLIANT, MADE IN THE USA**

With documented energy savings as high as 45% relative to PD and multistage blowers, and without the electrical complexity and durability issues seen in high speed turbo blowers, **Inovair** offers a unique combination of high efficiency, reliability, and simplicity. Unlike some others, **Inovair blowers** and customers are supported by the advantages of a vertically integrated manufacturer, with **Inovair** controlling all elements of design, production, and service. All of these activities are performed 100% in the USA, at the company's headquarters in Kansas City. BABA-COMPLIANT BLOWER OPTIONS FROM 25-600 HP





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# **IM SERIES MACHINE LINEUP** 25-600 HP



**MACHINE LINEUP** 

**IO SERIES** 

25-100 HP

**IM-30 STACKED** 

IM-50

# **INDUSTRY STANDARD COMPONENTS**

- NEMA Standard Motor
- Allen Bradley PLC
- Off The Shelf Variable Frequency Drive

IM-40

# **DURABLE DESIGN**

- Indoor/Outdoor Installation
- Dirt/Dust Tolerant
- Start-Stop Capable
- Durable 20-year design life

# **OPERATING CAPACITY**

- 150 to 2,600 SCFM
- Up to 22 psi
- Capable of variable level applications



# **BEST-IN-CLASS EFFICIENCY**

Precision machined aerodynamic impeller stages

**IO-10** 

 10-45% Energy Savings Over Multi-Stage or PD Blowers (~80% Isentropic Efficiency)

# LOW MAINTENANCE COST

- Annual Maintenance Interval
- High Capacity Inlet Filters
- Serviceable by Plant Personnel

# INTEGRATED CONTROL SYSTEM

# **IN-HOUSE UL CERTIFIED 508A PANEL SHOP**

- Allen-Bradley PLC's
- Ethernet (TCP/IP Modbus) or hard wire capable
- Easy systems integration

# LCP

- Mass airflow (SCFM) based control system
- Automatic temperature compensation
- Automatic pressure compensation for varying liquid levels

# **MCP**

- Feedback-based flow control capable D.O., ORP, etc.
- Balanced run time beltween multiple blowers
- Single point interface
- Lead-lag functionality
- Balancing valve control

# **INOVAIR CASE STUDIES**



# 37% ENERGY SAVINGS, IMPROVED RELIABILITY, OUTDOOR DURABILITY

Flow:

3.600 SCFM Pressure: 9.5 PSIG

Horsepower: 200 HP

Horsepower: 125 HP

Description: Western Missouri wastewater plant documented 37% energy savings along with improvements in reliability (reductions in maintenance and unplanned downtime) by replacing its two 150 HP PD blowers (300 HP total) with Inovair's 200HP stacked IM series blowers.

# **VARYING LIQUID LEVELS TO 15 PSI**



**Application:** Digester Aeration 400 - 1200 SCFM Pressure: 7.0-15.0 PSIG Horsepower: 125 HP Description: Southern California wastewater plant sought out Inovair to provide a solution for their varying liquid level digester (at 3300ft plant elevation). Inovair's compact footprint and ability to operate over widely varying liquid levels were key reasons for choosing Inovair.

# HIGH EFFICIENCY SBR SYSTEM, RELIABLE START/STOP OPERATION

### Application: Lagoon Aeration Flow:

Flow:

### 2000 SCFM Pressure: 11.38 PSIG

Description: A plant in Oregon switched from another technology and installed an Inovair IM-30 stacked unit for their BR process. The Inovair blowers have worked flawlessly starting/stopping every 10 minutes since installation. The plant is truly happy with their decision to utilize Inovair and is experiencing improved reliably and lower operating costs.

# **BETTER FLOW CONTROL AND EFFICIENCY WITH 25% LESS ENERGY**

## Application: Aeration Basin

Flow: 1,230 SCFM Pressure: 8.5 PSIG Horsepower: 75 HP Description: An Ohio plant was looking to replace their (3) 100 HP multi-stage blowers with more efficient blowers, with better flow control. Inovair provided (3) 75 HP IM series blowers with a master control panel. The higher efficiency blowers, along with the improved flow control provided a 25%+ energy savings.



# 12.000 START-STOP CYCLES

Application:	Aeration and Digester Processes			
Flow:	600-1150 SCFM	Pressure: 6.0 PSIG	Horsepower: 50 HP	
Description:	This project resulted in not only substantially energy savings and improved process control, but also substantially improved reliability. A unique aspect of the digester process was a high number of start/stop cycles. Now with over 12,000 start-stop cycles, this case study of blower improvements is even more powerful now than it was when we presented it at the Wisconsin Wastewater Operator's Association conference in 2016.			



# **COMPETITIVE CAPITAL COST, HIGH EFFICIENCY, AND EASY INSTALLATION**

Application:	Aeration Basin			
Flow:	2000 SCFM	Pressure: 7.0 PSIG	Horsepower: 125 HP	
Description:	The Inovair IM-30's competitive capital cost, high efficiency, and easy installation pro wastewater treatment plant in Western Kentucky with the lowest cost of ownership. I stack configuration provided a seamless and efficient flow range (1150 -5250 SCFM) in footprint. This nearly 80% turndown coupled with Inovairs designed and built control s			

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vided a novairs proven a single vstem ensures



High efficiency, compact size, reduced noise and integrated control systems are areas of significant innovation for aeration blowers in recent years. Inovair has made these improvements not only affordable, but also more reliable. Wastewater plants can now install or upgrade their blowers without the high cost or component complexity of air bearing or mag bearing turbo blowers.

# LOWEST COST OF OWNERSHIP



# **ADVANTAGES OF "MADE IN THE USA"**

- INCENTIVES/FUNDING
- INDUSTRY LEADING AVAILABILITY
- US-BASED SUPPORT





- BEST-IN-CLASS SERVICE AND PARTS TURNAROUND
- HIGHEST QUALITY



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