



High speed turbo blowers are an investment in efficient aeration

Spencer's AyrJet® Series 400 features high speed, high efficiency single-stage turbo blowers with magnetic bearing protection and control technology. The AyrJet Series 400 blowers are compact units that include a direct drive oil-free permanent magnet motor and an integrated variable frequency drive (VFD) with PLC controls.

The AyrJet Series 400 has flows to 11,000 cfm (18,689 m³/hr) and pressures to 19 psig (131 kPa) and handles applications ranging to 400 hp (300 kW), and features best-in-industry wire to air efficiencies.

With the AyrJet's highly engineered, proven magnetic bearing technology, the blower shaft is levitated and centered at both ends in their respective magnetic fields. From the moment power is applied the magnetic bearing controller monitors and adjusts the magnetic fields to maintain the shaft-centered position virtually eliminating contact, friction and the need for oil or grease lubrication. The continuous monitoring and adjustment of the magnetic fields to maintain the shaft's centered position ensures protection from catastrophic failure.

Designed especially to meet continuous-duty aeration requirements with peak energy efficiency over the full range of variable diurnal and seasonal flow requirements, the AyrJet Series 400 is an investment in optimum performance for water and wastewater treatment aeration.

Materials of Construction

- Blower casing: Aluminum 356-T6
- Impeller: Machined high strength forged aluminum - 7075-T6 alloy
- Enclosure: Carbon steel
- Enclosure finish: Epoxy primer with urethane topcoat

Product Features

Technical Data

Number of stages: 1
Operating speed: Up to 20,000 RPM
Casing design pressure: 50 psig (3.4 bar)
Inlet connection: 16" / 20" / 20" flange; Optional - mounted filter
Discharge connection: 14" / 18" / 18" flange
Seals: Teflon labyrinth impeller seal
Bearings:
<ul style="list-style-type: none"> • Magnetic • Self-monitoring • Non-contact • Built-in power failure back-up protection (UPS system) • Two modes of fail safe (back-up roller bearing and auto shutdown on fault)
Lubrication: None
Cooling system: Integrated air and closed loop liquid cooled motor. Internal coolant is cooled via heat exchanger with plant water connection; above 104 °F (40 °C) ambient, AC required
Blow-off system: Valve, actuator and silencer
First critical speed: 20% over maximum operating
Vibration free operation

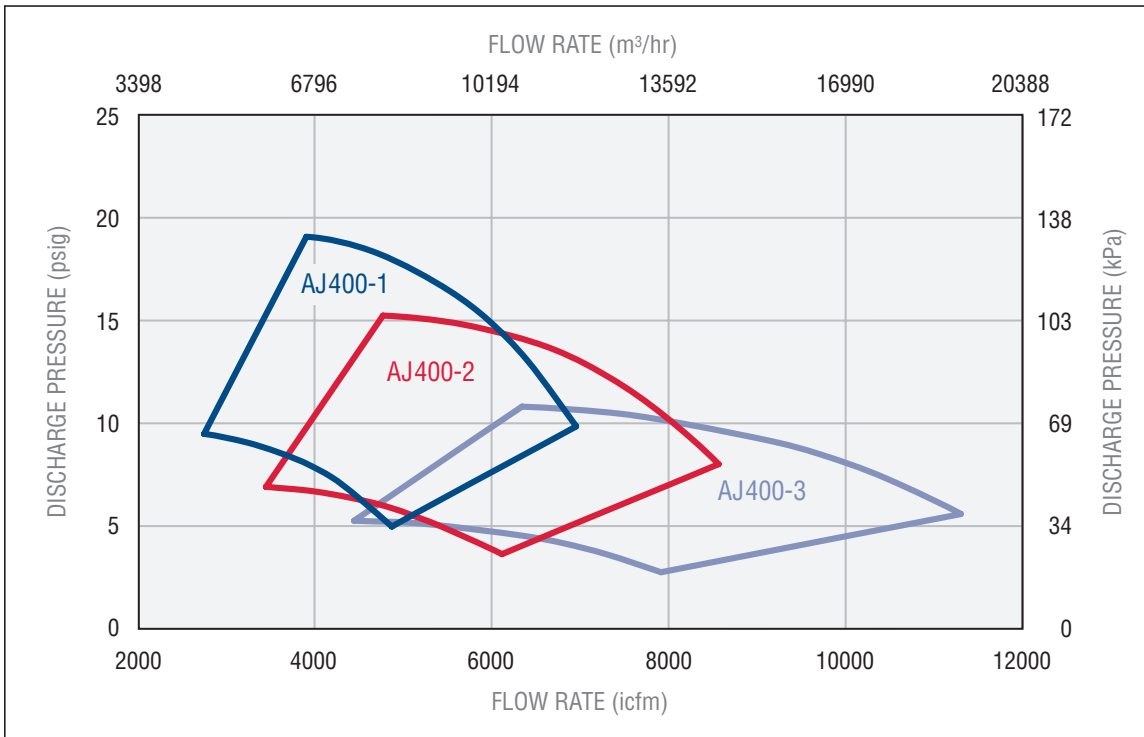
Control System – UL Listed

PLC based with touch-screen and interface to the plant SCADA system

- Blower system start/stop selection and status indicator
- Blower control selection: Local or remote
- Blower set-point entry: RPM / SCFM / PSI / DO (single blower)
- Remote signal set point: RPM / SCFM / PSI / DO (single blower)
- Display status:
 - Actual blower speed (RPM) and set point
 - Actual blower flow (SCFM) and set point
 - Actual blower pressure (PSI) and set point
 - Actual system dissolved oxygen (DO) and set point - (single blower)
 - Blow-off valve
 - Blower discharge pressure
 - Magnetic bearing
 - Shaft position
 - Motor winding temperature
 - VFD status
 - System alarms

Performance Range

Standard Conditions (Air at 68 °F, Relative Humidity of 36%, Inlet Pressure 14.7 psia)



Spencer may make improvements to equipment designs based on market trends and requirements.

For product selection assistance, please email marketing@spencer-air.com or visit our website at www.spencerturbine.com to locate the Spencer representative in your area.

AyrJet® is a registered trademark of The Spencer Turbine Company.

