



High Efficiency Turbo Blower with Air Bearing

Clean, Compact, Energy-Saving & More ...



Neuros

APG-Neuros Inc.

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www.APG-Neuros.com

Leader of Turbo Machinery – Neuros

Creating Clear and Clean Environment



■ Company Overview

- Name : Neuros. Co., Ltd.
- Business Conditions : Manufacturing, Service
- Product : Turbo machinery and Aero Engines, Controls
- Address : 461-35 Jeonmin-Dong, Yousung-Gu, Daejeon, Korea
- Contact : Tel. +82(42)865-7300, Fax. +82(42)865-7320
- Homepage : www.neuros.com

Foundation Period (2000-2001)

- Founded Neuros Co., Ltd.
- Founded Turbo Energy Research Center
- Office Construction Completed and Office Relocation

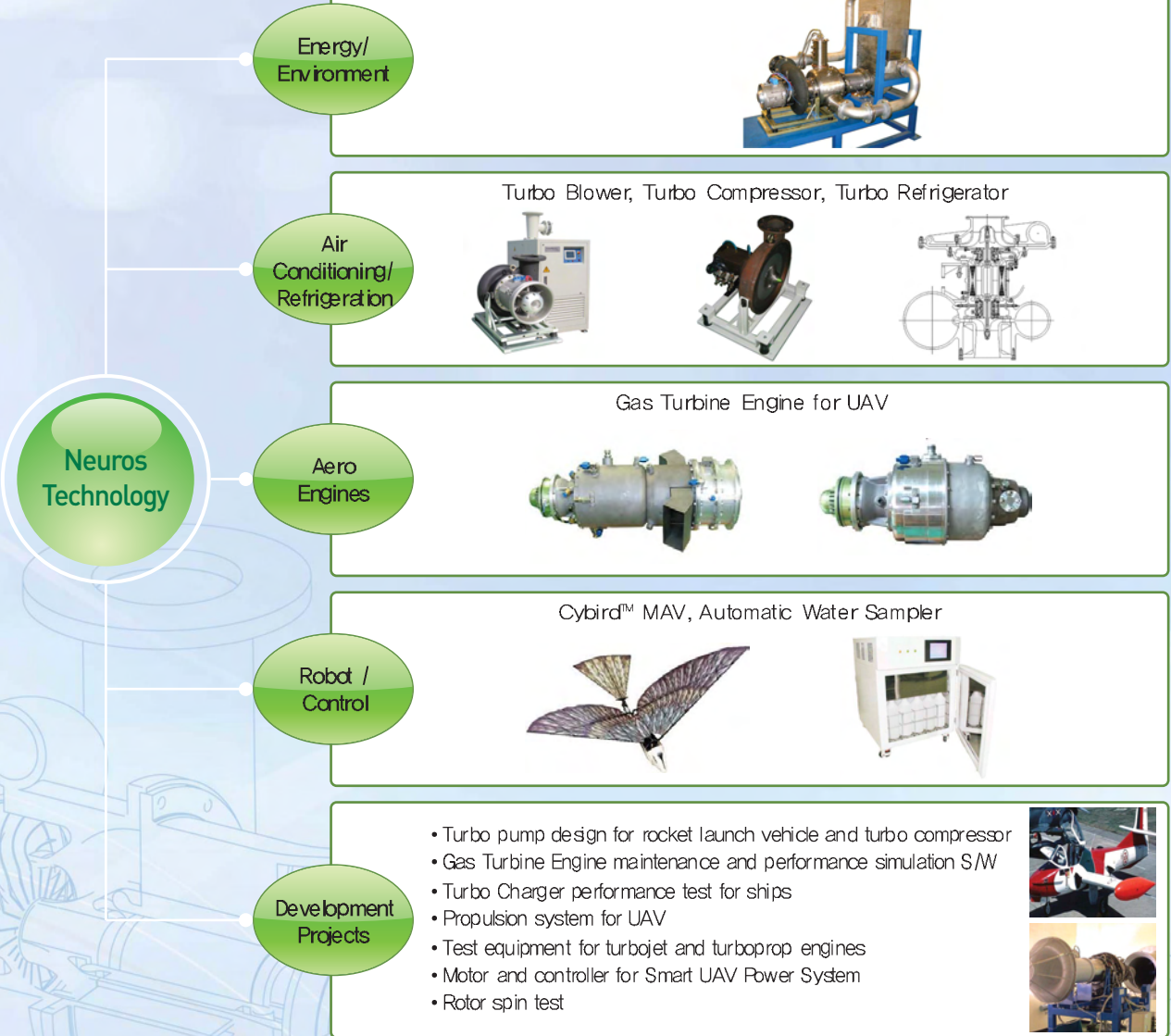
Expansion Period (2002~2004)

- Received ISO 9001:2000 certificate
- Released Flying Robot, Cybird™
- Completed Turbo Blower(0.3~1.0kg/cm²G) Development
- Began Turbo Blower Exports

Jump Period (2005 ~)

- Completed Development of Distributed Micro Turbine prototype (65 kW Class) Cogeneration System
- Completed Development of Turbo Compressor NC300-C200(2.0kg/cm²G)
- Received CSA/US, CE Certificate
- Setup Joint Venture Neuros-APG as Operation for Western Market

Field of Business



Technology

- High Efficiency Centrifugal/Axial Flow Compressor Design
- High Performance radial/Axial Flow Turbine Design
- Oil-free High Temperature Air Bearings
- High Efficiency Permanent Magnet Synchronous Motor Design and Manufacturing
- High Speed Flexible Coupling
- High-precision Flux Measurement(Venturi/Orifice/Nozzle/Bellmouth)
- Low Emission Diesel/Natural Gas Combuster
- Air Cycle Turbo Refrigeration
- Precision Electronic Control(Flux Control/Velocity Control)
- Gas Ejector(Jet Pump)
- Design and Integration of Complete Aeration control System



Spin Test Machine

■ Features of NX(Turbo Blower) / NC(Turbo Compressor) Series

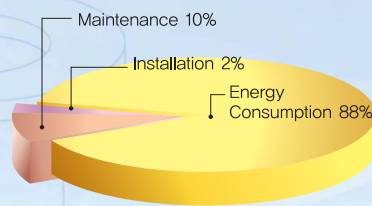
Introduction

The NX & NC series are high-efficiency turbo blower and turbo compressor. Thanks to high-speed motor and air bearings, there is no need for gearbox or lubricating system. Compared with existing roots blowers, you may save considerable amount of electricity charge due to much higher efficiency. Moreover, these products will save you footprint and provide you with comfortable working environment thanks to much lower noise & vibration level.

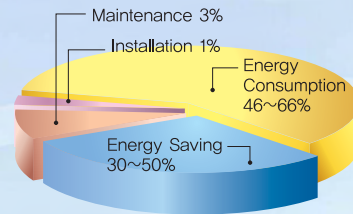
1

Energy Saving

- Thanks to advanced design technology, our turbo blower and compressor are most efficient among the same class turbo machinery.
- Compared with existing PD blowers, you may save up to 40 percent of operating cost.



[PD Blower Operating Cost]



[NX/NC Series Operating Cost]

2

Low Noise, Low Vibration

- Thanks to smart air flow path design, the noise level is less than 80 dB at one meter from the air inlet WITHOUT optional inlet silencer.
- Thanks to air bearings, no foundation work is necessary for installation.
- Patent technology of Air Bearing, Motor Cooling and Noise Trapping System

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Reliable, Easy to Install, Outdoor Application

- We have secured product reliability by performing proof tests such as hot environment test, vibration environment test, air bearing endurance test and impeller spin test.
- Compact in size, easy to install in small area.
- Outdoor installation package is available

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No Maintenance

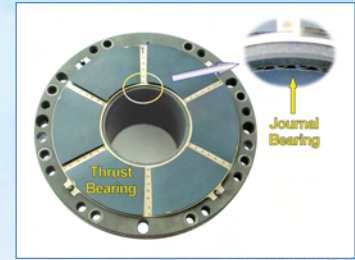
- Thanks to air bearings, there are no liquids or oils to change, ever.
- Cleaning or replacing of inlet air filter only, as required.



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Oil-free, Non-contact Air Bearing

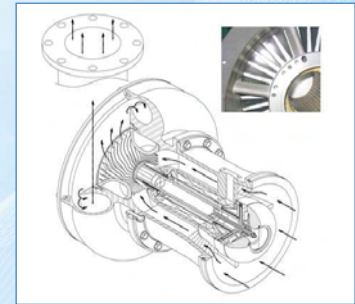
- No need for lubricating oil.
- There is less noise or vibration from bearings, since the rotating shaft does not contact air bearing during operation.
- Over 25,000 times of start-stop endurance test, equivalent to more than twenty years life time in typical operation.
- Patent (Air Foil Bearing): No. 10-0604132



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Air Cooling

- High-speed motor is cooled by blower suction air itself.
- No need for additional fan or blower for motor cooling.(no additional power consumption)
- There is no adverse effect on other equipment, since the heated motor cooling air is not discharged to the surrounding air.
- Patent (Efficient Motor Cooling): Nb. 10-0572849



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Option of Inverter (VFD) Separation

- Inverter separation type can be provided for the site of high temperature or toxic gas circumstance. Its maximum distance between the inverter and the blower core is up to 200 m.

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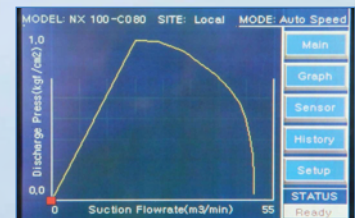
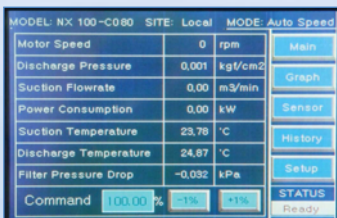
Permanent Magnet Synchronous Motor (PMSM)

- Our PMSM maintain efficiency with turndown to part load.
- Driven by Sinusoidal PWM algorithm to lower the motor rotor temperature and minimize the secondary cooling air flow.

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Control & Operation

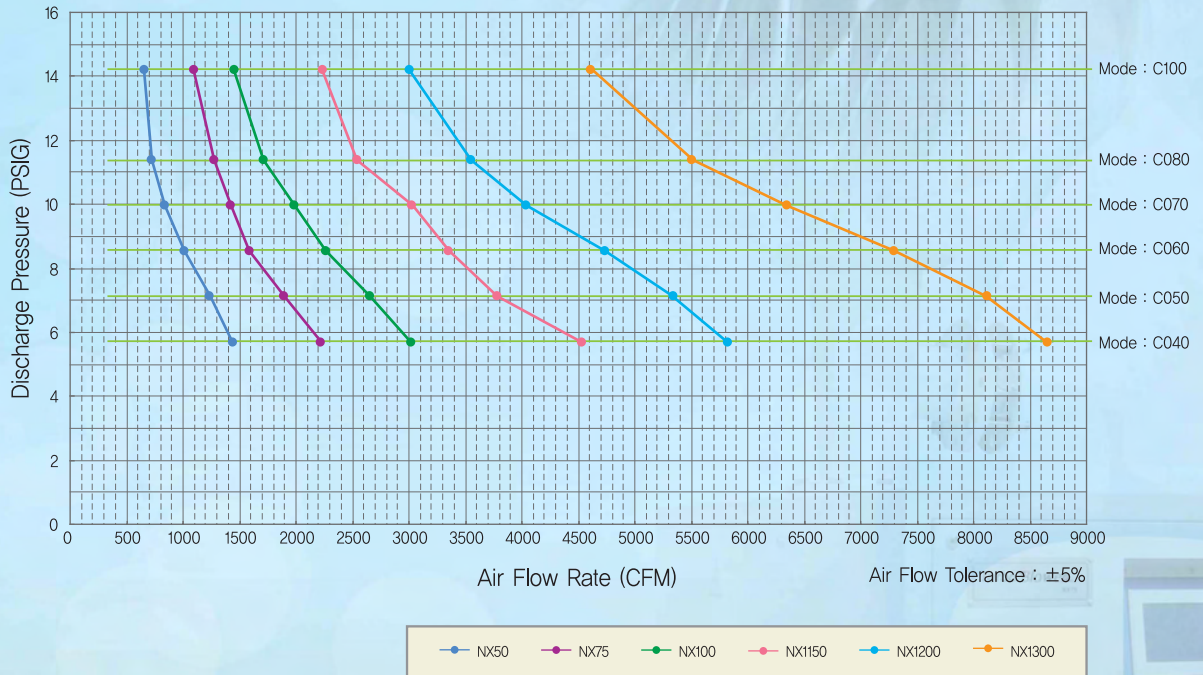
- High-speed motor and inverter allow you to run the blower at desired speed, will not sacrificing efficiency.
- PLC makes, it possible to run the blower in either constant pressure, constant flow mode or DO control mode.
- You can easily monitor the flow, pressure, temperature, speed, etc. on the LCD display.
- Easy operation with touch screen and remote control and monitoring is also possible through our various control platforms including Cimon, Allen Bradley, Siemens and GE



Oil-free, High-efficient Turbo Blower

Performance Characteristics of NX Series

Nominal Air Flow Rate of NX Series Turbo Blower



• Turbo Blower NX Series Normal Air Flow

Discharge Pressure (PSIG)	NX50	NX75	NX100	NX150	NX200	NX300
	50hp	75hp	100hp	150hp	200hp	300hp
Air Flow Rate(CFM)						
5.7	1411	2225	3023	4501	5827	8653
7.1	1236	1900	2656	3779	5365	8123
8.5	1017	1581	2267	3355	4738	7303
10.0	837	1427	1988	3037	4061	6350
11.4	721	1278	1716	2543	3553	5513
14.2	652	1095	1446	2225	3002	4626

*Air Flow at 68°F, 14.7 PSI, 65% RH(20°C, 1 atm, 65% RH)

- Single Stage Centrifugal Turbo Blower
- Direct Motor Driven System
- Flow Adjustment : Motor RPM Control by Inverter
- Noise Level : 75~80dB(A)
- Flow Range : 45~100% of nominal air flow
- Tolerance of Inlet Volume : ±5%
- Obtained CSA/US Marked
- Option : Check Valve, Flexible, Remote Monitoring & Control via LAN(Ethernet, ModBus TCP/IP), Serial and Hard Wiring

APG-Neuros,

Clean Environment and Energy Saving Oriented Company

■ Model Selection

Chart for Blower Selection

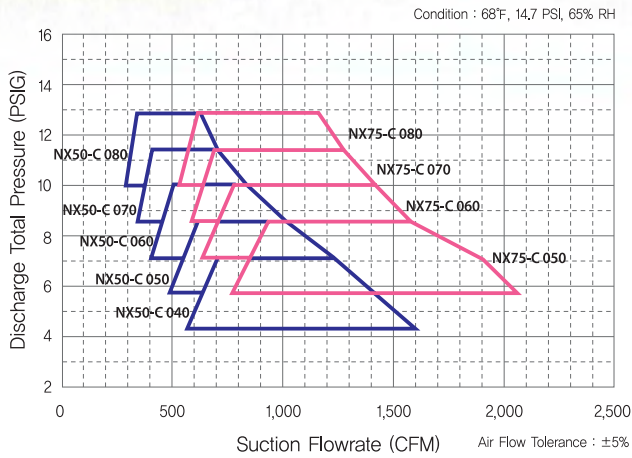


Chart for Blower Selection

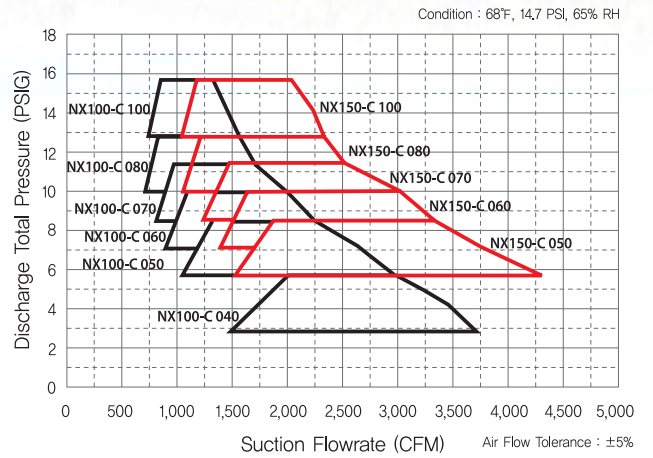
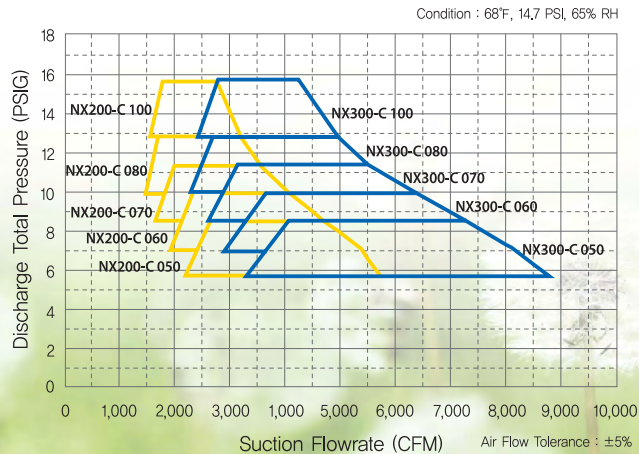


Chart for Blower Selection



■ NC Series Performance

- Performance Curve

Chart for Blower Selection

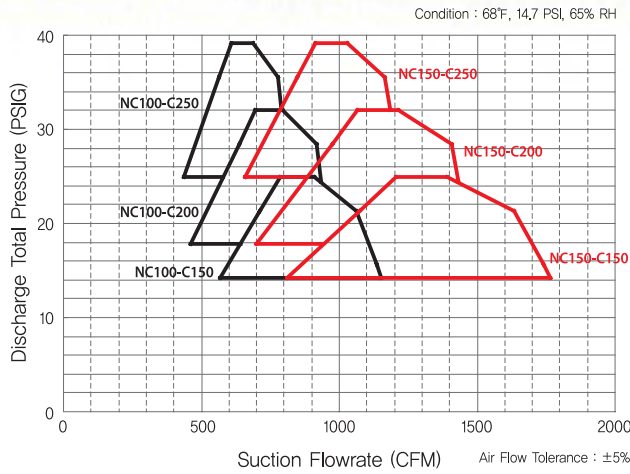
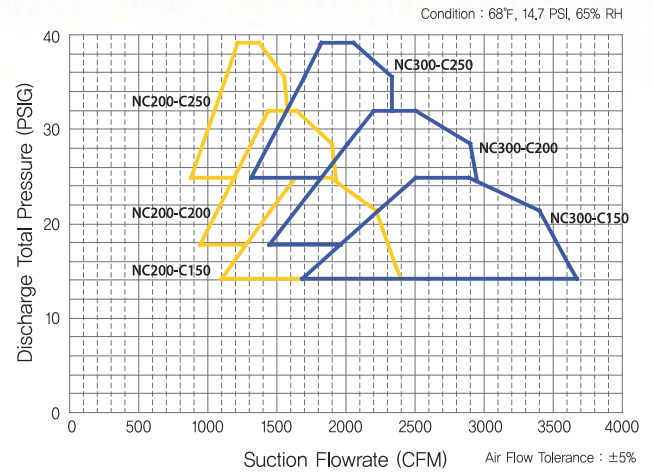


Chart for Blower Selection



- Norminal Air Flow of NC Series

Discharge Pressure (PSIG)	NC100	NC150	NC200	NC300
	100hp	150hp	200hp	300hp
Air Flow Rate(CFM)				
21.3	1060	1635	2216	3398
28.4	918	1406	1900	2902
35.6	777	1165	1554	2331

*Air Flow at 68°F, 14.7 PSI, 65% RH(20°C, 1 atm, 65% RH)

- Single Stage Centrifugal Turbo Blower
- Direct Motor Driven System
- Flow Adjustment : Motor RPM Control by Inverter
- Noise Level : 80~85dB(A)
- Flow Range : 70~100% of nominal air flow
- Tolerance of Inlet Volume : ±5%
- Option : Check Valve, Flexible Joint Stop Valve, MOR(Main Operation Panel)



Expectations



Installation & Application

- Air and Oxygen Supply at Waste Water Treatment Facility
- Raw Powder Material Transportation
- Oxidization at Power Plant Desulfurization Process
- Pulverized Coal and Limestone Transportation at Thermal Power Plant
- Raw Material Transportation and Blending at Petrochemical Plant
- Cooling Air for Generators in Power Generation



Neuros Turbo Blower is on a different level

APG-Neuros introduces Efficient and Affordable advanced technology blowers for municipal and industrial aeration.

The NX & VX series is a high-efficiency turbo blower. Thanks to high-speed motor air bearings, there is no need for a gearbox or lubrication system. The NX & VX series are the most efficient among the same class of turbo blowers. Moreover, this product will provide you with a comfortable working environment thanks to lower noise and vibration levels.



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