



Commitment to High Efficiency

Turbo Compressor NC Series



Masterpiece beyond compare

Customer satisfaction is our number one priority at Neuros which is the secret behind every compressor we make. The NC series is the embodiment of the highest efficiency and quality.

THE HIGHEST PERFORMANCE

With many years of experience in the research and development of gas turbine engines used in aircraft and combined with turbo machinery production know-how, Neuros has created the NC series of Turbo Compressors with the world's best performance.

EXCELLENT RELIABILITY

Already demonstrated in a wide variety of applications, NC series compressors are considered the industry standard for high quality thanks to the use of proven state-of-the-art air bearing, Permanent Magnet Synchronous Motor and control system technologies.

ECONOMICAL LIFE CYCLE COST

NC series provides the end users with a significant reduction in operating costs through energy savings of up to 70%, easy installation and low maintenance costs – only air filters and water for cooling need periodical maintenance.

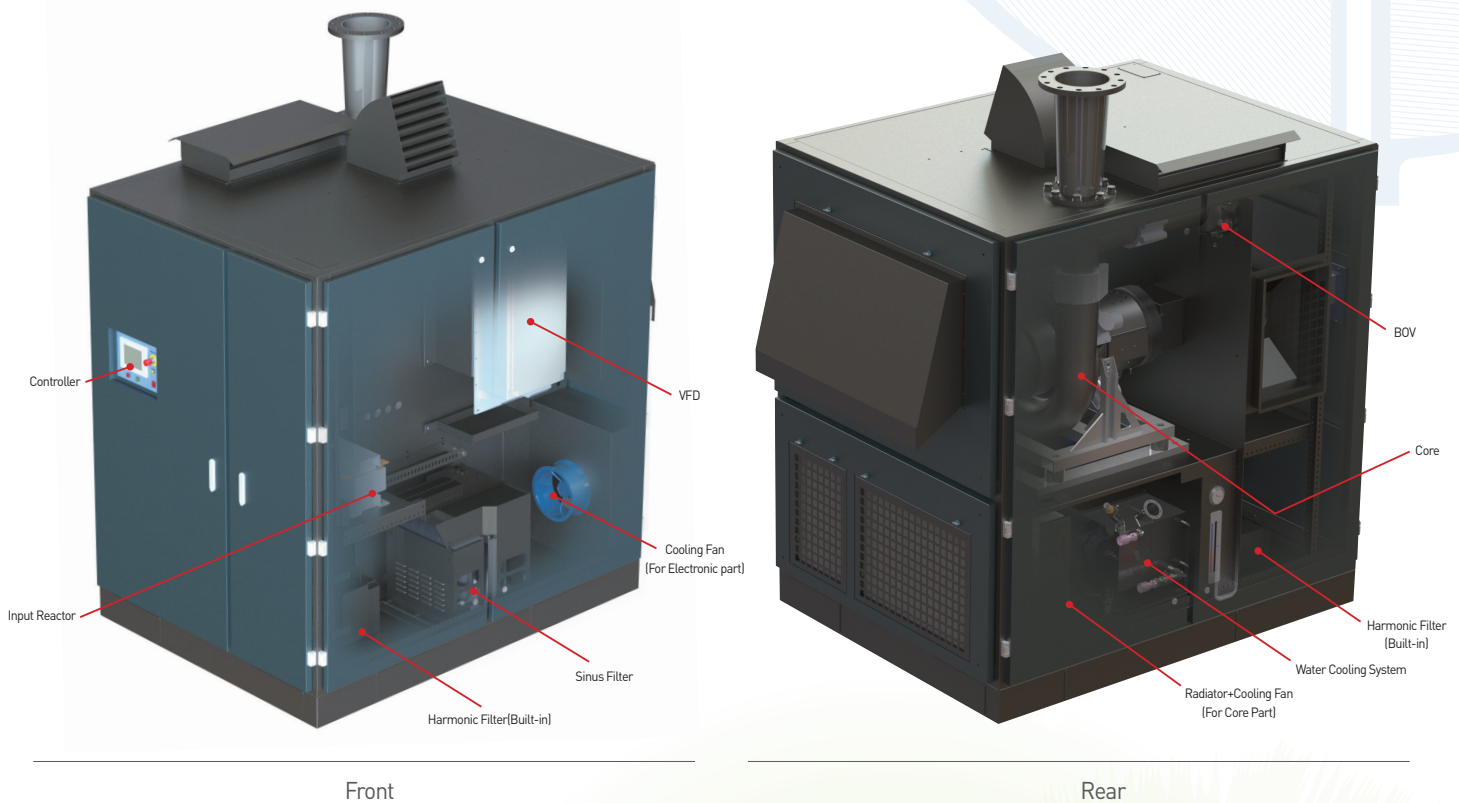
CUSTOMER ORIENTED TECHNOLOGY

User-friendly PLC for easy control, monitoring and diagnostics. Eco-friendly technology with low noise and vibration and no lubricating oil required.



Eco-friendly high efficiency turbo compressors are a smart choice for mankind and the environment

Turbo Compressor NC Series



Product Specifications

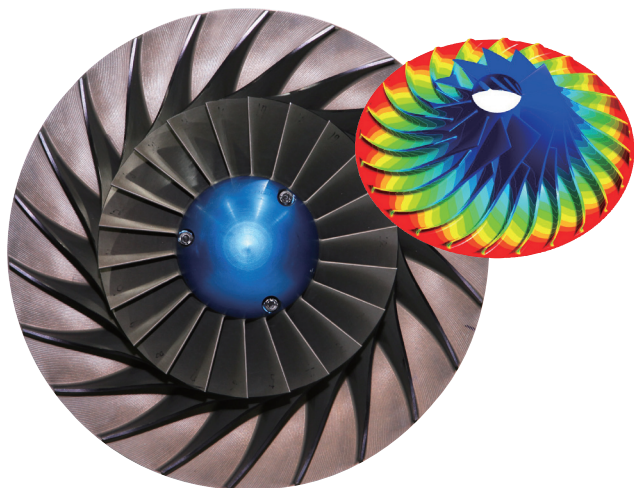
Model	Specifications			Dimensions and Weights(standard)			
	Cooling	Suction Flow (m ³ /min)	Motor Power (kW)	W (mm)	D (mm)	H (mm)	Weight (kg)
NC50	Air	8 ~ 15	37	1010	1300	1620	720
NC100	Water+Air	18 ~ 33	56	970	1750	1560	980
NC200	Water+Air	35 ~ 63	149	1514	1972	2000	1750
NC300	Water+Air	57 ~ 120	223	1400	2100	2020	1920
NC400	Water+Air	35 ~ 126	298	1400	2100	2020	2478
NC600	Water+Air	57 ~ 240	447	1880	3000	2150	3330

- ※ Discharge Pressure: NC series(1.1 ~ 2.0 kgf/cm² G)
- ※ Reference Conditions: 1.033 kgf/cm² A, 20°C, 65% RH
- ※ Turndown: 70-100%
- ※ Noise level: Below 85dB(A)
- ※ 100% Oil-Free System

- ※ Tolerance: Air Flow ±4%, Power ±1%
- ※ Compliant with ISO5389, ASME PTC 10
- ※ The specification of the product may be changed for improvement of performance without notice.
- ※ NC400-NC600 Dual Core Model

THE HIGHEST PERFORMANCE

The ultimate in turbo machinery utilizing cutting edge high performance aerospace technologies.

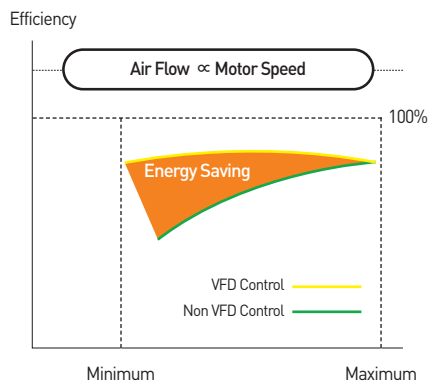
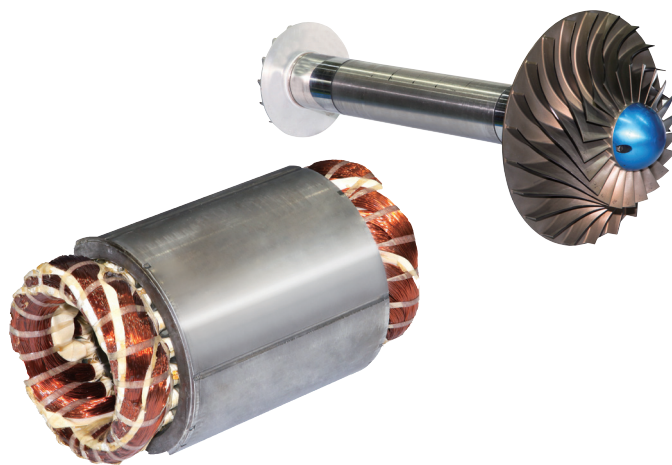


High Efficiency Impeller with Aerodynamic Design Optimization

- The design of the impeller and diffuser plays a key role in maximizing the efficiency of the turbo machinery.
- Impeller has high integrity and high fatigue life, as well as a precise 3D shape operating at optimal specific speed resulting in higher efficiency.
- The Impeller's structural integrity is verified by a Spin Test at 120% of maximum operating speed.
- The most suitable material, forged Aluminum Alloy, is used to manufacture the impeller using a 5-axis CNC machine to minimize key clearances.
- A hard anodizing coating on the impeller and casing improves corrosion resistance and durability.

High Speed PMSM

- Permanent Magnet Synchronous Motors (PMSM) are developed in house achieving high efficiency and power factor of more than 95%.
- Permits continuous operation with low loss and offers excellent speed control.
- There is negligible mechanical loss during operation thanks to the rotor of motor and impeller being directly coupled.



High Efficiency VFD

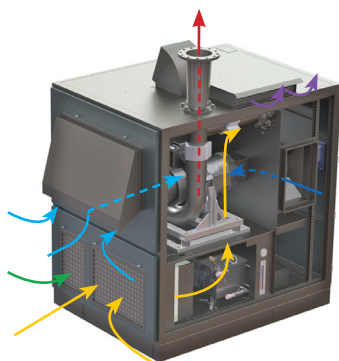
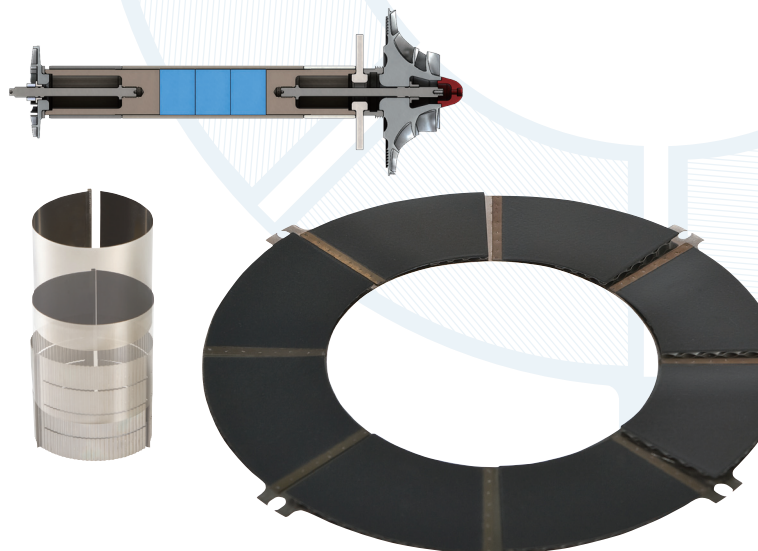
- The Variable Frequency Drive (VFD) conserves energy by controlling rotational speed to adjust the discharge pressure and flow rate to meet customer needs.
- Soft start using less than 100% current
- Enables operation in a wide range with turndown of 70~100%

EXCELLENT RELIABILITY

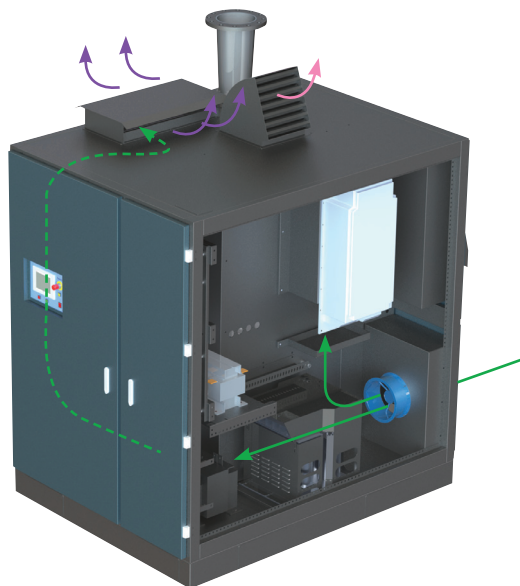
Proven air bearing and simple and natural cooling system ensures continued trouble-free operation.

Aerospace Air Bearing Technology

- Non-contact air bearing that utilizes the dynamic pressure of air fluid. It is composed of two parts: a corrugated bump foil and high temperature alloy inner foil. As the rotor speeds up, a thin film of air creates a cushion between the shaft and the bearing surface.
- 100% Oil-Free Compressed Air – no lubricating oil or associated maintenance required.
- Reliable and proven technologies used in Aircraft Environmental Control Systems and Air Cycle Machines.
(Neuros air bearing used in a small-size turbo compressor installed in a fuel cell vehicle passed a 1,000,000 start/stop test.)
- Patent No. 10-0964883 : Patent No. 10-1068542



- Directed to Main Inlet Air
- Main Discharge Air
- Radiator and Core Cooling Air
- Electronic parts Cooling Air
- System Cooling Discharge Air
- BOV Discharge Air
- Motor Cooling Air

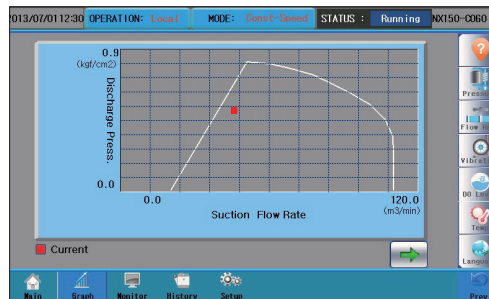


Functional Cooling System

- The compressor motor, VFD and other electrical components are cooled off by combination of water and air.
- Separate flow passage for main air and cooling air

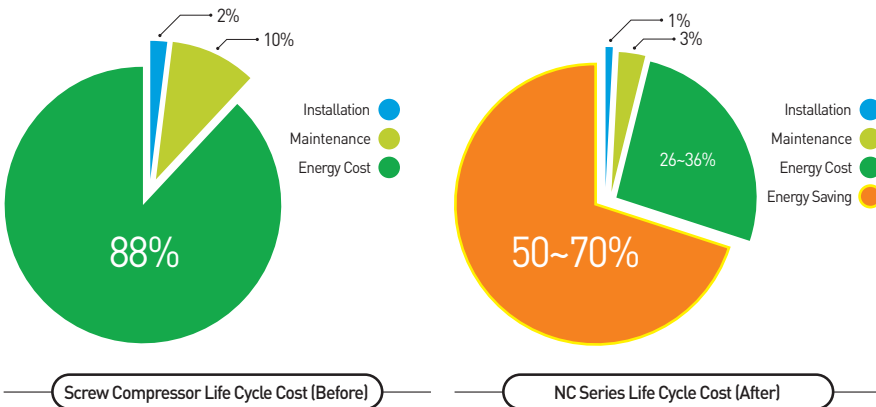
Protective Logic

- Built-in Protection Logic to prevent surge during operation by controlling speed or blowing off air automatically.
- Compressors keep operating even in case of undervoltage for 0.5 second. When undervoltage is sensed, the compressor speed decreases and returns to the normal speed once the power is recovered.



ECONOMICAL LIFE CYCLE COST

Low LCC thanks to the compressor's energy savings and low maintenance costs.



Return on Investment

- NC series can maximize profitability for end users through significant reduction of LCC.
- Neuros' Turbo Compressors save customers 50 to 70% of energy (40-50% reduced pressure loss savings, 20% compression efficiency) in applications that require a more flexible operation with air pressure of 120 - 250 kPa by replacing high-pressure screw compressors which produce 700 - 1,000 kPa.

Low Maintenance Cost

- Regular maintenance involves only cleaning or replacing air filters.
- No expenditures on replacement of oil, oil filters and water cooling systems (excluded some models).
- Reduced labor costs



	New Filtration System		Remarks	Applying
	Pre Filter	Main Filter		
Filtration Efficiency	80% @ 100 μm	99% @ 2 μm	ASHRAE 52.2-1999	
Type	Coarse	Fine		
Material	Non-woven Fabric	Synthetic Fiber		
Stage	2 Stages (Pre Filter + Main Filter)			
Maintenance	<ul style="list-style-type: none"> • Air Wash once a month • Replacement every 3 months 	Replacement every 3-6 months	<ul style="list-style-type: none"> • Warning & Fault Alarms • Depending on Circumstances 	

Improved Filter System

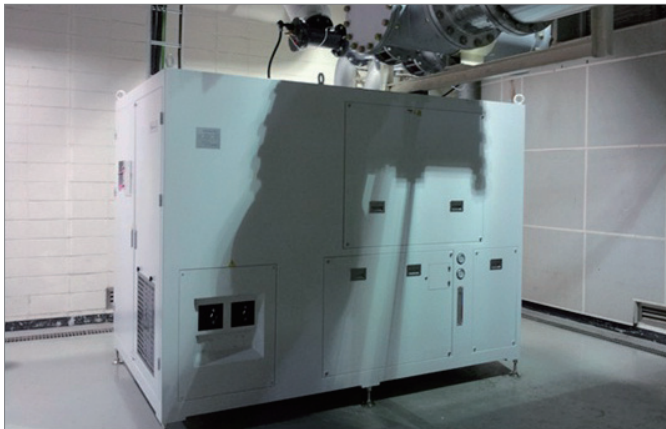
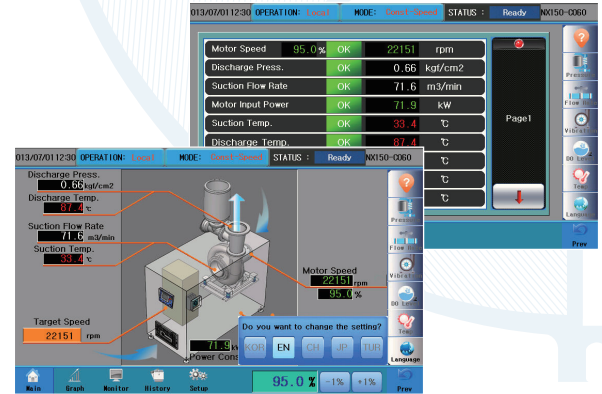
- NC series use a Two-Stage filtration system to protect the mechanical and electrical components and increase their efficiency.
- An alarm will alert the operator when the differential pressure goes above a preset point indicating that the filter needs to be replaced.

CUSTOMER ORIENTED TECHNOLOGY

Easy to use control system and eco-friendly technology.

Control System to Meet Various Customer Demands

- Programmable Logic Controller is the central control point of the compressor.
- It allows the end users to run the compressor in automated mode at constant speed, pressure, flow or sensor linkage mode.
- It is equipped with an easy to use touch screen which allows for easy control, monitoring and diagnostics to view all compressor parameters and conditions.
- The compressors can be controlled and monitored remotely using a Master Control Panel through communication protocols such as Ethernet, Modbus, Profibus, and Hard Wiring.
- Various languages are available including English, Korean, Chinese, Japanese, Turkish and Russian.

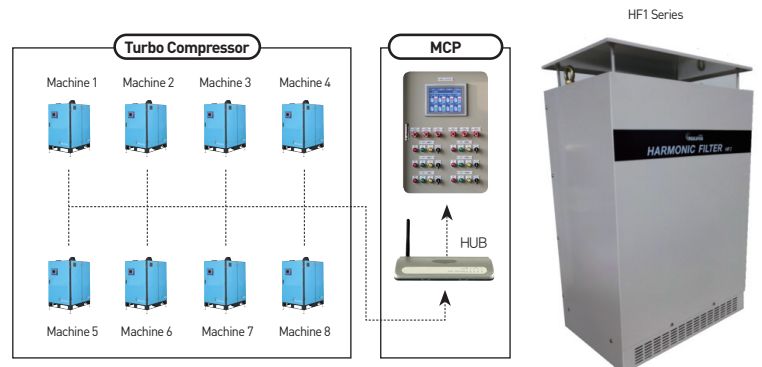


Eco-Friendly & User-Friendly Design

- Thanks to the patented non-contact air bearing and enclosure, the compressor has very low vibration of less than 1mm/s without a special foundation and noise levels below 85 dB(A).
- Patent No. 10-0572850
- No environmental pollution thanks to the 100% Oil-Free System
- CO2 emission reduction thanks to the energy savings
- Construction, electricity and plumbing costs are reduced with the smaller footprint.
- Plug & Play operation with “all-in-one package”

Optional Items

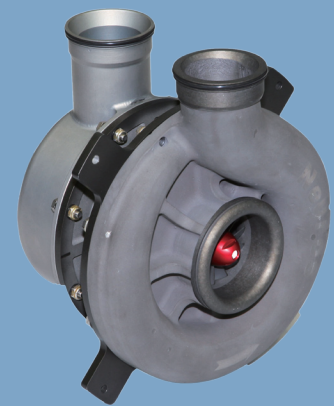
- Master Control Panel (MCP) can be used to control up to 12 compressor giving the operator one point of control and monitoring, and each machine can be controlled through the remote communication with SCADA.
- Harmonic Filter can be installed inside or outside the enclosure of NC series which provides an additional level of protection from harmonic distortion, removing harmonics generated during operation below the levels of THD_I 8%.



Born from aerospace technology

Neuros' Compressor technology was founded and utilized in the aerospace and defense industry, making the technology tested and reliable. Consequently, Neuros has acquired a premium brand reputation by providing sustainable and energy efficient solutions to its customers.

Neuros will continue providing value-added energy efficient solutions through continuous improvement, development and innovation of industrial turbo machineries as well as the commercialization of the next generation turbo charger and Environmental Control Systems in the field of automation and aviation industry.



ACM(Air Cycle Machine)
for avionics cooling

Headquarters & Factory(South Korea)

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