

Filters for gas turbines

Technology Innovation for
filtration solution for gas turbine



FILTEC 
eco filtering technology

Korea

Head office

28-90, Bugok-gongdan 4 gil, Songak-eup, Dangjin-si, Chungcheong nam-do, Korea

TEL : +82.41.358.0020 FAX : +82.41.358.0026

R&D center

Rm1509, 481-11 Daeryung Techno-town 8th, Gasan-dong, Geumcheon-gu, Seoul, Korea

TEL : +82.2.851.0020 FAX : +82.2.851.0076

China

Rm.B-213, Fanghezhenyuan Building, No.16, Guanghua Rd of Zhangjiawan
Industrial Development Zone, Tongzhou District, Beijing, China

TEL : +86.10.5235.0020 FAX : +86.10.5756.2155

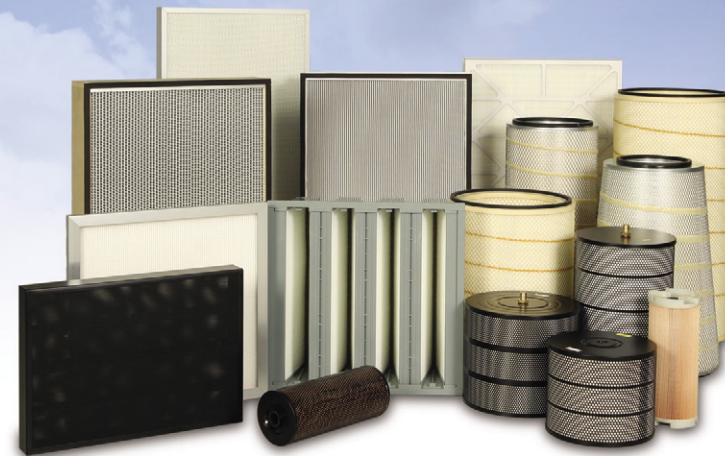
www.pnc21.com

FILTEC 
eco filtering technology

Company profile

Our goal is to provide top quality air filtration and protect people, environment and industrial process in a manner that most efficiently meet customer needs.

Headquartered in Dangjin-si, Chungchungnamdo, PNC manufactures the variety of filtration products such as Gas turbine filters, Air filters, EDM filters and so on. Selling globally around 30 countries under PNC band name, our products include commercial, industrial and residential air filters.



- Name** PNC Co., Ltd.
- Establishment** Sep. 24. 1984
- Representative** Dae Kun, Shin
- Capital** USD 1 Million
- Item** Gas turbine filter, EDM filter, Air filter and Cleanroom systems.
- Address** (Head office) 28-90, Bugok-gongdan 4 gil, Songak-eup, Dangjin-si, Chungcheong nam-do, Korea
 (R&D center) Rm1509, 481-11 Daeryung Techno-town 8th, Gasan-dong, Geumcheon-gu, Seoul, Korea
 (China) Rm.B-213, Fanghezhenyuan Building, No.16, Guanghua Rd of Zhangjiawan Industrial Development Zone, Tongzhou District, Beijing, China
- Web site** www.pnc21.com



Industry overview

Today's gas turbines demand maximum protection against environmental effects to ensure performance, longevity and minimum maintenance. This machinery depends on high quality air to prevent fouling, erosion and corrosion regardless of site conditions.

Damages

The right effective air filters are used to prevent the most important and expensive components of the power engine respectively from getting dust and unnecessary erosion. Wrong air filtration system will reduce the time frame involved in efficiency and performance of turbomachinery. As a manufacture of air intake system and filters with large fund of empirically acquired data, PNC is able to select suitable air filters to meet specific requirements of manufacturers for their turbo-machinery equipment.



Erosion



Fouling









Corrosion

Environment

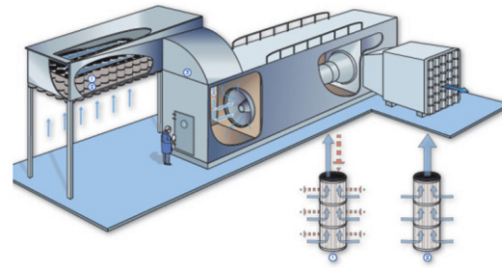
Every location of power plants is different. Gas turbine location can be different places such as ;

- Arctic areas
- Hot and desert areas
- Tropical areas
- Industrial areas

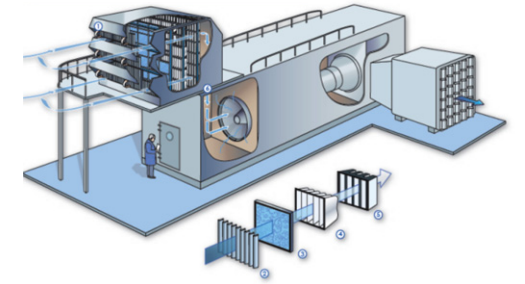
Subsequently there are different particles like natural or anthropogenic particles in the environment. Influenced by different climate conditions particle load in the air intake of a turbomachinery is defined by dust concentration and particle size distribution.

Dust- concentration influenced by different climate conditions							
Region							
Particle concentration	mg/m ³	0.02-0.2	0.02-0.5	0.01-0.3	0.01-700	0.02-10	0.1-1.0
Particle size range	μm	0.01-10	0.05-10	0.01-7	0.1-50	0.01-30	0.01-10
Possible damages		Erosion, Fouling	Fouling, Corrosion	Wet&hot, Gas path, Corrosion, Erosion	Erosion, Corrosion	Fouling, Corrosion	Wet, Corrosion, Icing, Fouling

Cartridge filters are designed to be self-cleaned by an overpressure reverse flow to the air intake. The application of this type filter is mainly in the area of air filtration for power generation, industrial and oil and gas installation with highly polluted environments.



Static filter does not have to be pulsed cleaned. The application of this type filter is mainly in the area of air filtration for power generation, industrial and oil and gas installations in a large part of land-based environments.



1. Cylindrical type (34" and 22")

- Easy installation
- High moisture resistance
- Cost effective solution
- No rust

Model no.	Description	Frame	Media
PNG-CY4234	34" cylindrical	Plastic, Galvanized steel	100% cellulose
PNG-CY4222	22" cylindrical		80/20 blend Melt blown 100% synthetic



2. Cylindrical and conical type (26")

- Easy installation
- High moisture resistance
- Cost effective solution

Model no.	Description	Frame	Media
PNG-CY4226	26", cylindrical	Galvanized steel	100% cellulose
PNG-CO4226	26", conical		80/20 blend Melt blown 100% synthetic



3. Cylindrical type (26" or 28")

- Pre filter cartridge wraps available.

Model no.	Description	Frame	Media
PNG-CY4226	26", cylindrical	Galvanized steel	100% cellulose
PNG-CY4228	28", cylindrical		80/20 blend Melt blown 100% synthetic

※ Alternative media and many other size are available.
 ※ More technical data is available upon request by e-mail.

sales_cf@pnc21.com



1. V bank type

V bank type filter has unique design with V-shape which increase contact surface area of media. The performance is maintained in humid or wet conditions, guaranteeing a long service life and an economical filtration solution.

Model	Description	Air flow	Class
PNG-VB6629	24" x 24" x 12"	2000 CFM	F7, F8, F9



2. Header type

The unit type filters are designed to withstand the high pressures and surging airflows associated with gas turbine operation.

- Single/double header available.

Model	Description	Air flow	Class
PNG-HD6629	24" x 24" x 12" 12" x 24" x 12"	2000 CFM	F7, F8, F9



3. HEPA filter

- Prevent submicron dust particles
- Designed to function as both the second and final stages

Model	Description	Air flow	Class
PNG-UN6629	24" x 24" x 12"	2000 CFM	E10-H14
		2120 CFM	

※ Alternative media and many other size are available.
 ※ More technical data is available upon request by e-mail.

sales_cf@pnc21.com



4. Coalescer

Coalescer is used to prevent moisture, water, mist, fog or rain ingress. The type of finished product can be roll, pre-cut pad and panel to meet customer's requirements.

Depending on the condition of power plants, the material media is variable such as; aluminum, stainless, synthetic, glass fiber, polyester and so on.

5. Pre filter

Pre filter is used to provide the most efficiency in 2 or 3 stage filtration systems offering extended service life to final filter. It is available in the panel type.

- Paper frame.
- 80-90% arrestance.
- Welded wire or expanded metal pleat support grid.

4" Gas turbine pre filter



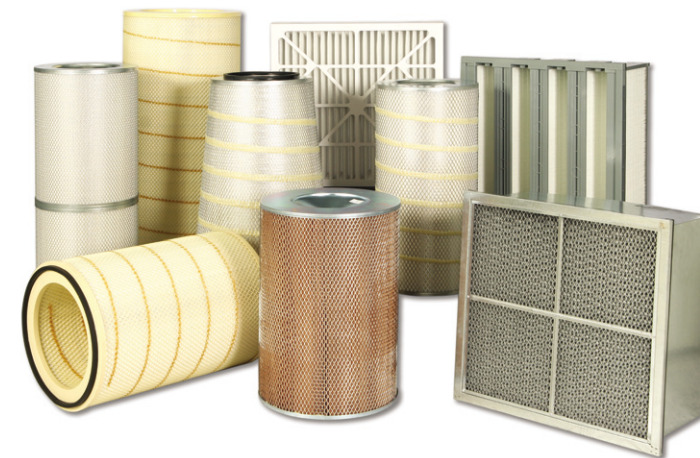
Model	Description	Air flow	Media
PNG-PN6610	24" x 24" x 4" 12" x 24" x 4"	2000 CFM 2500 CFM	90 % arrestance

- ※ Alternative media and many other size are available.
- ※ More technical data is available upon request by e-mail.

sales_cf@pnc21.com

PNC are able to design the filters with the following standards.

So our product is **reliable**. By just looking at filter in human eyes, it is difficult to judge its performance. The filters are classified by lavatory test to protect the turbine engine from the risk of damage; erosion, fouling and corrosion. Also, it is **economical** that our engineers are working closely with gas turbine filters to provide maximum efficiency and power production. Low pressure drop provides high power output. The high dust holding capacity increases filter service life.



EN 779 Class

G1	Am < 65
G2	65 Am < 80
G3	80 Am < 90
G4	90 Am
M5	40 Em < 60
M6	60 Em < 80
F7	80 Em < 90
F8	90 Em < 95
F9	95 Em

Draft EN 1822 Class

	E% @ MPPS
H10	> 85
H11	> 95
H12	> 99.5
H13	> 99.95
H14	> 99.995
U15	> 99.9995
U16	> 99.99995
U17	> 99.999995

AM%- average arrestance for coarse filter in the classification range G1 – G4

Em%- Average efficiency for fine filters in the classification range F5 – F9

E% Mean fractional efficiency for hepa & ulpa filters in the classification range H10 – U 17

MPPS = most penetration particle size

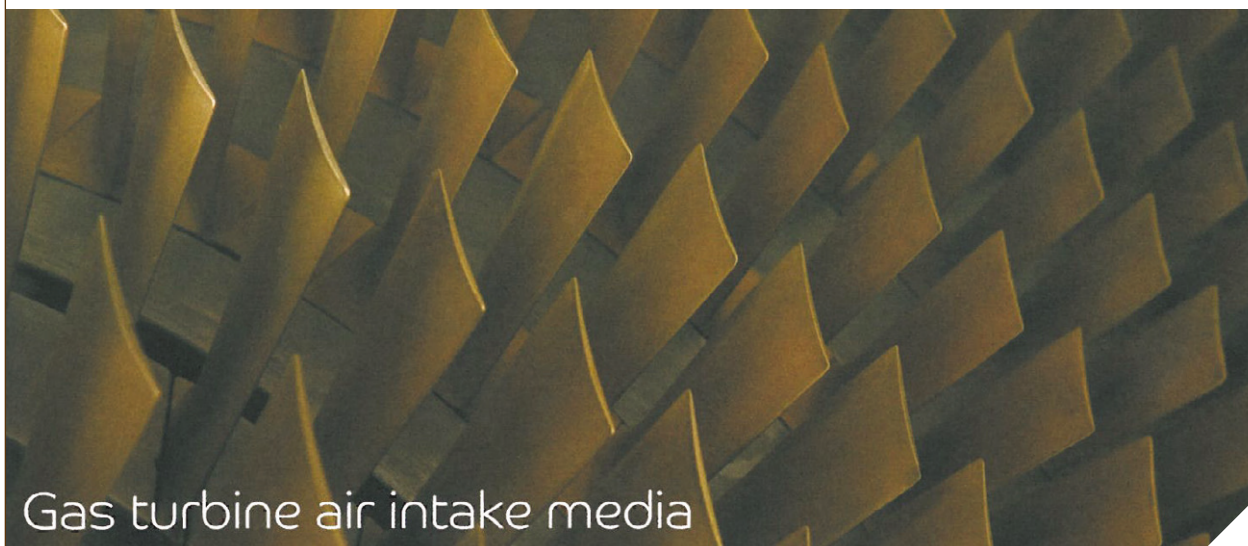
Coarse Filters

Fine Filters

HEPA & ULPA Filters

PNC Media portfolio for gas turbine air intake.

- Glass fiber
- Cellulose
- Cellulose & Synthetic blend
- Cellulose & Glass blend
- Melt blown
- Spun bond
- Nano-fibers
- Membrane(PTFE)



Gas turbine air intake media



Worldwide PNC customer

Supplying globally over 30 countries for many years, we have delivered our products to all types of gas turbine installation in various environments. The history in various environments can be a great asset that the customer can **benefit** from.