

Notice

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Design for Clean Air

Air Solution Technology

AIR SOLUTION TECHNOLOGY

Improve any working environment with the technology

Puretec Co., Ltd., specializes in industrial ventilation, air conditioning, and dust collecting. We have satisfied the high-grade demands of textile and pharmaceutical factories over the years. Currently, those technologies and the expertise cultivated to date are being applied in other fields. We propose to regulate working environments to achieve optimal working conditions with our technologies. We not only offer overall engineering from initial planning to design, production, and installation, we also respond flexibly to any need, such as reconstruction and expansion of existing factories and facilities.

Main environmental items for improvement



High temperature countermeasure

- Work area around the corrugator machine
- Work area around the flexo printer and other processors
- Work area around the paper machine



Paper dust countermeasure and Insect Protection with positive press

- Paper dust filter at the slitter part
- Dust Collecting Air Cyclone exhaust
- Automatic cleaning filter with positive-pressure air supply
- Automatic remover of dust deposited at high position



Noise countermeasure

- Sound insulation
- Silencer at air supply and exhaust opening
- Enclosure for noise-generating machines

Air Solution Technology

Insect Protection with positive press P03

High temperature countermeasure P05

Air conditioning and dust collecting P07

Paper dust countermeasure P09

Foreign substances (powdered crust, straw trash, etc.) P13 countermeasure

Airflow control P15

Other products P16

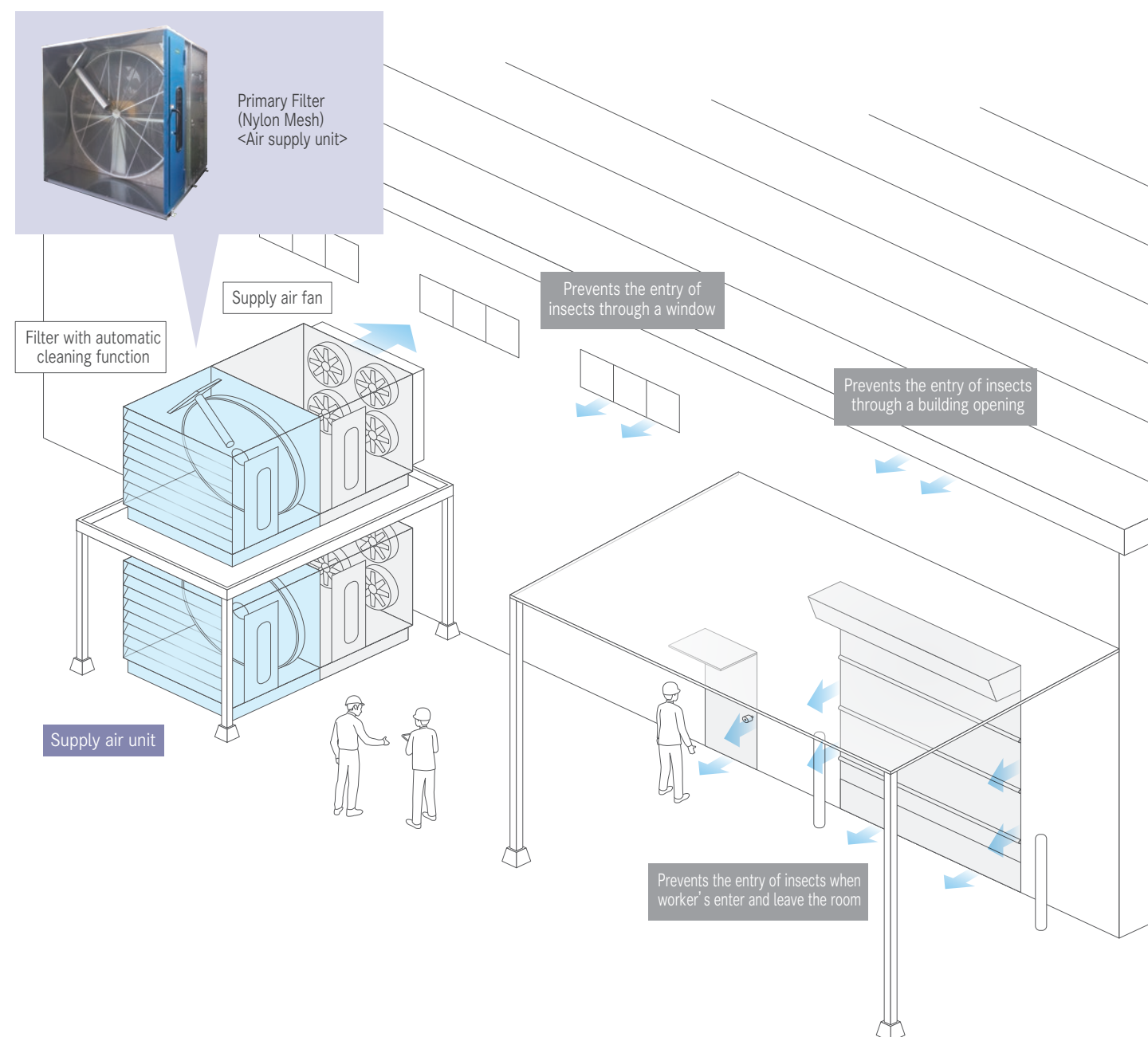
Installation process P17

INSECT PREVENTION

Insect Protection with positive press

Factories are installed with various exhaust systems, but for some reason, air supply systems are often overlooked. Without appropriate supply of air, negative pressure is created inside the room, causing outside air to flow into the room through doors, windows and openings in the building. This results in the entry of insects and dust, leading to quality issues in products manufactured in the factory.

Puretec offers original filter systems equipped with an automatic cleaning function. Developed in-house, our products achieve positive pressure in factories and contribute to resolving those issues.



FEATURES



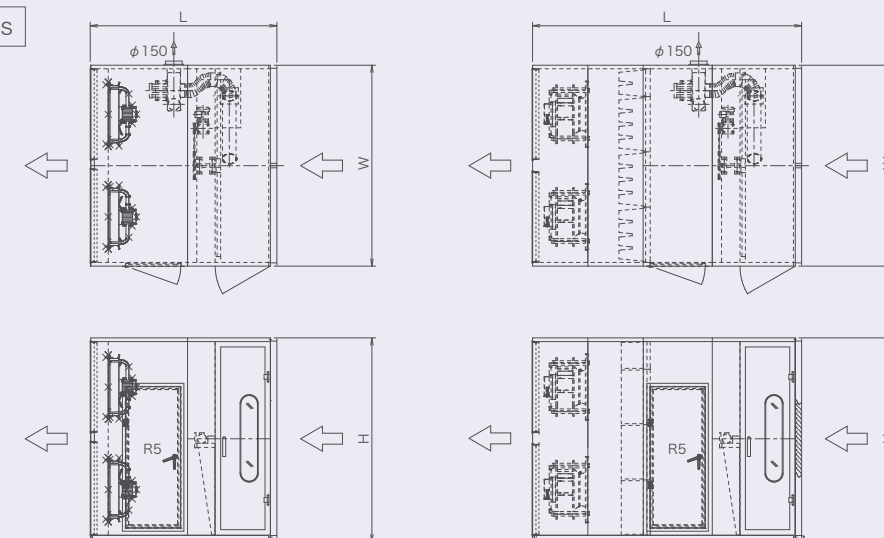
Our system is not ordinary air supply equipment, but it is an air conditioning system engineered to achieve designed air balance. The primary filter has an automatic cleaning function, and the optional secondary filter is equipped with a prefilter and high-performance Filter. We can also provide a cooled/heated water coil or steam heater to create and propose a full-fledged outside air processing and air conditioning system according to the request of each customer.

- Our automatic cleaning filter can be added to an existing air supply system or air handling unit.
- We can propose a system capable of maintaining positive indoor air pressure.
- Features a special filter mounting system (pursuit of zero gap) developed originally by our company.

PURE SHIELD

(insect-proof positive pressurization unit equipped with automatic cleaning filter)

Specifications



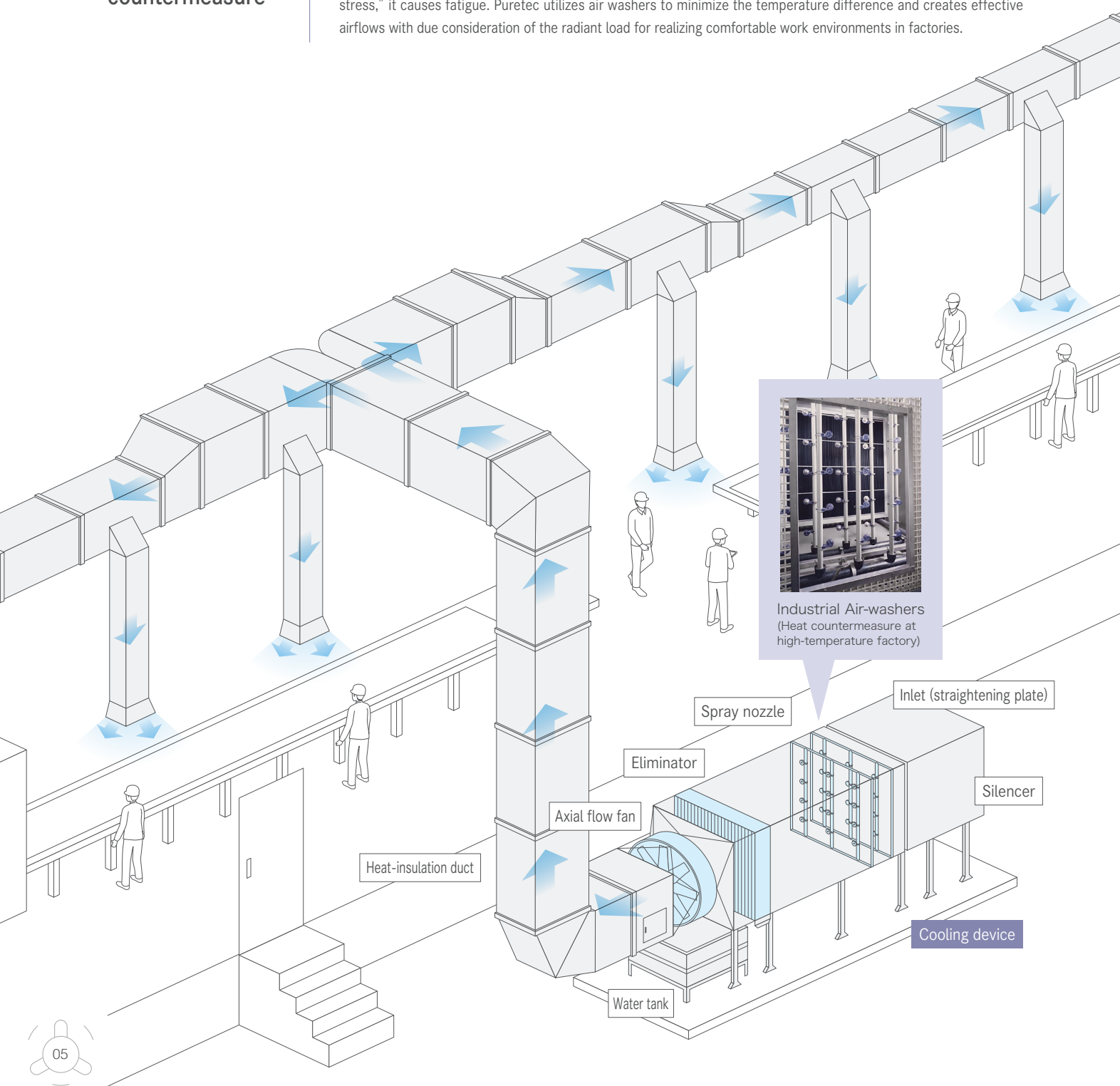
Pure Shield model			PS1520		PS2128	
			High-efficiency particulate air filter (Equipped as standard)	Standard type	High-efficiency particulate air filter (Equipped as standard)	Standard type
Air supply capacity		m³/H	25,200(420m³/min)	30,000(500m³/min)	40,800(680m³/min)	48,000(800m³/min)
Outside air processing filter (Automatic filter recovery)	Filter size		φ 1,400		φ 2,000	
	Filter specification		NB-40 or NB-60 (Nylon mesh filter)			
High-efficiency particulate air filter	592×592		6 pieces		9 pieces	
	592×296		3 pieces		6 pieces	
	Filter specification		ePM1 55%(ISO 16890 Classification)			
Drive motor	Supply fan		3.0kW × 2 units	3.7kW × 2 units	3.0kW × 4 units	2.2kW × 4 units
	Cleaning fan		1.0kW×1 units			
	RPF geared motor		0.2kW×1 units			
Main body material	Unit casing		Indoor installation type: SGC, 2.0t Outdoor installation type: SUS304, 1.5t(2B)			
	Unit base		Indoor installation type: SS + silver paint Outdoor installation type: SUS304			
	Supply air Louver		Specification: SUS304, alumite-treatment or SGC			
Consumption of compressed air for filter backwash			0.4MPa-300NL/min			
Main body weight			2,000kg	1,500kg	2,500kg	2,200kg
External dimensions	Dimension L	mm	3,000	2,000	3,000	2,000
	Dimension W	mm	1,600	1,600	2,200	2,200
	Dimension H	mm	2,000	2,000	2,300	2,300

* More options (cooled/heated water coil, humidifier, steam coil) are available.

MILD COOLING

High temperature in working room countermeasure

Work environments in high-temperature factories, such as paper/corrugated box manufacturing plants, foundries and dyeing factories, are extremely harsh in summer and can reach 40° C to 50° C in temperature. Workers continuously working under a commercial spot cooler in such an environment can experience fatigue quickly. That is because the difference of temperature between the air discharged by the cooler and the air inside the factory can be as large as 20° C to 30° C, disallowing the human body from properly adjusting the body temperature. Called "environmental stress," it causes fatigue. Puretec utilizes air washers to minimize the temperature difference and creates effective airflows with due consideration of the radiant load for realizing comfortable work environments in factories.



FEATURES

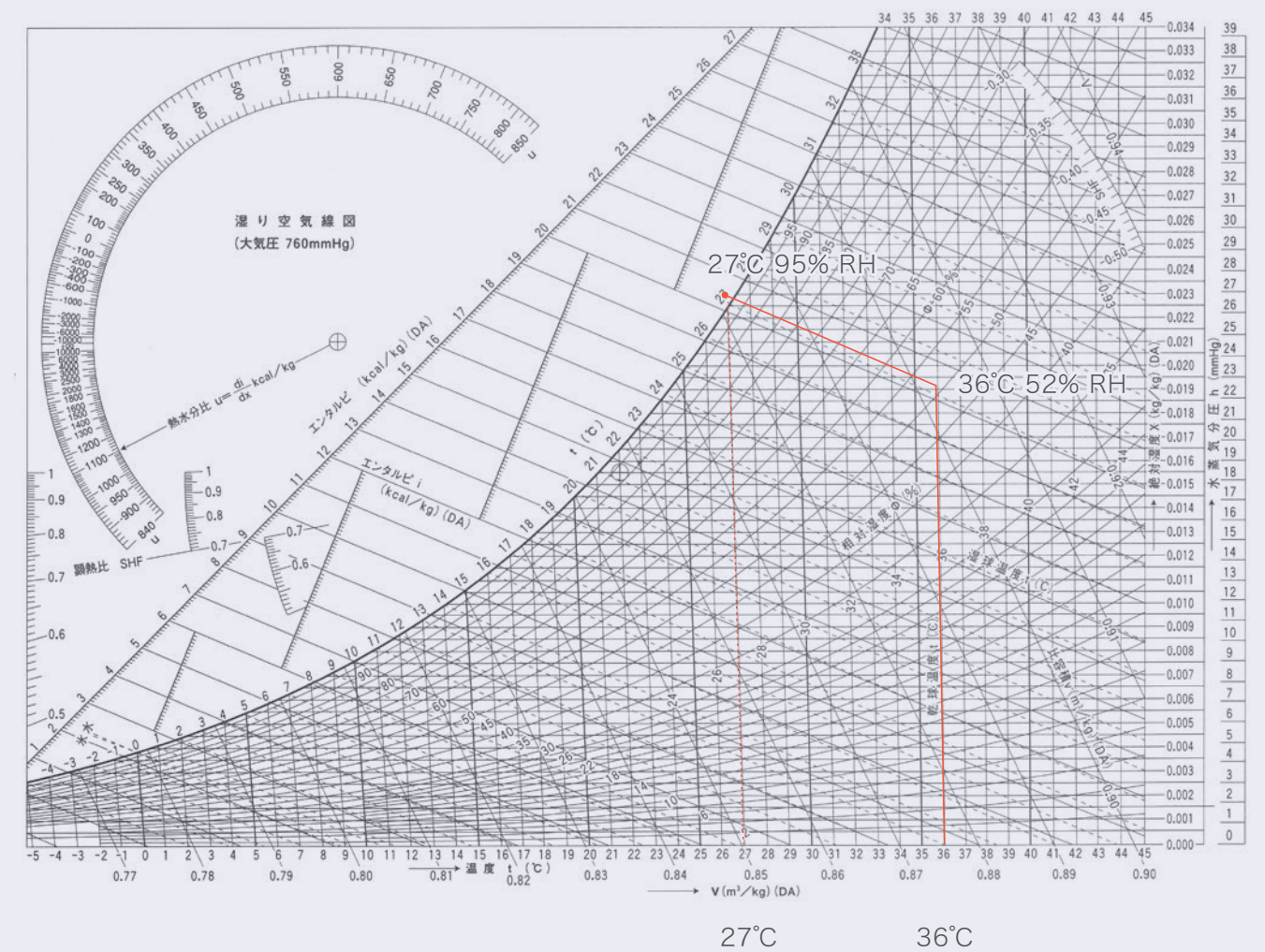
The air washer is a simple structure that sprays water into the blowing air and extracts water droplets with an eliminator at the rear stage.

The blowing air is deprived of vaporization heat by contact with the sprayed water, and the outlet air temperature is 7°C to 8°C lower than the inlet air temperature.

Because sprayed water can be reused, the amount of water remains almost the same with only a small amount of evaporation.

- Because the temperature difference stress is added to the temperature regulation function of the human body, and an air condition causing little fatigue is achieved.
- Since the air washer has an air-cleaning function, it can be used as a filter to remove outside air pollutants during normal operation.
- Only blowing fans and pumps for the washer require a power source, therefore power saving is much greater than general package air conditioners.

Psychrometric chart

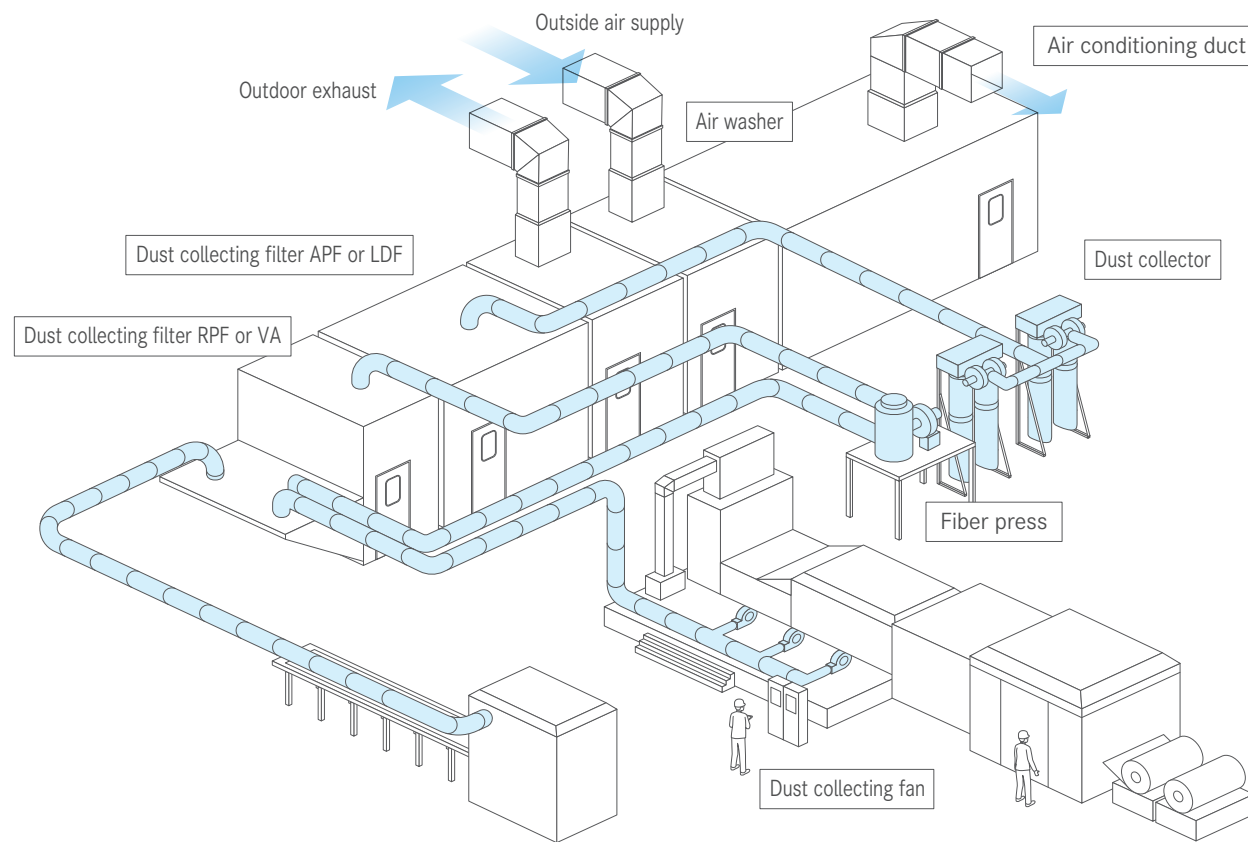


AIR CONDITIONING

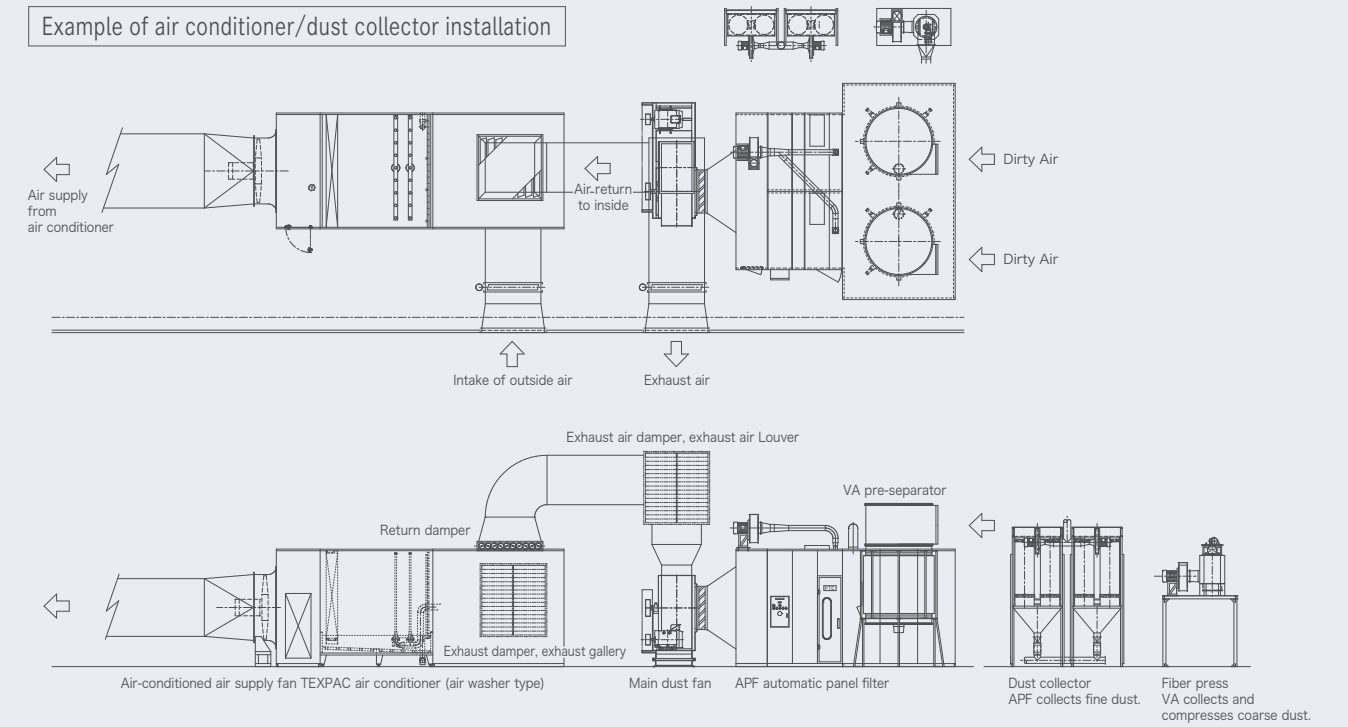
Air conditioning and dust collection

Nonwoven fabric factory

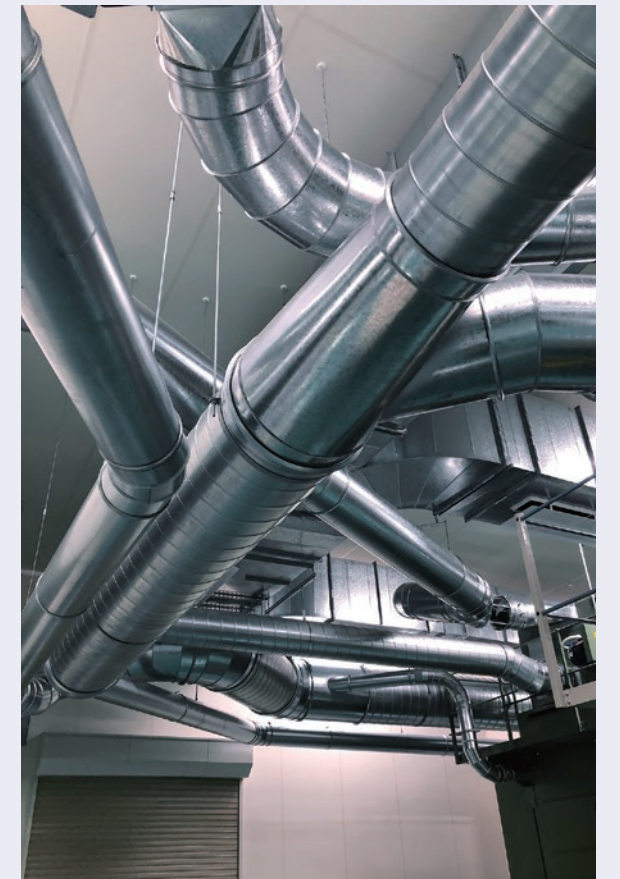
We propose overall air conditioning and dust collecting systems for dry nonwoven fabric production sites. Improve the working environment by means of purifying the exhaust and the return air of the production machines, which stabilizes the temperature and humidity and provides insect-proof positive pressurization. We not only offer overall engineering from initial planning to design, production, and installation, we also respond to any need for reconstruction and expansion of existing facilities.



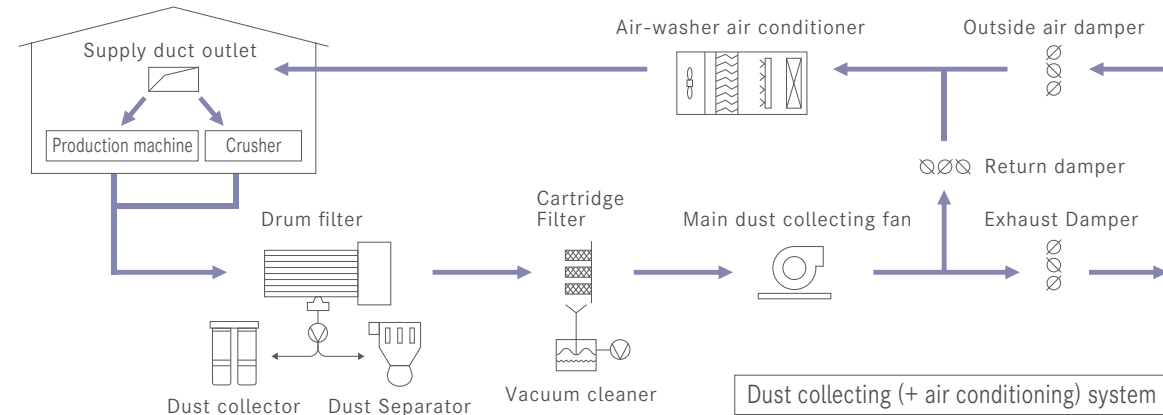
Example of air conditioner/dust collector installation



Variation of duct system Cotton-feeding duct, air-transport duct, dust collecting duct, air conditioning duct



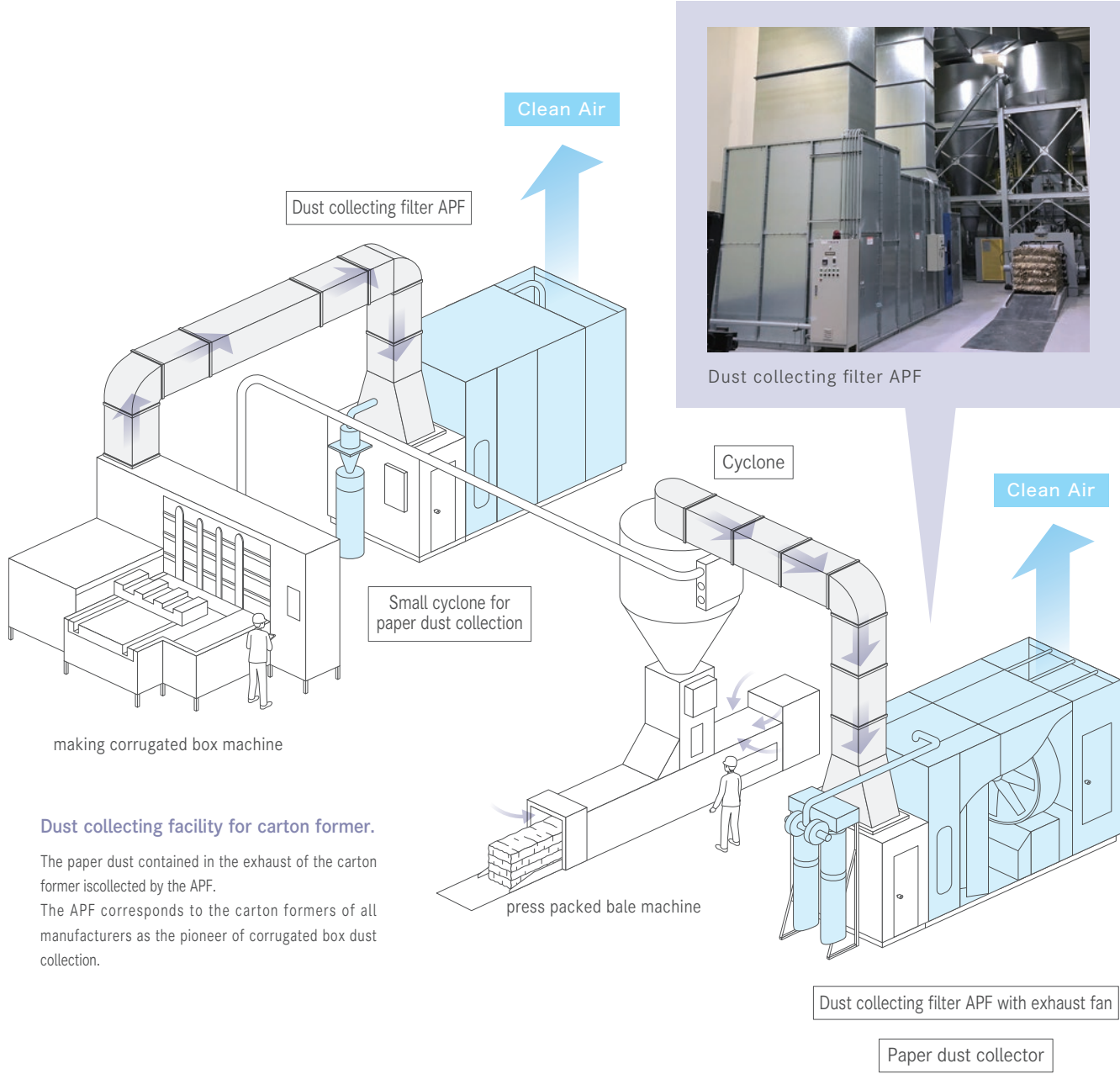
CONVENTIONAL AIR CONDITIONING



DUST CONTROL

Paper dust
countermeasure
corrugated box factory

In the process of manufacturing corrugated box, a large volume of corrugated paper dust is generated, especially at the periphery of the Carton Former, which cuts the grooves for folding and making boxes. Puretec proposes its automatic panel filter APF as a dust collecting facility for the carton box. We also propose the introduction of a cyclone exhaust and dust collecting system to prevent the scattering of paper dust around the wastepaper recycle system.



Dust collecting facility for carton former.

The paper dust contained in the exhaust of the carton former is collected by the APF. The APF corresponds to the carton formers of all manufacturers as the pioneer of corrugated box dust collection.

dust collecting system for Cyclone exhaust(wastepaper chamber)
Uses an exhaust fan for the conventional dust filter (APF) to control the internal pressure of the cyclone (negative pressure state). This prevents the paper dust from scattering from the cyclone or press packed bale machine.

FEATURES

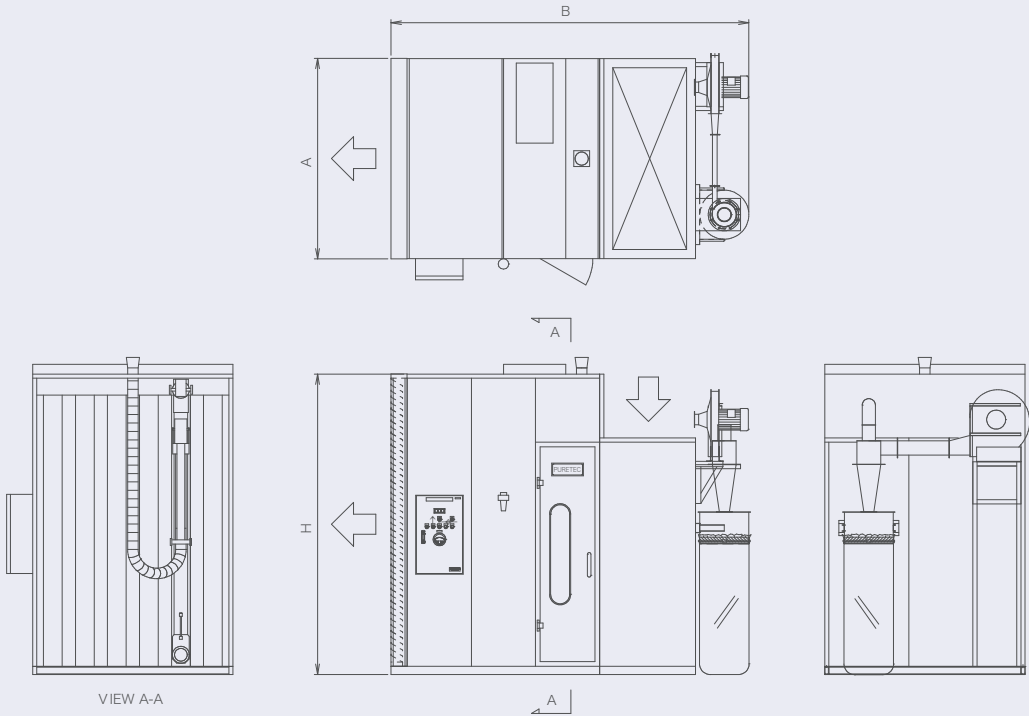
The APF (Automatic Panel Filter) is a space-saving dust collector consisting of multiple filter cells arranged in parallel. You can select and install filter media on the surface according to your needs. The dust accumulated on the filter surface is sucked and transported to the dust collector by the dust-removing robot that operates intermittently.

- It is space saving and can process large amounts of air.
- A lineup of units are available for any Carton Former.
- We will provide engineering works that include ancillary work, such as ductwork.



Paper dust collector

Specifications



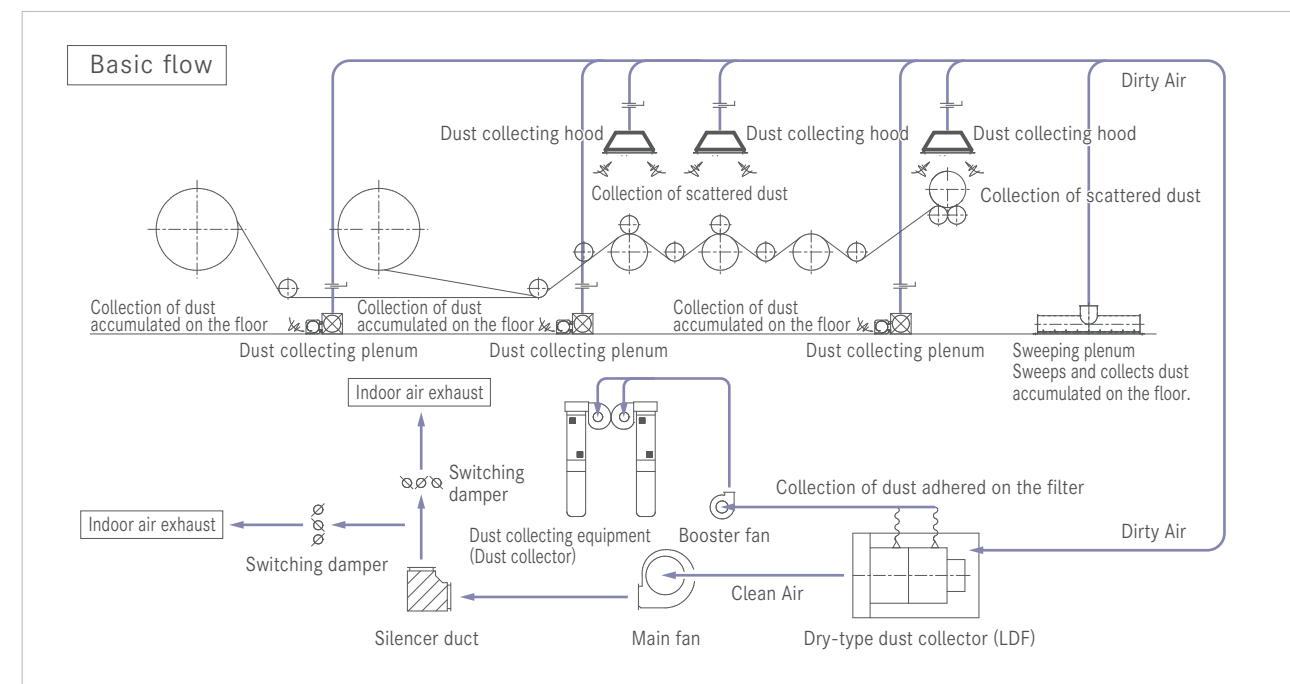
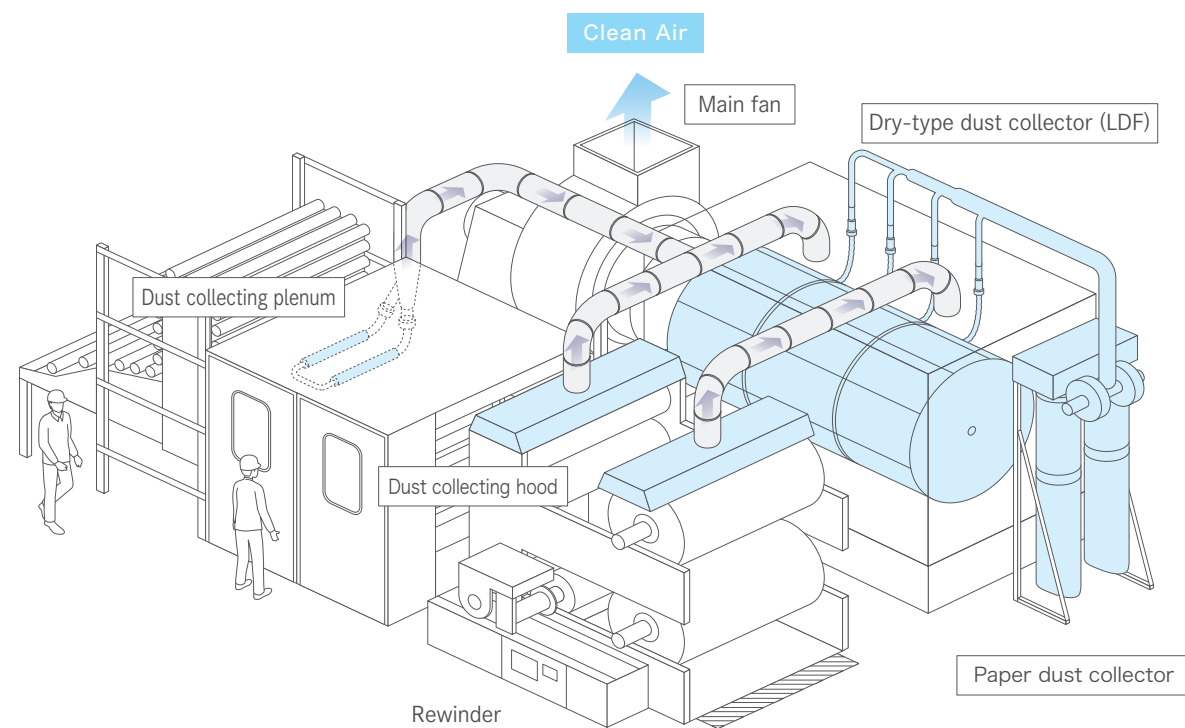
Dust collector (APF) model for carton former		1216S	1520S	1824S	2128S	2432S	2736S
Filter area	m ³	13.6	17.0	20.4	23.8	27.2	30.6
Number of filters used	pieces	16	20	24	28	32	36
Maximum processing air volume	m ³ /min	600	760	900	1100	1220	1380
Motor output	kW	4.1					
Dimension A	mm	1296	1600	1904	2208	2512	2816
Dimension B	mm	3397					
Dimension H	mm	2851					

DUST CONTROL

Paper dust countermeasure

Toilet paper factory

Household paper products such as toilet paper and tissues are manufactured using various processes. In particular, the winders that wind paper into rolls and the rewinders produce very large amounts of paper dust. Countermeasures against paper dust are essential not only for maintaining product quality but also for protecting the workers from paper dust. Puretec proposes the LDF dry-type dust collector developed in-house by our company. We also recommend the Circle Air ceiling-rotating blow cleaner that blows air toward the place where dust accumulates easily.



FEATURES

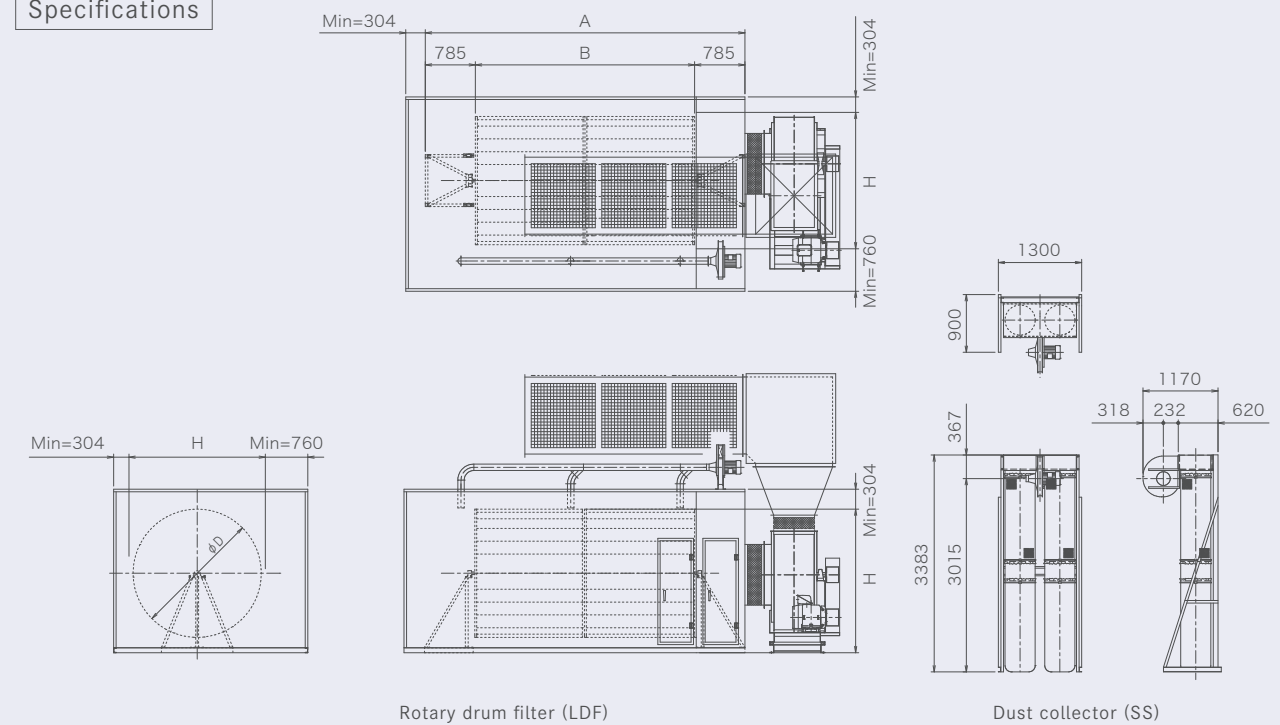
The LDF (rotary air filter) is a dry-type dust collector. It collects dust with the outer surface of the rotating cylindrical filter and uses the cleaner nozzles that are constantly traveling in the traverse direction to suck dust. The sucked dust is collected in the dust collector. Since the collected dust is placed in a polyethylene bag, it can be easily disposed of.

- The rotary air filter constantly cleans the filter surface using the high-pressure cleaning nozzles. Since this prevents the processing air volume from decreasing, the dust collecting efficiency stays stable. Dust and other particles sucked by the cleaner nozzles are transported by air to the dust collector.
- We develop dust collecting systems suitable for production machines such as paper machines, winders, slitters and other processing equipment. We design facilities and install equipment in consideration of total system balance. Puretec can perform in-house all designing and manufacturing activities for hoods and plenums for local dust collection.



Paper dust suction hood collector

Specifications



Rotary drum filter (LDF) model		15/17	15/34	15/51	20/17	20/34	20/51	25/17	25/34	25/51
Filter area	m ³	6.9	13.8	20.7	9.2	18.4	27.6	11.5	23	34.5
Number of filters used	pieces	3	6	9	4	8	12	5	10	15
Maximum processing air volume	m ³ /min	300	600	900	450	850	1,200	550	1,050	1,500
Weight	Kg	500	650	800	610	770	930	740	920	1,100
Motor output	kW	0.4								
Number of required dust collector units	units	1	1	2	1	1	2	2	2	3
Dust collector motor capacity	kW	1.5	1.5	3.0	1.5	1.5	3.0	3.0	3.0	4.5
Dimension D	mm	1,500	1,500	1,500	2,000	2,000	2,000	2,500	2,500	2,500
Dimension A	mm	3,280	4,990	6,700	3,280	4,990	6,700	3,280	4,990	6,700
Dimension B	mm	1,710	3,420	5,130	1,710	3,420	5,130	1,710	3,420	5,130
Dimension H	mm	1,899	1,899	1,899	2,280	2,280	2,280	2,888	2,888	2,888

*Other sizes are also available. We can design a system according to the size specified by the customer.

EXHAUST FILTERING

Foreign substances (powdered crust, straw trash, etc.)

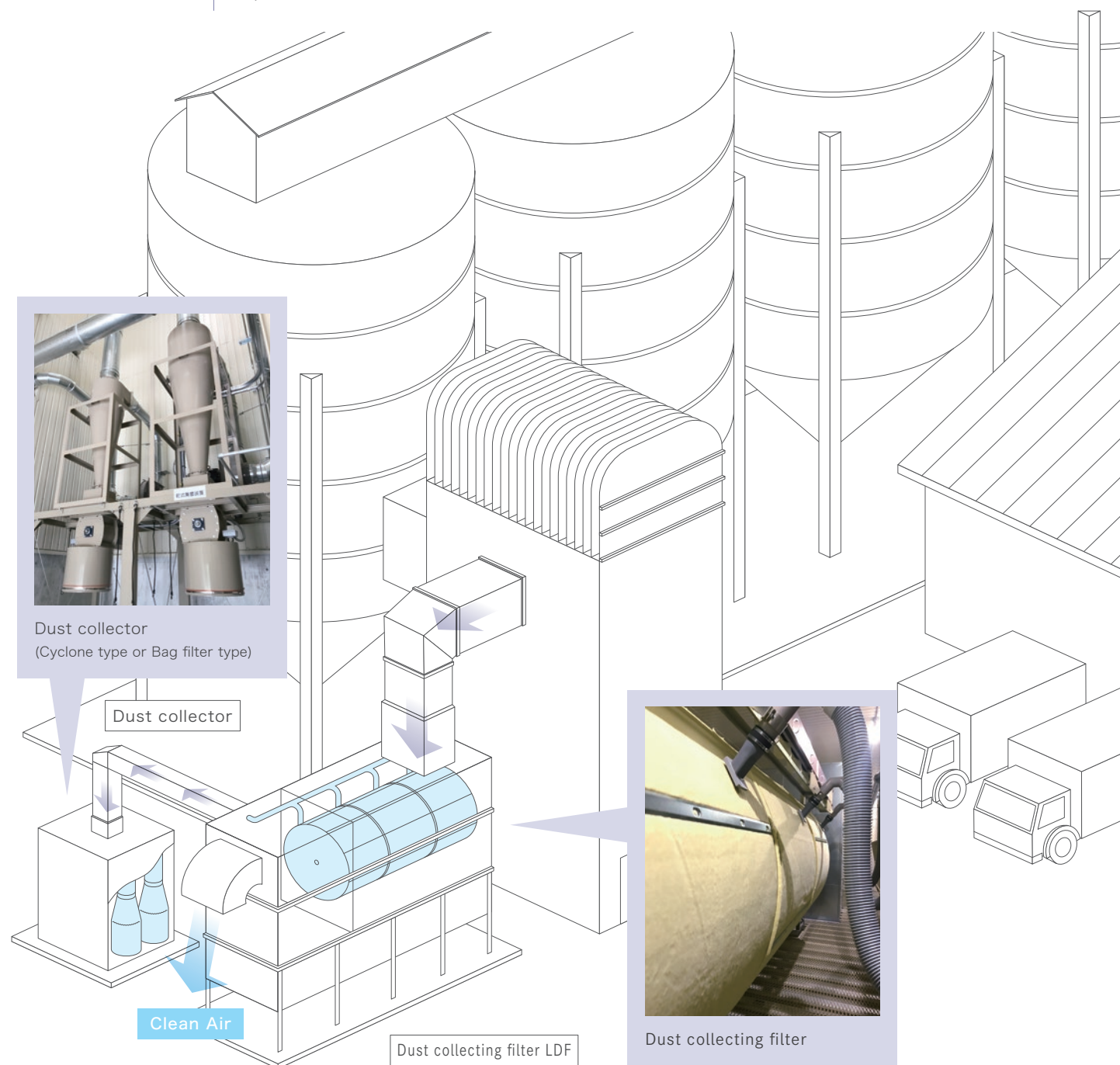
countermeasure
Rice husks and cereals

It is necessary to take care of the surrounding area when treating dust and other foreign substances significantly generated in a large facility, such as a country elevator, a rice center, or seed center.

Puretec proposes a dry dust collector LDF as a countermeasure.

This does not require treatment of wastewater because no water is used, and there is no worry about bad odor.

The device is energy saving and has a long service life, which also contributes to reducing the workload of the operator.



FEATURES

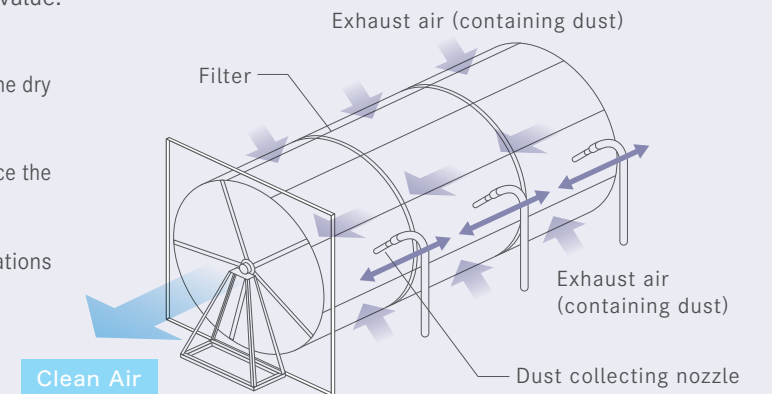
The LDF processes the dust-contained exhaust in the rotary filter mode.

The simple structure is driven by a single motor and can process a large volume of air.

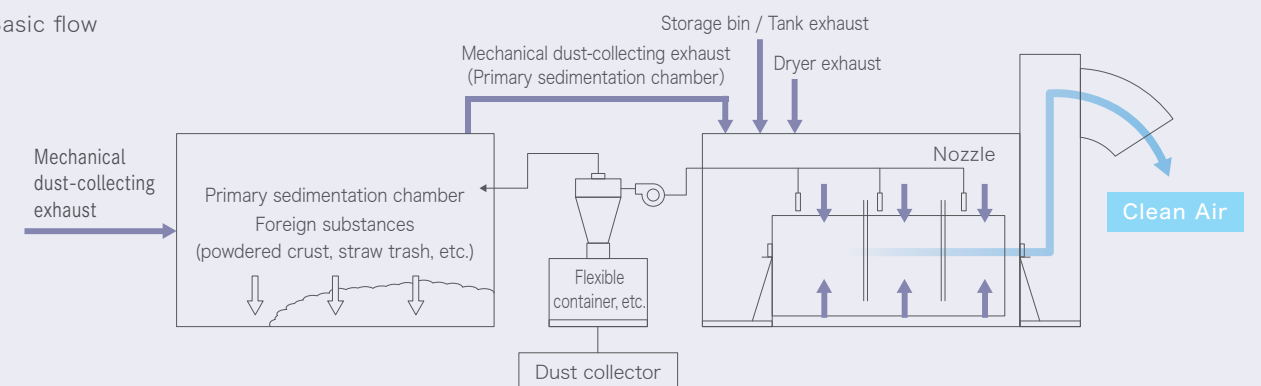
It is sufficient to install a small quantity of LDF and maintenance is easy.

The unit is an automatic cleaning type that monitors the differential pressure before and after the filter and collects powder dust automatically when it reaches a certain value.

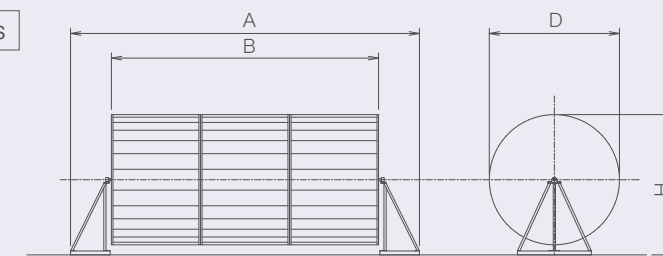
- Since foreign substances and power dust are collected in the dry state, the area appears clean with no bad odors.
- Moisture does not flow back into the dryer, which will reduce the risk of problems.
- It is possible to cope with tasks through various combinations depending on the processing air volume.



Basic flow



Specifications



Rotary drum filter (LDF) model		15/17	15/34	15/51	20/17	20/34	20/51	25/17	25/34	25/51
Filter ventilation area	m ³	6.9	13.8	20.7	9.2	18.4	27.6	11.5	23	34.5
Number of filters used	pieces	3	6	9	4	8	12	5	10	15
Maximum processing air volume	m ³ /min	250	500	750	330	670	1,000	420	830	1,250
Weight	Kg	500	650	800	610	770	930	740	920	1,100
Motor output	kW	0.4								
Cleaning fan motor capacity	kW	1.5	1.5	2.2	1.5	2.2	2.2	1.5	3.7	5.5
Dimension D	mm	1,500			2,000			2,500		
Dimension A	mm	3,280	4,990	6,700	3,280	4,990	6,700	3,280	4,990	6,700
Dimension B	mm	1,710	3,420	5,130	1,710	3,420	5,130	1,710	3,420	5,130
Dimension H ^{*1}	mm	1,737			2,139			2,693		

*1 The height of the panel casing is not taken into consideration.

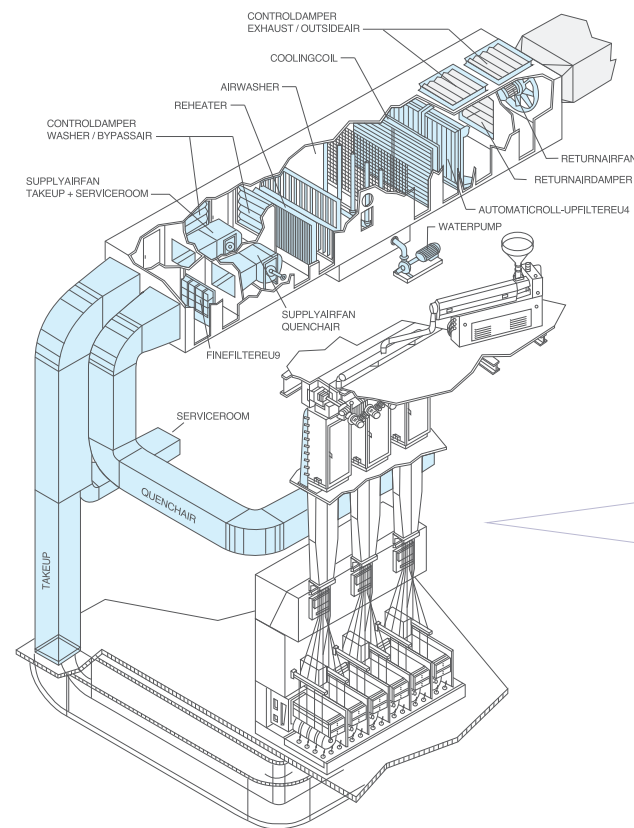
*2 Specifications of the machine may differ depending on design requirements.

AIR CONDUCTION

Airflow control

Nonwoven fabric factory

In the spun bonded nonwoven fabric manufacturing process, melted high-temperature resins are discharged from the nozzle and, at the same time, cooled by cool air (quench air) to become thin fibers. The outlet of this cool air is called a quench chamber. The quench chamber we propose realizes constant air speed and low-pressure loss. By doing so, we offer quality that meets customer demand.

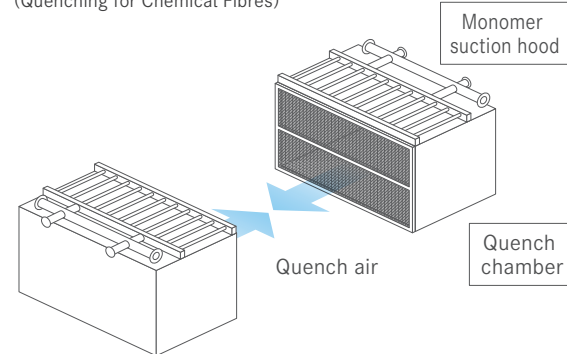


FEATURES

We can respond to the high precision requirements of customers that other companies can't.

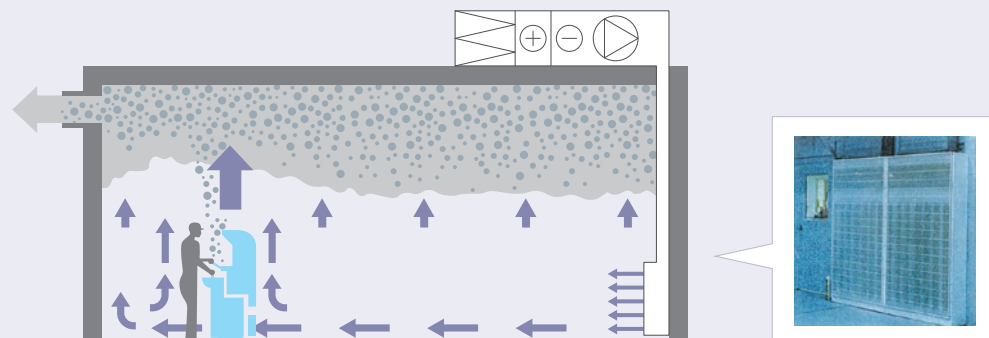
- ± 10 of average air speed
- Low pressure loss
- Approximately 350 Pa when the blowout air speed is 1.0 m/s.

Chemical synthetic fiber quenching process (Quenching for Chemical Fibres)



Floor Master (for displacement ventilation)

Floor Master is an air discharge unit used for displacement ventilation (piston ventilation). It blows out cool air-conditioned air from the outlets located just above the floor to send warm air upward and keep cool air at the lower part of the room. Floor Master creates comfortable work environments for workers at low energy cost. Standard discharge air velocity: 1 m/s (other velocities also available).



OTHER PRODUCTS



Circle Air

Condensation countermeasure, dust accumulation countermeasure



DS dust separator

Cartridge-type final filter



FSBN fiber press

Cotton fiber collection/compression/discharge machine



WDF automatic rotary water filter



Flow of introduction

From inquiry to
after-sales-and-follow-up service

Do you have such problems?

Want to prevent
insects from entering
the factory.

Want to change
the air conditioning
in the factory.

Want to remove dust
from the production
machine.

Want to implement
measures
against noise.



STEP 1

Inquiry

Please feel free to contact us first.
Our technical sales personnel are cognizant of the technology and will serve you from first contact to after-sales maintenance.
We also wait for your preliminary consultations before consideration of introduction.



STEP 2

Hearing

Please inform us of the environment and conditions that are necessary to select the device most appropriate to meet your needs and settle your problems.

Purpose
of use

Place
of use

Processing
air volume

Temperature
condition

Noise level

etc.

If you have any questions or require specialized knowledge, our technical sales personnel can visit the site directly and conduct surveys.



STEP 3

Proposal of plan/Estimate

We will examine the use conditions, such as the air volume and installation location, and select the optimum filter from a wide range of product lineups, design the system, and submit our proposal and estimate.



STEP 4

Construction

We will undertake construction under the supervision of technical sales personnel.
We will also prepare detailed drawings in advance if necessary.
It is also possible to measure the environment before and after construction and submit a report after completion of the construction.



STEP 5

After-sales-and-follow-up

Please entrust us with the after-sales-and-follow-up services concerning requests for periodic maintenance, especially if it has been several years since the initial introduction.



History

- ▶ March 1980 Began sales of gas adsorbent PureLite by the Development Group of Chemical Business Division of Nippon Chemical Industrial Co., Ltd.
- ▶ April 1994 Established Nippon Puretec Co., Ltd., in Koto-ku, Tokyo, wholly owned by Nippon Chemical Industrial Co., Ltd.
- ▶ June 1994 Opened the headquarter office in Chiyoda-ku, Tokyo.
- ▶ July 1995 Opened the R&D Technical Center in Koto-ku, Tokyo.
- ▶ September 2003 Acquired ISO 9001 certification.
- ▶ November 2006 Acquired all issued stocks of Luft Technologies (former Luwa Japan) Ltd.
- ▶ November 2009 Opened the Kyushu Sales Office.
- ▶ October 2012 Merged with Luft Technologies Ltd. (Our company is the surviving company.)
- ▶ April 2015 Moved the headquarters to Nagoya.
- ▶ October 2021 Became a 100%-owned subsidiary of MIRAPRO Co., Ltd.
- ▶ October 2021 Changed corporate name to Puretec Co., Ltd.

History of former Luft Technologies Ltd.

- ▶ March 1967 Established Nippon Luwa Ltd.
- ▶ September 1985 Changed the company name to Luwa Japan Ltd.
- ▶ July 1997 Became a 100%-owned subsidiary of Zellweger Luwa AG.
- ▶ November 2006 Became a 100%-owned subsidiary of Nippon Puretec Co., Ltd.
- ▶ November 2010 Changed the company name to Luft Technologies Ltd.
- ▶ October 2012 Merged with Nippon Puretec Co., Ltd.



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