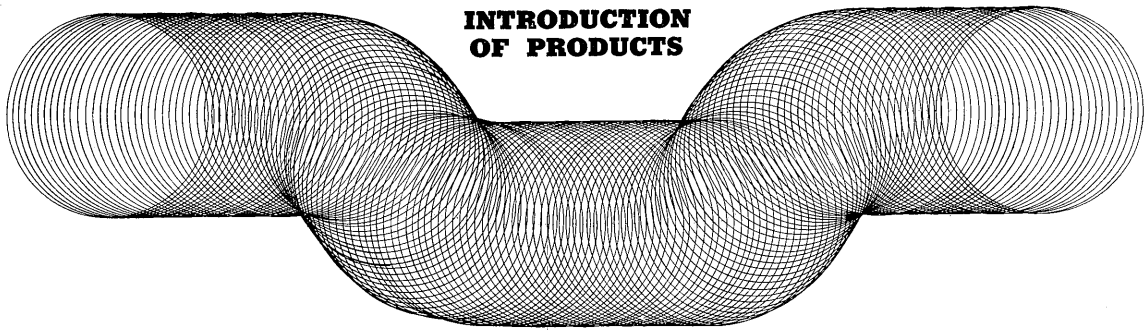


INTRODUCTION OF PRODUCTS



FUJI LUFTOLL FILTER Dry-Type Electric Air Purification System

LF-RFV type (vertical type)

LF-RFH type (horizontal type)

Introduction

Along with the development of modern industry, pollution in the air around us is increasing rapidly.

As this pollution gets worse, the problem of air purification naturally assumes considerable importance in respect to hygiene and all industrial processes.

Large amounts of many different types of pollution including sand particles, soot, lint particles, bacteria etc. are suspended in the air. 80 to 85% of these particles can not be seen by the naked eye since their diameter is less than 5μ and most of these particles with diameters under 5μ are injurious to the health. Such particles also cause a decrease in the quality of manufactured goods since they contaminate the products during processing, and can also result in damage or accidents in industrial equipment during operation.

The Fuji Electric Luftoll Filter is high-quality dry-type electrical air purification system which collects harmful particles from the air both economically and efficiently. Previously Fuji Electric sold a large number of highly-praised Fuji Luft Filters (electrical air purification systems) and Fuji Roll Mat Filters (Filter mat automatic wound-type filter systems). These two have now been combined to make a new type of air filter. The required installation area has been minimized, and since treatment of the filter after dust collection is automatic, it is not necessary to wash the dust collection mats in water, like in the previous electrical air purification systems.

Therefore, the water inlet/outlet plumbing or piping required previously are completely unnecessary. Maintenance has been simplified and this filter is well suited to air purification in building, factories etc.

Seventy of the Fuji Luftoll filters have been installed in Japan's first Skyscraper, the wellknown Mitsui Kasumigaseki building, where they handle air purification throughout the building.

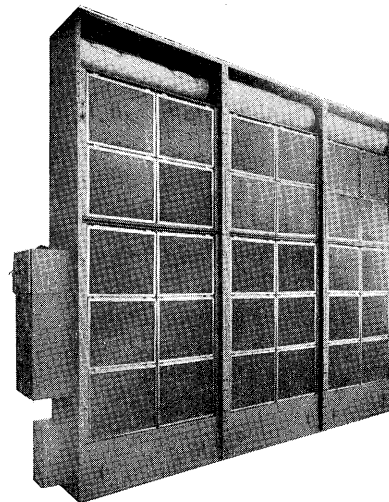


Fig. 1
LF-RFV
type

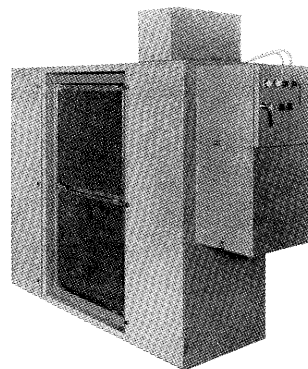


Fig. 2 LF-RFH type

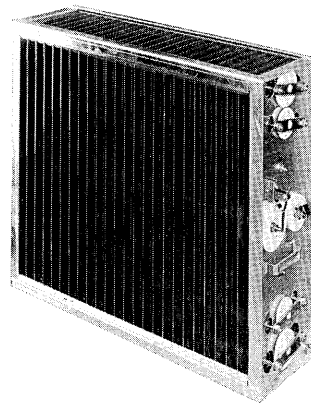


Fig. 3
Electric dust
collecting unit

Features

1) Highly effective collection of dust particles

A particle collection effect of over 90% is guaranteed by this purification method for particles with diameters of over 0.1μ .

2) Water inlet/outlet plumbing and distribution pipes unnecessary

Since this is a completely dry type method, flowing water is not needed for treatment of the dust particles after collection. Therefore water inlet/outlet plumbing and distribution piping are completely unnecessary.

3) Ventilation loss is small

Ventilation loss of the main unit of the system is less than 10 mm Aq and therefore the capacity of the air blower can be small, adding to the economy of the equipment.

4) Power consumption is small

In spite of the high particle collection efficiency, the power consumption of 0.8 w/m^3 is extremely small.

5) Maintenance of the power source system is unnecessary

Since a high quality silicon rectifier manufactured by Fuji Electric is used to supply d-c voltage to the electric dust collecting section, maintenance is not required.

6) Current limiting reactor control system

Optimum particle collection is possible under normal operation with this current limiting reactor control system.

7) Filter mat retention is reliable

Since both sides of the filter mat have ribbons attached, no deformation will occur because of expansion, contraction etc. The filter mat, which may be blown off, is held in position by an original Fuji filter stabilizing mechanism (patent pending).

8) Small space available for installation

Reduction of the length in the air flow direction to 660 mm has been made possible by combining the electrical air purification unit and roll mat filter unit, while the two separate unit require a dimension twice as large.

9) Maintenance is very simple

Except for exchanging the filter (once a year), maintenance is virtually unnecessary.

Applications

a) Hygienic air purification

In offices, department stores, hotels, theaters, and various meeting places.

In hospital operating rooms, sick rooms, dispensaries, and bacteria-free areas.

In the food industry, pharmaceutical industry to protect the products.

b) Air purification for industry

In electronic computer areas, automatic telephone

switch-board areas, communication equipment factories, optical equipment factories, and precision instrument factories as well as testing areas, semiconductor factories, laboratories, paint factories etc. for air purification in areas where dust particles are to be avoided.

In fiber factories, chemical works etc. where air purification can improve product quality.

In automatic control areas, centralized control panel rooms, distribution panel areas, power source areas etc. where air purification can prevent accidents from occurring in equipment due to dust particles.

Construction

There are two types of Fuji Luftoll Filters differing only in the rolled direction of filter mat (vertical (LF-RFV) or horizontal (LF-RFH)).

Each consists of the following:

1. Electrical dust collecting section (dust cohesion section)
2. Filter dust collecting section (dust collection section)
3. Power source
4. Operation panel
5. Filter mat automatic rolling drive section
6. Filter mat stabilizing mechanism
7. Main frame unit

In the electrical particle collection section, (dust cohesion section) the particles are attracted together electrically to form larger masses by introducing static electricity into the particles in the air flowing into the filter. This section is a two-tiered charging system with an intermediate dust collecting plate. High voltage electrode plates made of aluminum are inserted in the frame which is made of highly anticorrosive aluminum sheets. Regular spaces are maintained between the central electrode plates and the grounded electrode plates and the plates are arranged in parallel in the air flow direction.

A discharge wire is stretched across the air inflow side of the high voltage electrode. Ten kv dc of positive polarity are applied to this discharge wire, and ionization takes place between the opposite earth plates because of corona discharge. The particles passing through this ionization region are then charged electrically. Five kv dc of positive polarity are applied to the intermediate electrode plates adjacent the high voltage electrode plates. A uniform electric field is formed between each of the high voltage electrode plates and the ground plates, and the particles charged in the ionization area are attracted to the dust collecting electrodes where they accumulate.

As the number of minute dust particles collected on the electrodes increases, particle masses are formed. When a specified amount of these masses over about 50μ in diameter accumulate, they are

removed from the collecting electrodes by air flow, and are collected on the filter surface of the filter collecting section arranged at the air outflow side.

When the filter time specified beforehand by the timer control system in the newly applied filter of the filter collecting section is reached, the filter is

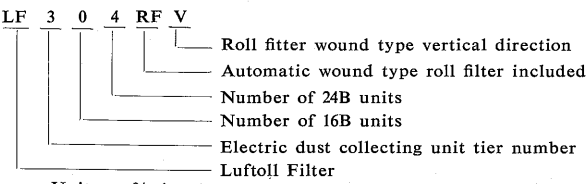
rolled at regular intervals from up to down in case of the LF-RFV type and from right to left in case of the LE-RFH type. The system is gradually being changed to this new form and a lamp on the operating panel lights to indicate when the roll is used up.

Luftoll Filter Air Quantity Specifications

LF-RFV Type (Vertical Type)

When air velocity is 1.5 m/s, or 2.0 m/s

Example of model number



Unit: m³/min
Dimensions: External width and height of casing are shown

Number				LF Tier Number		1		2		3		4		5		6	
Filter type	16B units	24B units		Overall height (mm)	Air velocity (m/s)	1536		2136		2736		3386		3986		4586	
						1.5	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5	2.0	1.5	2.0
Single System	A	0	1	900		45	57	90	114	135	171	180	228	225	285	270	372
	B	2	0	1180		60	76	120	152	180	228	240	304	300	380	360	456
	C	1	1	1390		75	95	150	190	225	285	300	380	375	475	450	570
	D	0	2	1600		90	114	180	228	270	342	360	456	450	570	540	684
	E	2	1	1880		105	133	210	266	315	399	420	532	525	665	630	798
Double System	A.C	1	2	2290		120	152	240	304	360	456	480	608	600	760	720	912
	A.D	0	3	2500		135	171	270	342	405	513	540	684	675	855	810	1026
	B.D	2	2	2780		150	190	300	380	450	570	600	760	750	950	900	1140
	C.D	1	3	2990		165	209	330	418	495	627	660	836	825	1045	990	1254
	2D	0	4	3200		180	228	360	456	540	684	720	912	900	1140	1080	1368
	E.D	2	3	3480		195	247	390	494	585	741	780	988	975	1235	1170	1482
Triple System	A.C.D.	1	4	3890		210	266	420	532	630	798	840	1064	1050	1330	1260	1596
	A.2D.	0	5	4100		225	285	450	570	675	855	900	1140	1125	1425	1350	1710
	B.2D.	2	4	4380		240	304	480	608	720	912	960	1216	1200	1520	1440	1824
	C.2D	1	5	4590		255	323	510	646	765	969	1020	1292	1275	1615	1530	1938
	3D	0	6	4800		270	342	540	684	810	1026	1080	1368	1300	1710	1620	2052
	E.2D	2	5	5080		285	361	570	722	855	1083	1140	1444	1375	1805	1710	2186