

TBLF PULSE FILTER

OPERATION MANUAL



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Important instruction:

1 This manual detailedly describes TBLF series pulse filter of each system structure, function and use and maintenance method. Before installation and use of the machine , customer should read the manual, and have a full understanding of the ministries and its structure and function, then have operation and maintenance of the machine. Due to the continuous improvement of product structure, after a certain time period, the manual of narrative content and the actual situation of the products will have small changes. Users should pay attention to it.

2 Please propose your advice to us for melioration when finding quality problem or others. Thanks !

1 APPLICABLE SCOPE AND PERFORMANCE

1.1 Applicable Scope

This product is a high-efficient dedusting equipment and is applicable to the dedusting and dust recycling in the industries of grain, food, feed, mine, cement, wood and light industry.

1.2 Performance Features

- 1.2.1 Round cloth bag and case structure are used, resulting in high dedusting efficiency;
- 1.2.2 Large treating air flow, small floor space and low noise.

2 MAIN TECHNICAL PARRAMETERS

2.1 General Technical Parameters

Working Pressure of Deduster: -1960Pa ~ +2940Pa

Pulse Width: 0.03 ~ 0.2s Adjustable

Resistance of Deduster: not more than 1470Pa

Filtering Air Speed: 3-4m/min

Pulse Blowing Pressure: 4×10^5 Pa

Specification of Cloth Bag: $\Phi 120 \times 2000$

2.2 Filtering Area and Treating Air Flow

Spec. Model	Filtering Area (m ²)	Treating Air Flow (m ³ /h)	Spec. Model	Filtering Area (m ²)	Treating Air Flow (m ³ /h)
TBLF-6	4.5	810~1080	TBLF-28	21	3780~5040
TBLF-12	9	1620~2160	TBLF-40	30	5400~9600
TBLF-18	13.5	2430~3240	TBLF-60	45	8100~10800

3 MAIN STRUCTURE AND WORKING PRINCIPLE

3.1 Main Structure

Pulse deduster mainly consists of top case, air-in case, air outlet and blowing system. See Figure 1.

3.1.1 Top Case

Top case mainly consists of air outlet and top cover.

3.1.2 Air-in Case

Air-in case mainly consists of air inlet, punched plate, filtering bag, filtering bag frame and access door.

Knitted felt filtering bag or model 208 industrial flannelette are used as filtering bag. The filtering bag frame is in cage frame structure and can support the filtering bag, thus ensuring that the effective filtering area of filtering bag will not decrease due to the state of negative pressure.

3.1.3 Blowing System

This system includes air tank, blowing pipe, pulse solenoid valve and pulse controller. The compressed air is supplied by air compressor through water treater, air tank and air filtering tank. Air tank is connected to the input terminal of solenoid valve and its output pipe is connected to the blowing pipe.

3.2 Working Principle

When air containing dust enters the case from the bottom or sides, section where air flows through increases suddenly and the flowing speed decreases suddenly. Therefore, under the influence of dead weight, centrifugal force of inertia and resistance of bag wall, bigger particles are separated from the air flow, drop to the bottom of case along the wall and are discharged out of the machine. Other particles are retained at the outer wall of filtering bags. The cleaned air is exhausted through the filtering bags and outlet of top case. With the increasing of particles at the outer wall of filtering bags, resistance of deduster will increase accordingly and the filtering capacity will drop gradually. So, pulse controller sends off signal periodically to open the pulse solenoid valve one by one. Thus, the compressed air in the air tank is blown through the blowing pipes in order and enters the filtering bags (called as first air), meanwhile, this puff of fast air flow will induct the air many times more than first air to enter the filtering bags (called as second air). The filtering bags expand rapidly, then blowing stops and the filtering bags contract rapidly. The expansion and contraction make the particles sticking on the bag wall fall, thus ensuring that the filtering bag is in good working state. The dedusting process is carried out in turn in every row of filtering bags and there is continuous air containing dust, so the treating capacity of deduster basically keeps uncharged in this process. Its pulse interval and width can be adjusted willfully so as to adapt to different working conditions (property of dust, dust content, filtering air speed).

4 INSTALLATION AND COMMISSIONING

4.1 Prior to installation, make overall check on all parts of the machine and ensure that parts are complete and in good condition.

4.2 The installation of pulse controller and pulse solenoid valve should conform to the stipulation of their operation manuals.

4.3 Outlet of solenoid valve is connected to the blowing pipe with pressure rubber hose. They should be tied tight without air leakage.

4.4 The filtering bags should be checked one by one and then well mounted. They should be tied tight without air leakage.

4.5 The installation foundation of this machine should be level. If not, adjustment must be made.

4.6 Check to see if there is blocking foreign materials in the dust discharging system and check its lubrication. Trial run cannot be carried out until it is confirmed that there is no problem.

4.7 When the machine is put into operation, the blowing cycle, width and interval should be determined according to the dedusting requirement. In addition, resistance loss and dust discharging conditions of the machine should be checked and the dedusting efficiency should be measured.

4.8 The air-in pipeline should be fitted with adjusting throttle valve. Before fan is started, throttle valve should be closed. Throttle valve shall be adjusted after fan runs normally.

4.9 The machine cannot be put into operation until the machine is checked completely and passes the trial run.

4.10 In each operation, firstly start air compressor generally 5-10 minutes in advance. When pressure rises up to certain value ($5.0 \times 10^5 \sim 7.0 \times 10^5 \text{Pa}$), start airlock and pulse controller in turn, and start fan 5 minutes later. To stop the machine, firstly stop fan, and then stop air compressor after N minutes (N is 2 times the blowing cycle). After pressure drops to $2.94 \times 10^5 \text{Pa}$ below, turn off pulse controller and airlock.

5 TROUBLE AND TROUBLESHOOTING

Trouble	Cause	Troubleshooting Method
Air leaks in the connecting part of flange.	Fasteners become loose.	Add seal gasket and silica gum, then fix.
Dust overflows from the outlet of fan.	1. Filtering bag is damaged. 2. Filtering bag is not fastened. 3. Seal of spacer plate is not tight.	1. Replace the filtering bag. 2. Mount it again and fasten it. 3. Fix and add silica gum.
Dedusting system does not work.	1. Controller does not work. 2. Solenoid valve does not work. 3. Pressure of air source is not sufficient.	1. Check to see if power of controller is connected and wiring is correct. 2. Check the coil of solenoid valve and corrugated film. And check to see if wiring of solenoid valve is correct. 3. Increase the pressure of air source.
Blowing is too wide and blowing force is not sufficient.	1. Control knob is adjusted improperly. 2. Spring of pulse solenoid valve loses the elastic force.	1. Make adjustment again. 2. Replace it.
Air leaks in solenoid valve.	1. Pressure of air source is too low. 2. Film is damaged. 3. Core rubber of solenoid valve has pressing mark.	1. Increase the pressure. 2. Replace the film. 3. Polish the pressing mark.
Continuous screen.	1. Air leaks through film. 2. Throttle hole is blocked. 3. Film spring is damaged.	1. Replace the film. 2. Clean the throttle hole. 3. Replace the spring.

6 MAINTENANCE

6.1 The mechanical driving parts should be lubricated periodically and the easily-worn parts should be replaced in time.

6.2 Check the filtering bags once every 6 months.

6.3 Pulse controller and solenoid valve should be inspected by specially assigned person no less than 2 times every shift to see if the blowing is normal. Solenoid valve should be cleaned once every 3 months and the easily-worn parts should be replaced in time.

6.4 If it is found that there is dust in the exhausted air during the blowing, it means the dedusting is excessive. The dedusting cycle should be adjusted.

6.5 After the deduster is put into operation, it should be managed and repaired by specially assigned person and checked every shift.

7 EASILY-WORN PARTS

7.1 Film of Solenoid Valve

7.2 Filtering Bag

8 CAUTION

8.1 During the operation of equipment, any parts of human body must not touch the rotating parts of equipment so as to avoid the human body injury accident.

8.2 To inspect or repair the equipment, equipment must be turned off.



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