



**JET – PULS FILTER OPERATION  
AND  
MAINTENANCE MANUAL**



PLEASE DO NOT OPERATE THE FILTER WITHOUT READING  
THIS MANUAL.

<b>GENERAL WARNINGS</b>	
	<b>The filter has been manufactured according to the level of the Technical safety rules. However, it can carry vital hazard for the operator and a third person or any form of hazards may form during the operation.</b>
	<b>This filter is a device having dynamic top level high current. This device can only be used by the authorized people.</b>
	<b>Do not make any operation related with the filter without reading this manual.</b>
	<b>This product should be used in accordance with its intended use. Otherwise, the supplier shall not be hold responsible due to the possible risks.</b>
	<b>All protection equipment, such as upper body safety locks, hopper access door, etc..., should have been assembled as an obligation.</b>
	<b>All technical information necessary for the maintenance and operation of this filter have been disclosed on the product plate. Please do not disgress over these values.</b>
	<b>Physical deformation may occur in the case of changing the particles in the air to be filtrated. Do not use the filter except designed type of particles.</b>
	<b>Please contact the manufacturer regarding the use of spare parts. Spare parts and extra accessories to be used must be supplied from the manufacturer with the characteristic convenient for the product.</b>
	<b>The assembly and settings of the supplied spare parts or accessories must be made in accordance with the specifications and warnings..</b>

Factory No.		17820	
Customer Tag No.		100-DC-01	
Filter Type		AL-P-361012	
Operational Values	<b>Description</b>	<b>Unit</b>	<b>Specification</b>
	Gas Flow Rate	m3/h	16270
	Temperature	°C	20
	Dust Load	gr/Nm3	50
	Humidity	%	7 max
	Material		
Bag House	Type		Jet Pulse
	Flow Rate	m3/h	16270
	Area	m2	216
	Filtration Speed	m3/m2/min	1,26
	No. Of Bags		108
	No of Selenoid X Dia		10 x 1 1/2"
	Pressure Drop	Pa	1500
Bags	Bag Quality		polyster with PTFE membrane
	Weight	g/m2	550
	Operating Temp.	°C	20
	Dimension L x dia	mm	160X3600
	Brand		BWF
	Lock system		Snap ring
bag Cages electro galvanised	no of wires lenghtwise	#	12
	diameterx length		155
Bag Cleaning	Type of selenoid		diaphragm
	Timer		DP controlled
	Protection Class		IP 65

Factory No.		17821	
Customer Tag No.		100-DC-02	
Filter Type		AL-P-361612	
Operational Values	<b>Description</b>	<b>Unit</b>	<b>Specification</b>
	Gas Flow Rate	m3/h	29980
	Temperature	°C	20
	Dust Load	gr/Nm3	50
	Humidity	%	7 max
	Material		
Bag House	Type		Jet Pulse
	Flow Rate	m3/h	29980
	Area	m2	345
	Filtration Speed	m3/m2/min	1,45
	No. Of Bags		192
	No of Selenoid X Dia		16 x 1 1/2"
	Pressure Drop	Pa	1500
Bags	Bag Quality		polyster with PTFE membrane
	Weight	g/m2	550
	Operating Temp.	°C	20
	Dimension L x dia	mm	160X3600
	Brand		BWF
	Lock system		Snap ring
bag Cages electro galvanised	no of wires lenghtwise	#	12
	diameterx length		155
Bag Cleaning	Type of selonoid		diaphragm
	Timer		DP controlled
	Protection Class		IP 65

**1. GENERAL INFORMATION**

**1.1. Warning Caution Marks and General Warnings**

	<p><b>Defines the General Warnings.</b></p>
	<p><b>Do not work without earflap over 82 dB.</b></p>
	<p><b>Should not be operated without reading the Operation Manual.</b></p>

**Table 1: Definition of the Warning-Caution marks stated on the product and used in this manual.**

## 1.2. General Safety Data

- ✓ Do not use other than the instructions of the Operation and Maintenance Manual and do not deviate from the given operation parameters.
- ✓ The filter can only be used by the authorized people and the maintenance and repair of it can only be executed by these people.
- ✓ Supplier cannot be hold responsible from the accidents that may occur due to any change made on the machine without the consent of Supplier.
- ✓ The filters can only be operated when the machine is fixed.
- ✓ It is not acceptable to exceed the specified speed-rpm of the filter ventilator even for a short time
- ✓ Please consider the safety and activation information of the motor manufacturer company before establishing the electrical connection of the motor.
- ✓ Ensure that there is no liquid or foreign substance in the filter. Liquid transfer may damage the filter bags or bag cages.
- ✓ The access door on the hopper and on the upper body can only be opened while the filter is not working. Necessary precautions should be taken in order to avoid the operation of the ventilator during this time.
- ✓ Design calculations and manufacturing of this filter were made in accordance with EN IEC 60079-0: 2018, EN ISO 80079-36: 2016, EN ISO 80079-37: 2016 standards.
- ✓ Electrical and mechanical protection setting during the assembly should be performed in accordance with DIN EN 60204-1, DIN EN 294 and DIN EN 349.
- ✓ Grounding should be done to prevent electrification. Earthing should be done in accordance with DIN EN 61000-6-3 and EN 61000-6-4 and VDMA 24169 parts 1 and 2.
- ✓ The maintenances should be executed periodically in accordance with the Operation and Maintenance Manual .

## 2. PRODUCT DESCRIPTION

Bag filter is a device designed to clean dust-laden gases. The gas to be dedusted travels from the source to the inlet of the filter through a ducting system; a fan downstream from the filter provides the necessary draught to draw the gas through the complete system and exhausts the cleaned gas to atmosphere. The bag filter is made up of two distinct chambers, a “dusty” one and a “clean” one; to get from the former to the latter, the gas must pass through a porous filter medium (usually needlefelt) which retains the dust and allows the gas pass through.

The filter medium is made up of cylindrical bags, supported on iron wire “cages”; a drilled sheet (tube sheet), physically separates the two chambers and supports the filtering bags; the bags are inserted through the tube sheet from the clean plenum and penetrate for their full length into the dusty chamber. A sealing system between bags and tube sheets ensures that dust cannot flow from the dusty side to the clean one.

### PROPER USE OF FILTER

Filter operating procedures do not call for any intervention or supervision by the operator during operation and the whole system is self-acting. Exposure to hazards occurs mainly during inspection and maintenance works, during which it is necessary to be most careful.

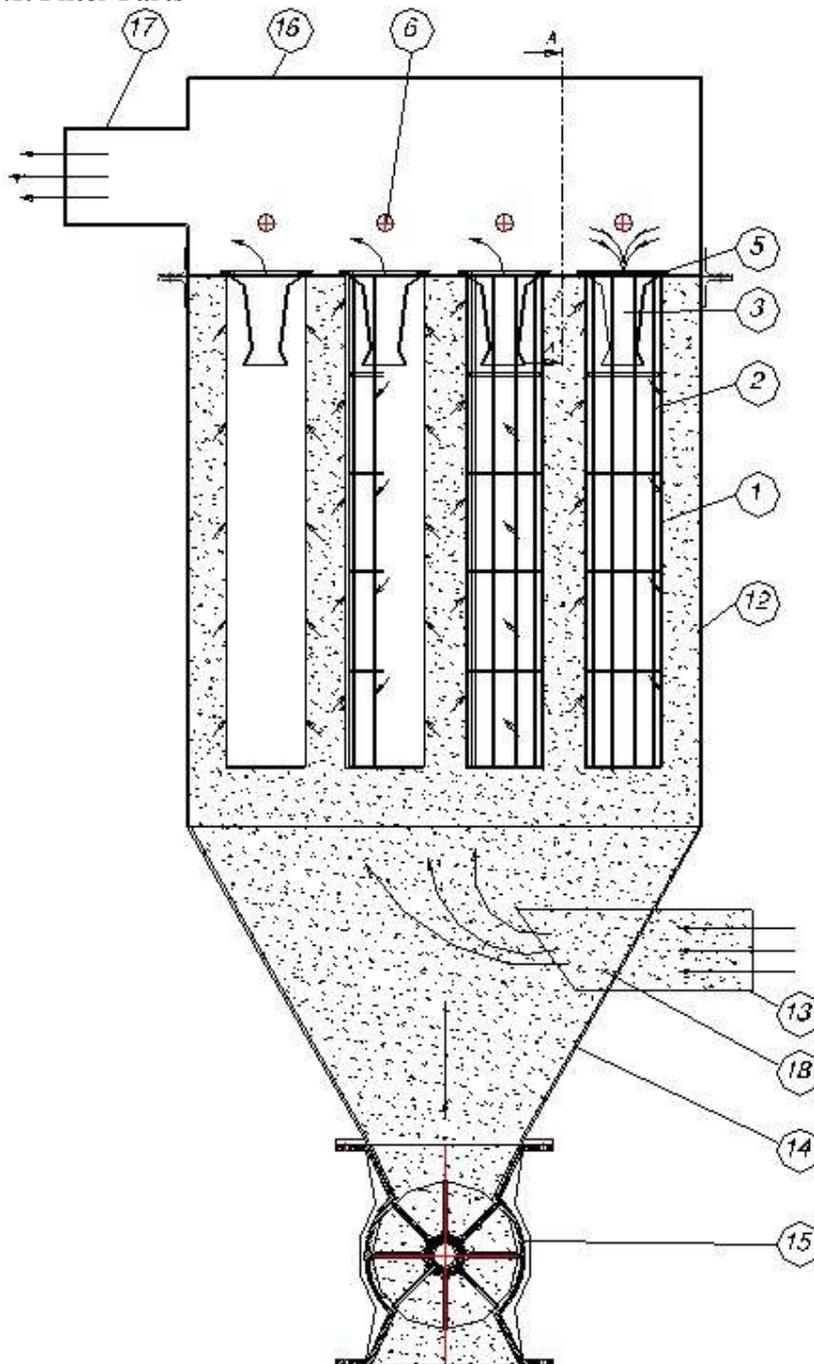


During operation, under any circumstances, never open access doors . In particular, never open and close doors while the filter is in operation: the strength to apply to the handle varies greatly with the degree of opening, so the risk of crushing and entanglement is very high.

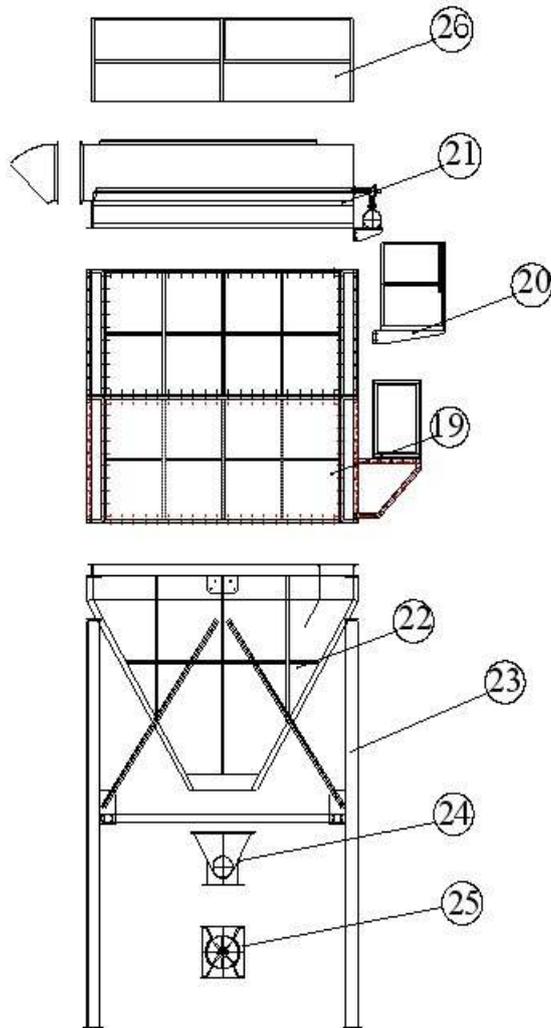
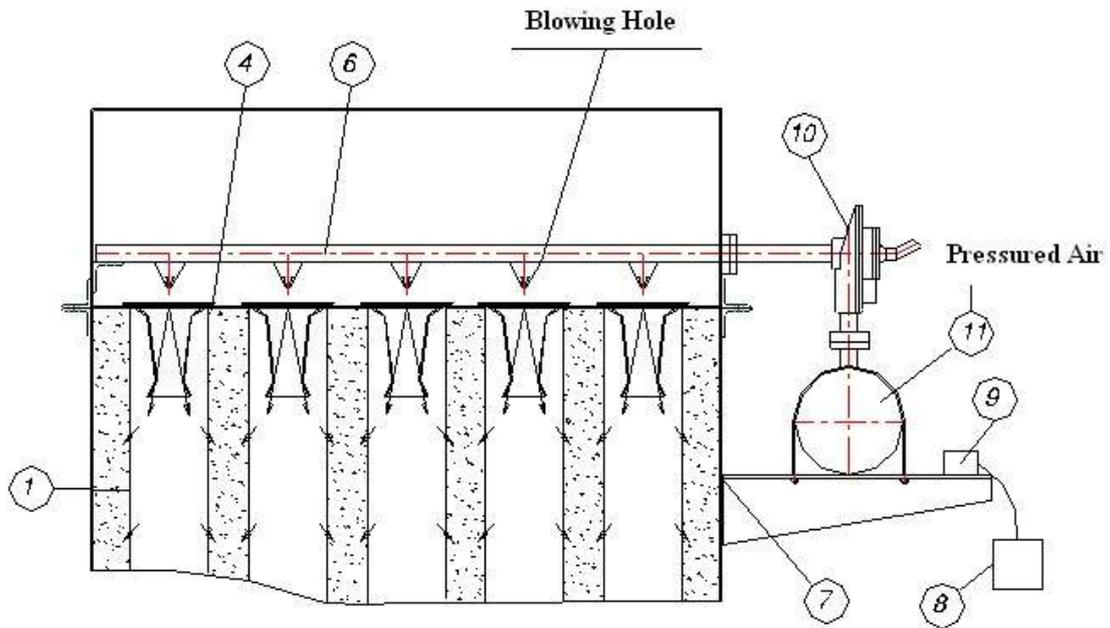


During operation may occur process conditions which cause sudden filter overpressure: particularly if the filter treats high temperature dust-laden gas, leakage of burning and powdery material might occur. Therefore, it is advisable to wear the proper protection equipment (glasses and respiratory protection equipment).

2.1. Filter Parts



- 1. Filter Bag
- 2. Bag Lattice
- 3. Ventury
- 4. Perforated Plate
- 5. Ventury Sahaped Part
- 6. Blow Pipe
- 7. Blowing Hole
- 8. Timer
- 9. Solenoid Valve
- 10. Diaphragm Valve
- 11. Air Tube
- 12. Body
- 13. Collecting Hopper
- 14. Discharge Hopper
- 15. Air Lock
- 16. Upper Body Access Doors
- 17. Exhaust Canal
- 18. Diffuser



- 19. Lower Body
- 20. Platform
- 21. Upper Body
- 22. Discharge Hopper
- 23. Stand
- 24. Conveyor With Screw
- 25. Air Lock
- 26. Guardrail

Figure 2. Filter Parts

### 2.1.1. Fan

The ventilators are the basic elements of a filter system. According to the filter type, they provide circulation of air through the filter to filtrate the air.



**The connection of the installation should be made without voltage!**

**The installation should be entrenched for avoiding the re-malfunction.**

For a continuous assurance, the electric connections should be guaranteed and the connections should be performed in accordance with the operation maintenance manual of the motor manufacturer.

### 2.1.2. Upper Body

This part included blow pipes, carries solenoid and diaphragm valves, air tubes and the exhaust canal of the filtrated air is in this part. Perforated plate can be seen after opening of the upper body access doors and filter bags can be controlled whether they are working properly or not. The cleanliness of inside of the upper part shows that the filter bags work properly.

### 2.1.3. Body (Lower Body)

There is not an access door on the body. Body and the upper body are separated by the perforated plate. Bag cages, filter bags hang from perforated plate to this part. The polluted air filtrates by the filter bags and transfers to the upper body.

### 2.1.4. Discharge Hopper

The polluted air which will be filtrated enters the system from collecting hopper on the this part firstly. The diffuser fixed to the collecting hopper absorbs the impact effect of the fast particles and to assure of the gas to distribute.

The filter bags collecting the particles inside the air, leave the particles after the stopping of the ventilator and leaving of the pressured air from diaphragm valves and the particles fall off to the conveyor with screw or air lock under the discharge hopper. The maintenance of the discharge hopper can be made on the access door.



**The discharge hopper access door shall only be opened when the filtration operation stops. There may be a flow of polluted air from inside of the hopper to outside. Put on your safety glasses and dust mask while the access door is open!**

### 2.1.5. Filter Bag& Cages

The parts that filtrates the particles in the air.



**The filter bags are the parts that perform the operation of filtration. Chosen of the right filter bags and the operation of replacing with the new ones shall be done by the expert people. Otherwise the filtration operation may not be right and cause some other parts to damage.**

### 2.1.6. Air Tube / Diaphragm Valve / Blow Pipe

The air tubes are full of pressured air. The electronic program unit (timer) sends the energy signal to the solenoid valve and performs opening of the diaphragm valve. So that the pressured air inside the air tube drains away. The pressured air goes into blow pipe from air tube and than from blowing holes to filter bags. By this way, all the filter bags in the same line are completely cleaned.

**Before installation of tubes be sure that tubes is free of any contaminant and water inside..**

## 3- ACCESSORIES

### 3.1. Air Lock/ Rotary Feeder

It is used for disposal and maintaining air sealing inside the filter body. . It is mounted to comperatively short filters. It is mounted under the discharge hopper by flange.

### 3.1 Screw Conveyor

Conveyor With screw is mounted under the discharge hopper by flanges. It is used for collecting of the particles from filtrated air and removing from system.

### 3.3 Barrier Valve, if any

It is mounted to the collecting hopper. It is used for preventing of the air to turn back -which is flowing inside the filter while the ventilator is working- when the ventilator stop working.



**Filters are used for filtrating of the particles inside the dry air, it is not right way to use them for filtrating wet/humid materials. By this reason pay attention not to keep these kind of materials-that can access into filter by the air flow-near to collecting gas canal.**

### 3.4 Other Accessories And Additional Equipment

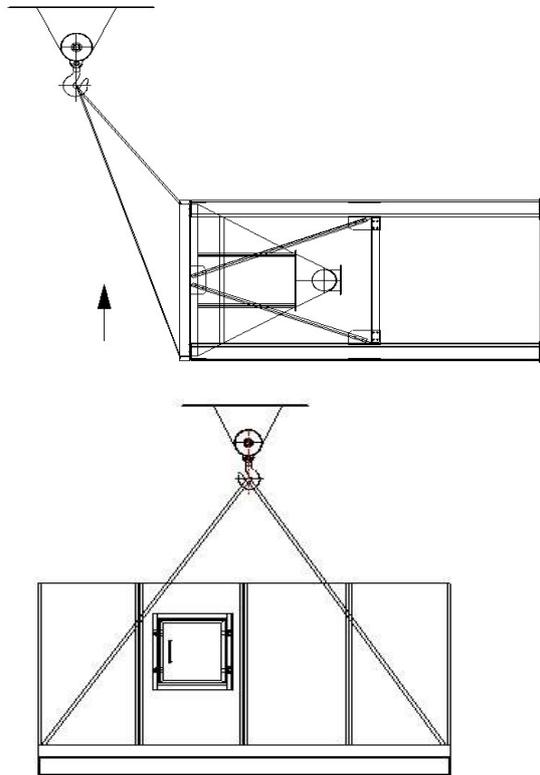
The terms to be taken into attention can be special production and delivery terms in respect of special and foreign parts; our company presents the spare parts to your evaluation in accordance with the newest technical norms and laws.

## 4. HANDLING, STORAGE AND PROTECTION CONDITIONS

### 4.1. Handling

**4.1.1** The filter should be carried part by part and should have no stroke during the transportation. There may be some cracks that can cause leaks occurs on canals, filter body, conveyor with screw may be damaged and deformations may form due to the strokes occurred as a result of lack of attention.

**4.1.2.** The filter parts should only be lifted with the lifting parts (rings or the holes on the strength lamas located on the body). See Figure 3.



**Figure 3. Lifting of Filter**



**Should not be lifted through holding from the sensitive parts (such as fan, blow pipes, flanges, air tubes).**

**For handling, the weight and dimensions stated in the Operation and Maintenance Manual and on the product's label should be taken into consideration.**

**4.1.3.** The filters delivered with all parts assembled should be kept in closed warehouses through protecting against humidity, chemical reactions, dust and rain.

**4.1.4.** The electric motor, ventilator fan, conveyor with screw, air lock, diaphragm valve, solenoid valve, timer of the filters delivered with partial assembly due to transportation problems should be kept in closed warehouses. The body, hoppers and the structures made of alloyed metal can be kept under the roof or in plastic plates. Processed parts should be lubricated against corrosion.

- The tube sheets are packed in assemblies held together by means of metallic frames. Do not hook the tube sheets by the bag holes, in order to avoid any damage of the same in such a critical part for the functionality of the filter.
- If the pneumatic valves are pre-assembled, take care they do not suffer any impact during loading and unloading operations
- The bag cages are delivered in metallic or wooden frame crates, holding up certain pieces, in order to protect the goods and allow handling. As the surfaces of the frame crates are open, loading operations must be performed avoiding accidental intrusion of foreign matters, which could cause bag cages breakage or deformation. Likewise, using lift trucks, take care their forks do not penetrate inside the frame crates.

## 4.2. Storage and Keeping

If the filter should be stored until the assembly; then it should be stored and protected as stated in Article 4.2-1 as to especially avoid the corrosion of the ventilator shaft, conveyor with screw, air lock, filter bags and protect it against dust, rain, high humidity and over temperature changes.

### 4.2-1. Storage and Protection Conditions

**a) If maximum 3 months**, then below mentioned terms should be taken into consideration for keeping and protecting during the interval storage:

- ∕ CAGes, filter bags should be keep away from humidity and dust and if it is possible should be stored on palettes.
- ∕ In order to avoid the rusting damage, conveyor with screw or air lock should be turned from time to time; motor parts should be covered with nylon.
- ∕ The necessary precautions should be taken in order to protect the filter against climatic effects (such as covering with folio or storing in a suitable building).

**b) If maximum 6 months**, then below mentioned terms should be taken into consideration for keeping and protecting during the interval storage:

- ∕ cages, filter bags should be keep away from humidity and dust and if it is possible should be stored on palettes.  
In order to avoid the rusting damage, conveyor with screw or air lock should be turned from time to time; motor parts should be covered with nylon.
- ∕ In order to avoid the corrosion, the parts should be painted by the protective paint.
- ∕ The ventilator is protected in accordance with the instructions of the manufacturer company.

**c) If the stopping time is longer after start up and it is still within the guarantee, then the Supplier should be notified in order to realize a special protection study. If not notified, then the guarantee claims for the damages that may occur due to the wrong storage shall not be accepted.**

**FOR EXTENDED STOP**

Before stopping the plant for a long time, in order to preserve best the filter, it is advisable to perform the following operations:



Ventilate the filter with clean air (1/2 h - doors upstream the filter open) and reduced fan capacity (50% of nominal value) for a long period of time to avoid interior corrosion.



In order to remove the dust from the bags, stop the fan and let the cleaning system run (1 h)



Let the dust disposal system work for other 15 min. after that the cleaning system has been stopped.



Grease all movable parts, door hinges, lid lifting devices (if any).

**5. ASSEMBLY**

The access gas canal and exhaust gas canal should be joined tightly in order not to cause any leaks.



Filter bags should be dressed on the cages perfectly and clamps should be controlled. The upper body access doors and discharge hopper access door should be closed completely.

Pay the utmost attention to the weights of the single parts, when planning to lift them. The parts shall be handled with care, using lifting lugs or clevis, where possible, to be positioned on the existing holes. Use of ropes for sling, especially wire ropes, is not advisable, either for safety considerations and for the risk of damaging the sheets

Assembling on the ground must be performed in a clean, suitable place, following the directions shown on the drawings. Particularly, the bolted flanges which require sealing gaskets must be cleaned and degreased before application of the sealant.

Once mounted the supporting structure, the hoppers and the casing up to the tube sheets level, before going on verify the squaring, checking that diagonals and parallelism are within allowed tolerances, as shown on the relevant drawings.

Before mounting the filtering bags, check to see that the edges of the tube sheet holes are in perfect conditions, are defect-free and have no deformation and no welding and painting spatters. This check is very important for the efficiency of the seal

- Please perform an air leakage check on vacuum air canals and filter body prior to the beginning of a dusty work.
- Please double check the electrical connections and pay a special attention for the examination of the sequencing connections.
- Check direction of your fan.
- Please perform a special checking of the single phase 220 V 50 Hz connections of electronic timers and correct set up of the timer adjustments in accordance with the number of solenoid valves. Keep in mind that excessive voltage and wrong connections would be resulted with electronic circuit element defects and even cause the burning of the solenoid valve coils.
- After the ventilator is correctly located, aspiration and pressing channels should be connected with the counter flanges delivered together with the ventilator.
- During the assembly, should not be hit to the turning parts such as fan, shaft, bearings, conveyor or air lock with hammer or similar hard substances. These kinds of strokes can cause the malfunction of the bearings and unbalance of the equipment.
- Electric motors, diaphragm valves and any other special parts should be protected against climatic conditions for filters to set up outside areas.

## 7. START UP AND OPERATION

Before starting up the filter, it is necessary to perform all checks stated in the start-up sheet attached; particularly:

- check correct positioning of bearings, fixed and free points
- flow the compressed air piping, in order to remove all inside slag, at first with the receivers not connected, shooting the air outside (5 minutes min.), then with the receivers connected to the net , shooting the air through the drain valve (5 minutes min.); afterwards pressurise the system and check the tightness.
- start-up the bag cleaning sys. control panel, at first without compressed air to the receivers, checking its full functionality, according to instructions on the relevant handbook.
- verify all pneumatic and solenoid valves, and also section shutoff valves.

check installation of access door sealing gaskets

- verify installation of filtering bags and cleaning set, then check connections and thermal insulation if available
- If any fault is found, consult the section MAINTENANCE TO CORRECT FAILURES AND REMEDIES



Set the compressed air pressure regulator to design pressure (6 bar, unless differently stated on the filter data sheet)

Electric connections and panel shall be provided in accordance with EN 60204-1:1997 standard. The electric motor should always be connected by an authorized electrician.

The compliance of the network voltage with the operational voltage rate written on the label of the motor should be controlled and the motor must be protected with a power switch adjusted according to the ampere of the motor.

Before operating the filter, check whether all protection and other precautions are taken or not.



**During the first takeoff of the filter, check whether there is any foreign substance within the channels or not and clean if necessary.**

1. Control whether the fan is turning correctly or not (the arrow direction on the ventilator) through switching on and off the power switch of the motor for a short time. If the turning direction is not correct, then change the pole connections of the motor and provide the correct turning. If there is no error, then you can operate.
2. There is a slight pressure difference between the entrance and exit of your dust collector that is firstly operated with new bags. This fact continues until the increase of the pressure loss (the increase of the differential pressure due to the dust accumulation) in the bags.
3. The fan vacuum should be decreased in accordance with the pressure increase in the bags in order to keep the bags safe from facing with a sudden dust load and to prevent excessive fan loads. In addition to that; the filtration rate could be lowered by transferring a flow volume, lower than the operation flow volume of the first time operation through the filters, and the high speed struck of the dust granules to the clean filter fabric is prevented by this practice.
4. Generally, the operators would prevent the filter obstructions in the first time operation, which are resulted especially from the very fine warm, and adhesive dusts by performing a gradually increased loading to the design flow volume after operating the filter one or two hours in  $\frac{1}{2}$  of design flow volume.
5. It is recommended that the system adjustment to be set prior to placing the bags onto the filter units in the cases especially when the dust collectors are used together with spray dryers and process equipment. Ignoring this recommendation could create the risk of either burning or humidification or getting wet or demolition of the bag.
6. In case of the dust collectors are combined together with any type of dryer system; it is strongly recommended that all of the canal and collector system should be warmed by running the dryer for 20 to 30 minutes prior to feeding humid goods to the system, in order to prevent dust condensation over the filter element and dust collector walls.

7. In the normal operating conditions, the dust collectors don't necessitate the careful inspection of the operators. The occasional performance of differential pressure differences is required since they reveal the performance of the dust collector.



**The filter has been chosen according to the operation conditions (flow, pressure, temperature, etc...) stated in the order and on the label. You can consult our company to use the filter under different conditions.**



**If the distance between you and the ventilator is below 1 meters during over 82 dB(A) noise, then please wear earflap.**

### 7.1. Start-Up- General Warnings

- We recommend you to supply a specialist staff of our company in your company while activating the machine for the first time.
- Our company cannot be hold responsible for the faults resulting from the incorrect start up by the customer.
- Ensure whether there is any foreign substance or not in the pipe lines or body of the ventilator before first operation.
- **Filters are used only for filtrating of particles in air. So it must be prevented accessing any other kinds of particles defined in the order or any materials into the filter.**
- Before first operation, control whether all the connections done tight, bag cages and filter bags installed correctly.
- Always control the filter ventilator fan returning direction. (The arrows showing the returning direction are on the body of the ventilator).
- Control whether the assembly of mechanical and electrical protection equipment is performed correctly or not.
- Control the compliance of the operation voltage and the network voltage with the motor ampere.  
Check whether the electric connections are appropriate to norm standards or not.

- The upper body access doors and discharge hopper access door must be closed completely.

start up the filter carry out the sequence shown further below; some installations may require interlockings between the sequence steps, in order to prevent performing of following steps when the previous ones have not been successful; likewise, if one of the preceding systems fails, the following ones will be stopped too. Possible special directions will be stated in a technical specification.

- start dust disposal system downstream from filter (screw conveyors, dust dischargers, chain conveyors, elevators), if any
- start bag cleaning system
- start fan

Regulate manually fan capacity, by means of regulating valves and/or speed converters, to fulfil contract condition, which may be:

- keep a given negative pressure in a given point of the circuit
- draw in a fixed gas flow

For regulating systems, in the first weeks of operation it is necessary to carry out successive settings of the regulating devices, until steady operating conditions are reached.

## 8. MAINTENANCE AND REPAIR

All filters require periodical maintenance during the operation. The basic principles of maintenance are described below.

### 8.1. General Maintenance



**Always wear protective clothes during the maintenances.**

1. Control whether all connection bolts are tight or not, the loosen bolts should be stretched.
2. Access doors should be controlled, if there is any damage, bending or leakings then the gaskets should be replaced with the new ones.
3. Filter bags should be controlled; there must not be any tears on the bags.
4. When the paint of the filter is corrupted, then it must be repainted.
5. General Maintenance Period is 3 months.

### 8.2. Filter Bags

Filter bags are the parts that collect the particles in the air. The particles in the polluted air block the filter bags. The bags should always be carefully examined. Sometimes, there is no need to remove and clean the obstructed or stuffed bags. Sometimes stopping the fan and running the shake off system alone (running without load) could yield better and effective results than washing.

### 8.3 Diaphragm Valf / Solenoid Valve

Pulse valve and solenoid pilot valve maintenance constitute the most important part of the maintenance. Insufficient conditioning of the pressured air (dry, un lubricated air and heat) causes the early decomposition and blasting of membrane and pulse rubbers. Also, the humidity of the air causes corrosion on the springs and switches the system off. In case of hearing a continuously escaping air sound, the blow out of the valve rubber or a dirt obstruction should be inferred. Therefore, the valve should be opened for changing the diaphragm. The poorly conditioned air creates the same corrosion effects on the o ring and rubber of pilot solenoid valve. In these cases the parts should immediately be replaced with new ones.

Drawing of solenoid seed more frequent than 1 time a minute could cause the occurrence of smashing on the head. This causes the spring and socket picker to be restrained. So, they would not function. If this occurs; the enlarged picker head should be carefully filed; spring and rubber to be replaced, their functioning without restraining to be checked and finally, the system to be assembled to its place.

#### **8.4. Control of Bolted Connections**

All screwed connections should be periodically controlled whether they are fixed and complete or not, such as:

- Body screw connections
- Access doors screw connections
- Basic ground screw connections

#### **8.5. Electric Supplies**

The maintenance and cleaning of the electric supplies and switches should be performed by an authorized electrician. Control whether the ventilator motor, conveyor with screw motor etc. is getting warmer or not. If any error occurs although all the instructions are fulfilled, then immediately contact the Supplier..

#### **8.6. Other Terms**

In case if below mentioned events occur, then the necessary precautions should be taken without waiting the maintenance date and through notifying Supplier

1. Damages / cracks on the body,
2. Block of the filter bags,
3. The fall of The pressure and the flow of suction,
4. The dents on the body because of the vacuum,
5. Leaks from the upper body access doors or discharge hopper access door,
6. Exhausting polluted air from exhaust canal instead of clean air,
7. Corrosion, Damage / Cracks, Stain formation and the balance on the filter ventilator fan

The staff responsible for the operation and maintenance of the filter should pay attention to the general technical rules and the terms stated in this instruction.

**9. POSSIBLE TROUBLE CHART OF FILTER**

No	TROUBLE	REASON NO (Given in Table 3)
1	Air lock/conveyor with screw does not work correctly.	1
2	Leaks from access doors.	2
3	There is a noise in the diaphragm valve.	3
4	The filter bags do not do the filtration work.	4, 5, 6
5	High differential pressure than usual. (The general value of the design differential pressure is 75 – 100 mmSS. However, a pressure of 25 – 100 mmSS should be taken as normal.)	7, 8, 9, 10, 11, 12, 13
6	Insufficient vacuum	14, 15, 16, 17
7	Pressured air pressure Air pressure always low	18, 19, 20, 21
8	The filter bag problems ( Blindness, Short Life Etc.)	22, 23, 24, 25
9	Visible dust discharge.	26, 27, 28, 29

**Table 2. Troubles with the filter****10. FILTER POSSIBLE PROBLEM CAUSE-SOLUTION TABLE**

No	CAUSE	SOLUTION
1	There may be rusting on the turning parts or friction caused by sticking material.	Lubricate the turning parts systematical, control of any frictions.
2	Gaskets may be old.	Replace the gaskets with the new ones.
3	Membrane rubber may be torn or deformed.	Diaphragm has to be replaced with the new one.
4	Solenoid valve o-ring and gasket may be torn or deformed.	Replace the Solenoid valve o-ring and gasket with the new ones.
5	Excessive squeezing of the bolts during mounting process of the Solenoid valve could cause breaks or deformation on base section of picker socket. The device would not function properly, since this would cause restraining of picker and its spring.	Remove the coil group by loosening the bolt located on the coil. Extract the pilot group from the from the pilot body by carefully removing of the bolts. Clean and replace the eroded parts.
6	Vapour that could condense may access into filter system.	Condense them before entering into the dust collector is the best solution. Remove the vapour immediately from the system.
7	The differential pressure value would go over the	The dust collector is loaded with an excessive

	normal limit values and staying there.	flow volume of air. If they are possible, check the fan speed and damper adjustments and system design flow volume rate.
8	The pressured air intake is not complies with the correct value.	The normal pressure need is 6 kg/ cm <sup>2</sup> . Increase it until the level of 7 kg/ cm <sup>2</sup> for a better cleaning.
9	The pilot solenoid valve is not functioning completely. Also the leaking diaphragm would reduce the cleaning energy	This would cause either the slowness of the valve opening time or its never opening again.
10	the incorrect functioning of the timer	Please check both the opening of valves in desired sequence and reaching of the signal.
11	Air leakage in rotary valve or dust discharge system.	Ignoring to emptying the dust could result with excessive loads accumulation.
12	The humidity blinded bags.	It is possible to clean and open its porous by running the shaking system alone without the fan.
13	Existence of an important amount of dust in the clean air compartment.	(some leaked from a previously perforated bag). Reduces the productivity cleaning systems by conveying the dust to the interiors, which it carried during the vacuum process of reverse direction blowing. The clean gas compartment should always be clean.
14	The fan turning direction would be wrong.	Replace the electric wire connections of ventilator electric motor.
15	A fan belt slipping would occur.	Check the belt tension.
16	There would be leakages on canals, maintenance caps, burst covers, dust discharge system or rotary valve.	Please check, provide the leakproofing.
17	The ducts may be obstructed, or the flaps left closed.	Provide the cleanliness of the canals, make sure the dampers are open.
18	The solenoid valve would left open	Please check and clean it. Pay special attention on the checking of the picker spring system.
19	There would be short circuit in the connections of your system.	The valve would be open at all times, check the electrical connections.
20	There might be an incorrect timer output or the blowing time would be longer than 0.1 second.	The timer must be controlled by an expert electrician.
21	There would be an incorrect connection. There may be leakages on compressor or tubes.	Check the connections, prevent the leakings.

22	Please check the operational temperature limits of the filter bags and operation temperature.	Make sure the temperature limit do not passed.
23	Excessively low free humidity and similar humidity's would cause the generation of static electricity.	Please check the operational humidity.
24	The rise of the material till the filter bags does damage to the bags.	Please check if the dust material did create a bridge or not at the bunker.
25	The bag cage would be faulty mounted.	In this case, the frictions among the bag and cage or the bags and exterior body would create problems. Please check the vertical positioning and tightness of the bags.
26	Wrongly assembled bags.	Make sure the filter bags put on the bag lattice in the right way.
27	Loosen bag clamps.	Tighten all the clamps. The polluted air must be prevented to pass upper body.
28	Torn, ripped or perforated bags.	Smashing of fast dust granules to the bags cause the wearing of the bags. Please check the intake diffuser. Change th bags with the new ones.
29	Faulty assembly at joining sections or missing leak proof element usage.	Repair assembly faults. Leak proof elements should be used in all the connections.