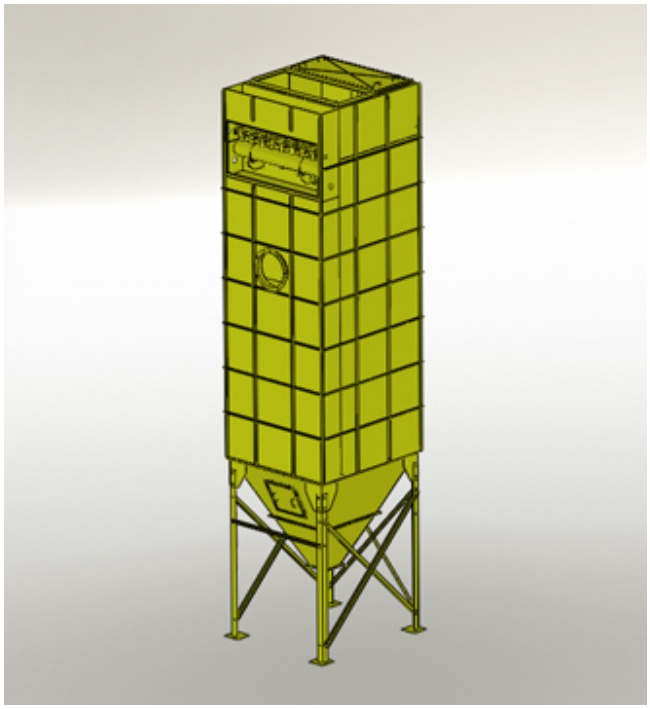


COMPACT BAGHOUSE COLLECTOR

Instructions for Installation, Operation and Maintenance

Models: C10P, C20, C20P, C25, C30, C35, C40, C45

Shipping and Receiving:

1, Inspect the shipment with purchasing order and notify the carrier and our company immediately if there is any discrepancy in the order.

2, The shipment will consist of assembled modules and some standard loose parts for attachment at the work site. The typical standard components include:

No	***Standard Supplied Dust Collector Components***	QTY	Note
1	Fully Assembled Dirty Air Plenum, Clean Air Plenum, Tube Sheet, Pulse Control Assembly and Upper Hopper	1 set	
2	Needle Felt Bag	72 pc	
3	Bag Cage	72 pc	
4	Lower Hopper	1 pc	
5	Hopper Manual Valve	1 pc	
6	Dust Drum	1 pc	
8	Blow Pipes	9 pc	
9	Timer Controller	1 pc	
10	Differential Pressure Gauge	1 pc	
11	Bag Access Doors	2 pcs	
12	Hopper Inspection Door	1 pc	
13	Safety Handrails	1 set	
14	Supporting Legs & Bracings	1 set	
15	Fastening Bolts, Nuts and Washers	1 set	

3. The optional components are usually not shipped with standard components. Once customers order any of them, they will be shipped together with standard components. The optional components are:

No	***Optional Supplied Dust Collector Components***	QTY	Note
1	Pleated Bag	72 pc	
2	Service Platform	1 set	
3	Safety Ladder	1 set	
4	Explosion Release Vent	1 set	
5	Trough Type Hopper	1 pc	
6	Rotary Valve	1 pc	
7	Screw Conveyor	1 pc	
8	Material Sensors	1 pc	
9	Differential Pressure Controller	1 pc	
10	Compressed Air Regulator	1 pc	

NOTE:

1. To ensure the correct models, components and assemblies have been received, please check the components you received in the shipment with your order sheet and its descriptions. If there is any discrepancy, please contact us and carrier immediately

2. Below parts are now included in the shipment and have to be supplied by others:

- **Anchor bolts for bolting the equipment to the foundations**
- **Hardware for connecting the inlet and outlet ducts**
- **Electrical wiring materials and conduit**

Operation Principles of Compact Baghouse Collector

An understanding of the design and operating principle of the baghouse is essential for effective system setup, operation and maintenance. Our compact baghouse dust collector is a continuous, automatic, self-cleaning, reverse pulse-jet dust collector. The dirty air enters the collector through one or more circular inlets. A reflector is located at the inlet to deflect the dusts into the hopper, provide uniform air stream distribution, and to protect the bags from direct impingement.

After the dust laden air leaves the reflector plate, it passes through the filter media, depositing the dust on the outside surface of the individual filter bags. The cleaned air leaves the filter bags and discharges into the clean plenum at the top of the collector, where it is then exhausted through the outlet.

The filter bags are periodically cleaned by bursts of compressed air that are directed down the inside of the bags. A venturi located in the top of the bag cage induces additional air to the inside of the bags being cleaned. This reverses the flow of air through the bags and dislodges the dust cake from the surface of the bag, allowing it to settle into the hopper.

Since only a small percentage of the bags are cleaned at one time, the unit remains in continuous operation. Hoppers are designed to receive the dust and are not for storage. The recommended practice is to continuously empty the hopper by means of a rotary lock and/or screw conveyor or by some other discharge device.

System Assembly:

Our compact baghouses have been designed specifically to minimize the amount of site work assembly required. Consult with an experienced rigger for an accurate estimate of the time and equipment that will be required. All site work assembly will be limited to bolting components together. **NO WELDING WILL BE REQUIRED**. Following is an outline of the assembly required for a standard compact baghouse.

1. Assemble Leg & Bracing structure.

2. Raise the bag collector housing and anchor to the support legs and bracing structure.

3. Install the safety ladder and platform if available

4. Install the safety railing.

5. Connect compressed air supply to the compressed air tank.

6. Mount and wire the pulse control.

7. Attach inlet and outlet air ducts.

8. Install the filter bags, bag cages and attach blow pipes

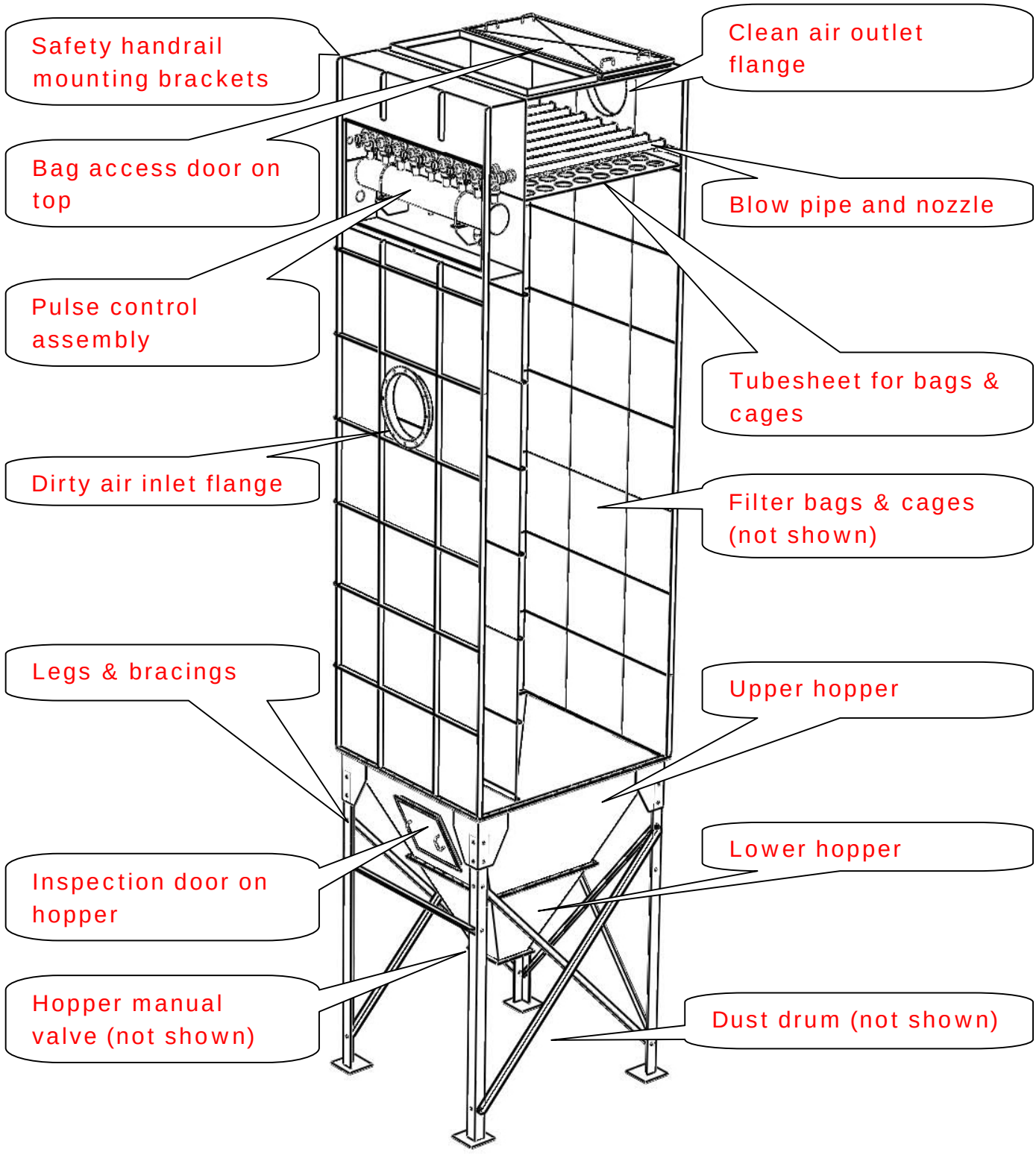
9. Install the bag access doors

10. Install the lower hopper, hopper discharge valve and dust drum

11. Install optional components

Detailed instructions regarding each of these operations are provided in subsequent sections of this manual.

System Setup Overview



System Descriptions

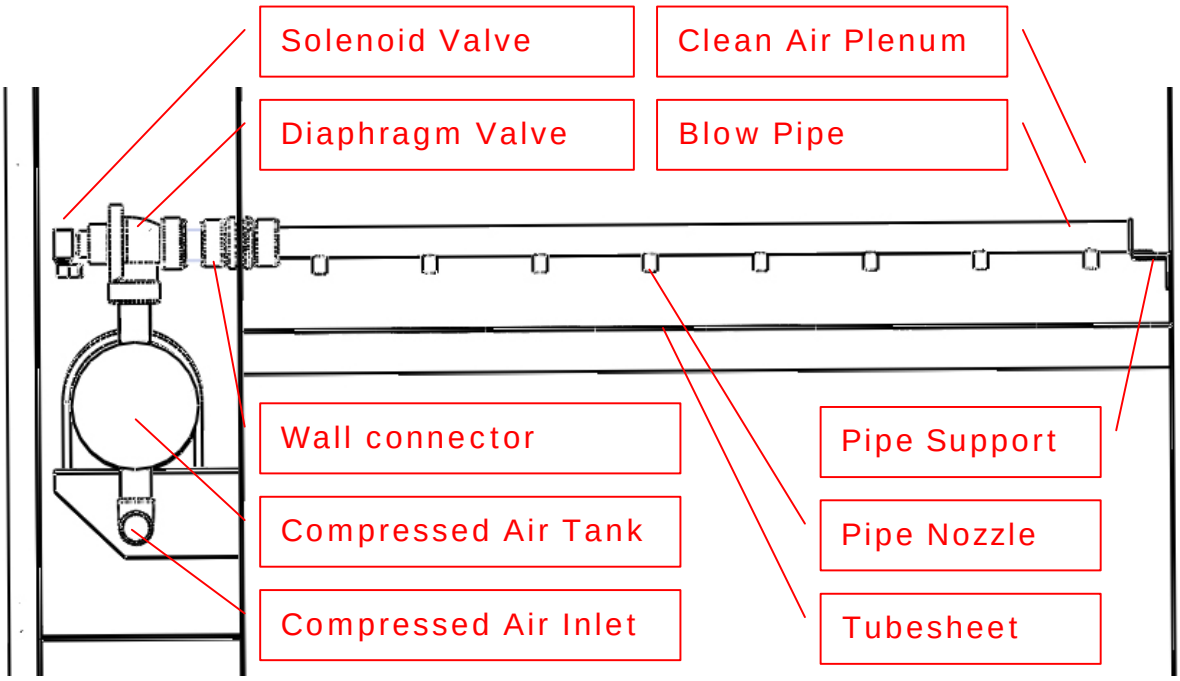
The compact dust collectors are composed of 72 bags with variety of bag lengths at 1000mm, 2000mm, 2500mm, 3000mm, 3500mm, 4000mm and 4500mm.

The dust collectors are continuous, automatic, self-cleaning, fabric pulse-jet dust collectors. The bags are accessed from the top of the dust collector.

The weather hood in the front can protect the pulse control assembly from rains, sunlight and storms.

The cleaning cycle is controlled by a solid-state timer or pressure demand control in a metal enclosure. The controller can be field adjusted for best operation.

All models are constructed with compressed air tank which is fitted with 9 diaphragm pulse valves (1.5”). Pulse valves are connected to solenoid valves



PULSE CONTROL PIPE ASSEMBLY

Installation Instructions

1. Space Requirements

A minimum of 650mm clear space must be allowed on all sides of the collector that do not include the access ladder or ductwork. The side where the access ladder is located requires a minimum clear space of 1200mm. More space may be required where inlet or outlet ductwork and the explosion vent are located. For standard top access baghouses, be sure to allow adequate height for removal of bags and cages.

2. Foundations and Anchoring

The foundation must be designed to be adequate to support the system's operating weight, seismic, wind and snow loads (if any), collected dust, and any optional equipment, in accordance with appropriate codes. Secure all anchor bolts to ensure that the collector is firmly attached to the foundation.

3. Lifting Collector Components

Spreader bars must be used at all times when handling the dust collector parts to prevent any possibility of damage. These shall be connected to the lifting lugs provided on the baghouse stiffeners for this purpose. Only personnel experienced in rigging and handling heavy equipment shall be employed to erect the system. Refer to proper drawings for specific lifting instructions.

4. Join Dust Collector Components

Join the components according to drawing of System Setup Overview and bolt them together, placing the bolts and washers in every hole provided. Tighten the bolts fully.

5. Attaching Duct Works

Connect the inlet duct to the drilled and flanged inlet(s) of the collector. Connect the clean air duct to the drilled collector outlet. Ductwork should be of sufficient gauge to withstand the system design pressure and should be independently supported.

Our compact baghouses are not designed to support ductwork. Hot gas ducts may require expansion joints to prevent expansion loads on collector inlets and outlets. Close coupling a duct elbow to the collector inlet will result in an uneven velocity profile. This condition may result in less than optimum collector performance. A straight run of duct with a length equal to 3 to 4 duct diameters immediately before the inlet will provide an adequate airflow distribution to the inlet. When attaching inlet and outlet ducts, caulk the flanges appropriately to ensure that no leakage will occur during operation.

6. Ladder and Handrail Assembly

It is necessary to install the access ladder and handrails after assembling the collector. The first step is to position the handrails into place and secure them with bolts at the posts. The kick plates are integral to the handrail sections. Refer to the installation drawings supplied with the equipment for details.

When the access ladder is available, bolt the ladder to the collector housing. The ladder assembly has mounting brackets which attach to the housing and to the hopper/housing flange. Ladder mounting brackets may be bolted to the collector.

7. Electrical Controls and Wiring

The compact baghouse is supplied with electrical solenoid valves mounted top to the compressed air tank. Both the air tank and solenoid valves are enclosed in a weather hood.

The standard valve controller is a timer board. The optional device is a pressure demand control, or PLC. They should be mounted in an accessible location. Control wiring must then be field installed between the solenoid valves and the timer output terminals on the solenoid valves.

The pulse interval and duration is controlled by the solid state timer. The pulse interval (Time Off) should be 30 seconds, which is satisfactory for most applications. However, since dust loads, media velocity, and other factors vary, it may be necessary to readjust the pulse interval to meet individual requirements.

CAUTION:
Pulse duration is usually set in factory. Please do not adjust the pulse duration without consulting an expert or our company.

The model for pulse valve is PV-ZM-40S, Timer controller is DMK-4CS. Refer to the manuals for pulse valve and controller supplied independently for details.

All electrical wiring materials are supplied by others.

WARNING:
1. Potential shock hazard. Disconnect power before servicing. Only qualified electrical personnel should work on this system.
2. Operation without compressed air can damage the solenoid valves.

8. Compressed Air Connection

Compressed air must be clean, dry, and pressure regulated to avoid failure or plugging of the pulse valves. Compressed air filters are recommended for removal and automatic

discharge of minute particulate contaminants and coalesced liquids. A pressure regulator is needed to ensure that the compressed air supply does not exceed 0.6Mpa.

A pressure gauge should be installed in the compressed air supply line near the compressed air tank. The pressure gauge should be positioned so that it can be easily read.

9. Bag, Cage and Blow Pipe Installation

The bag, cage and blow pipe assembly are illustrated in below drawing. Ensure the inlet and outlet ductwork is connected and that the clean air plenum has been cleaned before installing the bags. Always handle the filter bags with care and keep them dry.

Pleated bags are installed in a similar manner to standard bags; however, no cage is required.

Initial Bag & Cage Installation

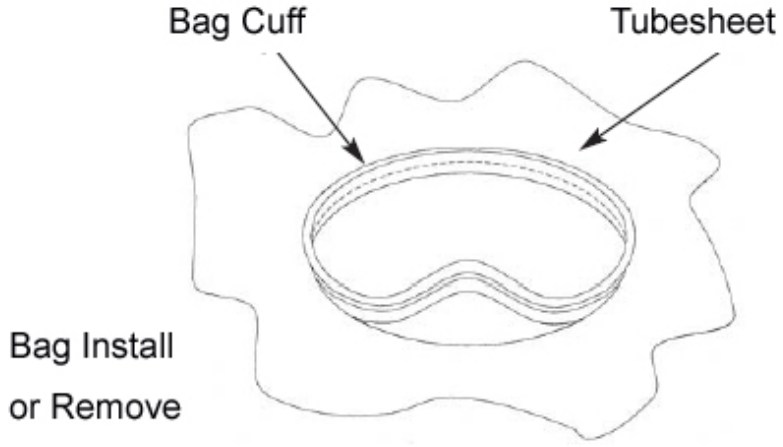
a. Insert the closed end of the bag through the tube sheet hole until the bag cuff is near the tube sheet.

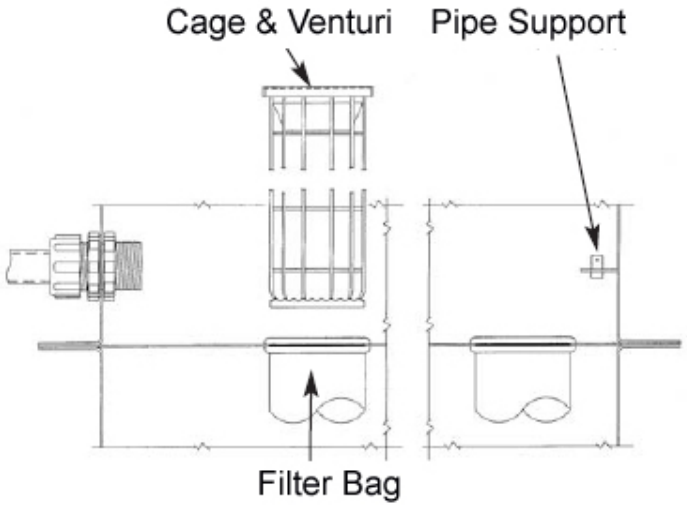
b. Collapse the bag into a half moon shape and insert into the tube sheet as shown.

c. Snap the bag cuff into position making sure the center groove of the cuff seals properly at the tube sheet.

d. Insert the cage/venturi assembly into the installed bag. The cage top should fit snugly on top of the bag cuff.

e. Repeat steps a.b.c.d until all of the bags and cage/venturi assemblies have been installed.





CAGE INSTALL OR REMOVE

Initial Blow Pipe Installation

a. Put wall connector coupling to the end of blow pipe.

b. Insert the pipe coupling into the wall connector

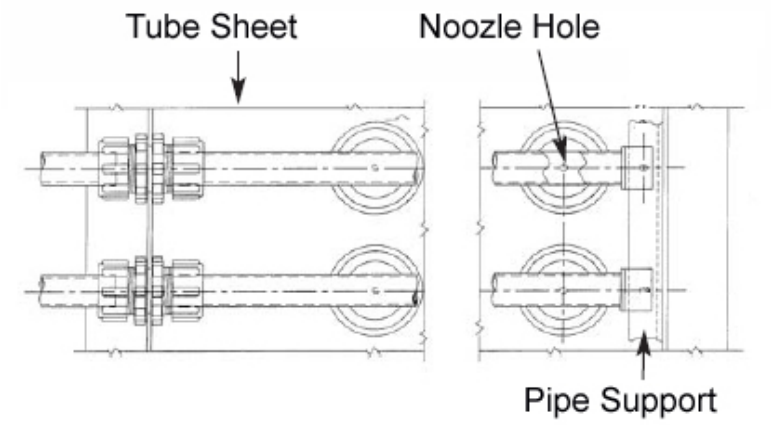
c. Attach the opposite end of pipe to the pipe support

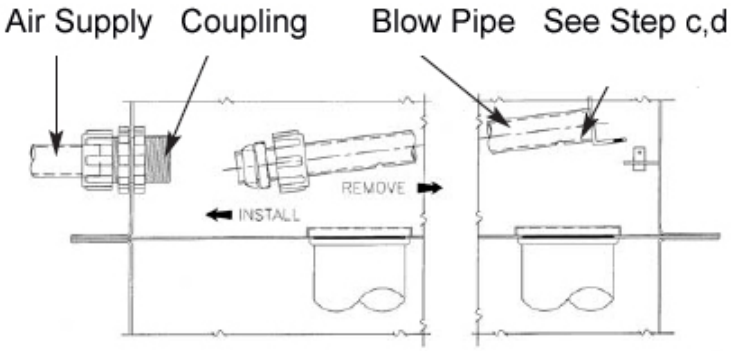
d. Fasten the blow pipe by bolts to support securely

e. Fasten the pipe coupling to the wall connector to ensure air tight.

f. Re-install the blow pipe assemblies by step a to e

g. Close the roof doors and secure the latches





BLOW PIPE INSTALL

CAUTION:
During reinstallation of pulse pipes, ensure the holes in the pipe nozzle align over the center of the venturi and point downward.

If installing pleated bags, do not deform the bag cuff since this may result in damage to the bag. Instead, the lower flange of the cuff should be lightly lubricated with a liquid soap solution and the cuff should be firmly pressed into the tube sheet until it snaps into position.

Startup Instructions

1. Cleaning the compressed air line.
Check the compressed air lines to ensure they are properly connected to the tank. Turn on the compressed air supply and adjust the pressure to 0.6 Mpa. (80 to 100 psig)

Before pulsing, condensate bleed valves should be fully opened to purge air lines and tank of dirt and water. Good practice dictates that all piping be blown down to remove any scale, rust or other debris prior to pulsing the unit.

This can be done by removing the plug in the bleed valve and supplying compressed air to the manifold.

2. Check the bags
Check the bags to ensure they are in sealed position in the baghouse. Verify that top access doors are closed and tightly secured.

3. Check the inlet & outlet duct, hopper and fan
Ensure the inlet & outlet duct have been properly mounted and airtight is ensured. Check the hopper discharge device operating properly. The extraction fan is correctly wired and mounted.

4. Energize solid state timer control panel
The light inside the enclosure will illuminate when power is on. Refer to the connection manual for initial settings on controller.

Listen for diaphragm valve and pilot solenoid firing, to determine that they are working properly.

WARNING:
Before introducing any dust to the collector, turn off the power to the timer controller.

5. Start the fan
Start the fan and observe the differential pressure indication on the differential pressure gauge, which indicates the pressure drop across the dust cake and fabric. Rising pressure on the gauge shows that dust is being collected on the bag. When the gauge shows 2" to 5" w.g., the fan may be opened to the full normal duty.

6. Check the pressure gauge again.
The differential pressure gauge should read a minimum of 2" to 5" w.g. with slight fluctuations each time a pulse occurs. If the pressure drop is not 2" to 5" w.g., the pulse interval of 30 seconds must be changed. Decrease the interval for high pressure readings and increase the interval for low pressure readings. If it is impossible to maintain the nominal 2" to 5" w.g. please turn to expert or our company.

Note: 1” w.g.= 248.8 Pa

Maintenance

Daily

Record the collector pressure drop daily for at least the first 30 days of operation. Adverse operating conditions can be detected by a change in pressure drop. An optional pressure gauge is available to provide the pressure drop reading across the dust cake and bag. After startup, the pressure drop will gradually rise to its normal operating level of approximately 2" to 5" w.g.

Monthly

A regular inspection of the filter bags should be made within 30 days of start up. Any faulty or worn bags/tubes must be replaced to prevent damage to the collector. The compressed air line regulator, dryer, and filter should be checked for proper operation. Also inspect the dust discharge device on the hopper outlet for proper operation.

6 Months

Ducts leading to and from the collector should be inspected for dust accumulation at a minimum of every six months. In addition, the following inspections should be made:

-Examine the bags for wear with special attention to seams and stitching.
-Examine the internal components for wear.
-Inspect all joints for evidence of air or dust leakage.
-Check for evidence of moisture or dust accumulation within the collector.
-Check all electrical apparatus for proper operation.
-Ensure the diaphragm and solenoid valves are pulsing when energized by the timer.
-Check discharge gas condition for signs of dust.
-Check other optional components and devices.

Troubleshooting

High Pressure Drop Reading

a. Improper Timer Operation. Check the wiring, fuses, and setting of pulse duration and interval.

CAUTION:
Do not adjust the pulse duration without consulting an expert or our company.

b. Insufficient Compressed Air. Check the air supply to ensure the compressor is providing 0.6Mpa (80 to 100 psig) Check for a plugged filter in the compressed air line.

c. Solenoid Malfunction. Listen to verify the solenoid valves are firing. Check for momentary air venting each time they fire. Clean or replace, if necessary.

d. Pulse Valve Malfunction. Pulse pipe jets should be checked to verify operation of the pulse valves. Pulse valves can be easily disassembled and rebuilt in place.

e. Leaking Dust Discharge Device. A leaking hopper, rotary lock, screw conveyor, slide gate, etc. can overload the baghouse by preventing dust discharge after pulsing. These causes high pressure drop, excessive bag wear, and reduced air volume. Seal any such leaks.

f. Condensation. High humidity may cause blinding of bags, which results in excessive pressure drop. Run the cleaning mechanism with the fan off and the program timer on, or with the pressure switch set to zero, to release the dust cake. If condensation is a recurring problem, pre-processing warm-up and post-processing purge periods of 15 to 30 minutes each may help. Exterior insulation may also be necessary. Sources of

moisture may come from leaking process ductwork, moisture in the process gas stream, or moisture in the compressed air system.

g. Static Electricity. Static buildup can cause a high pressure drop. If possible, increase the humidity using discretion to avoid creating condensation. Grounded bags may also be required in situations where a spark may result in ignition of an explosive dust.

h. Collector Overloads. Too much air or dust will create high pressure drops across the collector. Check the fan speed, system design, pre-cleaners, and the fan damper position. Also ensure the dust load and air volume is within the system design parameters.

Visible Discharge

a. Improperly Installed or Damaged Bags. Check for holes or tears in bags. Replace damaged bags. Reseal bags as necessary.

b. Insufficient Dust Cake. The unit could be pulsing too often, resulting in over cleaning. Verify the pressure drop is at least 2" w.g. Increase the pulse interval until the unit is operating stably at 2" pressure drop minimum.

Fabric Bag Problems

a. Excessive Temperatures. Operating temperature should not exceed the specified maximum.

b. Humidity. Humidity can blind bags. The moisture results in a denser dust cake accumulation, or cements dust to the bag. Drawing dry air through the collector may dry the dust enough to allow the collector to clean with the fan off. If this method does not work, the bags must be dry cleaned or new bags installed.

c. Dust Characteristics. Each bag material is selected for specific physical and chemical characteristics which are compatible with the gas stream composition and temperature.

d. Bag Wear on the Inside. Dirt on the clean side of the bags will cause the bags to wear from the inside. This could be the result of a broken bag, incorrect bag installation, or an improper tube sheet seal. Vacuum the clean air side of the plenum, replace the bag, correct and reseal the bag in the tube sheet. Do not blow dirt inside the bags. Any dirt contained in the bags should be vacuumed out.

Dust Discharge Problem

a. Dust Buildup in Hoppers. Dust buildup in the hopper may generate a problem in the bag area and cause excessive abrasion of the bags. The buildup may be caused by a malfunctioning discharge device, or by condensation in the hopper. It may be necessary to add a vibrator to the hopper, or add hopper heaters and insulation.

Spare Parts

It is recommended that the following spare parts be stored at the installation for routine maintenance purposes.

No	*Description*	QTY	Note
1	Filter Bag	2 pcs	
2	Filter Cage	2 pcs	
3	Timer Board	1 pc	
4	Solenoid and Diaphragm Valve Kit	2 pcs	

Contact I.C.A.

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