Procedures for Installation, Start Up, and Cleaning Hot Gas Applications – BHA® Preveil® Filter Bags

The best way of starting up the baghouse in a hot gas application is to bypass the baghouse until the temperature comes up and feed (coal, lignite, MSW, etc.) is put to the boiler. Unfortunately, many of our customers are being told by the EPA and state agencies that bypassing the baghouse will no longer be an option. You may be able to get clearance to bypass in the short term, but we do not think bypassing will be allowed for much longer.

If bypassing the baghouse is no longer an option, the following are our recommendations to minimize the chance of blinding the filter bags.

1. Natural Gas
   Start up the boiler/incinerator with natural gas until feed is put to the unit. The use of natural gas will minimize the chance of liquid hydrocarbons blinding the filter bags, but with the amount of water in natural gas, condensation and corrosion still need to be addressed. The startup procedures listed below should be used to pass through dewpoint quickly and minimize corrosion.
2. Diesel Fuel or Coal
   The baghouse can be started up with diesel fuel. The startup procedures listed below will decrease, but not eliminate, the chance of blinding the filter bags with raw fuel.
   Starting up with coal will minimize the chance of hydrocarbon contamination, but the following procedures should still be used.

1. Start up

Hot Gas, Multiple Compartments

When bringing the dust collector on-line, bring one compartment at a time on-line. This is done because, during warm up the full volume of the dust collector is not needed. Because the volume is reduced the velocities through the dust collector are reduced meaning if the entire dust collector is on-line it takes quite a while for the collector to come up to temperature. This means the compartments operate for a considerable amount of time in the dew point. By bringing the dust collector on-line a compartment at a time we bring the temperature in the compartments up quickly, passing through dew point quickly.

Start with one or two compartments on-line and the cleaning system off. As the differential pressure gets higher and the temperature comes up, add the next compartment. Sequence from side to side. Inject BHA Neutralite® into each compartment as they are brought on line. Continue this procedure until all compartments are on line.

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Do not start the cleaning cycle until the grain loading from the boiler has begun and the pressure drop has increased by 1 – 3 inches. Some people refer to this as starting up with "sacrificial compartments," although ideally, the sacrificial bags are not sacrificed. It will be very important that precautions are taken to turn off the fuel if the flame goes out during warm up.

When all the compartments are on-line and grain loading to the baghouse has begun, start the cleaning system. The cleaning system should always be controlled by differential pressure.

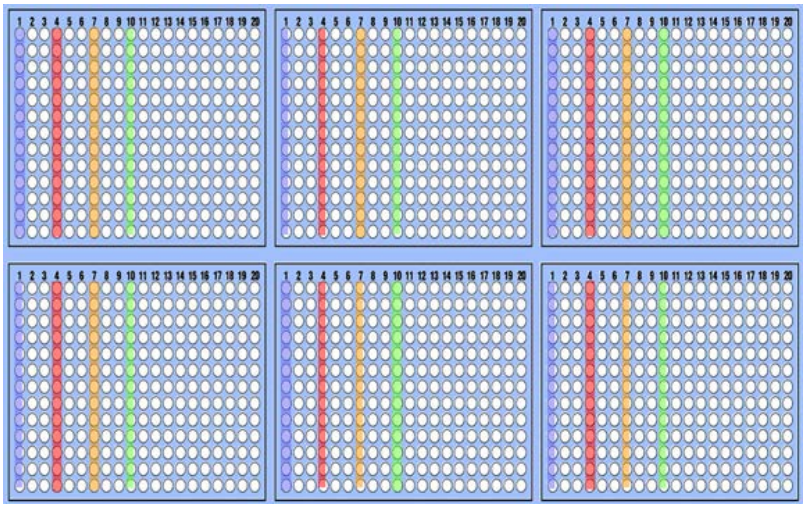
Cleaning set points need to be determined based on the individual systems. The setting on the clean on demand system should have a maximum of 1" from the bottom set point to the top set point, preferably ½ ".

Hot Gas, Single Compartment

Because we have no other choice, the collector unit must be brought on –line all at once. It is imperative that the collector is pre-coated with Neutralite. Also, the cleaning should be off until feed is put to the kiln. As with the multiple compartment unit, the cleaning should be controlled by differential pressure. Cleaning set points need to be determined based on individual s y s t e m s . The setting on the clean on demand system should have a maximum of 1" from the bottom set point to the top set point, preferably ½ ".

2. Pulse Sequencing – Pulse Jet Baghouse

On multi compartment collectors 1 to 3 rows should pulse in each compartment at the same time. The number of rows per compartment depends on the total rows in each compartment. The sequencing of the rows should be staggered. (Row 1, 4, 7, 10, etc.) The sequencing will be a little different for each system. Single compartments simply clean using staggered sequencing. Depending on the number of valves, several valves may fire at the same time. The illustration is for a 6-compartment baghouse with the inlet gas stream traveling down the center of the compartments from left to right.



First, all the blue rows are pulsed at the same time, then all the red rows are pulsed at the same time, followed by the orange rows, etc.

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Basically, we want to pulse 1 or 2 rows at the same time in each compartment. Usually, after pulsing 1 or 2 rows in each compartment, the pressure drop will decrease by ½" – 1" which will turn off the cleaning system. It is important that the cleaning system has memory so that it starts cleaning where it left off and does not clean the same rows again. This method of cleaning will result in less frequent cleaning of the filter bags and a more stable pressure drop and process ventilation. The bag life of fiberglass is usually determined by the number of times the bags are pulsed. Cleaning on-line is better than cleaning off-line.

On-time (pulse duration):	100 milliseconds
Off-time (between pulses):	15 – 25 seconds
Pulse Pressure:	60 – 75 psi (lower is better)
Photohelic set points:	5" & 5.5" (may vary depending on the actual system)

3. Reverse Air Sequencing

Typical reverse air cycle:	Isolate the compartment	5 seconds
	Open the reverse air damper	20 - 30 seconds
	Close reverse air damper	45 - 60 seconds
	Open isolation damper	

All dampers should open and close fast except for the isolation damper when it opens to put the compartment back on line.
The time between the compartments is based on differential pressure across the unit.

4. Shut Down Procedures

a. Stop the cleaning system;
b. Put out the flame/turn off the burner;
c. Let the fan run for another 15 minutes to absorb moisture and gases in the dustcake; stop the fan after 15 minutes;
d. Clean every row of bags (or every compartment on reverse air systems) for at least 2 complete cleaning cycles while removing dust from hoppers;
e. Make sure all dust has been removed from the hoppers;
f. Run the fan for another 15 minutes;
g. Complete one additional cleaning cycle and remove dust from hoppers
h. Close inlet and outlet dampers and all access doors while the unit will be off line.

5. BHA Preveil Installation Procedure

(The following is a brief overview of the complete instructions which can be found inside the boxes of filter bags)

Top Load Snap band Pulse Jet

- Do not take the filter bags out of the boxes until you are ready to install them in the tubesheet.
- Installation sleeves must be used which can be found inside the boxes of bags.
- Once the filter bag is in the tube sheet, follow standard snap band installation instructions.
- Once bags are snapped in the tubesheet DO NOT walk on the snap band tops.
- When installing the cages, make sure a vertical wire is in the crease of the bag.
- DO NOT force cages into the bags by standing on them.

Reverse Air

- Do not take the bags out of the boxes until you are ready to install on the thimble.
- Take the bag out of the box at the tubesheet level and rope up to the hangers. Attach to the tensioning assembly, then attach at the thimble. DO NOT drop the bags down from the top walk ways.
- Follow detailed instructions on seam, thimble, and clamp orientation.
- Follow all standard reverse air installation instructions.

Please call us if you need additional information or would like to discuss the procedures further.

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