



High Standards. Higher Performance. Highest Temperatures.

Huyglas® from the APC division of Filtration Specialties Inc

Installation, Start-up and Shutdown Recommendations

The following instructions are general recommendations for installation, start-up and shutdown of Huyglas® bags. Huyglas® is manufactured using a proprietary blend of high temperature resins. These resins impart a unique combination of temperature and chemical resistance in addition to excellent release properties. Huyglas® is shipped in a partially cured state to keep the fabric soft and supple during bag fabrication and installation.

1. CAGE DESIGN AND CONSTRUCTION

- Cage Design:** Mesh cages with openings no greater than 1"X3" or multi-wire cages having 20 or more vertical wires with annular rings on 6" centers should be used. APC's experience has been that these cages provide adequate support. Huyglas® filter bags installed on these types of cages have performed well in various applications. If a different cage is to be utilized, contact APC.
- Cage Construction:** The cage construction materials should be consistent with the material used for the construction of the baghouse. For the majority of applications, ordinary steel or galvanized steel cages are sufficient. In excessively corrosive environments, cage construction material offering suitable resistance to corrosive attack (such as stainless steel) should be considered.
- Venturi Design:** An hourglass shaped venturi of approximately 6" (150 mm) should be placed at the top of the cage to direct the cleaning pulses down the center of the bag. The venturi reduces turbulence as the cleaning pulse enters the bag and prevents the pulse from causing abrasion to the inside of the bag.

2. BAG SHIPMENT, STORAGE, CONSTRUCTION AND PULSING INFORMATION

- Bag Shipment:** Huyglas® bags should be rolled onto heavy-wall cardboard tubes that are slightly wider than the flat width of the bags and of a minimum outside diameter of 2" (50mm).
- Bag Storage:** Huyglas® bags should always be stored under dry conditions. The surfactants present in the unconditioned bags may cause a temporary change in the "feel" of the media, but will not affect its performance.



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- Bag Dimensions:** Huyglas® is dimensionally stable and does not stretch or shrink. It is therefore unnecessary and unadvisable to over-size the bag. Bags should be sized to the exact length and circumference of the cage through trial fitting to actual cage. Bags should be sewn to have a maximum of $\frac{1}{8}$ " to $\frac{1}{4}$ " (3-6 mm) of "pinch" in their circumference when installed. The correct circumference will be just large enough to allow cage insertion without damage. Oversizing the bag circumference will cause the formation of wrinkles and sharp creases that will ultimately lead to premature flexural failures. Oversizing in either length or circumference can also lead to premature bag failure due to bag/cage abrasion.
- Cage/Bag Alignment:** Huyglas® filter bags should not come into contact with each other while in service. Therefore, proper alignment among and between filter bags is essential. All filter bags will fail prematurely as a result of excessive contact with adjacent filter bags. Holes develop quickly at such points of abrasion. Bent or crescent-shaped cages, improper installation and inferior tube sheets can contribute to poor filter bag/cage alignment and should be avoided.
- Bag Handling:** Huyglas® filter bags should fit their cages snugly in both length and circumference. If Huyglas® filter bags are installed through a tube sheet (whether mounted on cages or not), care should be taken to avoid bag abrasion. Such abrasion can result from contact with the sharp edges that are often present in tube sheet openings.
- Bag Pulsing:** To maximize filter bag life, cleaning air pressure of 60-90 PSI (4.1-6.2 bar) should be used. The lowest cleaning pressure providing stable ΔP should be used. Users should also take into account which combination of pulse duration, pressure and frequency will yield an acceptable pressure drop while maximizing filter bag life.
- Bag Laundering:** Huyglas® filter bags should not be laundered. Should an upset condition occur in the baghouse, the following steps should be taken:
1. Take the unit off-line and allow it to pulse under a no-dust load condition.
 2. Use a compressed air wand to dislodge persistent dust-buildup.
 3. If the above prove insufficient and the bags must be vacuum-cleaned, vacuuming should be done with the bags remaining on the cages, if feasible.



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3. START UP PROCEDURES

Bag Conditioning: After leak-testing installed bags, diatomaceous earth or commercially pure calcium carbonate (pulverized limestone, not lime) CaCO₃ bag pre-coat conditioner should be applied prior to introduction of particulate in all emission control applications at the rate of 3-4 oz/square yard (100-135 g/m²) of media.

Start Up Never pulse cold filter bags.

When possible, preheat the baghouse to operating temperature before introducing flue gases. When preheating is not possible, bypass the baghouse until the temperature of the flue gas has stabilized. This helps to prevent caking and/or blinding of the media.

Do not allow gases from fuel used to dry out a boiler or cure refractory to pass through the baghouse.

The system should be operated at approximately 50% of design volume in manual cleaning mode when flue gases are introduced to the baghouse for the first time. Manually initiate bag cleaning when the ΔP across the tubesheet reaches 6" w.c. (150mm). Allow the ΔP to build back to 150 mm and repeat manual cleaning for a total of 3 cleaning cycles prior to putting the system into automatic cleaning mode and increasing the flow to normal operating flows.

During the first few minutes when new Huyglas[®] bags are first exposed to high temperatures, a slight haze may appear from the exhaust stack of the baghouse. This is normal and will dissipate within 20-30 minutes after the bags reach 425° F (218°C).

The operating temperature should be at least 50° F (28°C) above the calculated acid dew point. This margin is to ensure that excursions through the acid dew point do not occur.



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4. SHUTDOWN:
1. After fan shutdown, immediately seal the inlet and outlet dampers to maintain a hot, dry atmosphere around the filter bags.
 2. Pulse the baghouse unit off-line until the temperature drops to approximately 140o F.
 3. Evacuate dust from the hopper.
 4. Open the inlet and outlet dampers and activate the fan. This will purge the filter bags of residual corrosive gases and is best accomplished with residual heat from the ductwork.
 5. Add sufficient desiccant material to the hopper or plenum to absorb residual moisture and maintain a dry filter bag environment during prolonged shutdown.
 6. Close the baghouse inlet and outlet dampers in order to seal the unit until start-up.

Don't be concerned by the stiffness of bags that are removed from service. Bags that have been placed into service will be relatively stiff at room temperature, but will be flexible at operating temperatures due to the characteristics of the fully-cured silicone resins in the Huyglas® finish.

For further information, please contact APC.