

# Instruction Sheet

BHA® Preveil ePTFE Membrane Fabric Filter Installation Procedures and Cleaning Cycle Recommendations for Pulse-Jet Collectors



ENGINEERING YOUR SUCCESS.



Instruction Sheet:

# BHA Preveil ePTFE Membrane Fabric Filter Installation Procedures and Cleaning Cycle Recommendations for Pulse-Jet Collectors

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**NOTE:** Please follow all general baghouse entry procedures as outlined by OSHA and your specific plant.

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- Remove all used filter bags and cages from collector before new bag installation. The clean air plenum should be thoroughly cleaned after removing used bags. New cages are always recommended to protect your filter bag investment. If cages are being reused, inspect carefully for broken welds, burrs, and surface roughness to reduce fabric damage. Wipe cage down with abrasive pads to remove any surface roughness.
  - Boxes should be transported unopened to the baghouse tubesheet or staging area to avoid damage to the filter bags. Remove a filter bag from the box and install one at a time to reduce the risk of damage to other filters.
  - Cardboard or other smooth material should be placed on or around rough surfaces (such as door frames and handrails) where bags could make contact with baghouse compartments during movement, protecting the filtration surface from damage.
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**NOTE:** Before re-bagging your collector, verify the style of bags and cages you have and follow the corresponding instructions.

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## Installation instructions

Snapband top filter bags ..... Page 4

Flange top filter bags ..... Page 5

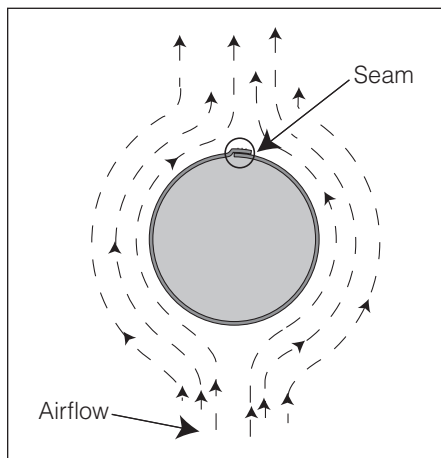
Sleeve top filter bag with roll band cage ..... Page 6

Sleeve top filter bag with OEM style annular ring cage ..... Page 7

Raw edge filter bag with roll band cage and T-bolt clamp ..... Page 8

Raw edge filter bag with T-bolt clamp and OEM style annular ring cage ..... Page 9

Cleaning cycle recommendations for all pulse-jet collectors ..... Page 10



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**SPECIAL NOTE:** To help troubleshoot problems, install bag seam opposite compartment inlet.

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## Installation Instructions for Snapband Filter Bags

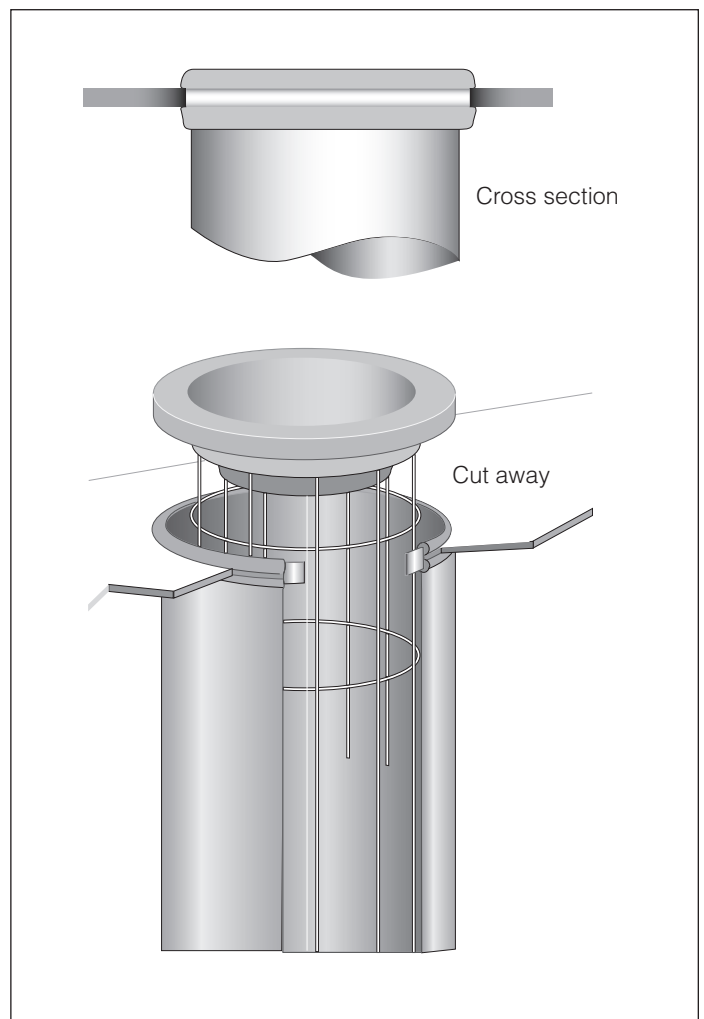
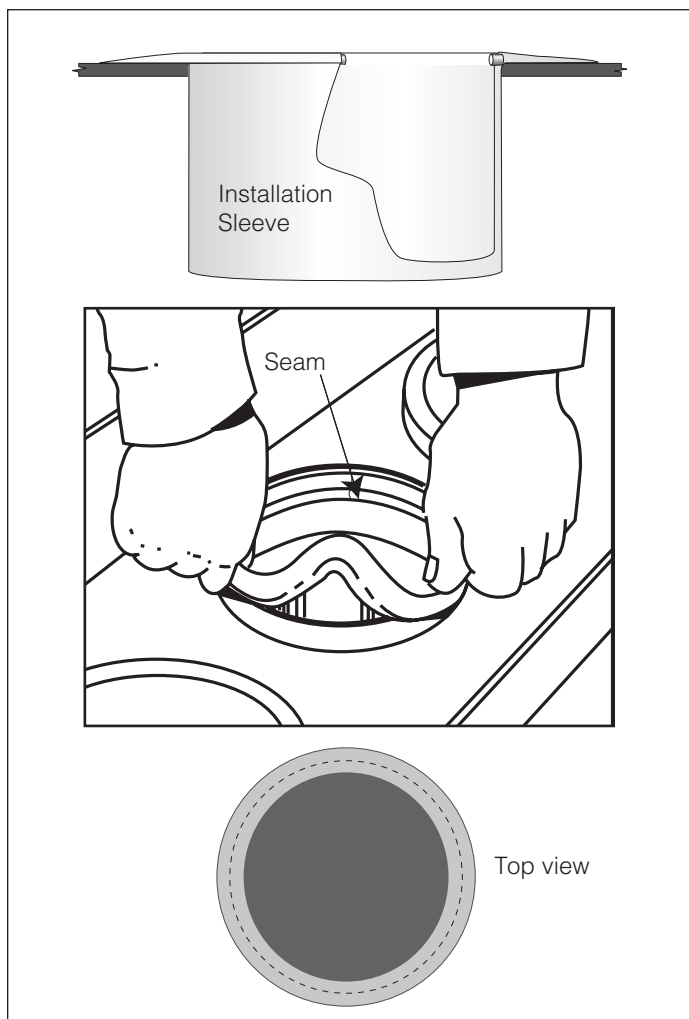
- Insert the provided installation sleeve in the tubesheet hole to protect the membrane from the rough edges. (Installation sleeves are located in the box labeled “Open First.”) Lower the bag through the tubesheet hole and slip the installation sleeve off over the top of the bag.
- Bend the snapband into a kidney shape and place the grooved gasket into the tubesheet hole. The seam portion of the snapband should be the initial point of installation.

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**PLEASE NOTE:** The surface of your filter bag is very delicate! When moving or handling, care must be taken to prevent any scraping of the surface. If bags and cages are assembled prior to installation, they must be placed on smooth, clean cardboard and stacked no more than four high.

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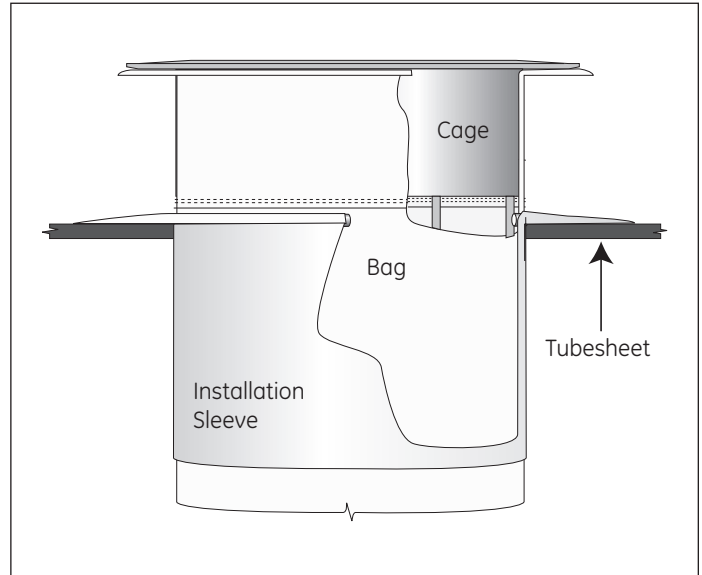
- Let the snapband expand into place. A sharp popping noise should be heard when the band is properly seated around the circumference of the tubesheet hole. It may be necessary to use light pressure to seat the band.
- Check to make sure you cannot easily twist the snapband and that the band is securely seated with the metal tubesheet fitted into the center of the band groove. Check the inside of the band to make sure it is round (fully expanded) and not kinked or dimpled.
- Lower the cage straight down into bag. Do not drop the cage into the bag. Lower it by hand to ensure the bag is not spiraled on the cage.



## Installation Instructions for Flange Top Filter Bags

### Option 1: Assembly of bag and cage prior to inserting into tubesheet.

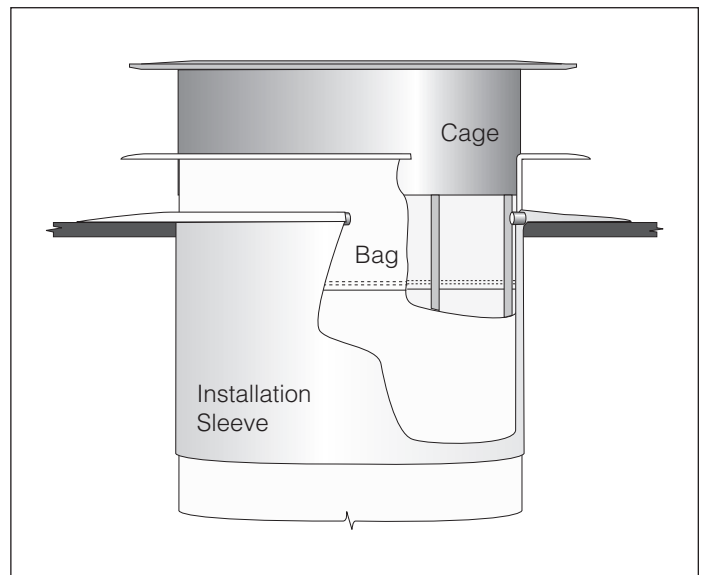
- Installation of the bag typically requires two people. Begin at the bottom and slide the bag horizontally onto the cage. One person should feed the bag from the bottom while the other person slowly slides the top part of the bag onto the cage. Hold the bag straight out to prevent sharp creases as it passes over the cage pan. Care should be taken to ensure the seam of the bag is straight and not spiraled around the cage.
- Insert the provided installation sleeve into the tubesheet hole to protect the membrane from the rough edges. (Installation sleeves are located in the box labeled "Open First.")
- Lower the bag and cage assembly through the tubesheet hole, slip the installation sleeve off over the top of the bag and install hold-downs.



**PLEASE NOTE:** The surface of your filter bag is very delicate! When moving or handling, care must be taken to prevent any scraping of the surface. If bags and cages are assembled prior to installation, they must be placed on smooth, clean cardboard and stacked no more than four high.

### Option 2: Installation of bag into tubesheet prior to inserting cage.

- Insert the provided installation sleeve into the tubesheet hole to protect the membrane from rough edges.
- The best way to do this is to form the bag into a "V" along its length and pass it through the hole, minimizing contact with any surfaces. Slip installation sleeve off over the top of the bag. Insert cage into filter bag taking care that filter bag does not fall completely through tubesheet.



## Installation Instructions for Sleeve Top Filter Bag with Roll Band Cage

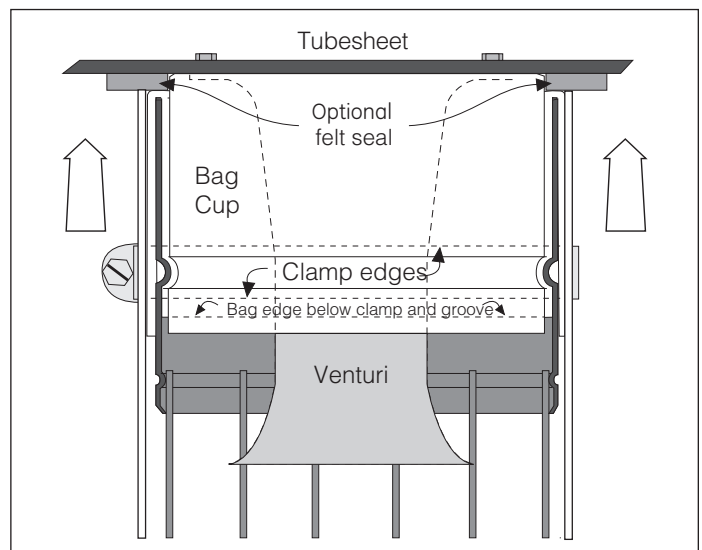
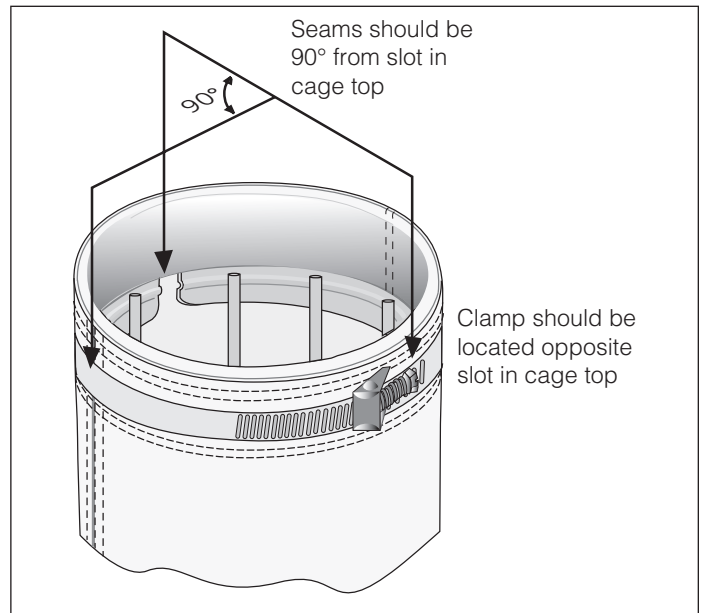
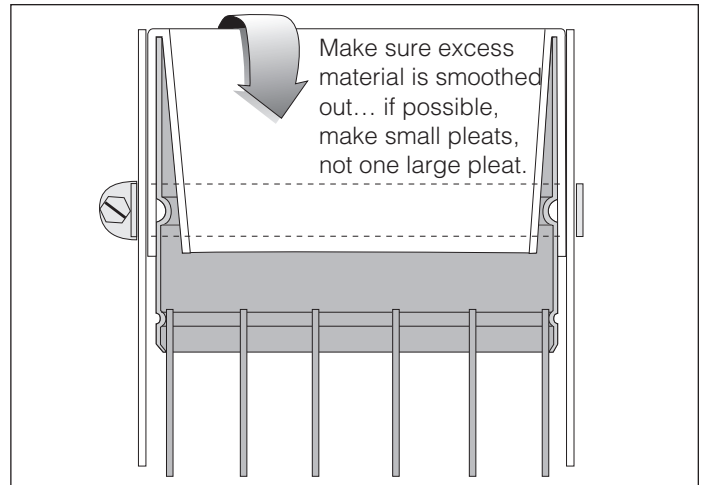
- Installation of the bag typically requires two people. Begin at the bottom and slide the bag horizontally onto the cage. One person should feed the bag from the bottom while the other person slowly slides the top part of the bag onto the cage. Hold the bag straight out to prevent sharp creases as it passes over the cage pan. The bag should be installed so the bag seam is not directly over the gap of a split collar cage top (i.e. at a 90° angle to the split in the collar of the cage). Care should be taken to ensure the seam of the bag is straight and not spiraled around the cage.
- Fold the sleeve top of the bag inside the cage. The sleeve should extend down inside the roll band top below the first groove. Smooth the folded fabric and distribute any excess fabric into several small pleats instead of one large one.

**NOTE:** The surface of your filter bag is very delicate! When moving or handling, care must be taken to prevent any scraping of the surface. If bags and cages are assembled prior to installation, they must be placed on smooth, clean cardboard and stacked no more than four high.

- Loosely install a new clamp around the top of the bag/cage combination with screw positioned between the gap in the roll band top and the bag seam. The clamp should be seated over the first groove, just tight enough to stay in place. Install a new optional felt seal around the bag cup. This seal further helps prevent leakage of fine particulate.
- Slide the bag/cage combination over the bag cup which is below the tubesheet. The bead on the inside of the cage (the back of the groove) should be squarely in the groove of the bag cup with the fabric of the bag between the cage top and the bag cup.
- Using a socket wrench, tighten the clamp securely, making sure it stays in place over the groove in the cage to prevent leakage. It is important to use greater than usual torque on the clamp for this application (50-60 in-lbs. for slotted band type clamps). During tightening, rock the cage slightly to ensure the grooves are mating properly. After tightening, you should not be able to rotate the bag and cage by hand. Over tightening can strip the clamp.

**NOTE:** If the clamp is placed too high, is not tightened adequately, or the fabric is not past the groove, leakage may occur.

### Do Not Re-install Used Clamps



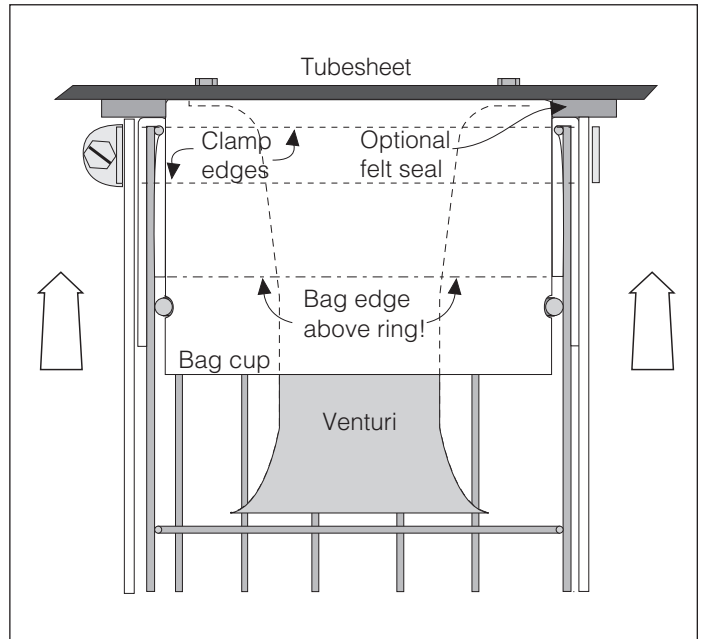
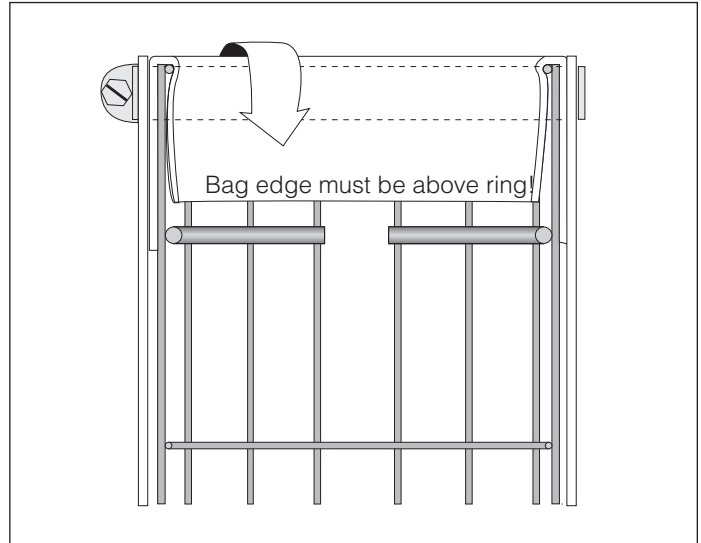
# Installation Instructions for Sleeve Top Filter Bag with OEM Style Annular Ring Cage

- Installation of the bag typically requires two people. Begin at the bottom and slide the bag horizontally onto the cage. One person should feed the bag from the bottom while the other person slowly slides the top part of the bag onto the cage. Hold the bag straight out to prevent sharp creases as it passes over the cage pan. The bag should be installed so the bag seam is not directly over gap of a split collar cage top (180° opposite is recommended). Care should be taken to ensure the seam of the bag is straight and not spiraled around the cage.
- Fold the sleeve top of the bag inside the cage. The sleeve should extend down inside the cage just short of the large ring. Smooth the folded fabric and distribute any excess fabric into several small pleats instead of one large one.

**NOTE:** The surface of your filter bag is very delicate! When moving or handling, care must be taken to prevent any scraping of the surface. If bags and cages are assembled prior to installation, they must be placed on smooth, clean cardboard and stacked no more than four high.

- Loosely install a new clamp around the top of the bag/cage combination with screw positioned midway between the gap in the ring top and the bag seam. The clamp should be on the cage top, just tight enough to stay in place. Install a new optional felt seal around the bag cup. This seal further helps prevent leakage of fine particulate.
- Slide the bag/cage combination over the bag cup which is below the tubesheet. The ring on the inside of the cage should be squarely in the groove of the bag cup with the fabric of the bag sandwiched between the cage top and the bag cup.
- Using a socket wrench, tighten the clamp securely, making sure it stays in place centered between the ring and cage top. To prevent leakage, it is important to use greater than usual torque on the clamp for this application (50-60 in.-lbs. for slotted band type clamps). During tightening, rock the cage slightly to ensure the ring and groove is mating properly. After tightening, you should not be able to rotate the bag and cage by hand. Over tightening can strip the clamp.

**Do Not Re-install Used Clamps**



# Installation Instructions for Raw Edge Filter Bag, Roll Band Cage, and T-Bolt Clamp

**If you are installing a raw edge bag, you must use a T-bolt clamp or you will experience leakage.**

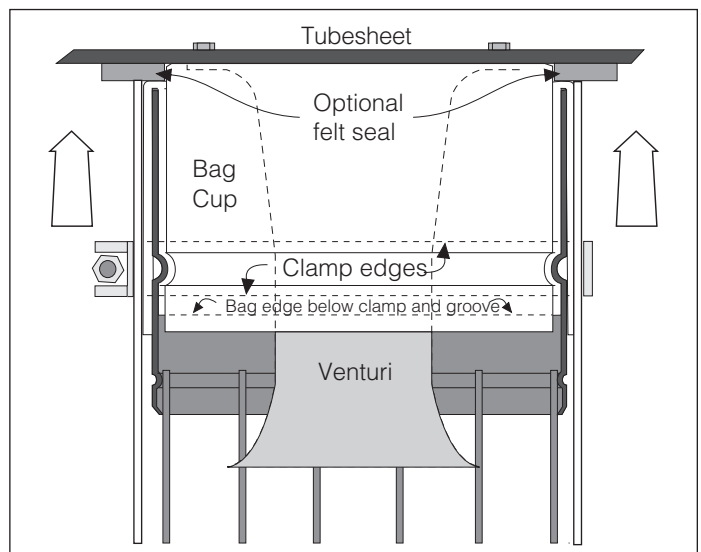
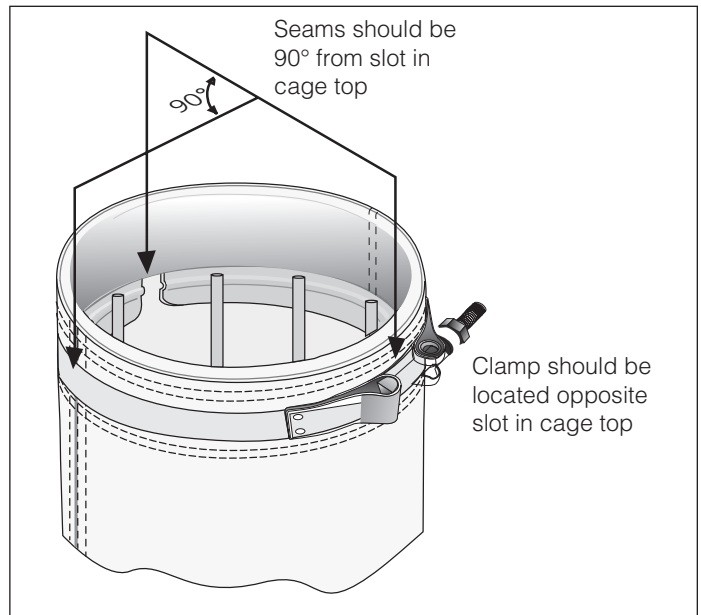
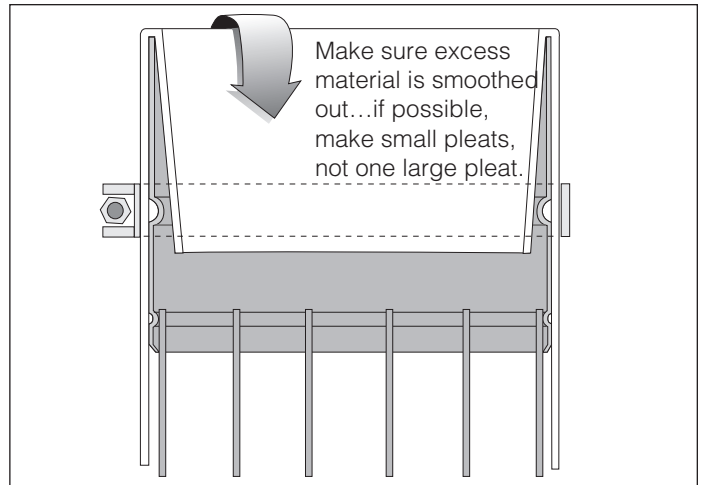
- Installation of the bag typically requires two people. Begin at the bottom and slide the bag horizontally onto the cage. One person should feed the bag from the bottom while the other person slowly slides the top part of the bag onto the cage. Hold the bag straight out to prevent sharp creases as it passes over the cage pan. The bag should be installed so the bag seam is not directly over the gap of a split collar cage top (i.e. at a 90° angle to the split in the collar of the cage). Care should be taken to ensure the seam of the bag is straight and not spiraled around the cage.
- Fold the sleeve top of the bag inside the cage. The sleeve should extend down inside the roll band top below the first groove. Smooth the folded fabric and distribute any excess fabric into several small pleats instead of one large one.

**NOTE:** The surface of your filter bag is very delicate! When moving or handling, care must be taken to prevent any scraping of the surface. If bags and cages are assembled prior to installation, they must be placed on smooth, clean cardboard and stacked no more than four high.

- Loosely install a new clamp around the top of the bag/cage combination with T-bolt clamp between the gap in the roll band top and the bag seam. The clamp should be seated over the first groove, just tight enough to stay in place. Install a new optional felt seal around the bag cup. This seal further helps prevent leakage of fine particulate.
- Slide the bag/cage combination over the bag cup which is below the tubesheet. The bead on the inside of the cage (the back of the groove) should be squarely in the groove of the bag cup with the fabric of the bag between the cage top and the bag cup.
- Using a socket wrench, tighten the clamp securely, making sure it stays in place over the groove in the cage to prevent leakage. It is important to use greater than usual torque on the clamp for this application. During tightening, rock the cage slightly to ensure the grooves are mating properly. After tightening, you should not be able to rotate the bag and cage by hand. Over tightening can strip the clamp.

**NOTE:** If the clamp is placed too high, is not tightened adequately or the fabric is not past the groove, leakage may occur.

**Do Not Re-install Used Clamps**





# Installation Instructions for Raw Edge Filter Bag with T-bolt Clamp and OEM Style Annular Ring Cage

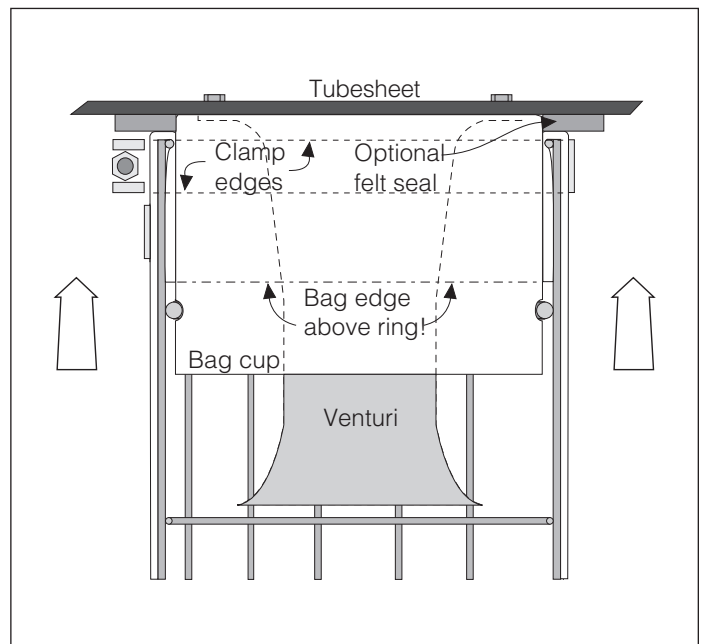
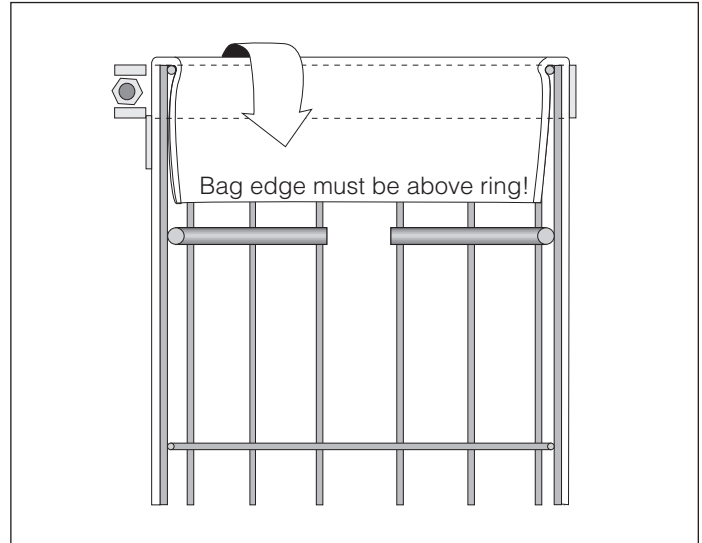
## If you are installing a raw edge bag, you must use a T-bolt clamp or you will experience leakage.

- Installation of the bag typically requires two people. Begin at the bottom and slide the bag horizontally onto the cage. One person should feed the bag from the bottom while the other person slowly slides the top part of the bag onto the cage. Hold the bag straight out to prevent sharp creases as it passes over the cage pan. The bag should be installed so the bag seam is not directly over the gap of a split collar cage top (180° opposite is recommended). Care should be taken to ensure the seam of the bag is straight and not spiraled around the cage.
- Fold the excess material of the bag inside the cage. The excess material sleeve should extend down inside the cage just short of the large ring. Smooth the folded fabric and distribute any excess fabric into several small pleats instead of one large one.

**NOTE:** The surface of your filter bag is very delicate! When moving or handling, care must be taken to prevent any scraping of the surface. If bags and cages are assembled prior to installation, they must be placed on smooth, clean cardboard and stacked no more than four high.

- Loosely install a new clamp around the top of the bag/cage combination with screw positioned midway between the gap in the ring top and the bag seam. The clamp should be on the cage top, just tight enough to stay in place. Install a new optional felt seal around the bag cup. This seal further helps prevent leakage of fine particulate.
- Slide the bag/cage combination over the bag cup which is below the tubesheet. The ring on the inside of the cage should be squarely in the groove of the bag cup with the fabric of the bag sandwiched between the cage top and the bag cup.
- Using a socket wrench, tighten the clamp securely, making sure it stays in place centered between the ring and cage top. To prevent leakage, it is important to use greater than usual torque on the clamp for this application. During tightening, rock the cage slightly to ensure the ring and groove is mating properly. After tightening, you should not be able to rotate the bag and cage by hand. Over tightening can strip the clamp.

## Do Not Re-install Used Clamps



# Cleaning Cycle Recommendations for Pulse-Jet Collectors

- Once operation has stabilized, the time interval between pulses should be adjusted daily until the longest off-time possible has been attained without exceeding the designed differential pressure. Excessive pulsing will lead to shortened bag life.
- The pulse duration should be set to: 0.10 - 0.15 seconds for membrane on both felt and woven fabric.
- A Pulse-on-Demand controller is recommended for the pulse-jet cleaning system in order to extend bag life and reduce compressed air usage. Consequently, this system will start the cleaning cycle when the high differential pressure ( $\Delta P$ ) set point is reached and stops when it cleans down to the low differential pressure set point. Suggested high point setting is  $5'' \Delta P$ , and the suggested low point setting is  $4.5'' \Delta P$ . Depending on the static pressure of the fan, lower differential pressure set points may be required to maintain the desired airflow. This is acceptable in many cases, but should be reviewed with Parker Hannifin to determine the optimum set points to maximize airflow while minimizing cleaning frequency. This will vary on a case by case basis.
- The pressure of the compressed air (or blower) at the baghouse header should be set and adjusted as follows when using Preveil ePTFE filter bags.

Preveil ePTFE membrane on felt:

- For high pressure/low volume cleaning systems (over 60 psi), the initial setting should be 60 psi and increased only if the  $\Delta P$  cannot be maintained. If the pressure must be increased over 100 psi, contact Parker Hannifin.
- For medium pressure/high volume cleaning systems (30-60 psi), the initial setting should be 30 psi and increased only if the  $\Delta P$  cannot be maintained. If the pressure must be increased over 60 psi, contact Parker Hannifin.
- For low pressure/high volume cleaning systems (15-30 psi), the initial setting should be 15 psi and increased only if the  $\Delta P$  cannot be maintained. If the pressure must be increased over 30 psi, please contact your Parker Hannifin representative.

Preveil ePTFE membrane on woven glass and woven PTFE:

- For high pressure/low volume cleaning systems (over 60 psi) only, the initial setting should be 60 psi with a maximum adjustment not to exceed 80 psi. Increase only if the  $\Delta P$  cannot be maintained. If the pressure must be increased over 80 psi, please contact your Parker Hannifin representative.

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**NOTE:** This adjustment should only be done after several weeks of operation. As the filter bags age, increased pressure may be required. If so, pulse pressure can be increased in increments of 5 psi until maximum pulse pressure is achieved and/or differential pressure stabilizes.

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- Only clean, dry compressed air should be supplied to the baghouse cleaning system. Moisture can cause acid attack, fabric blinding and cage corrosion.
- All inlet ducts should be equipped with baffles or deflector plates to prevent high velocity impingement of the particulate on the bag surface. Dust should never be allowed to build or stand in the hoppers.
- Start up and shut down procedures should be designed to minimize acid dew point condensation which can cause dustcake agglomeration or fabric damage. Operate the cleaning system manually to minimize the dustcake retention during baghouse shut down.

**Service crews are available for installation and inspection. If you have any questions regarding Parker Hannifin products or services, please call your sales representative at 800-821-2222.**



## Protecting Your Assets and Ensuring Purity for Our World

We protect and purify using diverse solutions engineered for your unique application. Never failing you is where we build our pride. We use our expertise to find the best filtration solution for your specific business goals. Our knowledge and filtration expertise are what sets us apart. We always bring the next generation of technologies to the market.

State-of-the-art labs. Advanced filtration research. A leading global provider of innovative filtration technologies and solutions offering superior industry knowledge, thought leadership and exceptional customer service, with a passion for building high-performance products ensuring a safer, cleaner and more sustainable environment.

World-class manufacturing processes. You will find we produce top quality filtration solutions through rigorous manufacturing methods. And, as a global company with an expansive network strategically located around the world, we provide superior localized services and support to you.

Application engineering experience for any filtration challenge. Our ability to design a solution to fit your application begins with engineering expertise; proven by hundreds of global installations supported by local teams with application and industry experience to deliver the industry-leading performance you expect.

## We Are Your Filtration Resource

### Aftermarket Dust Collection Filters and Parts

We know you value and trust our quality, technical expertise, and industry-leading design and innovation when it comes to dust collection and air filtration. We take that trust very seriously. That means we don't sell just any solution. We work hard to understand your specific needs to provide the right answer. That commitment that honesty is fundamental to what we do. It's at our core. It's who we are.

