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## **BIN VENT (TOP REMOVAL – BAG & CAGE) INSTALLATION AND OPERATING INSTRUCTIONS**

### **GENERAL DESCRIPTION**

Filter Technology, Ltd collectors remove solids or dust from an air stream. Dirty air enters the bottom of the lower section and is forced or drawn through the bag filters where the dust is deposited on the exterior of the filter elements. The clean air continues through the center of the filter to the clean air plenum where it exits to atmosphere.

### **APPLICATION NOTES**

While it is not the purpose of this manual to describe the possible applications and uses of Filter Technology, Ltd's series collectors, these units should never be used in hazardous areas or for the collection of explosive materials without prior written consent of Filter Technology, Ltd.

### **OPERATING PRINCIPLE** (Figure 1, 2, & 3)

The BV series dust collectors are designed for continuous operation cleaning the filter elements while the air passes through the unit. This is accomplished by directing a blast of compressed air into the top of each filter element. The compressed air blast both reverses the airflow and mechanically expands the filter dislodging the dust, which falls out of the bottom of the unit.

Starting with the supply of plant compressed air to the regulator supplied with the unit. The regulator system removes any water and oil is automatically drained from the filter by the auto drain on the base of the regulator. The regulator reduces the incoming air pressure (maximum input pressure is 90 PSI) to 85 PSI approximate which is the required pressure for cleaning the bags without damage.

The header stores a volume of air sufficient to allow the diaphragm valve to pulse when actuated. The diaphragm valves are controlled by the solenoid valves, which act as a pilot in that they hold compressed air on the diaphragm preventing them from opening. The diaphragm valves are actuated by the release of pressure from the solenoid valves. From the diaphragm valves the pulse of air travels through the flex-couple to the blowpipes, exiting through hoses in the bottom of the pipes and into the top of the individual bags.

One row of bags is pulsed or cleaned at a time allowing the remaining units to continue to filter the air flowing through the collector.

Generally the collector will operate at less than 4" WG differential pressure at a timer "off" time of 10 to 12 seconds. The purpose of the timer board is to provide a signal to the solenoid valves, which translate the electrical signal into the release of air pressure, which actuates the diaphragm valves.

The duration of the cleaning pulse and the interval between pulses can be adjusted to meet the cleaning demands of the application.

Once the collector is properly installed and settings are made, normal operation is automatic and only a periodic check of the unit is required. Checking the unit involves verifying the cleaning system is operating (this should be done when dust laden air is passing through the unit which over timer will cause the automatic system to operate) or alternately by placing the unit in the manual clean mode.

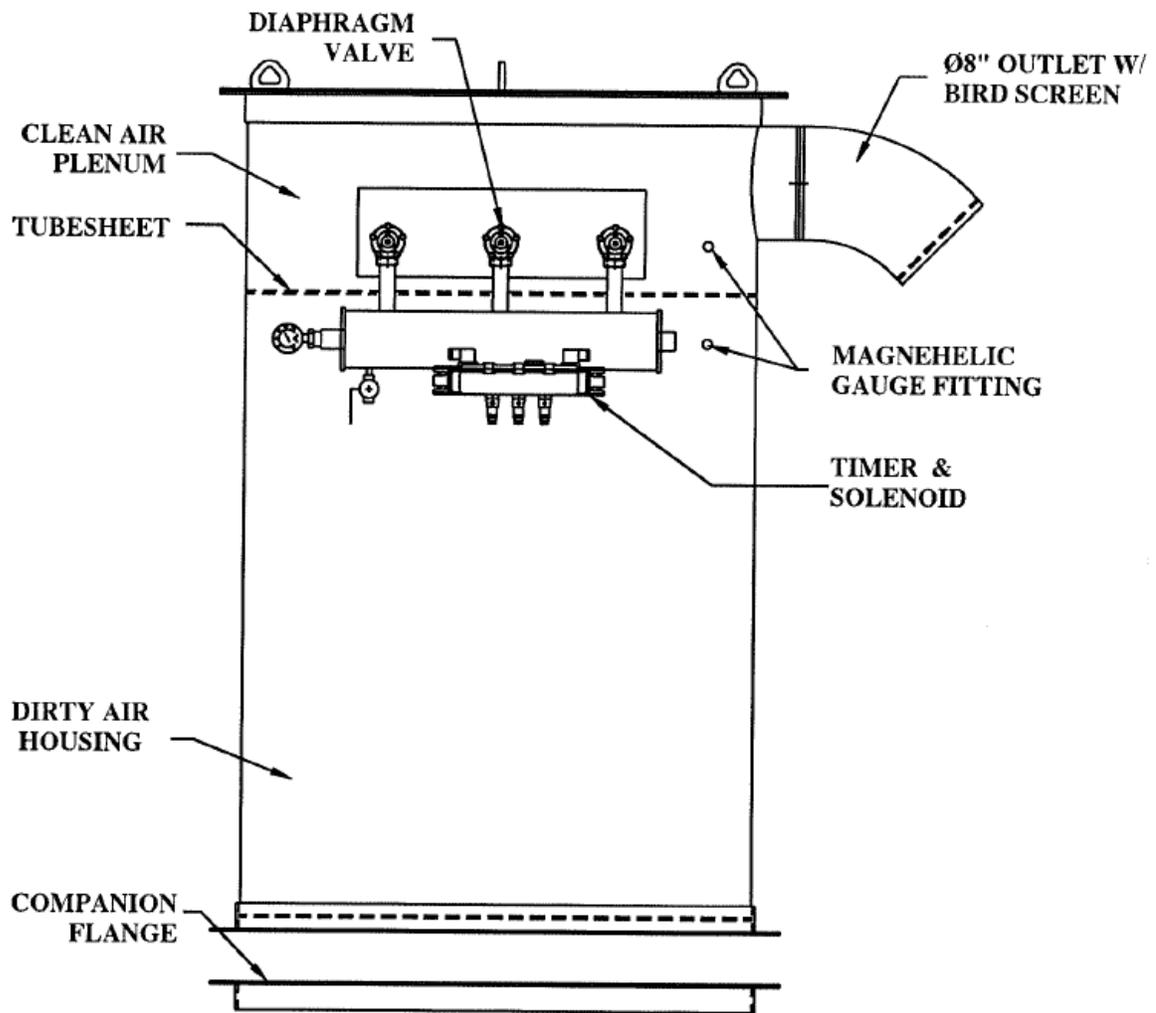
### **INSTALLATION OF TOP REMOVAL BAG & CAGE FILTERS**

1. Insert the filter bag in the tubesheet (Figure 4A) by slowly feeding the bag through the hole using the seam as a guide to keep the bag straight. A twisted bag will hinder the insertion of the bag cage / venturi assembly. Care should be taken in dropping the filter bag through the hole making sure the fabric does not rub against the edge of the hole.
2. Grip the open end of the filter bag and bend the stainless steel band that is sewn in the collar so it forms into a kidney shape configuration. (Figure 4B).
3. Roll the bag collar into the hole of the tubesheet allowing it to snap into place (Figure 4C). Smooth the collar by hand, making sure the beads are uniformly in place above and below the tubesheet.
4. Install cage through snap band all the way to the bottom so it sits on the tubesheet (Figure 4D)
5. After a complete row of bags and cages have been installed, mount the blowpipe onto its supports (Figure 2). Fasten the blowpipe to the support angle at the far end of the collector, making sure the pulse pipe holes are directed downward. Attach and tighten the coupling on the opposite end of the blowpipe to complete the installation. Insert the blowpipe into the wall coupling far enough to clear the slotted support at the other end. Push into slot and then tighten wall coupling – hand tighten only (do not use a pipe wrench).

### **TROUBLESHOOTING CHECKLIST**

<b>DUST IN CLEAN AIR PLENUM</b>	<b>SOLUTION</b>
Loose or improperly installed bag	By tracing the location of the accumulated dust it may be possible to identify the bag that is leaking. Reinstall bag correctly.
Holes in bags can be from damage during installation, abrasion or worn out bags.	Inspect for worn or damaged bags, and replace with new bag. If a replacement bag is not immediately available, the hole in the tubesheet may be temporarily plugged.

<b>LOSS OF AIR FLOW</b>	<b>SOLUTION</b>
Loss of airflow may not be caused by filter, but rather by other changes to the system.	Remove unit from service (turn off fan) and initiate cleaning cycle. Allow cleaning to go completely through cycle two or three times.
<b>LOSS OF AIRFLOW EVEN AFTER CLEANING</b>	<b>SOLUTION</b>
Cleaning system not operating	Troubleshoot cleaning system (timer, valves, solenoids, compress air, etc. as below)
Cleaning system operates	Inspect bags for clogging. If cleaning system is correct and bags do not respond, they may need to be replaced.
<b>CLEANING SYSTEM DOES NOT OPERATE</b>	<b>SOLUTION</b>
No noise of valves pulsing	Verify that timer is on and power is reaching the terminals of timer. If powered, small lights on timer should periodically illuminate. If lights on timer, verify connections to solenoid, solenoids should “click” when energized. Make sure to verify the “common line” returning to neutral side. If no lights, contact factory as may be a defective timer.
Just clicking noise from solenoids.	Verify compress air source. If air on header, verify tubing connections between solenoids and diaphragm valves. If connection is bad with air pressure a noticeable leakage will likely be present. Make sure to remove air supply and bleed system prior to attempting to correct any leaks.
<b>CLEANING SYSTEM OPERATES BUT ONE OR MORE ROWS OF FILTERS DO NOT CLEAN</b>	<b>SOLUTION</b>
	Verify clicking noise when solenoid on that row is pulsed. If no clicking noise, check timer connections. If connections are correct, solenoid may need replacement. If clicking noise on solenoid, but diaphragm valve does not actuate, check plumbing between solenoid and diaphragm valve. If plumbing is correct, diaphragm valve may be clogged. Bleed air supply prior to attempting to correct. Remove cover and inspect. If dirty, remove and re-check. IF diaphragm is damaged, contact Filter Tech for replacement parts.



FRONT ELEVATION

Figure 1 Operating Principle

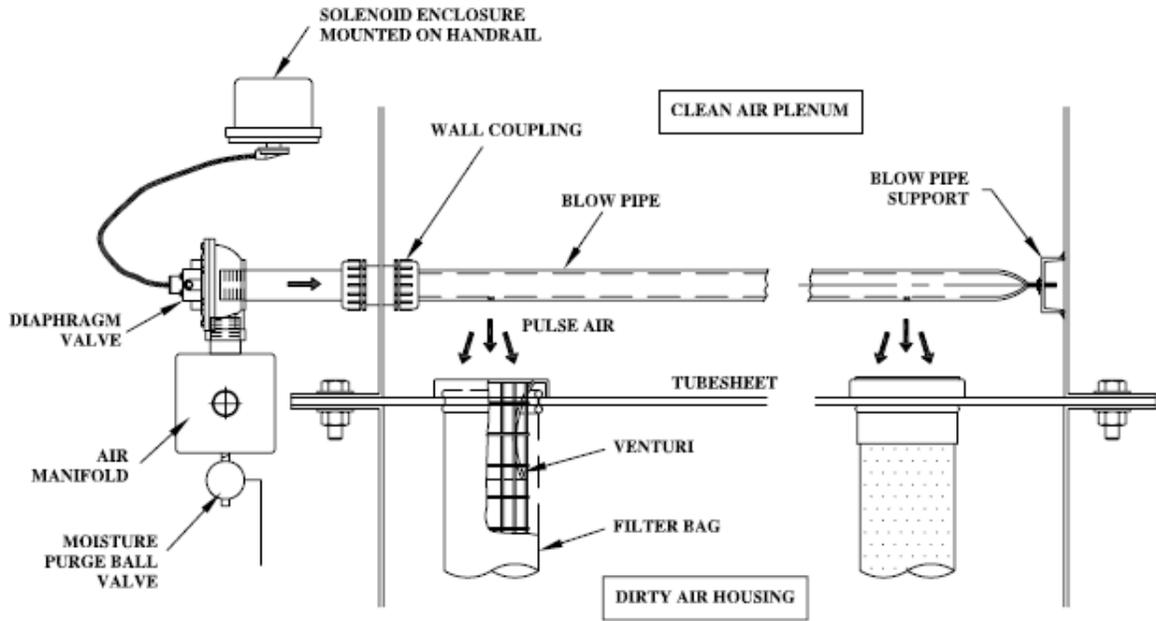


Figure 2 Operating Principle

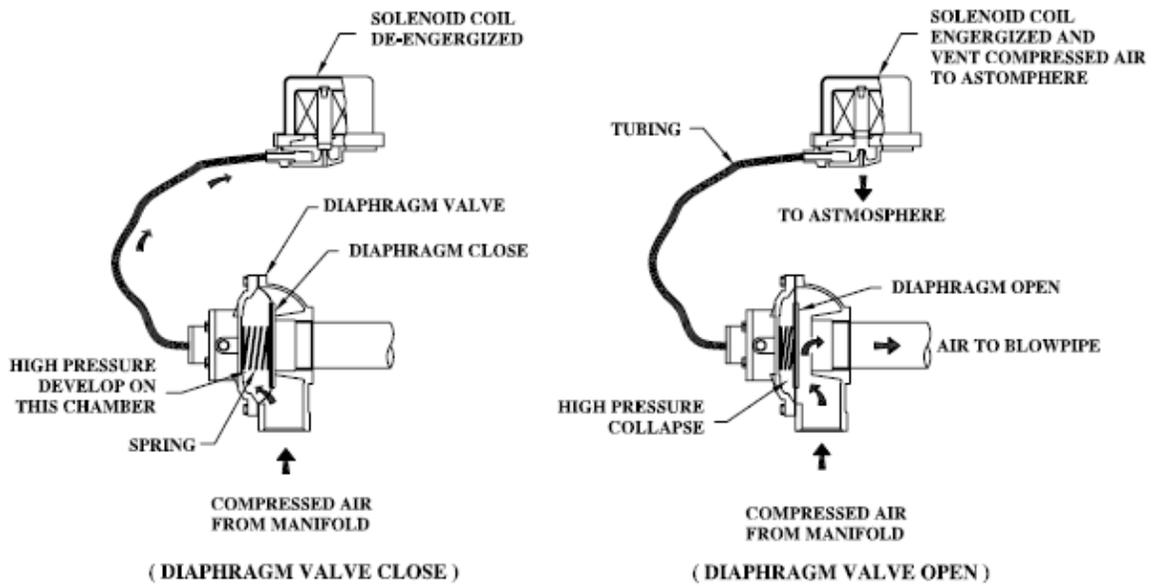
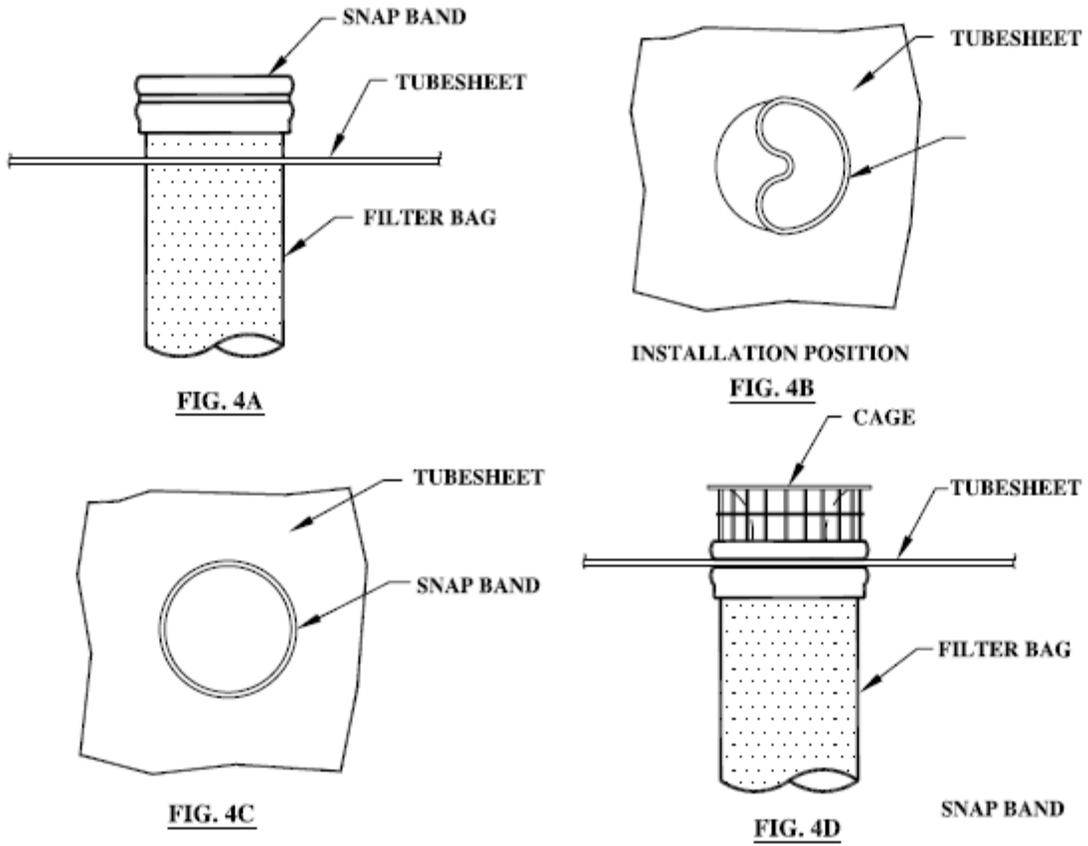
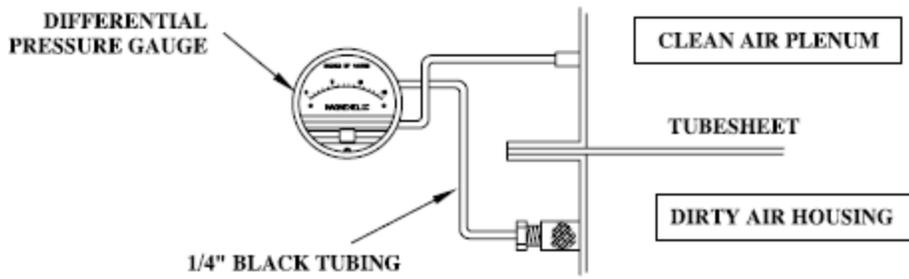


Figure 3 Solenoid Operational Diaphragm



**Figure 4 Bag and Cage Installation**



**Figure 5 Magnehelic Pressure Gauge Installation**