



## **BENEFITS OF MICRONAIR'S UNIQUE *ULTRA-FLOW* REVERSE PULSE TECHNOLOGY**

The key objective of filter design and the filter media cleaning system is to build and support the correct dust 'cake'. Filters do not achieve their maximum efficiency until this dust cake builds to the correct consistency and porosity i.e. 'correctly caked' filters have significantly greater efficiency than a completely clean filter!

ULTRA –FLOW design is built around promoting a uniform, stable and porous 'filter cake' along the entire filter length. In doing this it increases collection efficiency and the cakes ability to hold more dust between cleaning cycles. This then requires less cleaning cycles and operates at lower pressure drops.

### **Here's how this is achieved:**

High Volume pulse pipe orifices. Valves open for less than 1/10<sup>th</sup> second yet release up to 40 liters of compressed air – for a concentrated cleaning pulse that travels evenly along the full filter yet actually uses less compressed air than slower systems.

### **Proven Benefits:**

- Reduces compressed air consumption by up to 65% yet achieves a more aggressive and even 'pulse'
- High energy creates a vacuum behind the 'pulse' which pulls in extra 'free' air to assist the cleaning efficiency.
- Cleans 100% of the filter media surface in an even pulse along the full length of the Filter
- Delivers up to 3.6 times more reverse pulse cleaning energy at a lower neck velocity than conventional designs ( even pulse = less wear on filters)
- Less dust penetration through the filter bags, negligible dust emissions allowing recirculation of filtered air back to the building if needed. Filtering as fine as 1 micron ( 1/1000<sup>th</sup> of a millimeter) at up to 99.9% filter efficiency thanks to even control of 'caking'

- Reduced cleaning frequency is needed to achieve the same result therefore less wear and tear on the filter bags

**Filter bag spacing is scientifically determined** and wider than conventional collectors.

**Proven Benefits:**

- Avoids damage of adjacent filters from particle ejection during the cleaning pulse.
- Avoids 'impulse' dust loading from adjacent filters as they are cleaned -which clog conventional dust collectors

**High tech higher density Filters**

**Filter material supported by internal steel cage**

**Proven Benefits:**

- Carbon fiber impregnated 'anti-static' filter material reduce static build-up problems
- Dependable, trouble-free operation compared to conventional lighter filter materials. ULTRA-FLOW uses 550gram per square metre filter material.
- 3 -4 times increased bag filter life, 7 to 10 year bag life is not unusual
- Cages support and retain bag shape – avoiding 'collapse' during the pulse cycles

**High inlet into a larger pre-separation chamber**

**Proven Benefits:**

- Air velocity drops more dramatically than conventional systems when it enters a larger chamber. Means it loses more energy (load carrying capability) so it releases the heavier particles. This is further assisted by these particles striking the back baffle. Result is they fall readily to the collection hopper – assisted by gravity because of the high entry point.
- The remaining fine dust then circulates in a downward spiral past the filters. This downward flow is very important as upward velocity carries fine dusts up the filter lengths (away from the collector) and imbeds these fines in the filters reducing their efficiency.
- Spiral action distributes air and dust very evenly over all filter elements
- Overall these combine to promote a net down flow action of both heavier and fine particles through the dust collector.

- Optional Baffles protect filter elements from abrasive action of the dust particles where this is a particular problem.
- The entire system works with gravity utilizing principals of proven physics to assist the separation and collection process. ULTRA-FLOW works with these natural laws of physics – not fighting to overcome them as many other systems do.

### **Air pressure inside the system is lower than outside air pressure ( Negative pressure)**

#### **Proven Benefits:**

- Fine dust cannot leak from the system e.g. around the seal of the bin to the extractor is damaged: air is actually being drawn into the extractor at that point – not dust expelled out under pressure!

### **Clean air fan system (Fan is 'after' the filters)**

#### **Proven Benefits:**

- No wear or damage to Fan from contaminants passing through it on their way to the filters.
- Quieter and less power consumed

### **Additional Benefits:**

- Collector handles significantly more process air and dust load than conventional systems
- Cleans entirely on-line, no need to shut down the collector during cleaning.
- Cleaning cycle can be altered to suit different applications
- 25-35% smaller fan / blower and motor Kw required
- A 20 to 30% smaller dust collector, reduced investment.
- Significantly lower operating cost; lower power consumption, compressed air consumption, less filter changes

***ULTRA-FLOW***