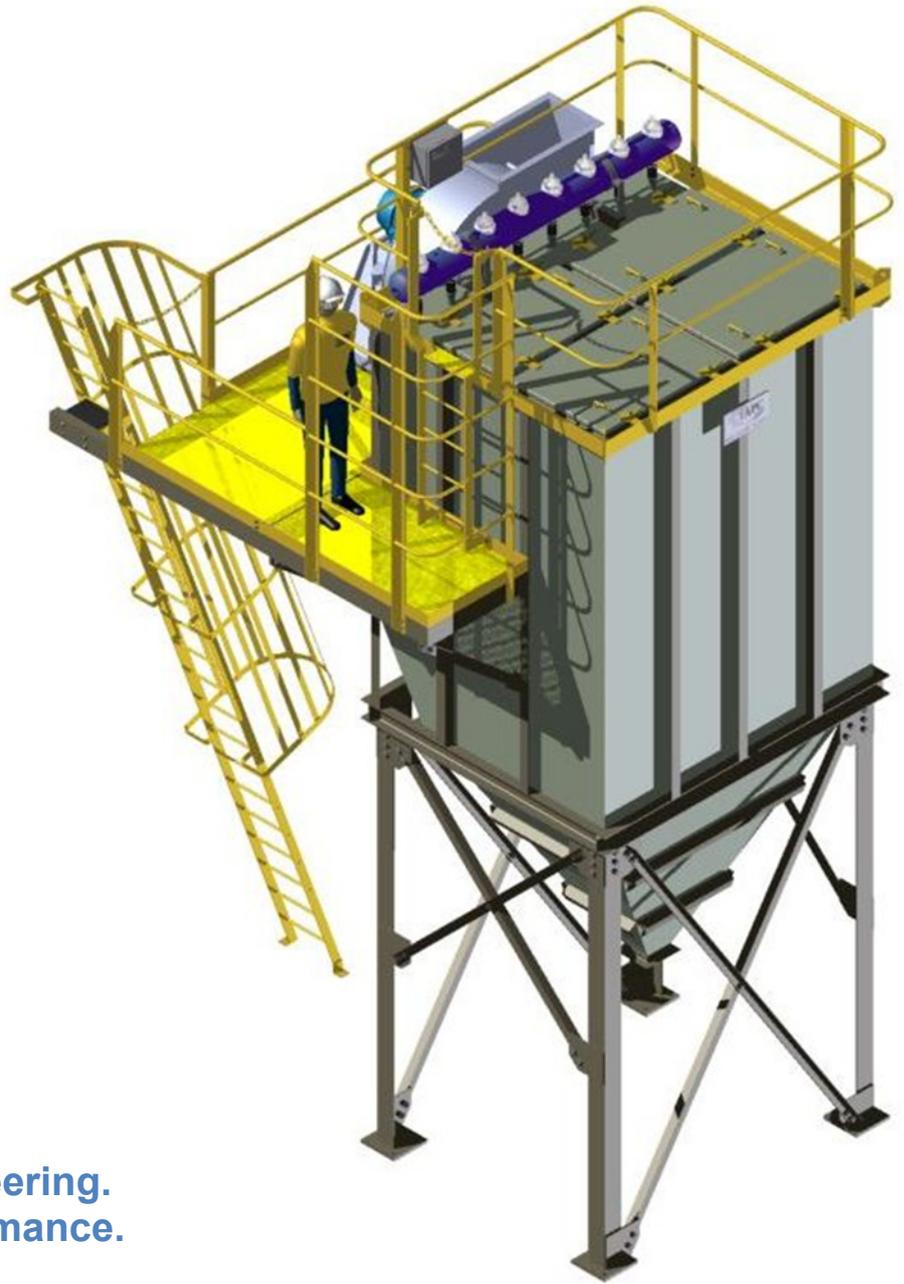


# PowerJet™ Fabric Filters



## Exceptional Engineering. Exceptional Performance.

Many years of experience have provided the basis for our PowerJet™ fabric filters, creating what we believe is the best industrial filtration system available anywhere in the world today. In designing our latest generation units we have combined state-of-the-art 3D CFD modeling with real world field testing and years of hard won experience in repairing, redesigning and rebuilding other manufacturer's bag filters. The culmination of this is a range of fabric filters that are not only economic to build, but are also uncompromising in engineering design, quality and efficiency.

When you buy a TAPC fabric filter you can be assured that you are buying the best, most robust, industrial filter on the market today.



# PowerJet™ Fabric Filter Range

## PowerJet I

### Small venting applications

- \* Small applications like silo and conveyor venting
- \* Flexible design which can be supplied as a conventional silo vent, as “insertable” unit or with a hopper.
- \* Gas flows up to 2,000 Am<sup>3</sup>/h
- \* Gas temperatures up to 140°C
- \* Small footprint, high capacity design



## PowerJet II

### Most general applications

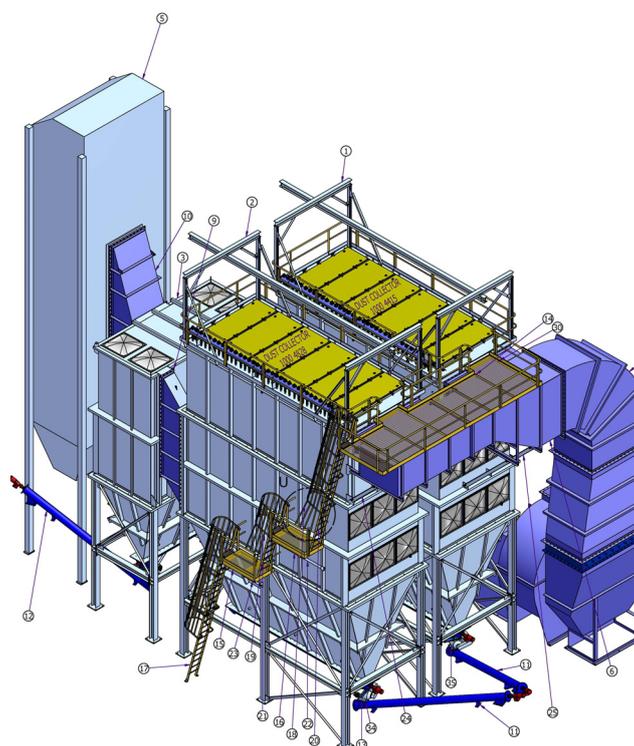
- \* Most general applications
- \* Suited to Ventilation Systems, Dryers, Transfer points etc.
- \* Gas flows from 1,000 to 20,000 Am<sup>3</sup>/h
- \* Gas temperatures up to 260°C
- \* Utilises the TAPC PowerJet™ nozzle system for enhanced pulse cleaning
- \* Compact design, readily transportable on conventional trucks
- \* Hopper entry design with Ladder Vane™ flow distributors



## PowerJet III

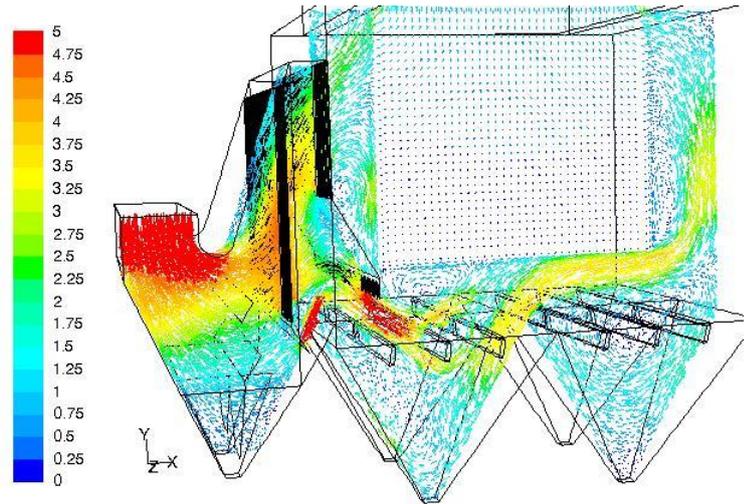
### Large, heavy applications

- \* Larger applications and heavier dust loads
- \* Suited to Power Stations, Metallurgical Process Industries, Refineries, Furnaces etc.
- \* Modular design
- \* Gas flows from 15,000 to 3,500,000 Am<sup>3</sup>/h
- \* Gas temperatures up to 260°C
- \* Utilises the TAPC PowerJet™ nozzle system for enhanced pulse cleaning
- \* Inbuilt pre-separator chamber and hybrid down-draught design for superior dust removal and flow distribution.



# Advanced Flow Pattern Design

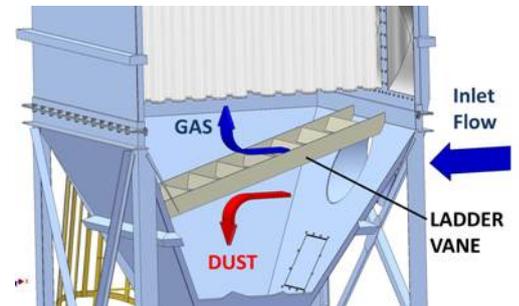
Our gas entry systems and flow patterns have been designed using the latest computer modelling. These designs allow for dust pre-separation, gas velocity reduction and even gas distribution.



## PowerJet II

The PowerJet™ II uses a hopper entry, updraught design with a ladder-vane pre-separator in the hopper.

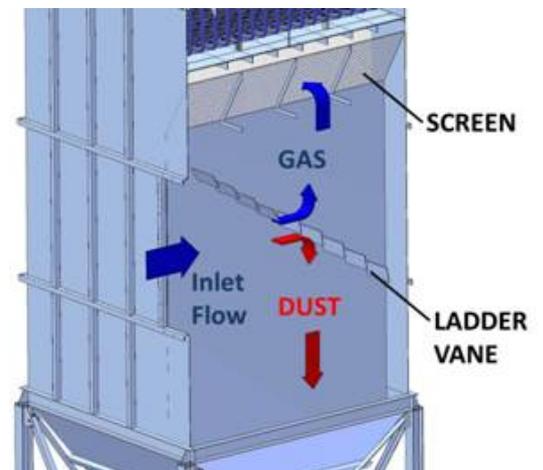
As the dirty gas enters the hopper it is met by the innovative TAPC ladder vane system that causes a rapid change in direction of the gas flow. This system partially separates the heavier dust particles due to the momentum change. At the same time the gas is slowed and evenly distributed across the bag nest. The TAPC Ladder Vane has also been retro-fitted into existing hopper entry fabric filters for improved performance.



## PowerJet III

The PowerJet™ III uses a side entry, down-draught design with a ladder-vane pre-separator in the entry chamber and a baffle screen top exit.

This innovative design adapts the ladder vane system into a side entry baffle. Dirty gases enter the baffle chamber horizontally and are immediately slowed by the expanded area. Heavier dust particles are impacted on the ladder vanes and fall into the hopper below due to a momentum change. The gas stream then passes vertically through an inclined distribution screen and enters the bag nest towards the top of the filter elements. This then creates a net downward flow of gases over the filter elements - generally referred to as a "down-draught" design. The advantage with this system is that there is no upward flow of gas to counter the dust when it is cleaned off the filter elements. This leads to better cleaning efficiency, lower pulse frequency, lower compressed air use and longer filter life.



# PowerJet™ Filtration Media

Our PowerJet™ Fabric Filters are designed to use either conventional fabric bags and cages or the more modern PulsePleats® and ThermoPleats®, which offer higher filtration areas for the same filter element size.

Since each baghouse has its own set of characteristics and system parameters, it is important to evaluate each of the following variables in order to choose a fabric best suited to the system; Temperature, Moisture level, Particulate size, Gas stream chemistry, Air-to-cloth ratio, Particulate abrasiveness, Mechanical factors, such as cleaning style, installation, etc. Our engineers can help you decide on the appropriate filter media and technology for you.

## Conventional bags and cages

**Welded ring top** fully welded to wires

By combining a fully welded system with clever design, our cages consistently prove to be the strongest and most robust on the market today.



**Centre joint** for 8m bags (optional for 5m)

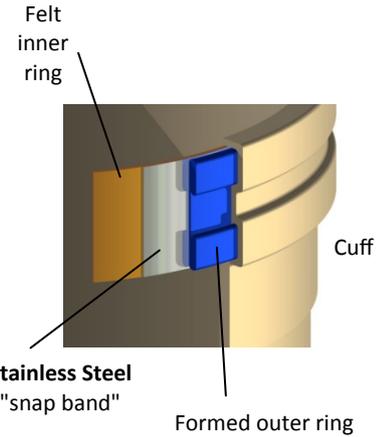
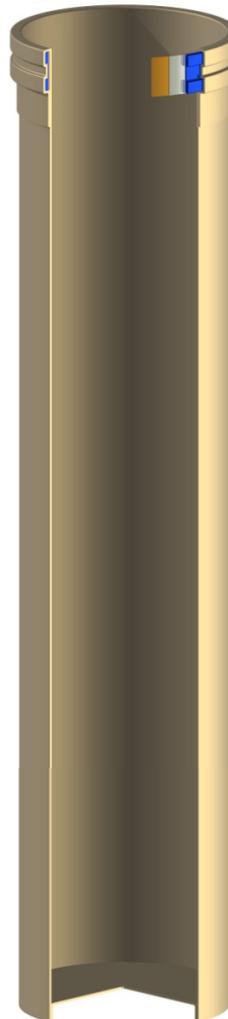
Cages can be made from various materials including black steel, galvanized steel, stainless steel, In-conel as well as various coatings.

**Rolled pan base cap** fully welded to wires

**Filter Bag Cage**



**Filter Bag**



Snap-fit into the tubesheet

For the tightest possible fit, we use laser cut tubesheets with snap cuff bags. We manufacture to 0.1mm tolerances. In combination with the highest quality fabrics, these are the best filter bags on the market

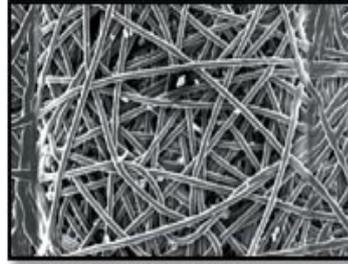
**Fully sewn disc base**

FABRIC GUIDE	Poly-propylene	Polyester	Acrylic	PPS	Aramid	Fiberglass	P84	PTFE (Teflon)
Max. Temp.	77° C	135° C	130° C	190° C	204° C	260° C	260° C	260° C
Moist Heat	Excellent	Poor	Excellent	Good	Good	Excellent	Good	Excellent
Alkalines	Excellent	Fair	Fair	Excellent	Good	Fair	Fair	Excellent
Mineral Acids	Excellent	Fair	Good	Excellent	Fair	Poor	Good	Excellent
Oxygen (> 15%)	Excellent	Excellent	Excellent	Poor	Excellent	Excellent	Excellent	Excellent
Relative Cost	\$	\$	\$\$	\$\$\$\$	\$\$\$	\$\$\$	\$\$\$\$\$\$	\$\$\$\$\$\$

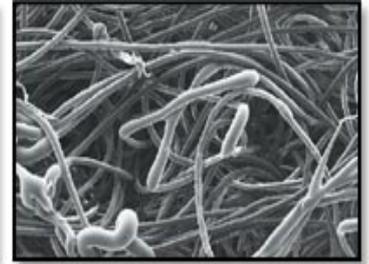
# Pleated Filter technology



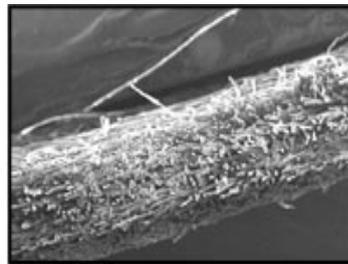
The unique PulsePleat® media is unlike traditional felt or woven fabrics in that it has a tight pore structure which resists penetration of particulate and has rigid physical properties that allow it to hold a pleat without the need for supporting backing material. The media is pleated and molded into a filter element that can increase filtration surface area 2 to 3 times compared to conventional filter bags, dramatically increasing filtration efficiency while operating at significantly lower differential pressures. Spun bond media is manufactured by layering fine denier fibers from multiple spinning heads onto a moving mat. This depth of fibers is then calendered under heat and pressure. Spun bond media can withstand temperatures up to 135°C.



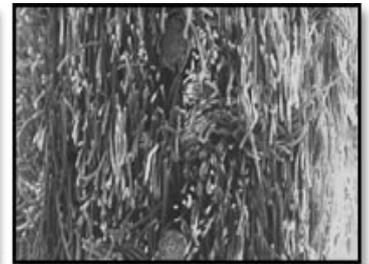
Face view of spun bond polyester (100x)



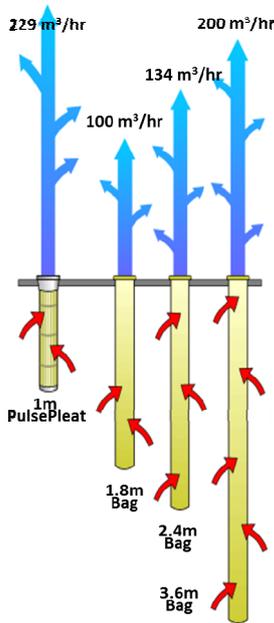
Face view of needlefelt polyester (100x)



Side view of spun bond polyester (50x)

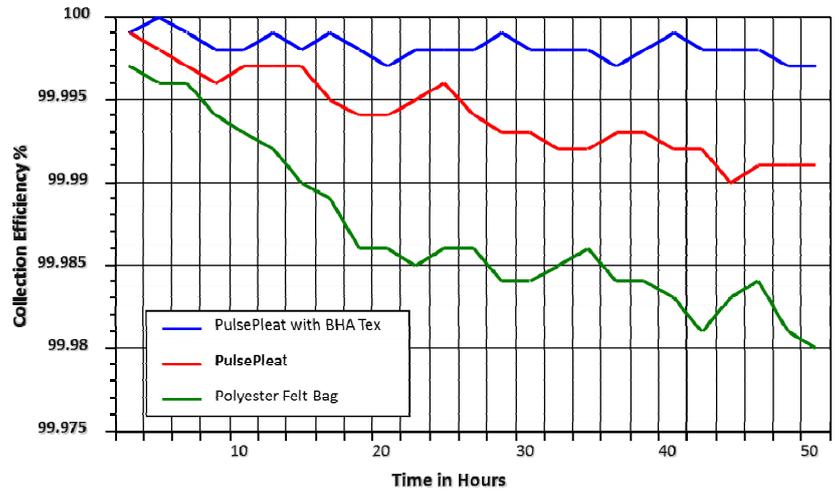


Side view of needlefelt polyester (50x)

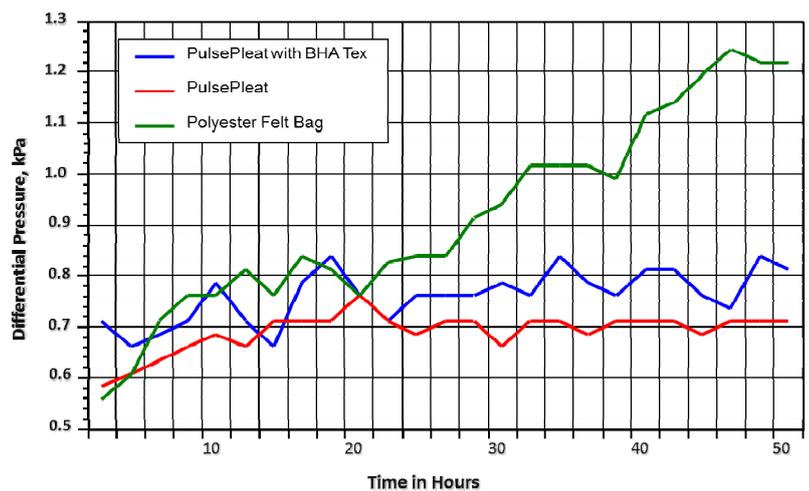


The standard 1m PulsePleat® can handle a greater air volume than a 3.6m long conventional filter bag. At the same time, it operates at a lower differential pressure and a higher filtration efficiency. No wonder the world is moving towards Pleated filter technology!

## Efficiency



## Differential Pressure

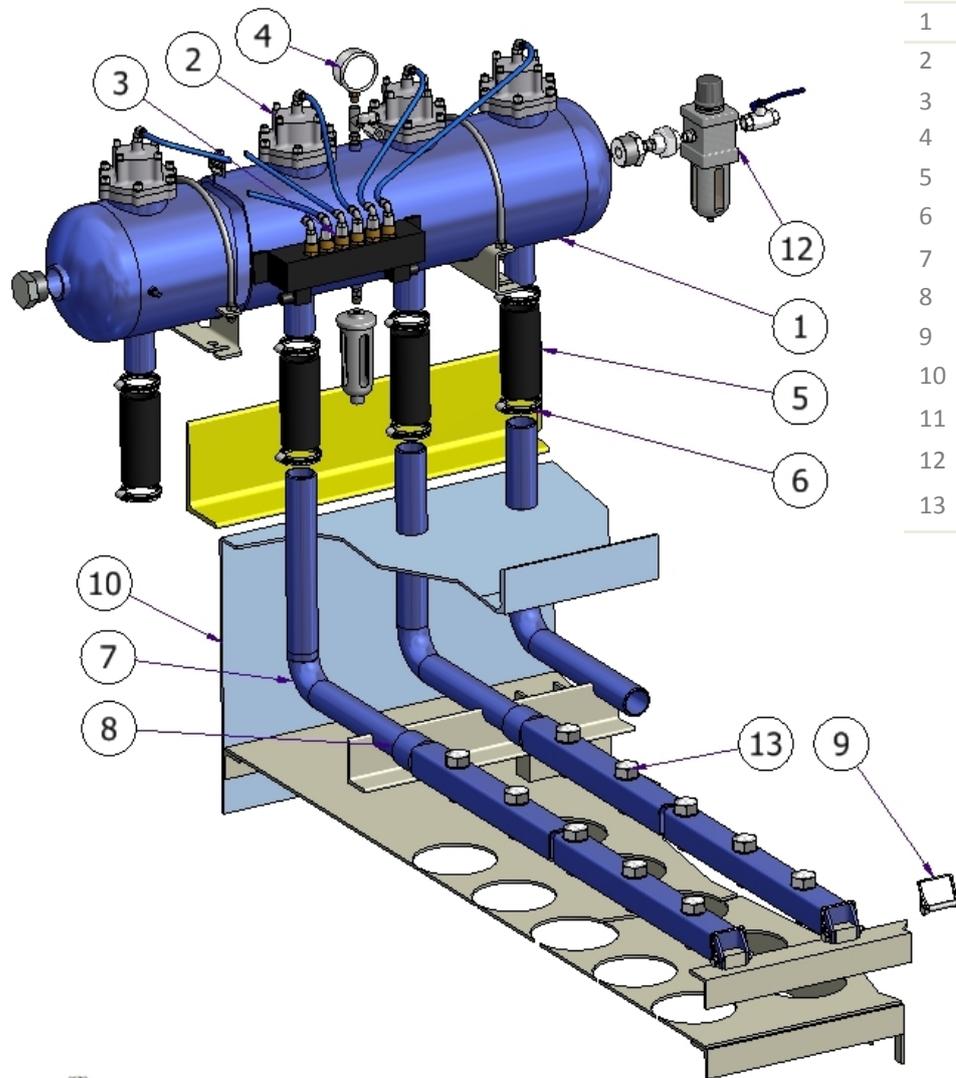


# PowerJet™ Pulse Cleaning System

The TAPC PowerJet™ pulse cleaning system most advanced compressed air cleaning system on the market today. At the heart of the system is the PowerJet Nozzle, which provides greater cleaning volume to the filter elements. The system delivers

- \* Higher Cleaning Efficiency
- \* Lower Compressed Air Requirements
- \* Lower operating pressure drops

Additionally, our system complies with all major international and Australian standards.



1	Header Tank
2	Diaphragm Valve
3	Timer
4	Pressure Gauge
5	Flexible connector
6	Clamp
7	Bent Blowtube
8	PowerJet™ Blowtube
9	Hitch Pin
10	Casing
11	Isolation valve
12	Filter/Regulator
13	PowerJet™ Nozzle

### Quick release blowtube

The PowerJet™ blowtube can be removed without tools by simply removing the hitch pin and sliding the blowtube off the other end.

### Fully submersible Diaphragm Valve



Our diaphragm valves mount directly into the header, providing a very compact arrangement with none of the inlet losses associated with conventional right angle diaphragm valves. The compact header arrangement allows us to mount all of our compressed air cleaning assembly within the handrails at the top of the fabric filter. Unlike other manufacturers, all of our equipment is accessible from within recognised access areas.

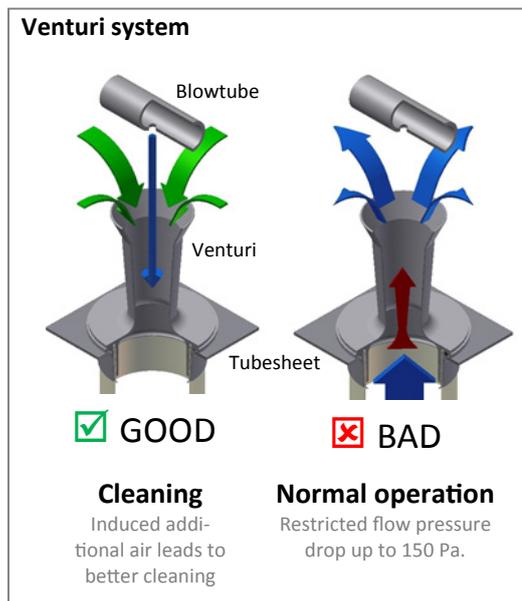
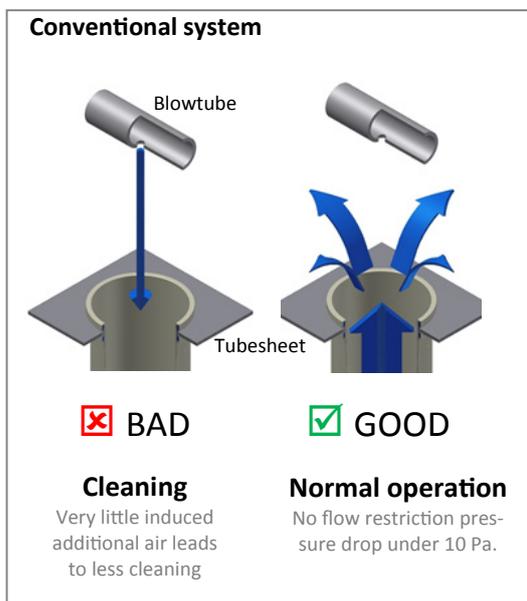
### Pulse Timer



The pulse timer is the brain of the cleaning system. We offer various levels of control from simple continuous timers to “smart” on-demand timers that monitor the filter and clean only when required.

## Why is the PowerJet™ system such an advance?

Conventional pulse cleaning systems use a blast of compressed air to clean the filter elements. In some cases this is cleaning is enhanced using a venturi, which effectively increases the amount of cleaning air that enters the filter. The problem is that the venturi adds a restriction to air flow coming through the filter during normal operation. Experimentation shows that this can be as much as 150 Pa, which adds to the power required in the system fan, and hence adds continuously to operating costs.

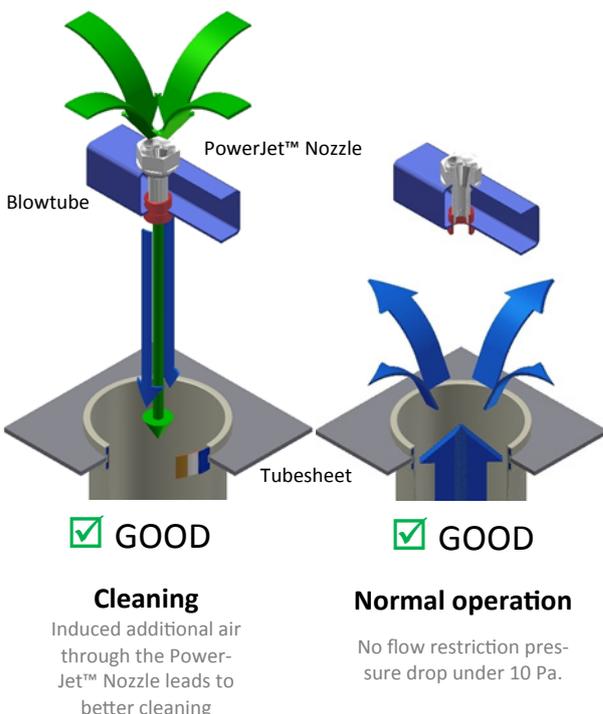


### So how can this be done better?

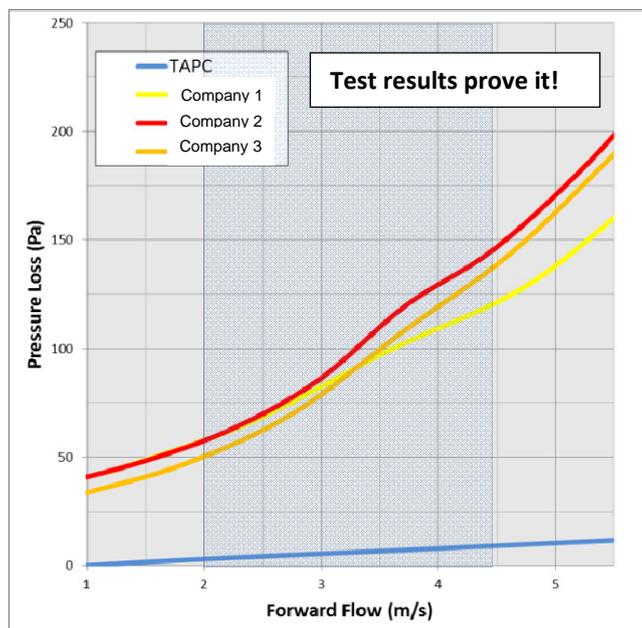
The TAPC PowerJet™ nozzle increases cleaning air flow to the filter elements, much like a venturi, but creates no restriction to air flow in normal operation.

Improved cleaning with no pressure loss problems!

### TAPC PowerJet™ system



The TAPC PowerJet™ Nozzle is a major innovation in pulse cleaning which reduces compressed air usage without the pressure loss of a venturi. It forms the heart of the most modern and technologically advanced pulse cleaning system on the market today.



# After Sales Service, Maintenance and Spare Parts



TAPC is a market leader in fabric filter maintenance and service. We operate service departments in various locations around Australia and SE Asia with experienced service technicians that can help keep your equipment working at its best. We can set up periodic maintenance plans or a simple call out service, whatever suits your needs.

We not only maintain TAPC designed and built equipment, but also all makes and types of air pollution control equipment. No matter the make or model, we can help. We stock many types of spare parts in our Wollongong warehouse. Also, if there is something that we don't have in stock, we can procure it from any one of our international partners. If you need it, we'll find it for you.

## Australia's Leading Air Pollution Control Company.



Gas Scrubbing



Fabric Filters



Electrostatic Precipitators

**Total Air Pollution Control Pty. Ltd.**

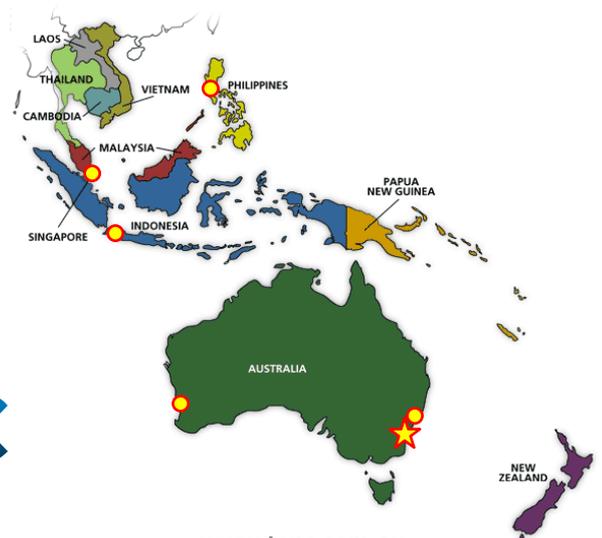
ABN 79 097 531 416

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