Cleanova
MICRONICS

PRIMAFLOW™

Pioneering Innovation in Filter Bag Technology For Demanding Industries

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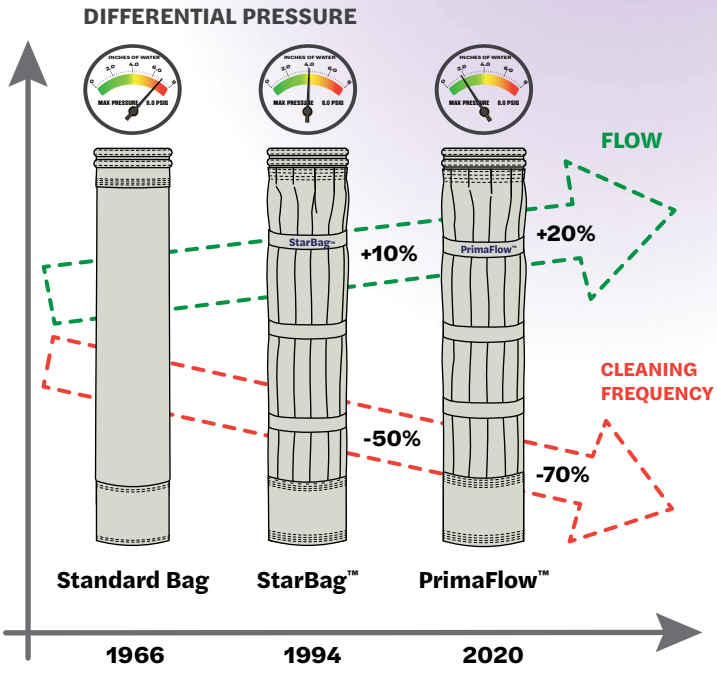
PRIMAFLOW™

PrimaFlow™ is a revolutionary combination of proprietary filter bag, filter cage, and customized filtration media, and is the next generation of Extended Surface Bags (ESBs), building on the StarBag™ legacy.

The unique Solaft® PrimaFlow™ design improves the gas inflow into the baghouse filter, and increases the internal core space, allowing the effective flow of gas along the entire length of the filter bag. This enables higher gas flow, lower differential pressure, and lower emissions, resulting in significant improvements to operations.

Key industries that benefit from our PrimaFlow™ include Aluminium, Coal-Fired Power Generation, Iron & Steel, and Cement Plants.



*Improvement percentages when compared to standard bags

1966

Standard Filter Bags
We have been improving standard bag technology since 1966.

1994

StarBag™
StarBag™ has been providing pioneering innovation in extended surface filters bags (ESBs) since 1994.

2020

PrimaFlow™
In 2020, PrimaFlow™ was introduced, taking StarBags™ to the next level for our valued customers.

THE EVOLUTION OF FILTER BAG TECHNOLOGY

We have been at the forefront of filter bag development to best meet increased production and regulatory emissions requirements for our clients.

PrimaFlow™ represents the future of filter bag technology today and highlights our continuous pursuit of excellence and pioneering innovation for a cleaner tomorrow.

PrimaFlow™ is the best alternative for quickly debottlenecking process filters that cause production limitations and it is both a sound technological and business choice.

ADVANTAGES OF PRIMAFLOW™

- Lower Differential Pressure
- Lower Emissions
- Reduced Pulse Frequency
- Improved Gas Flow
- Higher Particulate Capture
- Increased Flue Gas Capture

CASE STUDY 1
ALUMINIUM INDUSTRY, MIDDLE EAST

A Middle Eastern Aluminium smelter was not achieving its desired outcomes with standard ESB filters. Investigations by our team confirmed that there was a need to minimize the internal resistance within the filter so as to achieve the required performance.

We trialed PrimaFlow™ in one of the cells, compared it to a cell containing the existing ESBs, and were able to achieve significant performance improvements.

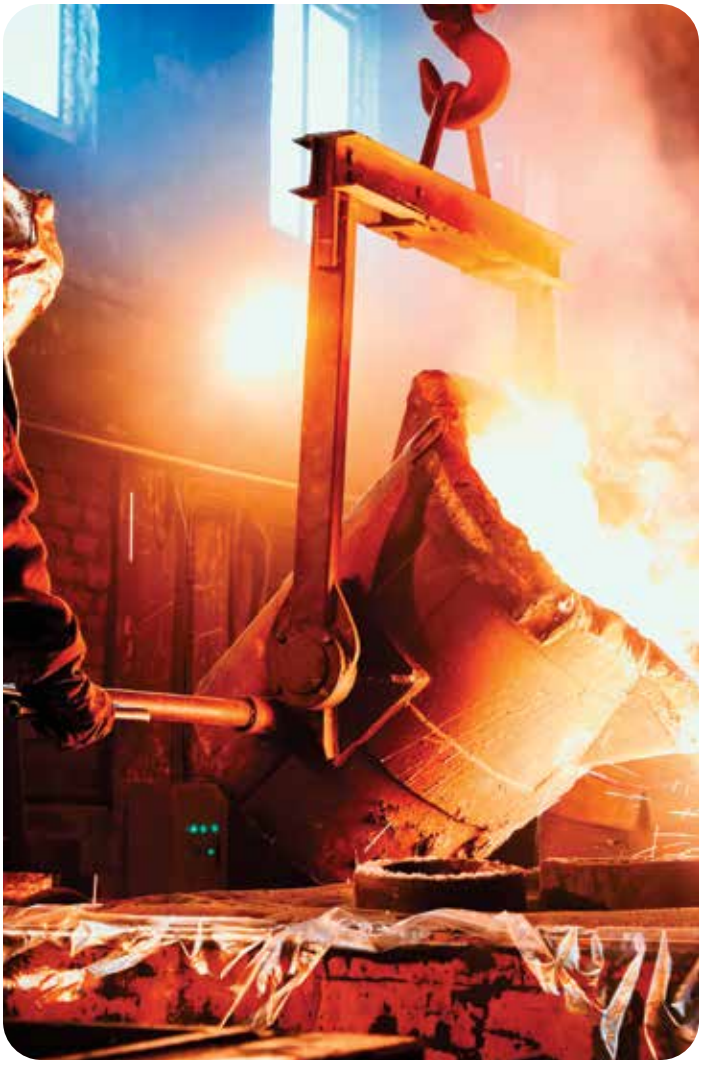
PROCESS PARAMETER	PrimaFlow™ vs. Other Design ESB Filters
Hours to pre-coat	155% higher
DP after offline cleaning	30% lower
Time to reach threshold	29% longer
Operational DP @ Max Flow	16% lower

The trial cells demonstrated that the PrimaFlow™ filters were easier to clean and had lower gas resistance, which yielded longer time to pre-coat and lower filter Differential Pressure (DP).

The Gas Treatment Center (GTC) was converted to PrimaFlow™ and the results compared to a full GTC containing existing ESB filters.

PROCESS PARAMETER	PrimaFlow™ vs. Other Design ESB Filters
Reverse pulse cleaning frequency	64% lower
Filter cell DP	10% lower

When compared to the DP of conventional round filters, PrimaFlow™ was 40% lower. Both the trial cell and the full GTC conversion demonstrated that the lower gas-flow resistance characteristics of the PrimaFlow™ system yielded measurable and significant advances in lower pressure drop and reduced cleaning frequency. Operational savings were achieved in induction fan power consumption, cleaning air usage, and longer filter bag life with respect to reduced flexural fatigue of the filter media.



BENEFITS OF PRIMAFLOW™

- Can be retrofitted without modification to existing cleaning systems and cell plates. This allows an increase in production load without the need for an expensive capital upgrade where baghouses are undersized for demand.
- Designed to ensure efficient operation with high filtration efficiency and throughput, with lower emissions
- Extended filter bag life due to less pulsing
- Lower maintenance and operational costs due to lower energy consumption and need for less intervention

CASE STUDY 2
ALUMINIUM INDUSTRY, EUROPE

A European Aluminium smelter retrofitted two GTCs with standard ESBs, with the aim of increasing the potline amperage while increasing gas flow from the pots and lowering filter DP. The project failed to meet the required targets, and the company approached us for a suitable solution. We recommended our PrimaFlow™.

A trial was conducted, and compared one cell with PrimaFlow™ to another cell containing a competitor's ESB filters.

PROCESS PARAMETER	PrimaFlow™ vs. Other Design ESB Filters
Filter DP	32% lower
Filter Cell Gas Flow	15% higher
Pulse Pressure	50% lower
Pulse Frequency	79% lower

This trial cell study demonstrated that the low gas flow resistance of the PrimaFlow™ system allowed operation at a low pulse frequency level, one previously not achieved at the smelter. The reduction in pulse air pressure and pulse cleaning frequency yielded a potential for ~75% reduction in compressed air in the GTC operations.

The PrimaFlow™ system also achieved the highest ever single cell gas flow at the aluminium smelter GTC. Overall, use of PrimaFlow™ well-exceeded the company's high expectations.

"PrimaFlow™ represents the best option in meeting regulatory emissions levels without compromising production."

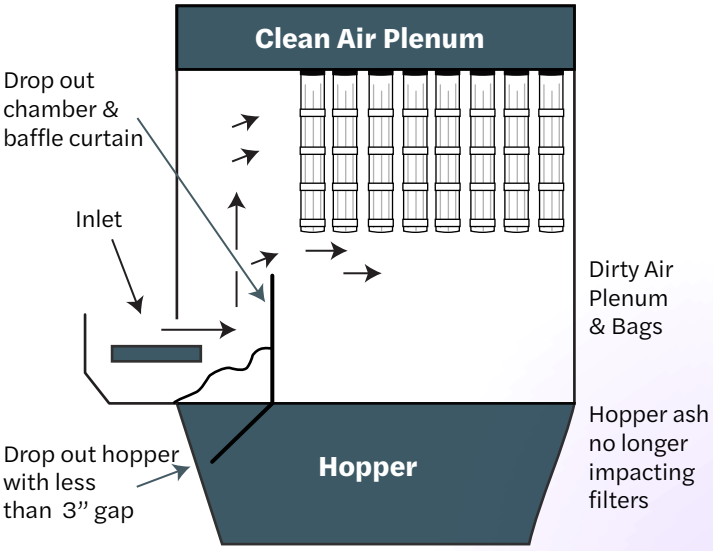
—Satisfied Customer

CASE STUDY 3
POWER GENERATION INDUSTRY, NORTH AMERICA

An Energy Station in North America was experiencing premature failure from abrasion of their filter bags, in line with the top of the baghouse inlet air baffle curtain. Abrasion was also occurring at the bottom of the bags from high velocity gas caused by high ash levels in the hopper. The abrasion problem affected 10-20% of the filter bags, with failures occurring within 2-3 weeks of installation. The method of dealing with the issue was to do frequent spot changes of failed bags to avoid breaches of emissions regulations.

The company investigated a number of options in an effort to mitigate the problems. A trial cell of PrimaFlow™ filter was installed and, after successful trial, the baghouse was fully converted. Implementation of PrimaFlow™ allowed a significant void volume under the filters to reduce gas velocity and promote ash pre-separation. Since start-up, the pulse pressure has been maintained at 50% of that of the conventional filters.

The differential pressure has remained 30% lower than with the conventional filters while the gas flow rate has been maintained equal to that of the conventional filters. There have been no unplanned corrective maintenance entries to remedy filter abrasion and emissions have been maintained below licensed limit.



With PrimaFlow™ successfully implemented, the previous abrasion problem and corrective maintenance issues after 2-3 weeks post-installation have been eliminated.

BENEFITS OF CHOOSING PRIMAFLOW™

- We are pioneers in the development of ESBs for large GTCs and scrubbing systems
- We deliver proven engineered filtration solutions for optimal performance in customers' demanding industries and applications
- We have global Industry specialists that understand our customers' business
- Technical support is on hand, when you need it

PRIMAFLOW™

Cleanova MICRONICS

Improving operating efficiencies, protecting the environment, contributing to sustainability, and ensuring a cleaner tomorrow.

We are a global leader in industrial filtration with a longstanding legacy of strong brands in Air Filtration including Micronics, NFM, SOLAFT, AFT, Filterfab, Action Filtration, CPE, UPC, and SFM. Our solutions span filter media, filter cages, a wide range of field services, in-house laboratory services, and training.

Our reputation is built on the specialized filtration expertise of our global team. We are proud of our high-quality filtration product and service operations in the USA, Canada, Brazil, the United Kingdom, Australia, China, and India. Collectively, we are committed to providing solutions that contribute to Environmental Protection and reduced emissions...today and tomorrow.

The Future of Industrial Filtration

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