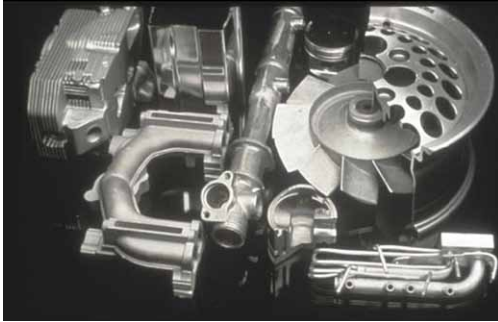


MOLTEN METAL FILTERS FOR ALUMINIUM DIECASTERS AND FOUNDRIES



The unique Pyrotek Metallics Bonded Particle Filter (BPF®) is especially useful in aluminium gravity casting (permanent mold), pressure diecasting, low-pressure, squeeze cast, and high-performance sand foundries to remove inclusions. It is used in both melting and casting furnaces where sustained use of 1–4 months per filter is typical. The

above picture shows various aluminium castings that benefit from filtration. Bonded Particle Filters are produced from high-purity silicon carbide aggregate, and feature superior strength for better handling, great durability and chemical resistance for long life, high thermal conductivity to minimize thermal gradients, greater filtration efficiency through a complex internal structure and proven cost-effectiveness.

EASY INSTALLATION

Small filters are easily handled manually. Larger gate filters are supported by clamps and spanner bars; box filters by clamps / studs and a 4-sided mounting frame. 'Feet' can be provided on box filters if desired.

Filters require relatively minimal preheat; just 400–600°F (202–312°C) for one hour. Preheat may be accomplished by placing gate filters over the sill or against a hot wall. Box filters are preheated over the dipwell or within a heated transfer ladle or other heating unit.

Filters are usually installed into the furnace with molten metal already present as rapidly as safety will allow. Priming should take place within less than one minute.

Filters require minimal maintenance. Accumulated filter cake may be carefully scraped from the filter sides to extend life.

Filter change-out requires just a few minutes and should be done on a scheduled basis commensurate with foundry experience and needs.

BONDED PARTICLE FILTER QUALITY

All raw materials, process parameters, and product manufacturing lots are subject to rigorous quality control and assurance to ensure the highest possible integrity and performance of the engineered ceramic, bonded particle filter media in its different product configurations.

ADVANTAGES

- Reduce casting scrap
- Reduce customer rejects
- Increase profits
- Increase metal fluidity during casting
- Improve the mechanical properties of castings
- Reduce hardspots and machine tool breakage
- Reduce microporosity
- Improve surface finishing operations on aluminium castings

BONDED PARTICLE FILTERS (BPF)

VERTICAL GATE FILTER (VGF)

- No capital investment or furnace modification required
- Easy application for melting and casting furnaces—does not require furnace draining
- Separates dipwell from heating chamber
- Spans any well width with single filter or multiple filter assembly
- Uses a compressible ceramic fiber paper gasket on filter perimeter
- Slots to accommodate the filter may be added during furnace rebuilds
- Normal filter life 2–3 months, minimal maintenance



METALLICS BOX FILTER (MBF)

- Designed to accommodate specific manual or auto-ladling space requirements in casting furnaces and provide point-of-pour-filtration for permanent mold or pressure diecasting
- All-filter-media construction provides full heat transfer and metal flow throughout
- Full filtering capability of entire vessel allows finer filters to be used with greater efficiency
- Especially useful when melting and pouring from a single vessel
- Supported by legs or by stud / clamped spanner bars on furnace sill
- Many sizes / shapes presently available
- Normal life capability 2–4 months depending on filter grade



FILTER PUMP (FP)

- Provides filtration in central melting or remelt furnaces
- Transfer filtered metal between furnaces
- Fill ladles without entraining remelt furnace dross
- Eliminate taphole dependency
- Increase fill rate and productivity
- Minimize superheat required to accommodate tap and transfer time lags
- Overcome barriers to gravity flow
- Prevent carryover of sludge and other re-melt debris
- Two models, 750 lb/min (320 kg/min) and 1500 lb/min (680 kg/min) maximum flow rates
- Filter life dependent on usage and overall metal cleanliness



BONDED PARTICLE FILTERS (BPF)

STALK TUBE FILTER (STF)

- Direct filtration each cycle in low pressure casting
- Significant reduction in inclusion-related scrap for cast wheels and other high performance castings
- May be attached to either cast iron or ceramic/ refractory stalk tubes using specific assembly techniques
- Many filter shapes and designs available to fit specific casting equipment and process requirements
- Full cylinder filter vessels, surrounding but completely independent of the stalk tube, may be used with excellent result and long life
- Filter life can be matched to stalk tube life if cast iron or fused silica is used. Filter can be changed without damaging higher performance ceramic stalk tubes
- Durable bonded particle filter media resists erosion during fill cycle, ensures filter integrity during its full life



CRUCIBLE BAFFLE FILTER (CBF)

- Separates pour-in section from ladling or dipout section
- Contoured filters to fit various crucible sizes (a tooling charge may be required)
- Achieves filtered product quality in casting crucibles, and when melting and casting from the same crucible if metal level and temperature are maintained relatively constant
- Useful when space constraints do not permit use of MBF
- Filter placement engineered to maximize ladling volume
- Employs compressible ceramic fiber gasket to create 'seal' and to accommodate crucible surface irregularities
- Filter held in position with fixed lugs on crucible ID
- All-media construction provides best metal flow and long filter life
- Filter useability maintained with moderate metal level draw-down, quick recovery upon refill
- Filter changeout and crucible reuse are attained with minimal effort



Pyrotek provides on-site field service assistance and training on filter installation in most instances. Descriptive manuals are also available. Each and every filter shipment contains simplified storage, handling and installation instructions. Metal quality testing assistance is available at a reasonable charge.

BPF® is a registered trademark of Pyrotek inc.

Note: The physical and chemical properties listed represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice.

Product Type: 124, 131

Commodity Code: 05004