FOUNDRY INSIGHT
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STAR MOBILE DEGASSER BOOSTS FOUNDRY AND DIECASTING OPERATIONS

STAR Degassing Systems Pyrotek

… AND NOW, ALSO MADE IN EUROPE

Pyrotek Metaullics builds a range of Rotary Degassing / Fluxing Systems for aluminium foundries and diecasters. One prominent piece of equipment is the STAR mobile degassing unit that is now also being built in Pyrotek's plant at Blansko* in the Czech Republic.

Pyrotek Metaullics STAR degassing unit, now built in Europe

In spinning-rotor degassing/fluxing systems, a metered amount of inert gas or flux is injected into the molten aluminium through the rotating graphite shaft and patented STAR rotor. This mechanism shears the inert gas into tiny bubbles and disperses them evenly throughout the melt. Unwanted hydrogen gas and non-metallic inclusions are attracted to the inert gas bubbles and rise to the surface. The flux injection allows a steady flow of flux below the metal line to promote oxide entrapment.

Advantages of degassing and fluxing.
The combined effect of gas injection and fluxing overall helps improve the quality of aluminium alloys and reduces operating costs. The procedure improves casting quality by reducing oxides and hydrogen, and aluminium loss is reduced during the dross removal process.

Oxide buildup on furnace walls is reduced and less flux is lost through furnace emissions. Overall, flux, and nitrogen or argon inert gas are used more efficiently and the process overcomes problems traditionally associated with powdered fluxes.

The STAR units include a range of special design features.

- The control panel is a compact 16 x 24 inch NEMA enclosure and a simple disconnect device is incorporated for lockout.
- Comprehensive mechanisms are incorporated for operator safety and PLC settings provide repeatable process results.
- A variable-speed drive and inert gas flow control are included.
- Standard industry components are used throughout the assembly and stainless steel hose and cable sheathing is fitted for maximum protection and neatness. The unit features either an electric or hydraulic powered lift for smooth, trouble-free operation. Its rugged construction provides a system free from vibration, shake and flexure.
- STAR degassing and fluxing models available are 1000, 2000, 2500, 3000 and 3500, each offering different combinations of operating features.
- The mobility feature available in the STAR models makes for easy transport and movement, designed with large 250 mm diameter cast iron wheels. It is also extremely stable with a 1.20 m stroke and accommodates an onboard gas cylinder.
- Quick utility connections allow fast startup in different foundry locations and an integral floor-lock prevents movement while degassing.

The flux injection option offers a range of extra benefits making for an optimally reliable system.
Reproducible and accurate flux injection is accomplished via a screw-drive feed mechanism. The 11 kg capacity system allows a 0.11–0.9 kg per cycle flux rate. This canister is designed with easy fill and drain attachments. There is no need to vacuum the material for removal from the canister.

Minimal plugging is achieved by using the correct flux, and an integrated purge gas cycle prevents shaft plugging of the shaft during operation.

** As of January 2009 the CE certificated Star units will be produced for foundry projects throughout Europe by the Technical Department and Engineering Centre at Blansko. They are fully equipped for construction and production, including mould manufacture.*