

LOW MASS CONTROL PINS COATED WITH BORON NITRIDE



RFM® control pins are a unique patented technology from Pyrotek. Traditionally, control pins are manufactured as solid rods from various materials. Unless thorough preheating is applied, the control pin can become a heat sink and sometimes lead to problems at start-up. Because the RFM control pin is manufactured as a tube, the material mass is greatly

reduced. In addition, the control pin further benefits from the unique thin wall properties offered by RFM technology.

To provide as much strength and security as possible, the RFM control pin benefits from a mid-wall reinforcement of helically wound metallic wire. This reinforcement guards against breakage or separation. The metallic wire has been tested against oxidizing atmospheres to ensure properties are retained.

To maintain consistent flow and sealing properties, the control pin is fitted with a ceramic tip. The ceramic tip offers excellent non-wetting properties and is resistant to corundum growth. The tip is manufactured to customer specifications and fixed by both adhesive and mechanical means.

RFM material is naturally non-wetting in liquid aluminium. To further enhance the non-wetting properties, the finished product is factory coated with ZYP Boron Nitride Lubriccoat-Blue® ZS.

It is possible to begin a cast with a “cold” RFM control pin, however, to prevent moisture pickup, control pins must be stored in a gas or electric storage oven set to a temperature between 150–250°C.

Cleaning is usually accomplished with soft tools or a gloved hand, simply wiping away the solidifying or solidified skull.

WHAT IS RFM?

RFM is a patented, composite based material well suited for use with liquid aluminium. Manufacturing technologies allow RFM components to be manufactured with thin walls. The components are strong and durable, and allow the aluminium processing operations to benefit from reduced mass. For detailed information about RFM products, visit www.pyrotek.info or contact a local Pyrotek Sales Engineer.

BENEFITS

- Tubular construction lowers total pin mass, reducing the chance of metal to freeze during start-up
- Integrated safety wire minimizes pin breakage/separation
- Offline preheating from 150–250°C is all that is necessary
- Integrated ceramic tip ensures repeatable flow characteristics and closure
- Material's natural non-wetting characteristics ease cleaning
- Has excellent thermal shock and thermal cycling properties
- RFM material promotes high life expectancy in comparison to traditional materials
- Available in any reasonable geometry

RFM CONTROL PINS

STORAGE AND HANDLING

- Store RFM control pins in a gas or electric storage oven set at a temperature between 150–250°C
- Avoid preheating by direct gas flame to any part of the assembly, installed or out of the spout
- If the pin must be preheated in the spout, ensure no direct flame impingement onto the RFM body. Use a “lazy flame”
- After use, recoat with boron nitride as necessary, then replace in the heated storage oven

CONTROL PIN MAINTENANCE

1. Inspect each control pin after use to ensure no crack has developed. The internal metallic wire helps prevent separation due to crack propagation.
2. Clean the pin with soft tools or a gloved hand, NOT steel tools. Aggressive abrasive cleaning can cause damage to the RFM skin.
3. Apply the boron nitride at the first sign of wear. Wear is evident when the white RFM body becomes visible under the blue boron nitride layer. Use ZYP Boron Nitride Lubriccoat-Blue ZS on RFM bodies for maximum adhesion and non-wetting properties. Apply by spray or brush. If using a brush ensure the boron nitride viscosity is correct. Several thin layers are preferable to one thick layer.

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Lubriccoat-Blue® is a registered trademark of ZYP Coatings, 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: 150

Commodity Code: 02029

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