

Stearns®**Brakes, Clutches and Electronic Components**

E-Letter January 2009

Metal Finishes

Stearns offers a number of finishes for optimized corrosion control and product appearance. The following list is an explanation of finishes commonly used at Stearns. Stearns sales and design engineers are available to work with you to select and specify the appropriate internal or external finish for the application.

**Water Based Primer**

A red-brown primer routinely applied as a single coat on cast iron surfaces at Stearns. The water based primer should be top coated for rust and corrosion protection.

**Zinc Rich Primer (Option M14)**

This green colored primer is applied to ductile iron castings as a corrosion inhibitor. This is an anti-corrosive zinc molybdate primer for use in marine and industrial environments which meets Navy specification TT-P-645B. The primer passes the 500 hour mark of an ASTM B 117 test at 3 mils thickness.

**Ferritic Nitrocarburizing (FNC) (Option M39)**

This endplate option improves wear and corrosion resistance in the disc pack surface area and is recommended in severe duty applications. The FNC process is standard on some armature actuated brake (AAB) armatures and pressure plates. The cast iron part surface may appear sooty or rusty (oxidized) in appearance as a result of the FNC process. The part surface absorbs nitrogen and carbon during a 90 minute 580°C process which is followed by a quench.

**Zinc Electroplating**

Zinc electroplate is commonly used on select magnet bodies. A thin coating of zinc, typically around 5-10 microns and has a bright clear coat finish. The zinc electroplate is RoHS compliant. An optional top coat sealer further improves corrosion protection to over 400 hours before red rust appears as tested according to the ASTM B117 standard.

**Electroless Nickel (EN)**

EN finish is an option for severe duty applications with demanding corrosion resistance requirements. The finish may be used on internal brake parts or applied externally. This is an optional plating finish applied for corrosion control and improved wear properties. The hard finish is resistant to galling and pitting. The finish is rated at over 300 hours of salt spray testing. The EN finish is RoHS compliant.



Top Coat Paint

(Option M14B external paint, M14E BISCC white)

Stearns offers a range of enamel and epoxy finishes to meet a variety of specifications including chemical resistance, corrosion control, chip resistance and appearance. A specification can be reviewed on request or a general top coat finish selected as an option.



Autophoretic Epoxy Paint

This smooth finish is used on select magnet bodies. The part is dipped in an acidic diluted paint solution which etches and applies the paint. This finish is a primer for other top coats. The process requires a large volume of identical parts and is currently an OEM option on select brake parts.



Anodize & Impregnate Seal of Aluminum

This optional external finish is the result of an electrically charged chemical bath. The surface oxidizes resulting in a hard corrosion resistant coating. Stearns resin impregnates the casting for IP 54 and IP 56 ratings. An additional optional seal coat expands the weather resistance to 330 hours of surface protection.



Prior e-letter tech sheets are posted on the Stearns web site: www.stearns.rexnord.com

Stearns®: Reliable brakes through design, manufacture and support.