

E-Letter February 2008

## Marine, Maritime & Severe Duty Brakes

Stearns offers a range of material and construction options to adapt catalog brakes to various environments and applications.

### IEEE 45: A Guide to Electrical Installations on Shipboard

The IEEE 45 standard regulates motor temperature rise, insulation, electrical tests, material and construction. The standard is less specific with brakes. Brake corrosion resistance is met by a gasketed enclosure. Stearns recommends two additional solenoid style brake (SAB) modifications:

- Class B and class H coils are both acceptable. The class H insulation coil has a robust encapsulated construction.
- Brass plates in the friction disc pack if the brake is exposed to damp environments.

Brakes are name-plated IEEE 45 at the customer's request.



The DC armature actuated brake (AAB) is IEEE 45 compliant "below deck", the 350 and 360 series have thick wall cast covers for above deck use.

*Shown: Below-deck mooring winch with Stearns 1-082-600 brake mounted opposite the motor drive end.*

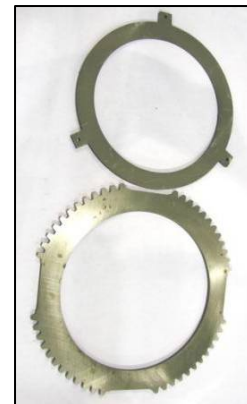
### Marine and Maritime Duty:

The term Marine Duty describes a potentially wet and corrosive environment. The term Maritime describes a Marine brake in a ductile iron enclosure. Both Marine and Maritime construction meet the IEEE 45 requirements.

The standard Marine duty brake is a NEMA 4, IP 54 or IP 56 modification of a standard catalog brake. Brass is used in the disc pack of the solenoid style multi-disc brakes.

The standard Maritime duty Stearns spring set brake has a ductile iron enclosure. The standard solenoid style multi-disc brake has brass in the disc pack and an encapsulated construction solenoid coil.

Depending on the end application or environment, Marine and Maritime specifications should consider additional modifications.



*Shown: brass 1-081 & 1-082 stationary rings used in marine, maritime or as an option in catalog construction brakes.*

### Additional Severe Duty Options:

Both the Marine and ductile iron Maritime brakes construction can be expanded to include options that best fit the application. A partial list is found at: [http://www.stearns.rexnord.com/pdf/cat\\_200/47-56.pdf](http://www.stearns.rexnord.com/pdf/cat_200/47-56.pdf)  
As examples:

- A space heater controls condensation inside the brake enclosure which results anytime the dew point is high or as a hot brake cools when not in use.
- The working area inside a brake endplate can be surface treated to create a hardened surface for corrosion resistance.
- A side release, with o-ring, is an IP improvement over the standard pull release.
- A full side release eliminates any residual disc drag and is recommended for quay side cranes, portal cranes, rail cars and similar applications where the motor-brake will run at rpm while the brake is not powered.



*Shown: 1-082 series brake with space heater, ductile iron support plate with (green) primer, status switch and hardened corrosion control finish (black edge).*

The IP rating is also affected by the mount surface. Depending on fan mount design, water may feed into a brake through the mounting bolts, keyway and close shaft fit. A brake directly mounted to a gasketed motor C-face has a protected shaft and keyway opening.

#### **American Bureau of Shipping:**

Stearns was audited by ABS and placed on the list of approved products in August of 2003. The Stearns brakes listing is on the ABS web site at:  
<http://www.eagle.org/typeapproval/contents-productsearch.html>

#### **Stainless Steel 56TC & 145TC Brakes:**

Stearns has introduced a cast stainless steel spring set brake in a 56TC – 145TC NEMA frame, available as a coupler style double C-face or a close fit C-face mount design. Consider the stainless enclosure for chemical duty, bridges, dam lift gates and other similar demanding severe duty applications. Details, part number and drawings for the coupler style are available on sheet 8-178-000-29. The close motor mount is detailed on page 13 of the catalog, and online at:  
[http://www.stearns.rexnord.com/pdf/cat\\_200/10-15.pdf](http://www.stearns.rexnord.com/pdf/cat_200/10-15.pdf)



A revised Marine, Maritime, Navy Brochure, 8-178-000-24, will be available in March.

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The e-letter is available in a Microsoft word format; request by return e-mail. Prior topics have included explanations of: What is a C-face, solenoid coils, internal encoders, identification of unlabeled brakes and parts and the Super-Mod clutch brake. Your suggestions and comments are encouraged, your own stories, pictures and experiences most welcome.

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

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