

The following information is for 2.00" thick epoxy resin electrodes when used with a 1/4" thick steel coverplate.

ELECTRODE MOUNTING BOLTS

The bolts FORTÉ has normally supplied for 30 years are hex head cap screws, 18-8 stainless steel, 1/2-13 x 3-1/2", partially threaded with a Class 2A thread fit.

Minimum Rockwell hardness is B70.

Minimum tensile strength is 70,000 psi.

They can be mildly magnetic.

Corrosion resistance is rated excellent.

316L can also be used. Same ratings with even better corrosion resistance.

FORTÉ does not have any application notes from the engineer who originally specified their use, but the main reason the SS bolts were selected was to minimize rust and corrosion. With the amount of hydraulic fluid that leaks from most bale presses, rust and corrosion is not a real problem in the majority of mills.

At many locations our customers have used alloy steel screws in place of the standard SS 18-8 screws. These alloy screws have much higher Rockwell hardness and tensile strength ratings, whether they are the zinc yellow-chromate plated variety or the black-oxide finished alloy steel.

For example:

Grade 5 alloy steel screws are rated 120,000 psi with a hardness of C25-C34 ("C" ratings better than "B"),

Grade 8 alloy steel screws are rated 150,000 psi with a hardness of C33-C39,

Grade 9 alloy steel screws (L9 screws) are rated 180,000 psi with a hardness of C38-C42.

One drawback of using the harder screws is that if they do break off, they are much harder to drill out.

TORQUE FOR MOUNTING BOLTS

The recommended torque used to tighten the mounting screws is usually in the lower range of 20 to 40 ft-lbs.

The key is not to tighten them down so that they compress and crack the insulating bushings (FORTÉ part # 56-1265-02) that are used to isolate the steel coverplate from the grounded press.

LOOSE SCREWS

We do not normally recommend using liquid thread lock of any type on the mounting bolts, but leave it up to the discretion of the mill wrights as to whether or not it should be applied. The use of thread lock does not affect the FORTÉ measurement.

The mounting bolts should be checked monthly or at least quarterly for tightness.

Make sure that the mounting bolt holes are tapped to a sufficient depth and that the mounting bolts are not "bottoming out".

If corrosion and rust is not an issue on your press, changing from the standard SS 18-8 flat washer to a thicker, hardened alloy steel flat washer can help prevent the mounting bolts from loosening up. The SS washers have a tendency to "dish" when tightened down on the bushing. The hardened washers stay flat. Make sure that the hardened washer that is selected has an outside diameter **less** than the outside diameter of the FORTÉ insulating bushing.

ANNUAL MAINTENANCE

Once a year, we also recommend that the entire electrode & coverplate assembly be lowered onto a bale and the mounting bolts removed.

Disconnect the FORTÉ coax cable from the electrode and the bleeder resistor leads from the press platen and coverplate.

Raise the press platen up and off of the electrode.

Use a mild degreaser to clean all surfaces of the electrode, coverplate and press platen.

Clean the mounting holes for the electrode bolts.

See PDF #85-1021.