**Upgrade Vintage Brass Steam with Resistance Soldering**

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Does your early brass model feature crude detail such as turnings, stampings, or coinings – or lack important details? Does your brass USRA steamer or diesel need road-specific details? If so, resistance soldering offers a simple and fun (yes, this type of soldering is fun!) pathway to improve your brass models to prototype modeling standards.

Resistance soldering involves passing a strong controlled electrical current through a joint to instantaneously heat it above the melting point of solder. A primary advantage of resistance soldering is the ability to achieve a strong joint without melting adjacent joints.

A resistance soldering unit consists of a power supply (200W for HO), a carbon-tipped probe, and a ground; soldering tweezers are sometimes handy in place of the probe and ground. Acid flux and small-diameter solder (e.g. .031”) works well with resistance soldering. RSU’s are available from P-B-L (P-B-L.com) and MicroMark, or can be home-built following on-line instructions.

A vintage brass steam locomotive is often an upgrade candidate. Ideally, your choice will be a locomotive which is already dimensionally accurate, “looks right,” is solidly assembled, and runs well. A good photo from your era of each side of the specific locomotive number that you are modeling is a big help in getting things right; the more photos the better.

A strong variety of brass parts is offered by Cal-Scale and Cary (both available at bowsertrains.com), and Precision Scale (precisionscaleco.com). Brass raw materials such as sheet stock, safety tread, bar stock, and wire can be found at Precision Scale, K&S, and Detail Associates.

Resistance Soldering Basics – Be sure your joint is clean. Select a power level on the power supply; start low, increase if not enough. Clamp model in grounded vise. Pre-tin the part and the substrate (I often use a conventional soldering gun for this). Apply acid flux to the joint. With one hand (protect fingers) or pliers, hold the part firmly against the substrate, with the other hand hold the probe against the part, and depress the foot pedal a couple of seconds to apply the current; do not move the part or the probe while the pedal is depressed. Click - - - Click, the joint is soldered; the joint will cool almost immediately. Remove excess solder as needed with NoClean mesh. After each session, wash the acid flux from the model with soap and water to prevent joint corrosion. Note – all of this is covered in a thorough and informative how-to DVD, available from P-B-L.

Bonus Tip References:

“Stripemaster,” *Model Railroader*, 3/02

“Painting Trim with Decals,” *Model Railroader*, 6/04