

Solving slug pull back problems on punch presses

With the emphasis today on productivity, it becomes increasingly important to reduce the amount of downtime in the production setting. This is particularly true with machines that automatically perform repetitive functions, such as conventional and numerically controlled punch presses.

A universal problem that is experienced in punch press operations is that of slugs being pulled up from underneath the panel or sheet that is being punched. As the machines operate faster in strokes per minute, this problem is accentuated.

Focusing on N.C. equipment, some manufacturers of this equipment advise their customers to use negative clearance die bushings to trap the slugs and keep them from coming back up. While this approach stops slug pull back, it creates another difficulty. As the dies get dull, greater pressure is required to push the slugs through. This can increase the load on the machine, and potentially cause punch and die breakage on square and rectangular shapes.

Basler Electric of Highland, Illinois recently purchased a C.N.C. turret punch press. This press was utilizing a cluster punch with six 1/4 inch punches on 3/8 inch staggered centers to produce a panel.

This cluster punch pulled 6 slugs on the first blank, and 13 slugs on the second blank. A Rocklinizer was used to deposit tungsten carbide inside the die bushing holes, which stopped the slug pull back.

This punching operation required 93 hits to finish the part, thereby getting rid of 558 slugs with none coming back through the die. The Rocklinized die ran 118 additional blanks for a total of 19,000 hits without pulling a slug, reports Basler Electric. At this time, the punch and die continued to show no wear.

■ Applying the Carbide Deposit

The Rocklinizer line of equipment is manufactured by Rocklin Manufacturing Company in Sioux City, Iowa. It electronically applies tungsten carbide and/or titanium carbide to metal surfaces by means of a vibrating sparking electrode connected to the power source.

The equipment has the capability of controlling the thickness of carbide deposit in .0001 inch increments. Three models (models 169, 312, and 314,) provide impregnation and build-up of .001 inch, .002 inch, and .004 inch respectively. Tungsten carbide electrodes are applied to high

speed steel surfaces to prolong useful life and reduce wear. The titanium carbide electrodes are used to surface seal carbides to prevent chipping and have been particularly successful on carbide lamination dies.

■ Advantages of the System

The electrode material is deposited by some users on new punches and dies to protect them from wear.

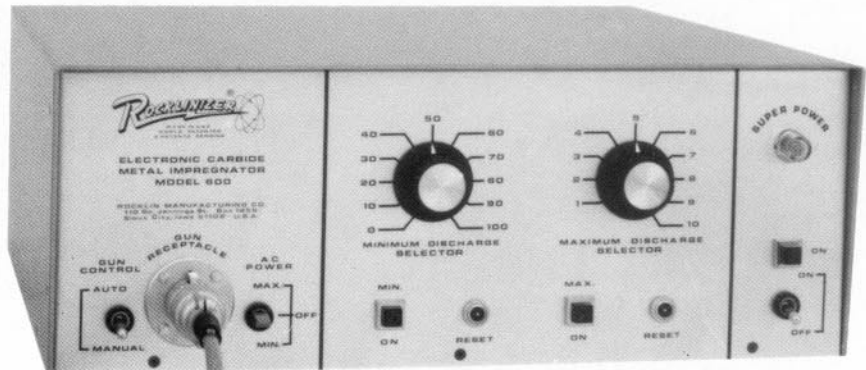
Worn or undersized punches and dies can be reclaimed by applying Rocklinizing in controlled increments of deposit as necessary to restore desired tolerances for reuse of the punches and dies. Cutting clearance allowance and component alignment can be taken into consideration when selecting the proper amount of electrode deposit desired.

The equipment is portable, thus allowing wear prevention and maintenance to be performed at the workplace.

The end result of this surface treatment is to increase productivity and reduce the costs of punching, including the cost of perishable punches, dies, and accessories, reports the manufacturer.

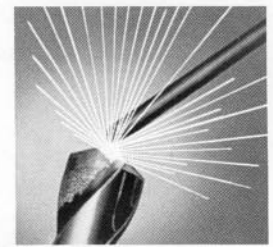


The Rocklinizer deposits tungsten carbide and/or titanium carbide to metal surfaces.



MODEL 600 ELECTRONIC CHARGE GENERATOR
With Automatic Gun Triggering & Super Power

ROCKLINIZER®



ELECTRONIC CARBIDE METAL IMPREGNATOR APPLIES A HARD AND WEAR RESISTANT SURFACE



MODEL 600 ROCKLINIZER

The **ROCKLINIZER** electronically impregnates and deposits wear resistant material both underneath and on top of metal surfaces. Unlike welding or metal spraying, no appreciable heat is generated; and the electrode material will not separate or flake off the workpiece.

After Rocklinizing no heat treating, grinding or other surface treatment is necessary.

The end result of this surface treatment is to increase productivity and reduce costs. When the tools and dies remain in operation without replacement due to wear, there will be less: machine downtime, operator idle time, and the expense of new or resharpened tools and dies. These savings justify the purchase of the **ROCKLINIZER**.

**MODEL 500
ROCKLINIZER**



The **ROCKLINIZER** Beamed Thunderbolt Gun is automatically triggered when the electrode is placed in contact with the workpiece, or manually triggered by the operator.

TYPES OF ELECTRODES

Tungsten Carbide is applied to high speed steel and other metal surfaces to prolong useful life and reduce wear.

Titanium Carbide alleviates structural drawbacks of carbide tools and inserts. This seals the compressed carbide and binder particles for a homogeneous and longer lasting surface.

Rockhard Electrodes build up materials, reclaim undersized tools by restoring tolerances, provide gripping on collets, and maintain dimensions on bearings, shafts, and other metal surfaces.

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FOR DEMONSTRATION OR LITERATURE

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