

To Plate or To Weld?

Characteristic	Plating	Welding
Surface finish	Smooth	Rough
Thickness possible	< 0.001" up to .050"+	> 0.010
Thickness uniformity	High (a few 0.001")	Low
How fast is it?	~0.010"/day	much faster
Heat exposure	<450 Deg.F	>1000 Deg.F
Warpage of adjacent areas	none	significant
Masking accuracy	~ 1/16"	N/A
Can repair threads and ID's?	Yes	No
Limitations	Narrow and deep features	Thin substrates
	Key:	Best Method

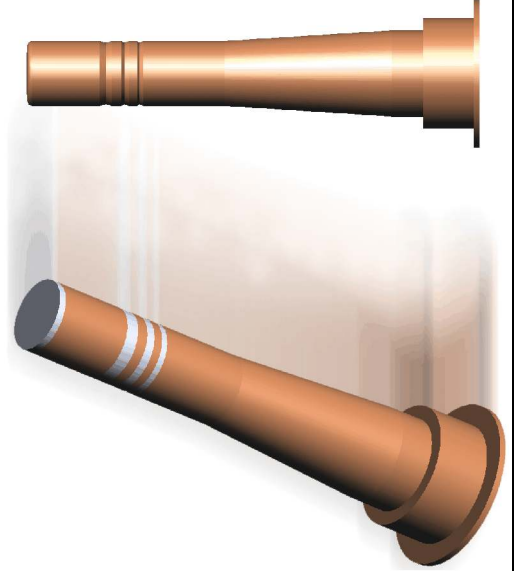
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Selective Electroplating for Mold Repair

Application Guide



Service With Your Needs In Mind

**Taking the Stress out of
Electroforming**

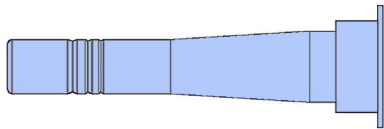
You have just been informed that your mold is no longer producing good parts because a core has worn out of spec. Having a new core made would take too long and cost too much, and welding the core may cause it to warp. What do you do?

**Don't Scrap It,
Don't Weld It,
Repair It!**

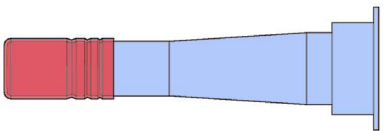
**With Selectively Electroplated
NiColoy™**

When your mold components get worn, damaged, or mis-machined, selectively electroplating a **tightly adherent** layer of stress-free, machinable and weldable **NiColoy™** can give back the material you need to **repair** your part.

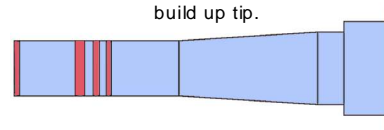
How The Repair Process Works



Mold Core with scoring and an undersized tip.



Core is Electroplated with NiColoy™ to fill scoring and build up tip.



Core can now be remachined to specification.

Materials That Can Be Plated

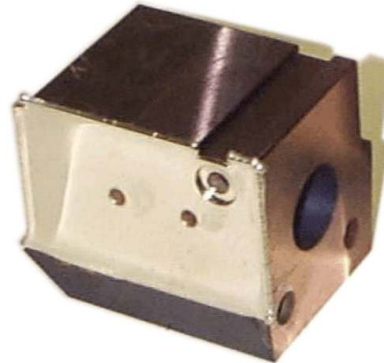
- Tool Steels: H13, S7, P20, many others
- Stainless Steel: 300 and 400 series
- Brass, Copper, Copper Alloys (Beryllium Cu) Nickel, NiColoy™
- EDM'd surfaces if they are stoned prior to plating

Materials That Cannot Be Plated

- Aluminum
- Pre-existing coatings (TiN, Cr, etc) must be stripped prior to plating.

Will The Plating Stick? Yes!

NiCoForm has developed plating cycles specifically for adhesion to mold materials. Thousands of mold components have been plated and are still in use today. Adhesion is guaranteed, or the part is reworked for free.



Repaired Mold Block

NiColoy™ Compared To Mold Materials

Hardness - up to 50 HR_C as plated

Temperature Stability - up to 700 °F

Corrosion Resistance - better than S.S.

Thermal Conductivity - higher than tool steels

NiColoy™ Can Be Machined and Joined By

- | | |
|-----------------|-----------------|
| • Grinding | • Welding |
| • Milling | • Brazing |
| • Turning | • Soldering |
| • EDM Machining | • Epoxy Bonding |
| • Drilling | • Buffing |
| • Tapping | • Polishing |

Additional Benefits of NiColoy™ Plating

- Mold components can be **quickly** rebuilt at a fraction of the cost of new parts.
- Unlike welding, electroplating is carried out at a low temperature **eliminating heat-induced distortions** and loss of strength.
- **Internal surfaces** and **threads** can be uniformly built up.
- NiColoy™ coatings have **improved wear** and **release** properties often eliminating the need for a release agent during molding
- Improve the corrosion and wear resistance of copper alloys, brass, P 20 and other non-hardenable metals.
- Improve the corrosion and wear resistance of 420 stainless steel components when molding highly corrosive plastics such as CPVC
- From **0.0001"** up to **0.050"**, the thickness of our plating is accurately controlled.

We Guarantee

Fast and Courteous Service
Full Attention To Your Needs
Quick Turnarounds
Competitive Pricing

**Call today and speak with an engineer, or
download an RFQ Form from our web site!**

For additional information please:

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