



5th Floor News

A periodic update on company happenings, new products and developments at NiCoForm, Inc.
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Taking the Stress out of Electroforming

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Integral Hubs Improve Tipping Die Usability

NiColoy™ Catheter Tip-Forming Dies have become a steadily growing product line for NiCoForm. Since 1999, more than 30 catheter manufacturers have ordered our dies. They offer outstanding surface finish and wear characteristics, versatility and convenience of application, reduced manufacturing costs and shortened cycle times. NiColoy™ combines high hardness and heat transfer characteristics with excellent durability, toughness and crack resistance. In an ongoing



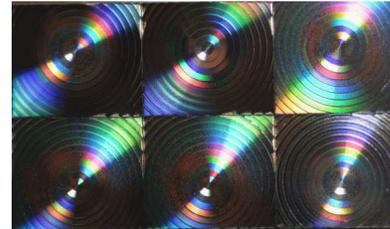
effort to offer our customers improved product characteristics, we have developed tipping dies with hubs permanently electroformed to the die. This design, as seen in the accompanying photo, eliminates the need for additional soldering at the users site - the mold is ready

for service as delivered. Available in open and closed-end, olive tip, single and multiple lumen configurations, with permanently mounted or removable stainless steel wire mandrels, NiColoy™ tipping dies offer you a competitive advantage. To learn more about electroformed tipping dies, visit www.nicoform.com/catheter.shtml

Optical Electroforms by NiCoForm

A poster presentation, 'Electroforming of Optical Tooling in High-Strength Ni-Co Alloy', (paper # CA05-502) by Berl Stein, NiCoForm's President will be on display at OPTO-Canada in Ottawa on May 9, 2002. It covers applications of NiColoy™ in optics and includes sample electroforms fabricated for various projects at NiCoForm. Optics is traditionally one of the most attractive applications of electroforming. Some fine optical patterns can only be generated by very expensive mechanical (diamond turning) or optical (photolithography, laser writing, etc.) techniques. Moreover, they can only be created in soft materials such as photoresist or copper (as in the accompanying photo) which can not be used for molding plastic lenses. Electroforming provides a one-

step transition from the soft master (original) to a hard and wear resistant NiColoy™ mold insert. This is accomplished by depositing a layer of NiColoy™ onto the metalized master surface and then separating the replica from the substrate. Over the years, optical NiColoy™ electroforms produced by



NiColoy replica of a Fresnel lens array reproduced from a copper master

NiCoForm have included spherical, aspheric and Fresnel lenses, diffraction gratings, submicroscopic moth-eye (antireflective) and microscopic cube-corner (retroreflective) geometries and others. The combination of low internal stress and high hardness (45-50 R_c) makes NiColoy™ uniquely suitable for high volume optical molding applications. The proprietary alloy produces mold inserts capable of withstanding two to three times the number of cycles that traditional nickel electroforms can withstand. To download a summary of Berl's presentation, go to <http://www.nicoform.com/OPTOCanada2002SummaryStein.pdf>

The Anatomy of A Mold Repair

As many of our customers know, repairing a mold component by selective NiCoColoy™ plating is not a trivial undertaking. The most tedious and time-consuming part



of this effort is masking. Because plating is an electrochemical process, deposition takes place only on conductive surfaces. To prevent plating from occurring on the portions of the mold we don't want to plate, a layer of non-conductive substance (maskant) must be precisely applied to the part. This operation assures that the post-plating machining time will be minimized. In many instances, the masking is done in several steps - first a liquid maskant is used to mask the fine features of the mold block, then tape may be applied over larger surfaces and, finally, a thick layer of a heavier substance is implemented to encapsulate the

entire part. According to Steve Bartz, Tooling Manager of Alliance Precision Plastics, (Rochester, NY), mold repair by plating can save a lot of time in comparison to building a replacement part from scratch. He also noted that when a complicated mold component is concerned, plating can save 50 - 80% of the cost of a replacement part in addition to the tremendous time savings. An average repair job takes just 2-3 days and some rush parts have been turned around in one day. Once the part is masked, it will be mounted to a plating fixture, taken through a number of cleaning and etching steps and be immersed in the electroforming tank where a layer of hard and wear resistant NiCoColoy™ is deposited to the



required thickness. Accurate controllers maintain the desired current per computer printouts. When the cycle is over, the part is

tanked out, rinsed and the maskant removed. A heat treating cycle follows and the part, better than new, is returned to the molder.

Expanding NiCoForm

A new addition to the NiCoForm team came on board in April. Tammy Henry, a recent Rochester Business Institute graduate, will take over Office Manager and accounting duties for the departing Kerri Horton. Kerri will be sorely missed, but her family interests come first.



The electroforming area has received a number of new tanks allowing us to process parts as large as 20x30".

With the recent acquisition of a Bridgeport mill and an EMCO lathe, NiCoForm has bolstered its machining capabilities and will be looking to add to its team a qualified machinist willing to learn electroforming and do some of both. Please contact us if you can refer anyone with the right personality and skills.

How to Reach Us

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On Foot: See map on the right

