



I S O 9 0 0 1 R E G I S T E R E D

C L E V E L A N D B L A C K O X I D E

Case History – Hardware Industry

Product: Bionic Wrench™ Pliers

Customer: Penn United/Loggerhead Tool

Features:

- The black color is aesthetically appealing.
- Black Oxide is an industrial selling point versus simply a coating.

Advantages:

- Black Oxide will not be damaged by the mechanical movement of mating parts
- Eliminates Galling.

Benefits:

- Black Oxide is cosmetically appealing
- Color adaptability
- Eco-friendly
- Commercially accepted
- Cost effective



Why Cleveland Black Oxide

We have over 50 years of black oxide conversion coating experience. We process over 8-million pounds of carbon, alloy and stainless steels; brass, bronze, copper; cast zinc and cast iron each year. And we have the experience, technologies and services to solve your coating problems.

Tank Capacity, Part Handling & Processing

We have the largest tanks in the industry – 17' long for steel parts, and can go beyond that size on a case-by-case basis. For stainless steel we have 12' tanks, and for Copper, Brass & Bronze, and Die Cast Zinc - 4' tanks. We offer rack process for parts not suitable for barrel or basket processing. We also design custom fixtures and process menus to meet all your special needs.

QC/Lot Control

A processing menu is created for each order and carefully followed – paying strict attention to times, temperatures, concentrations of solutions, and all other process parameters. These parameters and job history are stored in our computers, making a permanent record of your jobs. Records of all solution concentrations are maintained for periodic report and analysis. Tracking procedures are in place for lot segregation when required.

Exclusive Processes

Cleveland Black Oxide has developed a number of unique black oxide coatings including Black Onyx™ which produces a high luster finish on heat treated and hot rolled parts, and our Bi-Met™ process which is a conversion coating for brazed parts and dissimilar metal assemblies.

Service, Research & Technical Assistance

Send us your prototypes and we'll test and recommend a black oxide coating system that meets your protection, appearance and performance needs.

Quotations & Rush Orders

Quotes are promptly submitted upon receipt of sample parts or prints. Approximately 80% of all orders are ready within 48 hours. Our plant is in operation 18 hours a day and emergency service is available.

Cleveland Black Oxide

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HARDWARE