

# *Blackening System Improves Production*

**Reducing outside finishing costs** while achieving improved control of inventory and manufacturing scheduling led Rotary Lift Company of Madison, Indiana, to install its own in-house cold finishing system. Rotary Lift manufactures automotive car hoists and related equipment.

According to Essam Higazy, manufacturing manager of Rotary Lift, "Sending parts out forced us to carry a higher inventory of raw materials and components. By installing the blackening system, blackening larger quantities of components in-house became a major convenience for our just-in-time program," Mr. Higazy reported.

The BC 100 system, from Birchwood Casey of Minneapolis, Minnesota, is fully engineered with the capacity to finish large parts or multiples of smaller parts quickly. It has eight, 100-gal-capacity tanks, each measuring 24 by 40 by 28 inches deep. The line allows Rotary Lift to blacken castings, forgings, metal stampings and a large variety of other metals with an attractive finish that provides strong protection against corrosion.

According to verified testing, the finish withstands up to 200 hr neutral salt spray (ASTM B 117) or several hundred hr humidity (ASTM D 1748), depending on the sealant used. The finish itself has overall uniformity, even on those components with complex shapes and configurations, such as those finished by Rotary Lift. The process finish does not affect part dimension or material hardness.

The company found the process easy to prepare and to work with because the solution is odorless, non-caustic, non-splattering and only mildly acidic. It is

designed for long bath life without the need for routine dumping. Solution monitoring and control are simple using a color change test that indicates proper concentration level.

The system fit in well with the productivity and just-in-time needs at Rotary Lift because the total process time is only 10 to 12 min. The process runs as follows:

1. Clean at 150F, four to six min
2. Rinse in clear water, 20 sec
3. Second rinse, 20 sec
4. Activate at 120F, two to three min
5. Rinse, 20 sec
6. Blacken at room temperature, one min
7. Rinse, 20 sec
8. Seal out corrosion, one to two min

No special venting is needed with the process, reducing the initial investment cost. Without the noxious fumes associated with hot processes, Rotary Lift employees enjoy greater worker comfort.

As important feature of Rotary Lift's blackening system is the ion exchange that integrates effluent treatment within the process for zero drain pollution. The ion exchange feature incorporates a special resin filter assemble to remove all contaminants from the rinse tanks. Treatment in this manner completely eliminates discharge of the rinse waters into the sewer.

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Caption:

**ROTARY LIFT ENGINEER, Essam Higazy, shows a rack of blackened parts.**