

User Guide for Ultra-Blak ® 400-L

1.) Clean

Degrease the surface using E-Kleen SR 196 at **210°F**, E-Kleen SR 102, or E-Kleen SR 102-E. A typical cleaning with any of these products is about **5-10 minutes**.

2.) Rinse

Rinse using a bottom-fed, overflowing cold water rinse.

OPTIONAL: Add salt pickle in an E-Pik 211 solution at room temp, or 50% Hydrochloric Acid. Then rinse using a bottom-fed, overflowing cold water rinse.

3.) Blacken

Blacken by immersing in Ultra-Blak 400-L solution at **285°F-290°F** until a uniform, deep black color is developed; this can take **5-20 minutes** depending on mass of parts, type of steel alloy, and condition of the surfaces.

- Temp should not drop below boiling point for more than a few minutes.
- Loads should be about one pound of work to one gallon of blackening solution (including weight of baskets, barrels, and racks.)
- One pound is preferred, and loads **should not exceed 2 pounds per gallon**.
- A rolling boil must be obtained before work is introduced, and then maintained throughout.
- Operating at temperatures of **300°F** and higher may result in an undesired finish.

NOTE: Water will rapidly evaporate from the blackening solution due to the high temperature. If the solution level falls below the desired working level (this should be within about 3-10" of the top of the tank – we refer to this as “free board”), water is *slowly* added until the solution level reaches the desired point, then the Ultra Blak 400L is slowly added to produce the desired boiling point.

4.) Rinse

Rinse using a bottom-fed, overflowing cold water rinse.

- Transfer time from blackening solution to the rinse water should be as short as possible to avoid development of a red tint off-color on the surface.
- A mild water spray rinse may be applied while the parts are being transferred.

5.) Seal

Seal by immersing while still wet from rinse for **1 minute** in one of the following:

- For an oily finish: E-Tec 501
- For a soft, dry film: E-Tec 510
- For a hard, dry film: E-Tec 520

Be sure to read and understand the Technical Data Sheets and Safety Data Sheets for each of these products before using them. Please see the Ultra-Blak 400-L Technical Data Sheet for more detailed processing instructions.