

Application Case Study

Cleaning Steel Roof Bits (#1142)

Item to Clean

Roof bits manufactured from steel following the brazing process.

Contamination

Quenching Oil

Cleanliness Requirement

Washed off with Rust Inhibitor

Dryness Requirement

Blown off

Production Rate

Belt to run **0.7 inches per second**

Customer Background

The customer is a global manufacturer of engineered industrial products and advanced tooling, serving demanding applications where precision, durability, and consistent manufacturing quality are critical.

Challenge

The application required a compact, automated cleaning solution capable of removing quenching oil from steel roof bits after brazing. The system needed to provide consistent washing and blow-off while operating at a controlled conveyor speed.

The application also called for additional fluid-management capabilities, including micro-filtration, contamination monitoring, chemical injection, oil removal, and oil coalescing. These features help support solution cleanliness and management in an application where oil contamination is a primary concern.

Solution

Alliance Manufacturing specified an **Aquamaster CB-1608F Mini Conveyorized Parts Cleaning System** configured with dedicated wash and ambient blow-off zones. The compact system features a 16-inch belt, 24-inch wash zone, and 12-inch blow-off zone.

The system includes a stainless-steel wash tank with a capacity of approximately 75 gallons, a 2 HP wash pump delivering 35 GPM at 30 PSI, and electrically heated cleaning solution capable of reaching temperatures up to 130°F.

To address the oil contamination associated with the application, the quoted system includes an **oil skimmer** and an **oil coalescer**, with micro-filtration and contamination sensing also specified. An automatic chemical injection system provides controlled addition of cleaning chemistry to the solution tank.

Cleaning Method

The roof bits are conveyed continuously through the Aquamaster system on a stainless-steel flat-wire belt. In the **wash zone**, upper and lower spray nozzles apply heated cleaning solution to remove quenching oil and other surface contamination.

After washing, the parts enter a dedicated **ambient blow-off zone**, where upper and lower stainless-steel air knives provide forced-air blow-off. The 3 HP blower delivers approximately 780 CFM to help remove residual moisture from the parts.





