



Remove Machining Fluids and Particles from Golf Club Heads after Polishing Process



BACKGROUND

This company is a premier manufacturer of high-end golf clubs. This company was planning to introduce a new product to the market and decided to build a new manufacturing line. In addition to the machine tools for this new product, they needed a cleaning system to prepare the parts for assembly.

PROBLEM

These new club heads are produced from titanium, and are manufactured through investment casting. The club head is cast with a deep cavity on the back side. After casting, the club head is machined to remove burrs and give the head a "smooth/finished" look. This process leaves machining fluids and very fine particles on the part. After machining, the company's logo is to be attached on the back. Therefore, a very clean and dry part is needed.

Three complications that the cleaning system had to overcome were:

- 1) Removing the machining fluids and particulate trapped in the deep cavities...
- 2) ...then drying since the cleaning solution will then be deposited within these same cavities.
- 3) Finally, because the finish of the club head is critical to the sales and marketing of this product, it must be free of blemishes. Therefore, none of the pieces can come in contact with each other.



SOLUTION

Through testing, Better Engineering determined that an orbiting/submersing action was needed in order to clean the machining fluids and particulate from the deep cavities in the club heads. This would allow the cavity to fill up with wash and rinse solution and then dump any machining fluid and particulate as the part orbited. This same action was needed for successful drying.

To eliminate any blemishes or nicks on the parts, Better Engineering designed a basket, with separate, plastic coated compartments to hold each club head individually, thus eliminating any banging of the club heads. (see at top of page)

SYSTEM

A Cyclojet 3 system with a recirculated rinse tank, 10 HP regenerative blower, 21 KW heat tube, PLC control panel and customized baskets.