Plasma-Tec, Inc.™
PRECISION TURNING GRINDING THERMAL SPRAY

CHROME REPLACEMENT IN FOOD & BEVERAGE PROCESSING INDUSTRY

The Customer

A multinational industrial pump and food & beverage processing company with revenues of several billion dollars, the customer has significant operations in the United States. For many years, their plungers were shipped from Europe to their facility in the Midwest region of the United States. They were looking for a supplier who could reduce the lead-time below 10-12 weeks.

In the food & beverage processing industry, it is vital that equipment not harbor bacteria. In order to combat this hazard, every piece of equipment that comes in contact with food must be extremely smooth. The customer sought a partner that could manufacture a plunger with a high level of polish, as measured in Surface Finish (Ra). The traditional solution is to utilize industrial chrome plating.

Plasma-Tec partnered with this customer to manufacture and deliver these parts in a shorter amount of time, typically 4 weeks.

OVERVIEW

The Challenge

There are inherent drawbacks to the industrial chrome plating process. Industrial chrome plating is a specialty process, and the companies that perform the coating service have substantial lead times. If you need a part coated with chrome, plan for the process to take 4 to 6 weeks longer than a typical part ordered without the chrome coating. There are a limited number of vendors that provide this service, so getting your orders returned promptly is a major challenge.

Aside from the amount of time it takes to receive the part you ordered, there is an additional, often unconsidered cost. The industrial chrome plating process has a significant environmental impact. The chemicals used in the process are harsh and subject to stringent EPA regulations due to their caustic nature. Industrial chrome plating creates chemical compounds, known to be carcinogens. Because of this, there is worldwide pressure to reduce and eliminate the use of chrome.

The Solution

Plasma-Tec partnered with this customer to overcome these lead time issues & the environmental problem. We accepted this challenge and developed an alternative solution that achieved:

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"The chrome replacement coating offers an incredibly smooth surface, with a Ra value of 3-4."

- Highly polished surface
- Greater wear resistance (than industrial chrome)
- Significantly reduced lead time
- No more pollutants associated with industrial chrome plating

Plasma-Tec pointed the customer to a suitable chrome replacement coating as an alternative to the traditional industrial chrome coating process. The chrome replacement coating offers an incredibly smooth surface, with a Ra value of 3-4. Even better, the chrome replacement surface is 5 times more wear resistant than chrome.

The major pain the customer was experiencing was related to lead time. By utilizing chrome replacement technology, Plasma-Tec was able to reduce lead time on orders from 10-12 weeks down to 4 weeks. No more long delays, no more variables created by the unreliable industrial chrome coating vendors; just consistent, excellent performance.

The environmental challenge of chrome is eliminated, along with the issues of disposal and possible contamination if the industrial chrome coating were to chip, crack and peel.

Understandably, there were those working for the customer who thought the results were too good to be true. The customer ran tests, matching the chrome plated parts against the Plasma-Tec chrome replacement parts. The result? The customer now regularly adds parts to the list of those being converted from industrial chrome plating to thermal sprayed chrome replacement.

"The wear properties of the thermal sprayed coating helped our customer to gain an advantage in the market."

The wear properties of the thermal sprayed coating helped our customer to gain an advantage in the market. The new part from Plasma-Tec was not just better than the previous version of their own part, it was better than anything their competitors offered. This enabled the customer to provide a superior product, while getting it to market faster, creating even greater value.

Plasma-Tec worked with this customer to provide them with the parts they needed while reducing their lead time by 6 to 8 weeks on each order. The end result – less down time and headaches for the customer, while improving the quality & performance of the components and reducing the environmental impact. Is chrome replacement the right solution for your application? If you'd like to discuss this process further, we'd love to tell you more about what we do, and how we do it.