

Commercial Vehicle Industry

ITS Industrial Conveyor Washer Profile



Customer

This ITS customer is a global aluminum extruder and fabricator that provides world class products throughout the value chain. Unmatched in providing the highest quality parts to automotive and transportation related manufacturers, this industry leader requires vendors to deliver high-end production equipment to meet stringent specifications that match their high standards.

Project

The customer was developing a new machining and weld center for large commercial vehicle assemblies. This new project consisted of four separate lines that machined multiple assembly components feeding two automated weld centers. Each machining line would need a dedicated wash system that delivered cleaned and dried parts to the weld centers.

Requirement

To provide four identical cleaning systems with capabilities to aggressively remove chips and machining coolant out of internal passages and machined areas. Deliver parts to the weld process 100% dry, and in a chemical free condition to prevent the possibility of porosity in the subsequent weld process.

Challenges

- Designing the spray cleaning stage to effectively remove chips and coolant from multiple part types with varying geometries and machined locations.
- Incorporate a targeted an high velocity air blow-off design capable to deliver forced air to varied part geometries and machined locations to ensure 100% dry parts at exit.
- Design the conveyor system to allow natural solution drainage from tubular parts processed with the longest dimension in the direction of travel.
- Ensure complete contaminate and chemistry removal from substrate to eliminate the possibility of weld porosity in the subsequent process.



The washer features an inclined conveyor that is 39" at load and 42" at unload.



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ITS Solution

Designed the solution delivery nozzles with overlapping patterns to accommodate cleaning of multiple part type and unique features.

Incorporated an all-encompassing air delivery tube design that precisely forced high velocity air across the entire part envelop above and below the conveyor.

Designed the conveyor with an upward pitch toward the exit so solution could naturally drain back to a stage preventing spill out to the following stage or exit end.

Feature the drain stage following wash with a line rinse riser that delivers pristine rinse water for the complete removal of wash chemistry.

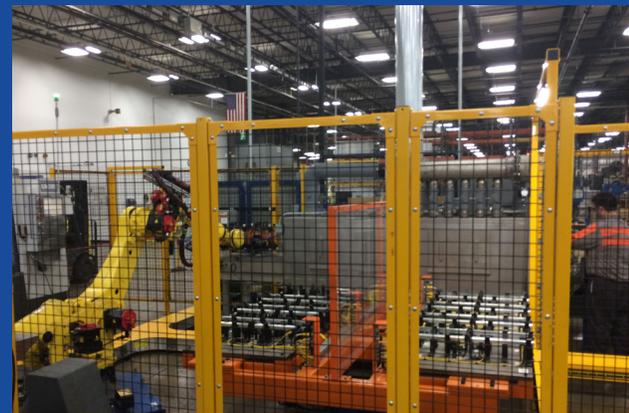
Keys to Success

- Cooperative effort between ITS sales and customer to outline all process requirements for concept development.
- Pre-sale design review by ITS engineering to develop a highly effective process.
- Cooperative project execution by ITS project management, manufacturing, and QC teams.

Results

All ITS team members, along with our customer, worked collaboratively through concept development, design, and build to deliver four highly effective cleaning systems that exceeded all process requirements.

We look forward to partnering with you.
Contact ITS for a product proposal.
sales@itsllcusa.com • 414.672.7700



Photos of washer installed in robot cell.