Application Case Study

Application: Inline Cleaning of Shock Tubes		**Date:** 4/12/21
Serial number: 999-1220	**Machine model:** Aquamaster CB-2400E	
Machine type: Conveyorized Belt	**Industry:** Automotive	

Customer summary:	Manufacturer of automotive shocks and struts
Item to clean:	Steel shock tubes, various sizes
Contamination:	Water-soluble coolant, forming oils, chips
Cleanliness requirement:	< 3 mg mass per shock tube, visually clean of oils
Dryness requirement:	100% dry
Production rate:	1 shock tube every 9 seconds, or 400 parts per hour
Process parameters:	Wash, ambient blow-off

Customer background:

The customer is a producer of automotive shocks, struts, and related assemblies. They manufacturer of both OEM and aftermarket parts. The company's US-based facilities primarily produce shocks and struts, while globally they also produce other automotive parts such as ride control, hydraulics, and electronics.

Challenge:

The customer needed an inline washer to clean various sizes of shock tubes up to 18.9" in length. The parts had a strict cleanliness specification and be visually free of oils, and needed to exit 100% dry or with residual moisture that would flash-dry quickly.

Solution:

Alliance engineered a conveyorized belt cleaning system with wash and ambient blow-off zones. The conveyor belt is angled at 3° to aid in cleaning and drying, and a guide rail is installed on the low side to contain parts on the belt. The belt also has bolted flights to contain each part separately. Spray nozzles are located above, below, and to the sides of the conveyor. The air knives are also located above, below, and on one side. Machine components are made of stainless steel, and a micro-filtration chamber is included to remove fine contaminants. The HMI controls are remotely located on a sub-panel.

Cleaning Method:

Inline aqueous cleaning was chosen as the ideal method for this application due to the size and orientation of the parts.

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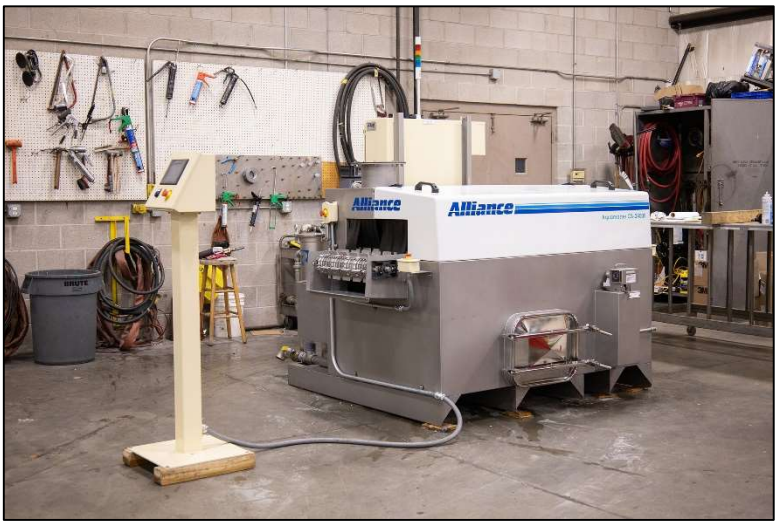
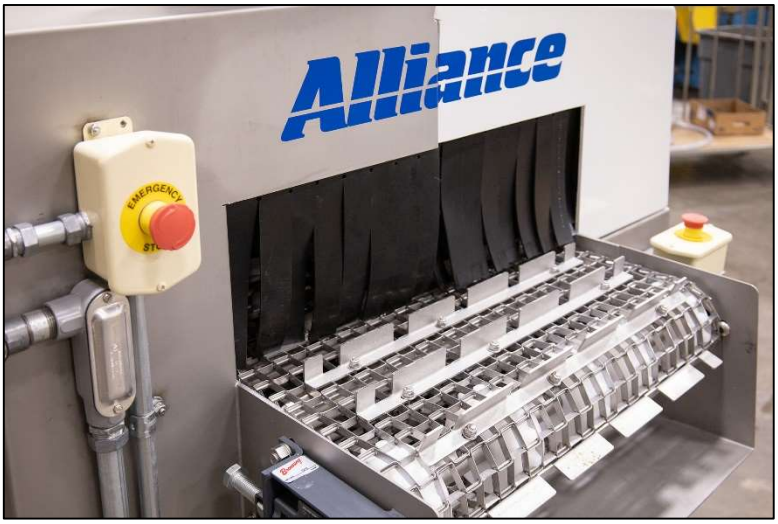
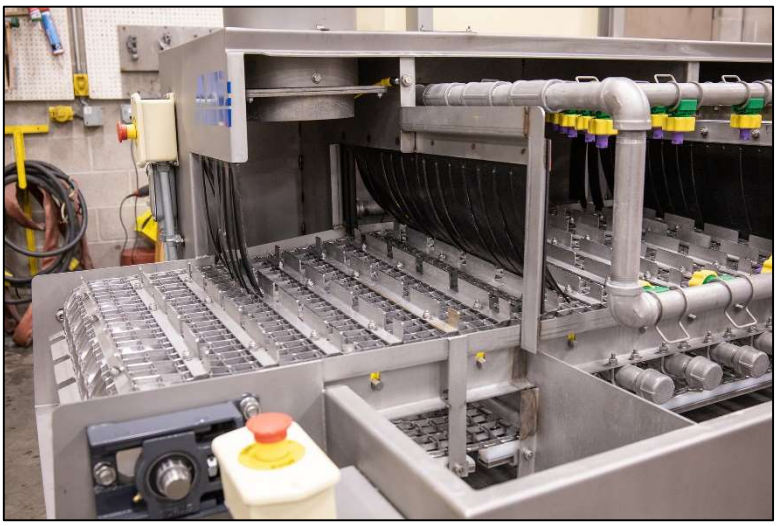


Aquamaster CB-2400E



Belt flights



Angled conveyor belt