

Application: Cleaning and Drying Fire Sprinkler Components		Date: Sept. 2020
Serial number: 978-0320, 979-0320	Machine model: Aquamaster CB-2400E and Aquamaster CB-1200E	
Machine type: Conveyorized Belt		Industry: HVAC/Plumbing

Customer summary:	Manufacturer and distributor of fire protection equipment
Item to clean:	Fire sprinkler concealment cover plate assembly (various sizes)
Contamination:	Water-soluble solder flux
Cleanliness requirement:	Visually clean
Dryness requirement:	100% dry
Production rate:	2400 parts per hour (4-lane washer), 1200 parts per hour (2-lane washer)
Process parameters:	Wash, ambient blow-off

Customer background:

The customer is a global manufacturer and distributor of fire protection products, including fire sprinkler systems.

Challenge:

The customer needed a system to clean water-soluble solder flux from various sizes of concealment covers used for an automatic fire sprinkler system. These covers are metal with a coated outer surface designed to conceal a fire sprinkler in a ceiling or wall. The covers are heat-sensitive by design, allowing the cap to separate from the base in the event of a fire. Therefore, the cleaning system could not exceed 110 degrees Fahrenheit while still washing and drying the parts.

Solution:

Two Alliance conveyorized belt cleaning systems were engineered to meet the high production rate of the sprinkler concealment covers. The CB-2400E has four lanes, and the CB-1200E has two lanes. The parts are separated by lane guides and are designed to increase the capacity of the cleaning system. Inside the machines, hold-down devices keep the lightweight parts on the belt surface and contained within their respective conveyor lane. The hold-downs can be adjusted to accommodate varying part heights, and a UHMW strip prevents scratching of the part surface. These machines utilize special stainless steel rod-style belts for increased spraying and drying coverage. Three mist collectors on the four-lane system and two mist collectors on the two-lane system are included for removing steam from the washers. Both machines also include micro-filtration chambers and belt-type oil skimmers to prolong the life of the cleaning solution.



Four-lane cleaning system



Interior of four-lane cleaning system



Two-lane cleaning system