

Application: Cleaning Cast Aluminum Lower Blocks		Date: 3/29/22
Serial number: 1022-0521	Machine model: CI-2400E	
Machine type: Conveyorized Indexing		Industry: Automotive

Customer summary:	Manufacturer of machined and assembled automotive parts
Item to clean:	Cast aluminum lower block
Contamination:	Water soluble coolant, chips
Cleanliness requirement:	Not specified
Dryness requirement:	As dry as possible
Production rate:	34.5 second cycle time
Process parameters:	Wash, regenerative blow-off, ambient blow-off

Customer background:

The customer is a manufacturer of machined and assembled automotive parts for engine, transmission, and suspension applications. They supply parts to several major automobile manufacturers.

Challenge:

The customer needed a system that could clean and dry cast aluminum lower engine blocks for a major automobile manufacturer. The engine blocks contained various passageways and blind holes. The production rate was 34.5 seconds per part.

Solution:

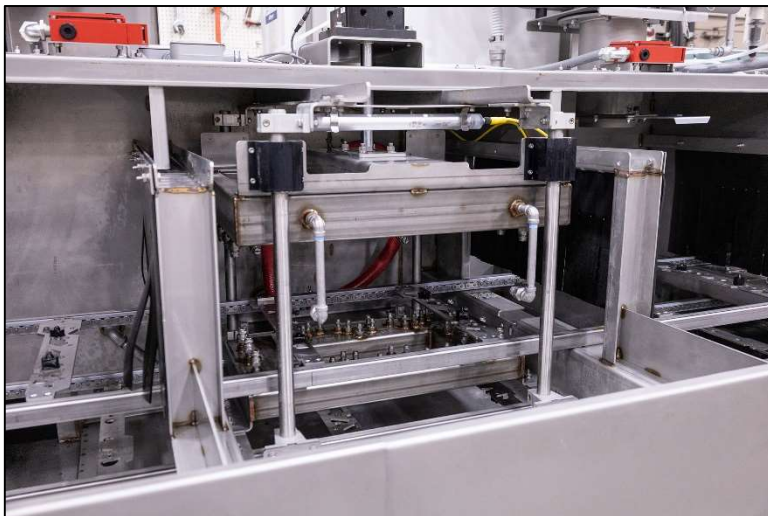
Alliance designed a conveyorized indexing cleaning system with part fixtures specifically designed to hold the customer's parts in position for precise cleaning and drying of parts. In both the regenerative and ambient blow-off zones, the servo-driven indexing conveyor stops in precise positions to allow pneumatically actuated probing devices to dry the part cavities. This machine also incorporated step-down micro-filtration chambers with an absolute-rated bag cartridge in the second filter, a belt-type oil skimmer, guarding and light curtains at both the load and unload ends, a profile plate to prevent a mis-load, a dual exhaust fan system, and a solution heat auto-timer.

Cleaning Method:

Aqueous cleaning was chosen because inline cleaning allowed for targeting the unique features of the parts, as well as to maintain the production rate. The customer also had two other aqueous washers, so this system fit in with their current process.



Aquamaster CI-2400E



Blow-off probes



Fixtures, guarding, and profile plate