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CASE STUDY: AUTOMOTIVE INDUSTRY



BACKGROUND

This customer is a major global manufacturer of powertrain systems for the light vehicle, commercial truck, off-highway, energy and industrial OEM markets. As such, they required a brand new high-quality, high-capacity parts washer for their plant in Guelph, Ontario, which was preparing to manufacture parts for transmission gears in a cellular environment.

The company needed a parts washer that could clean and dry a matched set of cast iron sprockets with a maximum diameter of 6.366 inches x 1.25 inches high. These sets were to be manually placed side by side on the load end of the belt in two lanes. The cleaned parts were then to be manually unloaded from the exit end of the washer and placed on carts. The customer also required the system be capable of processing 268 parts per hour and have oil removal capabilities.

SYSTEM SOLUTION

The machine chosen to meet the company's objectives was a Jenfab 18 inch, multi-stage stainless steel belt washer with two lanes, an air knife, two 10-gallon oil coalescers, and a variable speed drive.

CLEANLINESS STANDARD

In addition to the other specifications, the customer also required a stringent cleanliness standard. The number of particles per 1000 cm² wetted surface must correspond to one particle in the range of 600 microns, 2,000 particles in range of 100-600 microns, and 16,000 particles in range of 25-100 microns. The customer supplied sample parts for test cleaning.

After washing, the analysis from Jenfab's state-of-the-art test lab revealed the system met these specifications. This was achieved primarily through the use of two, five element cartridge filters—one 20 micron for the wash and the other a 5 micron for the rinse.

SYSTEM SPECS

- Washer dimensions: Load, 18 inches; wash, 60 inches; drain, 18 inches; rinse, 48 inches; drain, 18 inches; dry, 44 inches; and unload, 18 inches. An air knife is located between the wash and rinse in the wash drain section.
- Stainless steel flat wire belt 1 inch x 1 inch x 3/8 inch 18 inches wide. Adjustable guided to channel parts.
- Wash Tank capacity of 220 gallons, 5 HP pump, 70 GPM@40 PSI
- Rinse Tank capacity of 175 gallons, 5 HP pump, 40 PSI
- Automatic cleaning system to clean residues inside the blow off stage.
- Two, 10-gallon oil coalescers in the wash and rinse stages for removing oil.
- Two, five element cartridge filters—a 20 micron filter for the wash and a 5 micron filter for the rinse. The cartridge filters were essential in meeting the cleanliness requirement.
- Variable speed drive of 1-4 feet per minute for the belt.
- Allen Bradley PLC and Eaton HMI to monitor the washer's performance in real time and set process parameters.
- Stack light mounted on the electrical panel.
- 575V-3p-60 electrical power.
- CSA electrical components.
- Canadian ESA certification.
- Safety interlocks were installed on the liftoff covers and tied into the PLC.

DEADLINE

The customer required completion and delivery within eight weeks. Although a tight deadline, Jenfab was able to meet the customer's expectations by delivering the system on time and on budget. With its reputation for quality and over 55 years of experience in the industry, Jenfab has the resources, talent and know-how to take on even the toughest jobs while still providing "best in class" service to its customers.

