

CWST Facility in Brampton, Ontario Expands Capabilities

Curtiss-Wright Surface Technologies (CWST) operates a network of forty shot peening facilities in eighteen countries. These facilities were established to service manufacturers who are usually within a 100-mile (160 km) radius. Each facility is unique in that they are designed based on the regional customers' product mix.

The Brampton, Ontario facility opened in 1969 to service McDonnell Douglas in our 85,000 sq. ft. facility—our largest shot peening location in North America. It was designed to perform wing skin forming and job shop peening. The following aircraft had their wings formed at this location: C17 Globemaster (170-foot wingspan), MD-80 and MD-90.

Additionally, all types and sizes of aircraft, landing gear, engine parts and structures have been, and are still, shot peened at this location. General industrial, automotive, mining, and other markets also utilize this site for their shot peening needs. The facility is within the Greater Toronto Area, five minutes from major highways, and 10 minutes from Toronto International Airport.

The Brampton facility has always processed a large amount of aerospace components. During the past ten years, there has been increased interest in non-destructive testing (NDT), as this testing occurs just before shot peening. Using the floor space available from prior processing of C17 panels and wing skins, the space was repurposed for NDT inspection. Customers requested one-stop processing of the largest landing gear being produced. Therefore, both NDT lines and shot peening capabilities were sized accordingly.

Figure 1 shows a back row of tanks used to perform Nital Etch prior to magnetic particle inspection (MPI) for steel



Figure 1. Ti Etch and Nital Etch tank lines

components. The front row of tanks is for Ti Etch of titanium components prior to fluorescent particle inspection (FPI). Both tank lines can process 14-foot-long components. (Note: The magnetic particle and fluorescent particle inspection equipment are not shown in the photos.)

This facility has performed OD and ID shot peening of all sizes of landing gear for decades. With the recent installation of the NDT inspection lines, the decision was made to upgrade the peening capabilities for large landing gear.

CWST's engineering staff designed and installed an automated peening room for large landing gear. A 6-axis robot was mounted on a track to traverse the length of long components and shot peen outside geometry. For ID processing, a second room has the capability to shot peen long cylinder geometry typical of landing gear.

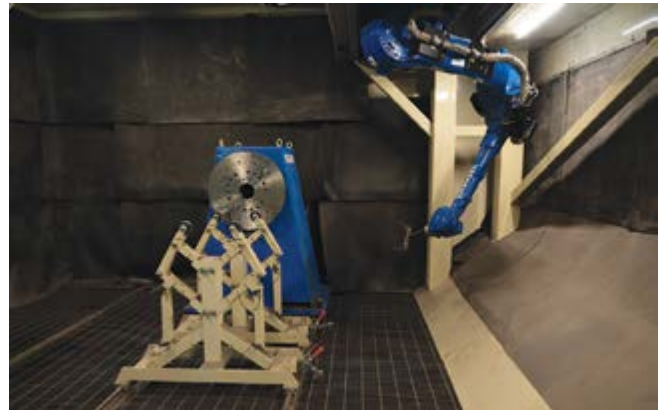


Figure 2. OD Robotic Peening Room

Figure 2 shows the automated peening room. On the floor is an adjustable bed to support various length landing gear components.

Figure 3 (page 36) shows the hardware outside the room used for ID lance peening.

This facility also has robotic peening capability for long aerospace shafts. The ID length of an 8-foot-long shaft can be peened. In addition, two identical machines are installed for ceramic peening of critical aerospace blisk geometry.

Figure 4 shows ceramic peening machines for aerospace blisks.

Another way the large peen forming floor space was repurposed is to shot peen very long shaft geometry. This area of the shop has a programmable machine to process 20-foot-long shaft geometry.



Figure 3. ID 10 ft. Side Lance Shot Peening



Figure 4. Robotic Ceramic Shot Peening

COMPANY PROFILE

With 67 facilities in 18 countries, Curtiss-Wright Surface Technologies (www.cwst.com) provides shot and laser peening, thermal spray, parylene, acrylic and urethane conformal coatings, dry film lubricants, Plasma Electric Oxidation and material analysis and testing.

We are surface treatment specialists providing solutions to fatigue, wear, stress corrosion cracking, corrosion, fretting, galling, seizing and erosion/abrasion.

Our proven surface treatments meet industry demands for lighter proven materials, improved performance and life extension in key markets such as Aerospace, Automotive, Semi-Conductor, Energy and Medical.

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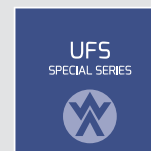
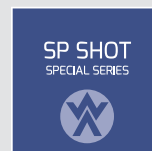
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