

Purdue University Shot Peening Center Receives Machine from Progressive Technologies

Purdue's shot peening program has been greatly advanced thanks to the donation of a shot peening machine from Progressive Technologies. The Purdue University Shot Peening Center, conceptualized by Jack Champaigne, president of Electronics Inc. and a Purdue alumnus, was established as a fee-based, not-for-profit consortium that will provide research and development funding for fundamental shot peening theory and practice. The machine is a tremendous asset to Purdue's engineering department—mechanical engineering technology students can now get invaluable hands-on experience without leaving the campus.

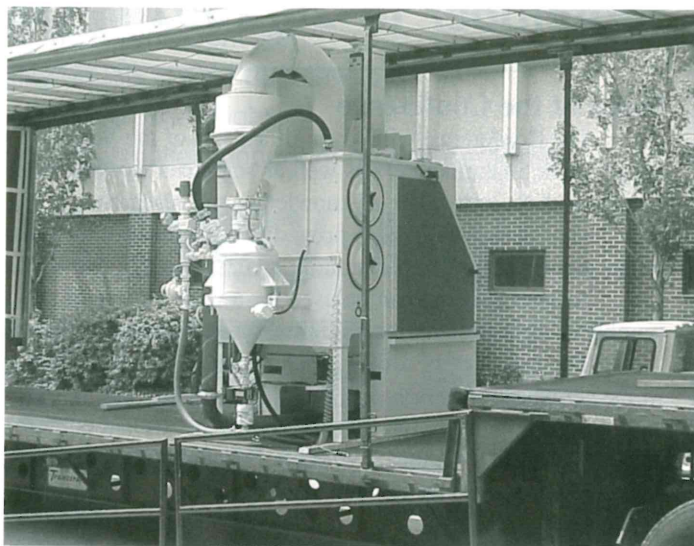
The machine has many features that provide process control and flexibility for any research project. It has pressure shot delivery, programmable spindle, single axis gun mover, closed loop air pressure controller, and a MagnaValve closed loop media flow device. At the heart of the machine is a PC control that provides a graphical user interface as well as software for process monitoring, data collecting, and reporting.

When asked why Progressive Technologies donated the machine to Purdue, Jim Whalen, V.P. of Sales and Marketing responded, "Progressive has always been committed to advancing the state-of-the-art in peening. We view the Shot Peening Center at Purdue as an excellent vehicle to promote shot peening and educate future engineers on the advantages that shot peening can offer. In addition to donating equipment, we will also support research programs that will develop new applications and further understanding of the shot peening process."

Research such as the following will be available to everyone in the consortium:

1. Non-destructive testing of peening intensity
2. Non-destructive testing of stress-depth profile
3. Computer modeling of peening process
4. Liquid tracers for high and low intensity peening coverage determination
5. Shot and air flow rates through a blast hose
6. Nozzle efficiency (direct pressure nozzle, induction nozzle, gravity fed nozzle)
7. Determination of minimum coverage and optimum coverage requirements
8. Determination of minimum shot size for a given peening intensity (i.e. detrimental effects)
9. Peening intensity determination without use of Almen strips
10. Relation of peening intensity and coverage on stress-depth profile
11. Relation of stress-depth profile on fatigue life

Have you ever wanted to inspect incoming parts for proper peening? Have you ever wondered how a design engineer selected a particular shot size and intensity for peening? Have you ever wanted to reduce your costs of compressed air? Have



The Progressive Technologies machine took a ride from Grand Rapids, Michigan to West Lafayette, Indiana.



From left to right: Steve Hahn, Purdue Lab Supervisor; Christine Corum, Purdue Professor; and Jim Whalen, V.P. of Sales and Marketing at Progressive Technologies.

you ever wanted to reduce the time to run Almen strip saturation curves? Have you ever tried to describe coverage to a new employee and wanted a better tool for comparison? Have you ever wondered if you could shave some more weight from a gear and not suffer fatigue failure? Have you ever needed better (fatigue life) performance from a spring?

If your company/organization could benefit from this type of information, please consider participating through monetary or equipment funding or membership in the consortium. Contact Jack Champaigne at (219)256-5001 for more information. ○