Machining & Laser Processing: Keeping Pace

Machining and laser processing providers must stay ahead of OEMs' needs while making their own technology strides.

Laser machining, in particular, has a number of "plusses," industry experts said.

"Laser machining is faster, cleaner and less expensive than traditional machining," added Khushroo A. Pastakia, assistant vice president of sales for Sahajanand Technologies, a manufacturer of advanced laser cutting systems based in Saiyedpura, Surat, India. "A wide variety of lasers can be used for machining. These include microsecond-pulsed infrared CO2 gas lasers at wavelengths between 9.3 and 11 micrometers, nanosecond-pulsed excimer gas lasers in the 157-353 nanometer UV (ultraviolet) wavelength range, and picosecond- to femtosecond-pulsed, solid-state lasers in the 266-1,064 nanometer wavelength range."

Due to automated computer and robot controlling, laser material processing now includes laser-assisted forming (bending, coloring and rapid prototyping), joining (welding, soldering and brazing), machining (drilling, cutting and cleaning), and surface engineering (hardening, annealing and alloying).

"For example," said Pastakia, "our Stentmaster laser system provides precision micro-machining and metal-cutting capabilities. The system is equipped with a 100-watt fiber laser source that produces a wavelength of 1,090 plus or minus 5 nanometers, with a cutting speed up to 4 millimeters per second."

Hardware improvements for laser controllers have made lasers easier to use and provide enhanced machining capabilities—especially speed.