MAKING YOUR LASER APPLICATION SUCCESSFUL

Our Primary Goal:
provide your business with a successful, profitable, sustainable laser material processing application

In order to successfully implement a laser in manufacturing, the basic economics of the process need to be understood first, and if it is a new application, whether laser processing will be more cost effective than conventional manufacturing techniques. This requires looking carefully at the overall manufacturing process: what are the specifications of the material being processed and the desired end product, what type of laser is best suited for this material because of how the beam interacts with the work piece, will the laser system stand-alone or be part of a larger system, what is the environment of the location, etc.?

Once the economics have been explored, four major technical areas need to be understood.

1. Processing the material: Fully define the process window, select the appropriate candidate laser sources, define the process specifics, some of which are: allowable variations in the material properties, beam quality, power, QC requirements, etc.
2. The laser: Since even lasers of the same general design from different manufacturers are not created equal, it is important to consider often widely variable aspects such as short and long term power and beam stability, service, and operating costs.
3. The beam delivery: Transmissive, fiber, or combination. How the energy generated by the laser needs to be delivered, modified and/or shaped at the work piece. What laser beam diagnostics are appropriate for process control.
4. The motion system: Basic motion type, such as xy, flying optics, galvo, etc, and its accuracy capabilities, speed, acceleration, and difficulty of programming.

Our Knowledge Base

For 25 years the success of our company we used to own, Laser Machining, Inc. depended on selecting the correct laser for the many processing applications brought to us by customers in widely different industries. Some of the lasers we worked with were CO_2, Nd:YAG, diode and fiber lasers from 10 to 12,000+ watts, with continuous wave to ultra short pulsed lasers with pulses in the nanosecond to femtosecond region, with the long IR @ 1060 nanometers to as short of

wave lengths generated by Excimer lasers operating in the UV at 248 nanometers.

My personal design activity was focused on defining the process, understanding and selecting the right laser source and on getting the energy to the work piece, i.e. designing all types of beam delivery and optical systems ranging from transmissive lenses to optical fibers. While I am not an expert in the detailed design of motion control systems, I have extensive experience in defining the performance and programming specification for the controls for laser systems.

Our Approach

We start by working with the customer to develop practical performance specifications, both technical and economic, for your process. From the specifications we determine the appropriate questions and tests to ask of the potential laser/system supplier(s). We coach the technical people through the integration of the laser system into the actual manufacturing situation and finally work to make the key people involved with the application knowledgeable enough so they can successfully operate the laser system and, if needed, improve it themselves.

Contact Bill Lawson at:

NewTech Development, LLC
1917 County Road I
Somerset, WI 54025 USA
Ph 715 247 3242
Fax 715 247 3594
wlawson@newtechdev.com