

### Laser Supply Systems

The purchase of laser cutting or welding equipment represents a substantial financial commitment by a metal fabricator. To help maximize the return on investment, special consideration must be given when selecting the lasing gases (He, N<sub>2</sub> and CO<sub>2</sub>), the assist gases (N<sub>2</sub> and O<sub>2</sub>) and the supply system.

Essential factors to be considered include the selection of the gas type (gas purity and mixture accuracy), supply mode (flow capacity, delivery pressure requirements, etc.) and design of the gas regulation and distribution equipment.

#### Praxair® LaserStar™ Gases and Blends

For optimum laser performance Praxair's LaserStar™ gases are produced to meet the stringent requirements of the laser processing industry. Available as pure gases or pre-blended mixtures of helium, nitrogen, carbon dioxide, and occasionally, carbon monoxide, Praxair's LaserStar gases are used to generate the laser beam in a wide variety of CO<sub>2</sub> lasers.

Carbon dioxide lasers must be protected from the problems created by moisture, hydrocarbons, and other contaminants which can be introduced through the gas supply system. These impurities can reduce laser power, create unstable operating characteristics, damage expensive optics, and cause costly downtime. With a properly designed delivery system, the use of LaserStar™ gases help assures optimum laser performance, maximum operating duty cycle, and minimum maintenance costs.

#### Supply Modes

From lasing gases to assist gases, welding and cutting operations can be optimized when proper care is exercised in the design and selection of the gas supply system. Praxair offers a variety of supply modes that will economy and productivity.

- High Pressure Cylinders
- Bulk Tanks
- Bulk Tanks with Cryogenic Booster

#### Gas Regulation and Distribution System Design

To further enhance laser equipment performance, high quality regulation and distribution equipment systems must be employed. These specially designed systems offer a number of advantages:

- Help to maintain gas purity and gas mixture integrity (to the use point)
- Contribute to precise pressure and flow control
- Provide uninterrupted gas supply
- Make the operation safe and easy to use
- Decrease the frequency for periodic laser maintenance.

Praxair offers a complete line of gas handling and delivery equipment (manifolds, regulators, flow control devices, control panels and accessories), and safety products. Refer to Section F for complete specifications and details.

