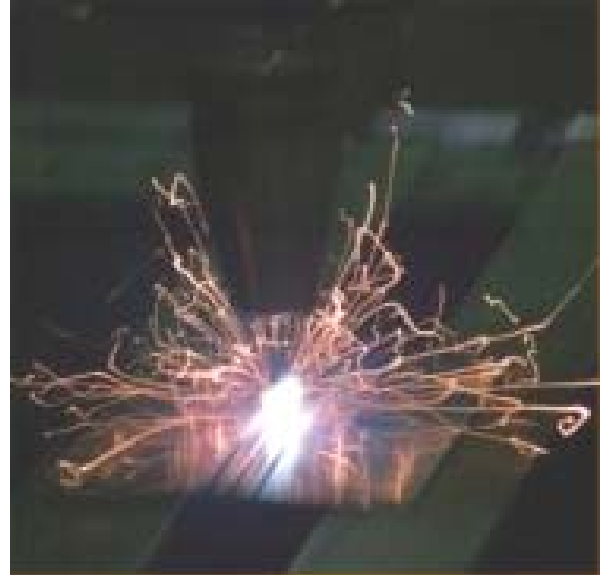


campus[®]

CA-1500

CO₂ Laser Workstation



Obviously since James Bond everyone knows about the power of CO₂ lasers being able to cut steel plates. Within ten years the laser was development to one of the most important in industrial processes. Reliable, powerfull and in comparison to other lasers very efficient – these are some features of this laser. A power of more than 20 kW can be reached which allows heating, melting and cutting processes. But additionally to these high power applications you can find other areas like medicine or measuring setups with an integrated CO₂ laser.

Based on the experiences from our experiment CO₂ Laser, which gives knowledge concerning the principal and the

capability of CO₂ lasers this experiment is using a sealed off laser system with power of 100 W.

This high power enables to learn welding processes as well as cutting, scibing and soldering.

The sealed off laser is RF excited and can be operated in cw as well in pulsed mode. The system is driven by a PC which is optionally available.

Laser safety is given by a protected cabinet. A cross stage is used to produce different shapes while moving by a CAD software.

After practical work with this setup the student is able to feel the power and capability of CO₂ lasers.

Educational Objectives

- CO₂ lasers
- Sealed off design
- Cw and pulsed mode
- RF Excitation
- Material processing
- Output power
- Laser cutting and welding

Components



(picture similar)

- 1 sealed off CO2 laser
- 2 Power supply and cooling system
- 3 RF generator, cw and pulsed
- 4 Electronic workstation
- 5 Cross stage for xy movement
- 6 Motor controller for cross stage
- 7 software
- 8 workplace with laser beam protection
- 9 fume removal
- 10 software, PC optionally
- 11 User manual