LASER MECH

INDUSTRIAL ARTICULATED ARMS

PROVIDING ADVANCED

SOLUTIONS FOR

LASER DELIVERY SYSTEMS

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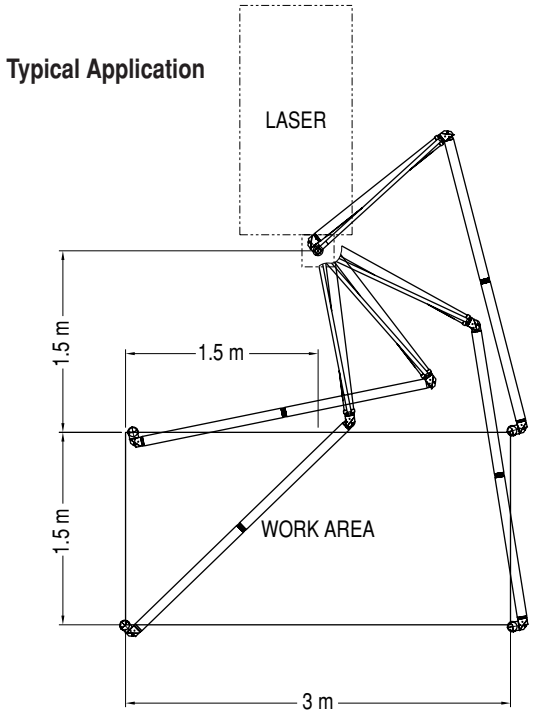
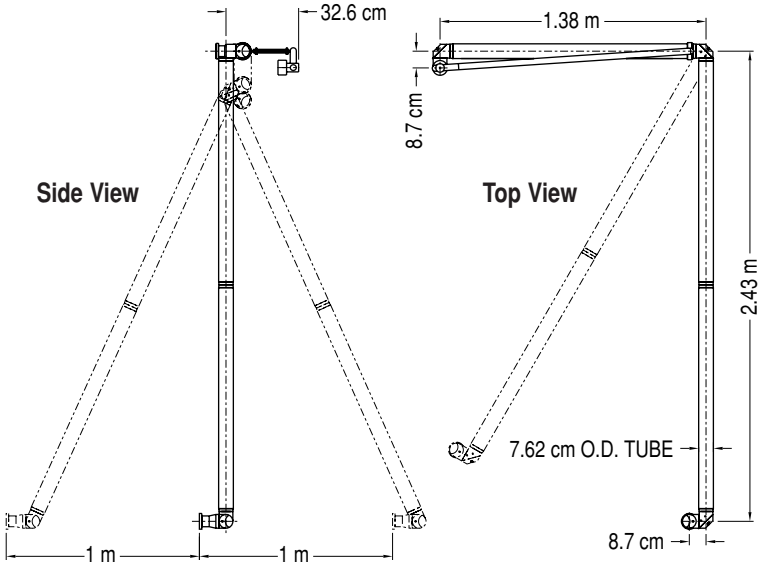
INDUSTRIAL ARTICULATED ARMS

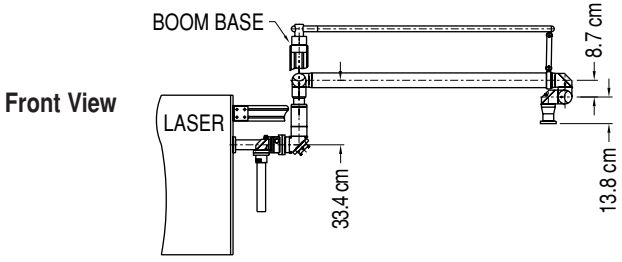
Articulated arms present a unique solution to the problem of connecting high power CO_2 lasers to moving beam delivery systems. The arm solves many problems. First, the beam is totally contained within aluminum tubing providing operator safety and a controlled atmosphere through which the beam can propogate. Second, the laser beam travels a constant distance to the focusing lens, resulting in a fixed beam size at the lens. This produces a constant focal spot size and beam wavefront, which gives uniform kerf width throughout the full range of machine motion. Finally, the problem of attaching and aligning the laser to the beam transport system is minimized. Relative motion between the laser arm combination and the beam motion system causes no change in the focal point position or loss of power. This minimizes machine foundation requirements and structural rigidity of the motion system. Many standard router or torch systems can be converted to laser machines using articulated arm delivery systems.

Specifications

- Clear Aperture: 35 mm (accepts laser beams to 1/e^2 diameter of 30 mm)
- Mirror Size: 2.0" water cooled zero phase shift
- Laser Power: 0-6kW (with water cooling)
- Range of Movement: covers 1.5 m x 3 m x-y motion, 1 m z motion, 7 rotations, 6 mirrors
- Focal Spot Accuracy: spot stays centered in gas jet tip to within .06 mm over full range of motion (when used with a typical 5" focal length lens)







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