Laser Welding

Costly Laser Absorbing Additives NOT REQUIRED

Unfilled Tube-to-Port

Continuous Weld

Unfilled Tube-to-Tube

Clear-to-Clear Polymer
Laser Welding System designed to weld clear to clear thermoplastics without the need of any laser absorbing additives. This system incorporates a recently developed 2 micron laser with a greatly increased absorption by clear polymers and enables highly controlled melting through the thickness of optically clear parts.

Benefits of Dukane’s Laser Welding System:

- Laser beam delivery system integrates both, a scan head and XY-servo driven gantry, utilized to move and precisely position the laser head when larger parts are welded.
- A closed-circuit television (CCTV) camera is integrated within the machine. This enables a live weld preview on the HMI screen and gives the ability to directly monitor and record weld cycles.
- Proprietary software provides the ability to break complex weld patterns into separate geometric segments, modify each segment independently and assign different welding parameters to each segment.
- All laser enclosures are Class I CDRH certified.

Parts and Materials FAQ:

Q - What type of plastics can be welded?
A - Most thermoplastic materials.

Q - Do both parts need to be clear?
A - No. The bottom or inner part can have color to it. If the color is black, the maximum carbon contact should not exceed 0.5 - 1.0 %.

Q - What material thickness of the upper/outer part works best?
A - 0.25mm – 3.5mm depending on the material.

Industry Leading Custom Tooling

- Highly specialized tooling cassettes with quick tool changing features.
- Tools, as a standard, incorporate binary tool ID recognition for automatic weld recipe recall.
- Capable of supporting multi-cavity function, multiple feature detection, vision systems, and independent clamping systems in an effort to compensate for part variations.