

April 2015

CASE STUDY

F06

A Fully CE Marked Catheter Laser Welder

Laser welder assembly and control system manufactured by Wellspring Engineering & Sciences Ltd, Ireland (www.wellspringengineering.net)

Wellspring engineers have 20 plus years of experience in medical device manufacture and related product & process development. They manufacture custom laser welding systems for use in medical device manufacture and offer laser welding solutions to their customers across a range of industries. In particular, their engineers have extensive experience of laser welding polymers which are widely used in the manufacture of balloon catheters and other medical device products.



medium volume production requirements.

The Synrad 48-1KWM Series lasers are ideally suited for the lasing of widely used materials such as Nylons, Pebax, PET and more. Catheter balloons ranging from 1mm to 20mm in diameters can be readily processed using a Synrad 48 series CO2 laser. The accuracy and repeatability of the laser welding process lends itself to straightforward process and product validation. Wellspring chose the Synrad 48-1KWM series lasers because they are compact, robust, provide years of trouble-free service and are economical for even low-



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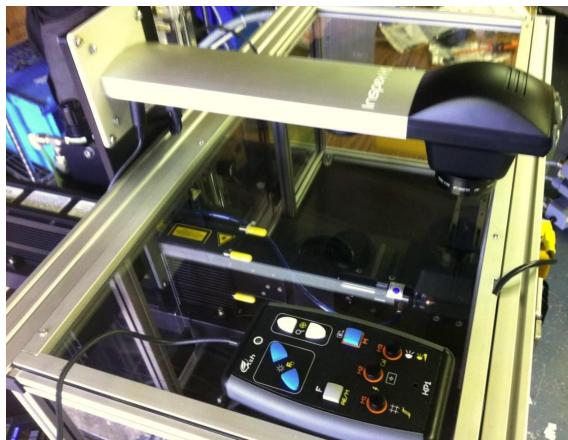
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The Synrad 48-Series laser continues to meet their requirements due to their simplicity, ease of operation and in-built safety features. The range of applications continues to grow as customers seek to replace less repeatable thermal bonding processes as well as adhesive or epoxy mix bonds which are prone to variations in bond strengths and integrity due to adhesive degradation or sub-optimal application processes.

"We have been surrounded by Synrad lasers for the past 15 years. We have yet to see one fail! They are accurate, reliable, repeatable and are the perfect choice for medical device manufacture where stringent validation and process control is required"

– Brian Duffy, Managing Director, Wellspring Engineering & Sciences Ltd.

The Synrad 48-Series is the only sealed CO₂ laser with an install base dating over 25 years. The industry gold standard for long life times and high reliability, it is supplied with a 3 year warranty as standard with all units. The 48-1KW is a 10 Watt all metal tube laser designed for the manufacturing industry; the high gas



quality of the laser ensures long operating life times - 45,000 hrs or longer have been experienced before any degradation in power.

The specific laser used for Wellspring's application was a water cooled tube fitted with Synrad's own "closed loop stabilization kit", this allows close control of the lasers output power. When fitted to the 48-1KW laser the power stability of the system is guaranteed at ±2%. This application required a laser which could offer close control

of the laser output power to ensure the welds were not only perfectly formed, but were also highly repeatable. Synrad are the only CO₂ manufacturer who offer this level of power control and stability straight out of the box.

The Synrad 48 Series Laser is supplied through Synrad's UK distributor Laser Lines Ltd.

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