TU DUBLIN
OLLSCOIL TEICNEOLAÍOCHTA BHAILE ÁTHA CLIATH
TECHNOLOGICAL UNIVERSITY DUBLIN

Hothouse

Technology to Licence T-20-033

Laser Tube Connection System

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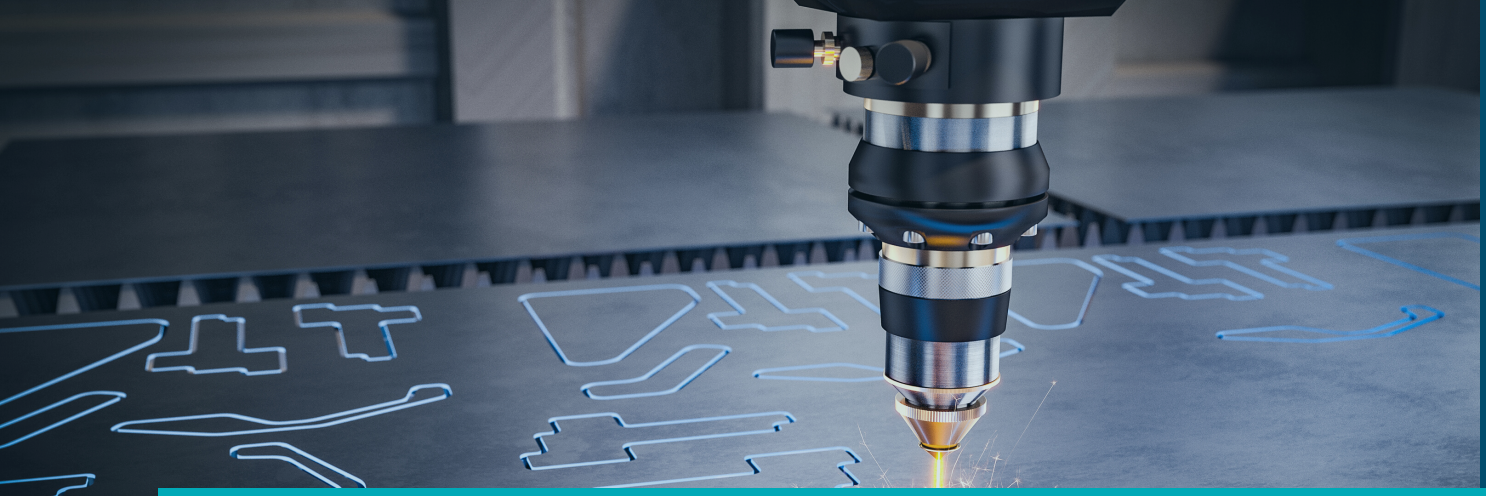

Overview

Researchers at TU Dublin have developed a Laser Tube Connection System.

This invention is designed for securely connecting pieces of steel tube together without the need for welding. The design involves the combination of laser cut (or possibly die cut) the steel tube, metal castings and bolts. The pieces of tube are cut/ machined too very specific patterns so that they can be pulled together using the castings and bolts to create a strong connection.

Other systems generally connect the tubes via an additional component such as a casting or moulding - each tube independently connects to a third “connection” component, but not directly together i.e. there is a joint between the Tube 1 and the connector and also between tube 2 and the connector, so 2 joints. These additional “joints” in the system leads more chance of flex/ movement and also a greater degree of flex/ movement so there is a compound effect.

With this design, the 2 tubes are directly connected together so there is only one joint and a lesser chance and degree of movement. The additional components in this invention are only to pull the tubes directly together – the connection is not via these additional components.

This design also uses the strength of the steel, which is stronger than a typical metal casting or moulding, to join the tubes together.

Advantages

The advantages of the system are:

- Less manual labour or additional manufacturing processes required to make a connection; no need for welding or cleaning of welds.
- Clean and strong weld free joints can be achieved.
- Unlike welding, the components can be disconnected if required.
- Unlike many systems, the connection will be strong enough to form the frame of a table or desk for example

Unlike welded assemblies the tubes can be flat packed for efficient packaging and transport

Opportunity

- While there are multiple connections systems which connect metal tubes together via castings, moulding's etc, this system connects the metal tubes directly together, using the casting and bolts to pull them securely together using the strength of the steel tube to create a tight fit.
- Possible applications of the system may include use in tubular steel frames for tables, benches, office desk systems

Stage of Development

TU Dublin is seeking commercial partners to assist in bringing this technology to market.

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See how TU Dublin Technologies can work with your business.

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