

MICROMETRICS Visit 4 March 2020 (Report originally for the Newsletter)

The lucky 13 of our group were welcomed by Neil Main, Micrometrics' Managing Director and introduced to Amy, a Lincoln University student undergoing an engineering apprenticeship with them.

Neil explained that his high-tech company uses a variety of high powered laser machines to produce custom made components to their customers' requirements. Examples of variety of the components made were in display cabinets in the entrance hall. However, the 3cm high dinosaur (a perfect miniature replica of the Natural Science museum's skeleton) resulted from 'playing about with calculations & possibilities'. The various components made range from the large to the minute, for instance, lorry turbochargers, filters used in aircraft, medical machines, lettering /patterns or code etched onto steel plate or cylindrical heat exchangers for the beer industry.

The laser cutting machine tools used a variety of methods. The first very impressive one we looked was new and in size resembled an underground train carriage. It had cost around £600K but 'was worth it' as it milled set shapes into steel plate at 3 times the speed of the machine it replaced, thus reducing shift time and overhead costs. When questioned about the development of laser technology, Neil mentioned 1912 Einstein's theories which **explained the interaction between light and matter by the absorption and emission of light quanta and eventually led to the invention of the laser in 1960 and** its development in Cambridge (then the right words like ruby, infra-red, oxide, Co2 and gas, microwaves and from 100w to 20kW laser development, were used but probably reported by me, all in the wrong order! You get the idea – it is **very** advanced technology!

We then looked at a rapid pulsing laser machine, which cut extremely fine holes (only detectable when held up to the light). There were other machines which involving cutting welding, another which etched markings for code identification and then images in art form, a tiger or Lincoln Cathedral for instance.

The versatility of this company was further reinforced when two of their expert engineers demonstrated to us two innovative items which had been specifically designed and developed to enable Micrometrics win the tender to produce a component in the first place. One specification needed a specialist tool or jig to hold the component being made and the another to feed wire at a steady rate into a weld. Both these unique 'inventions' were examples of the success of Micrometics in meeting market demand of their engineering customers.

Cathy Platt with David Crees' helpful clarity added in red.