

Industry: Education /// Manufacturing

Products Used: Drives

Precision lathes make time for students

Time is certainly not standing still at the UCE Birmingham School of Jewellery. Here students are taught to work with precious metals and also to develop the traditional precision fabrication techniques used in making watches and clocks. By utilising Mitsubishi Electric U120 inverters to control the speed of their miniature lathes, all the students rotational speeds can be accomplished quickly and conveniently.



Not surprisingly, the 8 miniature lathes used in this precision fabrication process originated in Switzerland. They are no more than 350mm long and operate at a maximum speed of 2000 rpm to work on the tiny brass and steel components which make up watch mechanisms.

Application story first released February 1998 by Mitsubishi Electric UK

To meet the students machining requirements Newton Tesla, a Mitsubishi Electric specialist Variable Speed Drive distributor, came up with an innovative system that combines 90W Parvalux motors and Mitsubishi Electric 0.2kW U120 inverters to control the lathes. The new system provides the precise speed control and consistency needed for machining intricate parts and furthermore motor noise is reduced, which is essential in a quiet study atmosphere.

Mr Kynes of the university stated, "Before the inverter, we used a pulley system and a fixed motor speed of about 1400 rpm and by moving the drive belt on the pulleys, we managed to cover most speed requirements. There are a few applications however, where we need a lower speed and this requires some improvisation. Another benefit of operating at slower speeds is that it provides an opportunity to enhance the skill level of the students. We are very happy with the U120 and feel it is well suited to our needs." Mr Kynes added.

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UCE Birmingham School of Jewellery

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All eight lathes have been fitted with this system, which has so impressed a number of commercial watchmakers within the industry that they have even fitted their own lathes with the same system." says Jim Kynes.