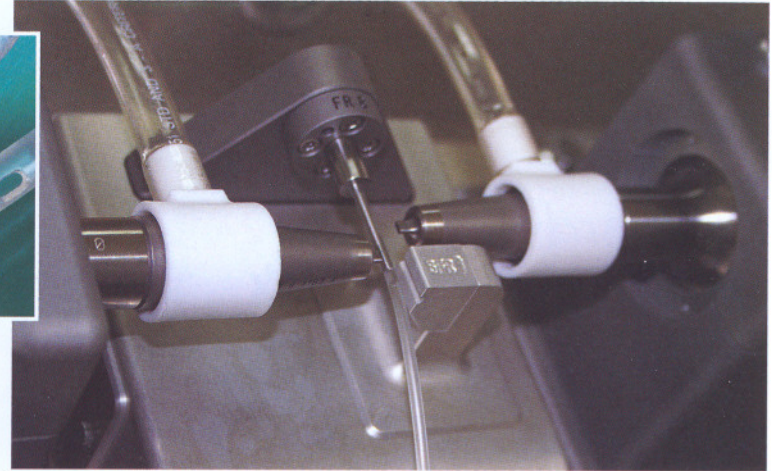
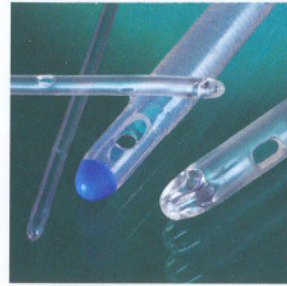


# Best Technology Application of the Year



## Rainbow Medical



Urinary tract catheters may not be the most glamorous medical devices but they play a critical role in effective treatment of patients within the healthcare system. That role can, however, be compromised by the very same device if it damages the patient's tissue or allows foreign matter or bacteria to enter.

It is a significant problem. Data shows that 44% of hospital patients with indwelling urinary tract catheters develop significant bacterial infections within 72 hours of catheterisation. And patients with a urinary tract infection are three times more likely to die than those without.

Hertfordshire-based Rainbow Medical Engineering has developed a manufacturing technology that minimises the risk of the catheter contributing to patient infection while

simultaneously eliminating the risk of defects.

Urinary catheters are routinely administered by insertion through the urethra into the bladder. It is essential that the catheter is as smooth as possible to avoid damaging the tissue in the urinary tract, because this can significantly increase the risk of exposure to infection.

Plastics processing technology produces very smooth catheter tubing. However, to achieve effective drainage the wall of the device must be perforated. Typically, these apertures are created by mechanical cutters, which cannot guarantee either burr-free edges or 100% removal of debris.

Rainbow Medical Engineering has developed an ultrasonic system that cuts and forms apertures with much smoother edges. The unwanted "chad" from each cut

aperture is drawn away immediately by vacuum and passed through an electronic counter; if a chad is not counted for a cut the process is immediately halted and the catheter ejected. Unlike the vision inspection systems used with traditional cutting technology, Rainbow says the counter is 100% reliable.

The ultrasonic cutting system is capable of forming apertures at speeds as fast as 0.1s. It can handle the PTFE-coated rubber latex materials used for short-term catheters as well as the silicone compounds used in long-term devices.

The judges said Rainbow Medical's solution impressed for its innovative combination of technologies that deliver production efficiency, improved product quality and a guaranteed no-failure rate for the customer.