



**The Austrian company MED-EL is one of the world's technology leaders in the field of hearing implant systems. In 2014, MED-EL was awarded, among others, the Austrian National Innovation Prize. They use more than 80 Memmert heating ovens in their production to cure silicones and adhesives. Thanks to the excellent service of Memmert partner GML-Fischerlehner + Kucera GmbH in Innsbruck, the appliances have been running reliably and problem-free for many years.**



MED-EL Cochlea Implant

## Wonders of technology: The cochlea implant

There are events in life which, for those who experience them, are little short of a miracle. Take, for example, being able to hear the voices and sounds around you once again after having been hearing impaired or deaf for many years. A hearing implant, which is suitable for people whose acoustic nerve is still intact, makes this possible. This hearing prosthesis, also known as cochlea implant, was named after the cochlea, in which electrodes are inserted that stimulate the acoustic nerve. According to estimates by the U.S. Food and Drug Administration (FDA) more than 300,000 systems have been implanted since the first successful implantation in 1969.

## Mr & Mrs Hochmair: Research pioneers and founders

It all started with American William F. House's research and the development of the first one-channel cochlea implant. These implants, which stimulate the acoustic nerve at one single point, did not, however, enable the wearer to understand complex speech. Alongside Australian Graeme Clark, from 1975 the Austrian couple Mr and Mrs Hochmair focussed on the development of implantable hearing prosthetics with which different frequencies could be transferred simultaneously. At the Vienna University of Technology, by 1977, they had succeeded in developing the world's first micro-electronic multi-channel cochlea implant, which was implanted in a patient the same year. Mr and Mrs Hochmair then founded their own company, MED-EL GmbH, which employed its first personnel in 1990. In the meantime, MED-EL develops and manufactures a wide range of hearing implant systems (cochlea implants, EAS hearing implant systems, middle ear implant system Vibrant Soundbridge, the world's first active bone conduction implant system Bonebridge, as well as brain stem implants) to offer as many people as possible who suffer from different forms of hearing loss the best possible solution.



MED-EL cures adhesives and silicone in a Memmert drying oven.

## Quality assurance is a must for medical products

A CI system featuring a microphone and speech processor receives sound waves outside the body and converts them into electric impulses. The implanted receiver coil is stimulated through a magnetic transmitting coil; the signals are then sent to the cochlea and the acoustic nerve through a fine electrode. It goes without saying that all cochlea implants manufactured by MED-EL and other medical technology companies are subject to strict quality requirements. The implants are manufactured and packaged in cleanrooms, providing quality assurance and ensuring that they are free of any contamination such as germs and endotoxins.

## Heating ovens operated non-stop

By now, about 80 Memmert heating ovens, in which silicone and adhesives are cured, are in operation at implant manufacturer MED-EL. Temperature-sensitive processes are monitored and documented using an internal chamber sensor and an external data logger. It is very important to MED-EL that the doors cannot be opened, something which has been an optional feature in Memmert devices built in 2003 and 2012. All of the heating ovens run non-stop, which is why the fast repair and spare parts service provided by Innsbruck-based Memmert partner GML-Fischerlehner + Kucera GmbH is an indispensable plus.

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### An overview of the main topics

- MED-EL
- Cochlear implant
- Memmert heating oven
- Curing silicone, curing adhesives
- Erwin and Ingeborg Hochmair

## Tempering optical lenses

UPT Optik Wodak GmbH performs form-stabilising tempering on innovative optical lenses after injection moulding in a Memmert UFP 800 cleanroom drying oven.

[more information](#)

### Laboratory appliances for drying

[Heating oven \(drying oven\) U](#)  
[Vacuum drying oven VO](#)

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