The secret behind custom-made sensors

Leif Jansson has been designing temperature sensors since 1967. Many of Pentronic's custom-made temperature sensors bear his signature.

"No one designs machines to suit temperature sensors," he says. "Special sensors are often the only alternative."

Leif is the designer of the load sensors for autoclaves that feature in the article about Getinge on the first page of this issue of Pentronic News. Personally he doesn't want to call himself a design engineer:

"Factors that determine the design include the customer's functional requirements, the environment, the requirements for robustness and how the sensor is to be mounted. We develop our temperature sensors together with our customers."

GETS IDEAS AT THE LATHE

Leif and his colleagues are responsible for transforming the customer's needs into a sensor that works and that can be manufactured at a reasonable cost.

"Often we first build prototypes and then draw the result using CAD," he says.

He says this approach works well because ideas flow more easily in the workshop. Sometimes the design of a sensor can change while he is working on it at the lathe. But he can see that this approach is changing as his younger colleagues take over more and more of the design work. They find it easier to get ideas while working in CAD.

"What's important is that all design engineers have experience of machining and other hands-on work," Leif says. "We often work at the limits of what the material can tolerate, and then knowledge has to be based on experience."

QUICK RESPONSE

Leif says that doing in-house machining is a prerequisite for working with custom-made sensors at all. Pentronic is one of the few temperature sensor manufacturers in the world that has an engineering workshop with this level of expertise.

The alternative is to buy components from subcontractors, who are often in other countries, and the result can be considerable waiting times.

"When we've developed a prototype it has to go to the customer for testing. That wouldn't be possible within a reasonable time span without our workshop."

Leif emphasises that the free-hand creativity stops when the basic structural design of a temperature sensor has been decided. The work is then taken over by CAD drawings, manufacturing to strict specifications and obligatory acceptance tests with protocols.

"Having your own machining department is a necessity for developing custom-made temperature sensors," says Leif Jansson, shown here holding the sensor used to measure the temperature inside the load in an autoclave.