

If the cap fits...

TorqSense transducers are used to ensure caps are being properly fitted to pharmaceutical bottles in a high speed packaging line run by the Almac Group at its global headquarters in Craigavon, Northern Ireland

The Almac Group is a pharmaceutical and biotech development and manufacturing organisation. Founded fifty years ago in Craigavon, Northern Ireland, it now has operations around the world and has just announced a major investment plan for new facilities at Dundalk, Ireland.

Strict international rules apply to the manufacture and packaging of pharmaceutical products and require that the correct environment is maintained within the bottle following capping. To this end, Regulation USP 671 provides

a guide to the torque range to be used for screw type containers with varying closure diameters. By ensuring that bottle caps are successfully applied to the bottles within the required torque tolerances, the integrity of the product can be maintained.

Sensor Technology, which makes TorqSense, has worked with many OEMs to develop high precision, high speed capping machines for use in pharmaceutical plants and a range of other applications. One of these, Cap Coder, an Oxfordshire neighbour of Sensor Technology, incorporates TorqSense units in its CCI440 and CCI440T Bench top Cap Coder machines, both of which are used by the Almac Group.

TorqSense is wireless in that it does not need to physically contact the bottle caps or shaft of the torque

head it is monitoring. Instead sensing is achieved through a radio frequency link. Attached to the surface of the transducer shaft are two Surface Acoustic Wave (SAW) devices, when torque is applied to the shaft the SAWs react to the applied strain and change their output. The SAW devices are interrogated wirelessly using an RF couple, which passes the SAW data to and from the electronics inside the body of the transducer.

"All you have to do is set up a TorqSense transducer in the capping machine and turn it on," explains Mark Ingham of Sensor Technology. "The SAW frequencies reflected back are distorted in proportion to the level of torque."

The Almac Group use a number of Cap Coder machines, both standard designs and purpose built at its global headquarters, some of which have been in service for five years.

When in use, if a torque value outside the acceptable range is encountered, an alarm will trigger the capping machine to identify unacceptable product for immediate rejection.

Ingham continues, "Fast and accurate torque measurement is becoming more and more important as all sectors of manufacturing automate their physical processes and also need to improve the recording of their production performance data. TorqSense is now used in many industries from automotive to materials handling, test and measurement, FMCG (fast moving consumer goods) production, power generation and so on."



Sensor Technology www.sensors.co.uk