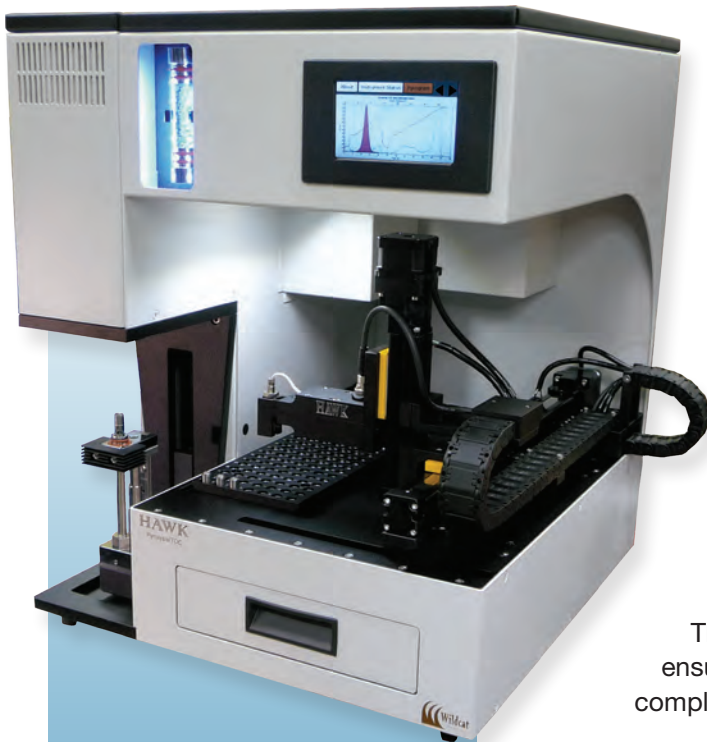




CASE STUDY

IKO Positioning Table Plays Crucial Role in Pyrolysis Measuring



Resource Workstation provides TOC and pyrolysis results with precision, accuracy and reliability for well-site or laboratory environments.

Wildcat Technologies makes laboratory and well site pyrolysis instrumentation for the oil and gas industry. For a crucial role in its flagship HAWK (Hydrocarbon Analysis With Kinetics) instrument, the company uses precision positioning tables from IKO International, Inc. Let's take a closer look at this pyrolysis instrument and the role that IKO's positioning tables play in Wildcat Technologies' design.

HAWK at a glance. Wildcat Technologies' HAWK instrument uses about 100 milligrams of 60 mesh size ground rock to measure all the normal pyrolysis parameters like total organic carbon (TOC), free oil (S1), kerogen yield (S2), organic carbon dioxide yield (S3) and maturity (Tmax). It also measures inorganic carbon which provides the carbonate carbon content of rock samples.

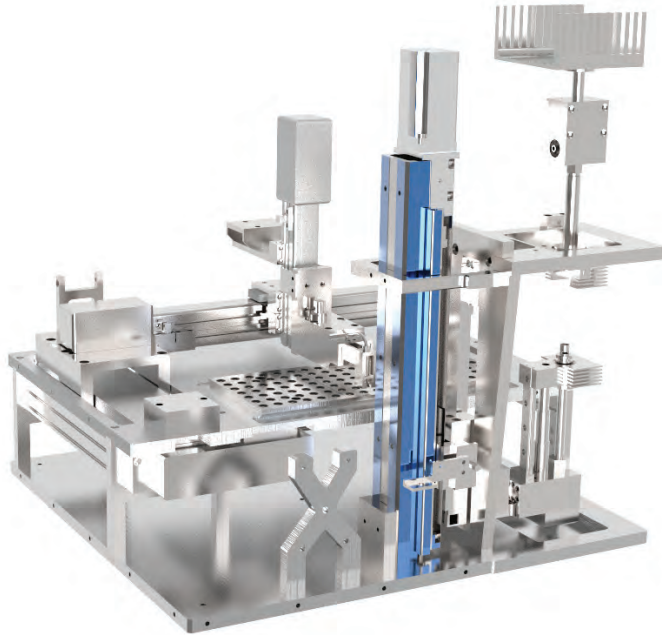
This instrument has a maximum oven temperature of 850°C, which ensures complete pyrolysis of Type III kerogen and guarantees the complete decomposition of carbonates such as calcite and dolomite.

The HAWK instrument analyzes both conventional and unconventional rock samples where the formation's generative and non-generative organic carbon contents can be determined while any generated, expelled or retained hydrocarbons can be qualified. By using its proprietary software, the instrument interprets results such as oil saturation, hydrogen index and maturity in near real-time to facilitate geosteering.

Other benefits include:

- Carbonate carbon
- True temperature for kinetics
- Multi-point calibration
- Multi-level software privileges
- No loss of free oil
- Extreme FID linearity
- 126 sample capacity
- Large crucible size with replacement insert

TU Table in HAWK



Wildcat Technologies uses IKO's 10 mm lead positioning tables in their HAWK instrument design.

Reliable positioning tables. For the HAWK, Wildcat Technologies sought out a precise, robust slide that allowed them to do multiple pyrolysis samples at the same time. After mulling over several options, the company found that IKO's TU positioning table was a great fit. IKO designs and manufactures a wide variety of specialized positioning tables that serve as reliable positioning mechanisms within industrial equipment and machinery. These tables are used in semiconductor, flat panel display manufacturing and high-precision equipment applications.

IKO's TU positioning table is a slim, compact model with a slide table assembled inside a U-shaped track rail which increases torsion, as well as the rigidity of the track rail under moment load. This model's table and bed are both made from high carbon steel and it exhibits a positioning accuracy of 0.020 to 0.050 mm. In addition, sizes range from micro and nano models to long stroke versions.

The positioning table plays a straightforward, yet important role in this instrument: It raises the sample into an oven for analysis—a process that can take upwards of 45 minutes, depending on the analysis requested.

Since this action requires the positioning table to routinely go in and out of the oven and constantly move up and down throughout the day, it was necessary for Wildcat Technologies to find a suitable option that could withstand these types of environments.

“In all my years working in pyrolysis, I’ve used other slides that became noisy and loose, and we couldn’t have that with this instrument,” said Wildcat Technologies President, David Weldon. “We were designing a new product and wanted it to last forever. We’ve been using IKO’s positioning tables since 2011 and haven’t experienced any issues.”

Optional lubrication insert. IKO’s positioning table comes with an optional C-Lube insert that’s IKO’s proprietary lubrication part that guarantees long life and maintenance-free operation for five years or 20,000 km of stroke length. Sliding or moving along a smooth surface with contact on the track rail and the raceway surface of the ball screws causes the lubricant oil within the plate to continue to seep on the raceway surface. C-Lube is an effective countermeasure for the attrition of grease for a location where re-lubrication is difficult.

Positioning tables when you need them. Early on, IKO helped Wildcat Technologies get through a challenging situation that ultimately caused them to alter their design. Wildcat originally ordered positioning tables that were manufactured in Japan. But since business took off quicker than expected, they went to IKO and told them they needed more positioning tables sooner than the shipments would arrive from Japan.

IKO offered to send Wildcat Technologies positioning tables from its west coast warehouse. Even though it wasn’t an exact replacement, the company was able to modify the HAWK instrument software to accommodate the United States inventory.

When Wildcat initially designed this instrument, they required a positioning table with a lead of 5 mm. At the time, IKO only had 10 mm lead positioning tables in stock at its United States warehouse, twice as fast as the one they originally ordered. After they sent Wildcat the 10 mm positioning tables, the company discovered that it worked better than the product they were waiting on from Japan. So from that point forward, Wildcat Technologies used IKO’s 10 mm lead positioning tables in their design.

For more information please visit www.ikont.com or call 800.922.0337.

