

Making Calibration Management Less Complex

Druck's DPI610E looks to give field technicians the right tooling in one easy-to-use, durable, versatile unit.



Pressure gauge calibration can be tricky without the right tool

The job is thankless and essential. The men and women who carry it out each day endure nature's harshest blows, from numbing cold to searing heat. The work unfolds on offshore rigs, at sprawling refineries, along massive pipelines, in pharmaceutical plants, and other places where the wheels of global production and commerce turn. Field techs climb ladders as the wind wails, make their way to a site's remote corners as the snow blows, and squint at the windows of gauges as the sun blazes. They are little known, but instrument technicians keep the world running. Their equipment must keep pace.

That is no small order, as any technician knows. They calibrate instruments in cruel conditions and, frequently, in places where hazards and demands alike are high. Historically, the tools of the trade did not make it easier. The portable pressure calibrator known as a Wally Box resembles vintage portable record players, a cumbersome object for a technician to tote up a ladder or down a flight of steps. Nor are they built for the job's ordinary rough-and-tumble nature. Bumps and knocks en route from one place to the next are apt to throw off the calibrators and require a time-consuming resetting.

Modern calibrators might do little to improve matters. Frequently, the devices are ill-equipped for the demands of the environment, have a narrow range of pressure they can calibrate, or are difficult to use in constricted settings where technicians' freedom of movement is reduced. Returning from the field, technicians' work is not finished. For many, the next task is to document their findings. When it entails paperwork, another possibility for error exists. Ensuring processes and efficiency are optimized is an important and sometimes-neglected aspect of overseeing or executing technicians' critical work.



The pain points

Recognizing the myriad of challenges regularly faced by technicians is a first step toward optimizing their processes and efficiency.

Properly understood, calibration is a comparison of a device's pressure measurement to a reference standard. Nothing matters more than accurate measurements. Providing technicians with calibrators that meet the highest standards in technology is a must. In fact, pressure calibrators should be more accurate than the devices being calibrated. That assures regulatory compliance and worker safety, and prevents interruptions in production that otherwise could have been avoided by finding problems at the earliest possible stages.

Stable pressure is a fundamental component of accuracy. Stability means the metrological properties of the measuring device remain constant over time. It's quantified by the extent of time in which a device holds a specific value. To the extent pressure remains stable or fixed, a device is accurate. This also speaks to the quality and reliability of the calibrator. Instability in pressure renders readings unreliable. Minimal drift is indicative of the quality and trustworthiness of the device.

Effective calibrators work across a wide range of pressures, from low to high. Calibrating devices at low pressure requires devices that can reliably generate stable and accurate low pressure as a reference. High-pressure calibration is a critical safety measure, meaning the device must be up to the task. Calibrators that reliably carry out the demands of working across pressure ranges maximize uptime by improving efficiency for technicians.

It is not enough that calibrators do all this. They also must be designed to guard against leaks between the calibrator and the instrument being tested, no small task in situations where technicians are operating in extreme weather conditions, close quarters, and hazardous environments, laboring to turn a wrench to tighten a connection. The impact of leaks on readings is plain enough, but they also present other problems, namely that they are difficult to trace and sometimes harder to fix, meaning that in the process of it all, valuable time is lost for the technician and the business.



Other indirect factors in calibrators can affect technicians' ability to acquire accurate data in the timely fashion every site needs to maintain the flow of production. Ease of operation is essential. This can be affected by everything from display screens to handles, or the absence of the latter. A touch screen might be simple to use, but what if the technician is working offshore in freezing temperatures requiring thick gloves? Technicians working pressure pumps in confined spaces might struggle to get the leverage they need to apply the necessary torque. Returning from the field, they could transpose data incorrectly from their device to paper records.

Technicians' days can run together and run long. Calibrators with batteries constantly in need of charging can be more than a minor headache. They can lead to the one thing no business or technician wants once the work is underway: downtime. Lack of durability can result in the same. Sometimes dropped, other times bounced off the sides of walls and rails and frequently thrown into the back of work vans after exhausting days in the field, calibrators must be as tough as the people who use them.

A history of great design

Founded in 1972 in Leicester, United Kingdom, Druck a quarter-century later provided what the industry long had been seeking: a calibrator that met technicians' needs. The DPI610 was in every sense revolutionary.

Bolstered by superior technology delivering on the highest priorities, accuracy, and reliability, the device made an immediate and lasting impression that endures to this day. Lightweight but tough, precise but easy to use, intrinsically safe and suitable for any environment, the DPI610 remains the standard against which other calibrators are considered. Technicians switching to the DPI610 didn't have to haul a Wally Box up and down steps and ladders and then stop to recalibrate when the box took a spill. Working the pump, a sometimes-tiring task on any device, was aided by a handle that techs could grab with their free hand. The DPI610 was an instant favourite and remains one today.

That might well prove to be the case with its long-awaited successor, the DPI610E. Imitators of the DPI610 arrived over the years. The DPI610E is not a replication of the original but an expansion of its wide-ranging appeal and capabilities. That expansion is based largely on input from industry experts and field technicians. Usability, durability, reliability, and flexibility were all examined and optimized in the DPI610E.





Designed by technicians

The DPI610E retains the straightforward design and other enticing features that helped drive the DPI610's popularity, and yet the new device offers more.

The DPI610E is easy to carry and easy to use. It features a touch screen that can be used with gloves. In addition, alongside the screen are a series of buttons to which a technician can turn while operating in icy conditions with their hands bundled in thick gloves.

Like its predecessor, the DPI610E is built to work in almost any environment, from the chill of winter in the northern hemisphere to the simmering heat of a rig set in the Gulf of Mexico. The device is rated intrinsically safe, meaning that it's been certified to be incapable of generating enough heat, energy, or spark to cause an explosion in a hazardous environment and meaning the device could contain a blast within itself if one occurred. This provides the fundamental peace of mind technicians need to do their hard, important work well.

But the DPI610E does still more. A single unit covers most pressure calibration needs, offering the highest accuracy at the broadest range. This is just one of the ways the DPI610E optimizes efficiency and processes. The manual pump for pressure generation reaches 1000 bar, or 14,504 psi, meaning it can be used effectively by technicians of varying size and strength in virtually any environment without use of additional equipment.

A quick-fit connector guards against leaks and requires no extra tools. The handle, so popular in the DPI610, is back and, has ports at the top of the device rather than the bottom, strategically placed to ensure ease of use.

Thicker plastic casing adds slightly to the weight of the device compared to the DPI610 but makes it even more robust and durable than the original. The reliability for which Druck products long have been known is a hallmark of the DPI610E.

Paper records that meant still more work for so many technicians once they returned from running calibrations on the site can be a thing of the past with the DPI610E. Linked with Druck's 4Sight2 calibration software, data from the calibrator can be fed straight into a computer from the device. That reduces workload for technicians – the task is made 40% faster, and ensures accuracy that otherwise could be lost in a simple juxtaposition of numbers while transposing data from machine to paper.

About Druck

A half-century after its founding, Druck, a Baker Hughes business, is a world leader, serving customers in more than 70 countries. The company's calibration instruments and sensors are known for delivering the best in performance, stability, quality, accuracy, and speed, thereby providing peace of mind in the most demanding environments.