

Cylinder Tracking

Automatic, Information-Rich, and Available in Real Time

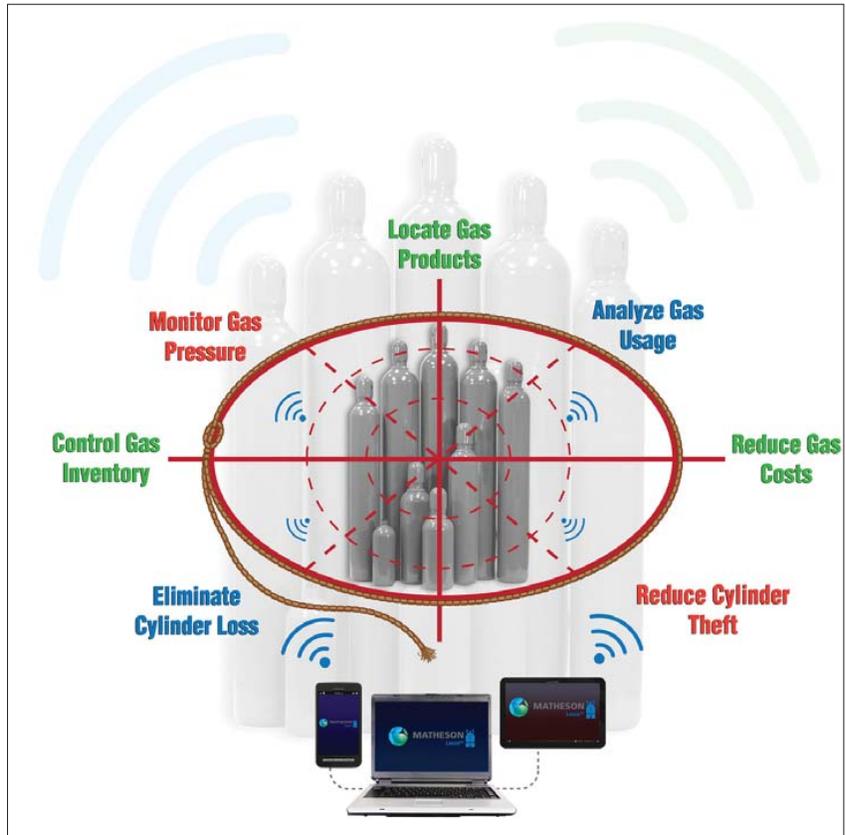
An Applications Report from MATHESON

Customers, distributors, and gas manufacturers all want it. So do regulatory authorities and local emergency responders. “It” is a reliable and simple tool for keeping track of cylinders (and other gas containers). Every reader here already knows about many of the demands and advantages of effective cylinder tracking. Most readers also will know about the weaknesses that cause most systems to fail: burdens on human interaction; incomplete information; and outdated data, to name a few. If the data provided by the system is not 100 percent reliable, then that data can always be questioned, and the value of the system is diminished.

This points us to three crucial qualifications for a cylinder tracking system. First, the system must be *automatic*. Data should be transparently entered into the system. Every point of human interaction, such as a procedure for checking in (or out) cylinders, is an opportunity for failure. Second, it must be *information-rich*. Data should include the location of the cylinder, contents, state of service (full, in-service, empty), history of usage, current cylinder content volume, expiration date, and other gas information. Third, it must operate in *real-time*. Manual inventory is only as accurate as the last census; barcode records are only as accurate as the last scan. A real-time cylinder tracking system is always up-to-date.

Automatic

Unlike systems using barcodes or other approaches that require manual scanning, a system using RFID (Radio Frequency Identification) is completely “hands-off.” Every cylinder or container has a unique RFID tag. Tag readers positioned around the site automatically read the tags. Tag readers are stationary devices that monitor for RF tag response within each reader’s radius of operation. The tag readers work together and are linked to the computer running the system software. As a result, when a cylinder is moved—for example, from Storage Location



MATHESON's Lasso™ Gas Product and Cylinder Management System tracks cylinders in real-time.

B to Production Line 12—the system automatically updates the inventory to reflect the change in location for that specific cylinder. The system automatically records the movement of a cylinder from the moment it enters the site, until it is removed from the site, including every movement in between, with no user burden.

Information-Rich

An automated cylinder management system can—and should—also manage value-added information. For example, with the MATHESON Lasso™ Gas Product and Cylinder Management System, a cylinder arrives at the user site with fill date, cylinder serial number, cylinder contents, expiration date (if any), and other related data already set up in the cylinder’s record. Customers have the option of utilizing RFID tags that are also able to

provide information about cylinder operating pressure or cylinder liquid level.

The Lasso™ software enables users not only to observe cylinder fill volume, but also to track and measure usage, set alert levels, and automate gas re-order reminders. The system also prepares gas order requisitions—automatically. The cylinder-related information enables improved inventory management and inventory rotation (first in, first out). For users with multiple storage locations, this simplifies the search for a new cylinder when a change-out is needed.

Real-Time

Gas usage is dynamic; an inventory taken yesterday is obsolete today. Complicating the matter, cylinders are often stored at multiple locations—at some facilities, these locations can be miles apart. As a further complication,

in-service cylinders are scattered across a site; some may be difficult to access or in a location that is hazardous.

Taking and maintaining a manual cylinder inventory is difficult. Even with barcode systems, data quickly becomes obsolete, and in-service cylinders must still be “visited” to obtain cylinder fill volume information. RFID technology moves the entire inventory process into real-time. Cylinder location and fill status information are always current.

Inventory Security and Regulatory Compliance

For users of gases that are on the Department of Homeland Security list of Chemicals of Interest, real-time monitoring and software help users comply with regulations and guard against theft. Users can set up a special alert for RFID readers at exit points. Management and/or site security (or other authorities) can be automatically notified if an item is detected at the exit of a lab, building, site, or other critical checkpoint—in real-time.

In measurements using EPA Protocol standards, a continuous history of cylinder pressure and volume is recorded, which helps users address EPA recordkeeping compliance.

Improving Operating Efficiency

RFID technology, coupled with software and hardware features (some proprietary to MATHESON), can improve the operating efficiency of virtually any site that uses gas products. Benefits of using this system are immediately noticeable. Inventory accuracy is improved, enabling the user to re-order only what is needed. Data is reported on a more timely basis, so guesswork and estimates are unnecessary. Information beyond just “on-site vs. off-site” is provided, improving information quality. By eliminating the need for physical inventory of gas products, operating efficiency is increased and the need for physical inspections decreased. And finally, by providing automatic reporting, usage alerts, and automated preparation of gas product requisition documents, workflow is improved overall. ■

MATHESON provides atmospheric, industrial, specialty, and electronics gases, equipment, and gas applications technology. For more information about MATHESON's Lasso™ Gas Product and Cylinder Management System, contact lassosystem@mathesongas.com.

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