# news & updates May 2026 | Issue 20

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### CEO's Corner

Coltraco Ultrasonics continues to make fire suppression cylinder testing faster, simpler, and more accessible with the **Portalevel® LITE** and **Portasteele® CALCULATOR**. Designed for reliable liquid-level indication, the **Portalevel® LITE** helps personnel quickly distinguish between GAS and LIQUID phases, enabling accurate cylinder checks without complicated procedures or unnecessary downtime. Its budget-friendly design and optimized rectangular sensor make it a practical choice for a wide range of fire protection applications.

Working alongside it, the **Portasteele® CALCULATOR** converts measured liquid level into agent weight, helping users save cylinder information, generate reports, and export data with ease. With an intuitive app design and a built-in database of fire suppression agents, this companion tool adds speed, consistency, and confidence to routine inspection work. Together, these solutions reflect Coltraco's long-standing expertise as a British ultrasonic technology manufacturer serving customers in 120 countries.

Alan Lowne
CEO, Saelig Company Inc.

## What's New?

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## Promotions

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## Discover the Portalevel® LITE & Portasteele® CALCULATOR

**✓ Reliable ✓ Accurate ✓ Budget Friendly**

With a clear GAS / LIQUID phase indicator, **Portalevel® LITE** gives any member of personnel the ability to test fire suppression cylinders **quickly and accurately.**

The **Portasteele® CALCULATOR** is the ideal companion to the **Portalevel® LITE.** Quickly and easily convert liquid level into agent weight.

**Find Out More**

## Step-by-Step Process:

**Step 1: Find the liquid level with the Portalevel® LITE**

**Step 2: Add a cylinder type and enter the measured liquid level**


**Step 3: Enter the cylinder dimensions and specific agent**


**Step 4: Obtain an accurate agent weight.**

## Highlighted Features

**✓ - Accuracy & Reliability:**
Utilises our optimised rectangular sensor

**✓ - Budget Friendly:**
Our most affordable ULLI, ideal for every application

**✓ - User Friendly:**



**✓ - Report Making:**
Save cylinder information and export data easily

**✓ - Versatile:**
Built-In database of fire suppression agents

LIQUID/GAS phase indicator ensures anybody can test accurately & reliably


✓ - **User Friendly:**
User friendly, intuitive app design

**Click here for more information**

COLTRACO
Ultrasonics | since 1987

British manufacturer of ultrasonic technologies, exporting to 120 countries and winners of The Queen's Award for International Trade 2019 and 2022.


# Coltraco Ultrasonic Liquid Level Indicators For Fire Safety Systems

***Using ultrasonic technology to check the contents of fire suppression cylinders is non-invasive, non-destructive and non-disruptive, meaning it is quicker and safer for personnel and does not require users to shut down fire suppression systems during inspection.***

**Fire Suppression Systems**

Fire suppression systems are designed to detect and suppress fires before they can spread and cause damage. A system includes smoke detectors, heat detectors, and sprinkler systems to quickly detect and suppress fires. When a fire starts, the heat from the flames causes the temperature in the room to rise, triggering the fire suppression system to be activated. A gas-based fire suppression system will release a substance such as carbon dioxide or halon into the room, depriving the fire of oxygen, extinguishing the flames, and preventing the fire from spreading.

**Why monitor installed fire suppression systems?**

Fire suppression systems usually consist of a group of fire cylinders, either welded seam, or seamless depending on the pressure, and are essential for protecting vital infrastructure, people, and assets from damage due to fire. Fire suppression systems are used to extinguish, control, and prevent fires from spreading. These systems are used in a host of applications in multiple sectors and environments, all with their own unique requirements and challenges associated with the installation.

The standard configuration of a fixed fire suppression system includes a bank of high-pressure cylinders that contain a fixed quantity of fire suppression agent used to extinguish a fire, all controlled by a central fire panel and actuating system.

In the event that a fire is detected via heat and smoke detectors, a trigger is sent to alert an activation of the fire suppression system. The cylinder valves are opened, and the pressure in the cylinders drives the agent through a pipe network for discharge at the point of fire. In some cases, these systems are supported by ancillary nitrogen cylinders if the distance the agent needs to travel is great.

Fire suppression systems, especially high-pressure cylinders, can leak and fail over time. Regulations state that storage container contents must be checked at least every six months, which ensures that the system is fully operational and contains the correct volume of agent sufficient to suppress a fire. During inspection, the pressure of refillable containers and the quantity of the agent must be checked. If inspection shows a 10% drop in pressure or at least 5% loss in net weight, the system must be replaced or refilled.

***ISO 14520-1:2015 (Gaseous fire-extinguishing systems – Physical properties and system design – Part 1: General requirements)***

***Chapter 9.2 Inspection, 9.2.1 General***

***9.2.1.3: The storage container contents shall be checked every 6 months as follows:***

***Liquefied gases: for halocarbon agents, if a container shows a loss of agent in quantity of more than 5% or a loss of pressure (adjusted for temperature) of more than 10%, it shall be refilled or replaced.***

***Annex F – System Performance Verification***

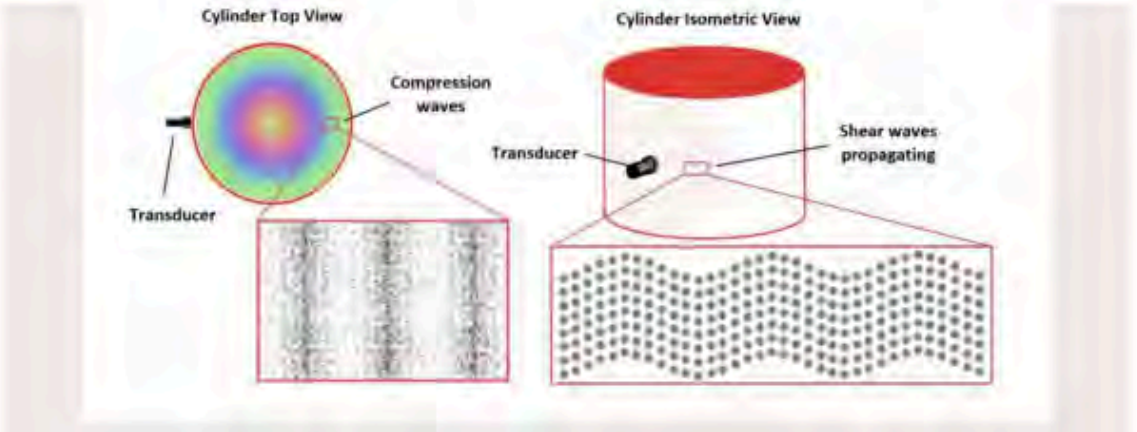
***Every 6 months: perform the following checks and inspections: for liquefied gases, check the weight or use a liquid level indicator to verify the correct content of containers; replace or refill any showing a loss of more than 5%***

**Ultrasound & Ultrasonic Liquid Level Sensing**

Using ultrasonic technology to check the contents of fire suppression cylinders is non-invasive, non-destructive and non-disruptive, meaning it is quicker and safer for personnel and does not require users to shut down the fire suppression system during inspection. The use of ultrasonic technology is a regulatory approved alternative method for monitoring the contents of cylinders. Coltraco ultrasonic liquid level indicators are accurate to ±1.5 mm and can monitor all types of liquified fire suppression agents, such as the common types of CO2, FM-200™, NOVEC™ 1230 and Halons. The non-disruptive, non-invasive nature of ultrasound monitoring in-situ takes around 30 seconds per cylinder using this easy-to-use, intuitive technology, in contrast to traditional, manual weighing which requires lifting equipment, multiple people, and about 15 minutes for inspection.

Coltraco liquid level indicators use ultrasonic sensors to identify the status of fire suppression cylinders. Ultrasonic sensor technology or Ultrasonic Testing (UT) is a reliable, versatile, and safe method for Non-Destructive-Testing (NDT). Ultrasonic waves are sound waves with frequencies above the upper limit of human hearing (above 20 kHz, or 20,000 Hz). Sound waves are mechanical waves that travel in a straight line and require a medium through which to travel. The propagation and attenuation of sound waves depend on the structure of the medium down to an atomic level; therefore, ultrasound is a useful method of studying a material's structure and the processes occurring within it.

While the highest frequency a human can hear is around 20kHz, Coltraco Portalevel® units use high-frequency ultrasound transmitters with a frequency of 1MHz. The main unit sends a strong electrical signal to the sensor (a piezoelectric crystal), which then emits a high energy pulse of ultrasound into the fire cylinder wall. The ultrasound that is produced is conducted through the solid walls of the container and then interacts with the contents (CO2, FM™200, NOVEC™1230, etc.) After the ultrasound transducer stops emitting ultrasound, it starts 'listening' for the returning echoes of the signal. The return signals are sent back to the main electronic unit for analysis in comparison to a previous calibration signal taken for each cylinder. This allows the Coltraco liquid level indicator to detect the presence or absence of liquid behind the area of the container wall where the sensor is placed without disturbing the contents.




Ultrasound interacts differently depending on the transducer and crystal. The diagram on the left (above) shows bulk waves in gas traveling radially inwards from the walls of a fire cylinder. Displacement is in the direction of propagation. The diagram on the right represents shear waves propagating radially over the surface of the cylinder from the point of transducer contact. Displacement is perpendicular to the direction of propagation. This information, combined with advanced signal analysis and calibration algorithms, provides a clear picture of content picture inside the cylinder, differentiating between the liquid and gas section.

**The Portalevel® Range**

The Portalevel® range of instruments is designed to be a portable way to non-invasively locate the liquid level inside any single skinned cylinder welded or seamless fire suppression cylinder. Each Portalevel® unit is capable of detecting the presence or absence of liquids externally, from water and liquid pressurized gases to clean agents and halons. The Portalevel® range can be used on an extensive range of container types, composed of different materials, shapes and sizes, but they are mostly used on steel high-pressure compressed gas cylinders.

This technology is suitable for many applications, but it is most widely used as a replacement for both weighing fire suppression cylinders during installation and servicing, or the fitting of internal and invasive liquid level 'float' devices. Once the liquid level height inside a container has been located, the actual agent weight can be determined using the Portasteele®Calculator, which is designed to quickly convert liquid height to weight accounting for the cylinder size, agent type and temperature (see below).

Ultrasonic inspections take about 30 seconds for each bottle, with easy-to-understand results displayed to indicate the internal level of liquid or gas. This ultrasonic level sensing technology is suitable for other liquid level monitoring applications, including LPG gas level indication and non-fire suppression containers such as water level measurements.

**Converting Liquid Level to Weight**

Monitoring the liquid level in fire cylinders is a vital aspect of any fire suppression system maintenance schedule. However, understanding how the liquid level relates to the fill weight of the cylinder is equally important. Coltraco Ultrasonics offers, in conjunction with the Portalevel® range, the world's first liquid level to agent mass calculator.

The Portasteele® Calculator calculates the agent weight of a fire suppression cylinder by using the liquid level determined by a Portalevel® instrument or inversely, by using the required fill level for a certain weight of

suppression agent. The Portasteele® Calculator is sold as a stand-alone unit on a 7'' hand-held tablet for use in conjunction with our Portalevel® range.

**Fire Cylinder and Fire Suppression System FAQs**

**What are the different types of fire cylinders?** There are various types of fire cylinders used for storing firefighting agents. Some common types include carbon dioxide ($CO_2$) cylinders, dry chemical powder cylinders, foam solution cylinders, and water cylinders. Each type of cylinder is specifically designed to contain and discharge the appropriate firefighting agent for extinguishing different types of fires.

**What are the two types of fire systems?** The two main types of fire systems are automatic fire detection and alarm systems and automatic fire suppression systems. Automatic fire detection and alarm systems detect signs of fire, such as smoke or heat, and provide early warning through audible and visual alarms. Automatic fire suppression systems, on the other hand, are designed to automatically suppress or extinguish fires using substances like water, foam, gas, or dry chemical agents.

**What is the most common fire system?** The most common fire system is the automatic fire detection and alarm system. This system includes smoke detectors, heat detectors, or a combination of both, along with audible and visual alarms. It is widely used in various buildings, including residential, commercial, and industrial settings, to provide early warning of fire and initiate appropriate evacuation and firefighting procedures.

**What are the 5 different classes of fire in USA?** The five different classes of fire are Class A, Class B, Class C, Class D, and Class K:

- Class A fires involve common combustible materials such as wood, paper, fabric, and plastics.
- Class B fires involve flammable liquids and gases, such as gasoline, oil, propane, and solvents.
- Class C fires involve energized electrical equipment or wiring.
- Class D fires involve combustible metals like magnesium, titanium, or potassium.
- Class K fires involve cooking oils and fats typically found in commercial kitchens.

**What are the types of fire extinguishers in USA?**

- Class A: Pressurized water or dry chemical for fires fueled by standard combustible materials, e.g. wood
- Class B: Carbon dioxide or dry chemical for fires fueled by flammable liquids, such as oil or grease
- Class C: Carbon dioxide or dry chemical for electrical fires
- Class D: Special agents for fires fueled by flammable metals
- Class K: Wet chemical for kitchen fires involving grease or oil
- Stored-pressure: the expellant is stored in the same chamber as the firefighting agent.
- Cartridge-operated: the expellant is stored in a separate cartridge and is released when needed.

Coltraco Ultrasonics' range of portable Liquid Level Indicators are high-quality, reliable, and accurate instrumentation designed for fire suppression systems such as CO2, FM-200™, NOVEC™ 1230, Halons and a wide variety of other clean agents. For many years, Halon 1301 was the ubiquitous choice for high-value assets that would be damaged by traditional sprinkler systems. It could be used in data centers, IT rooms, museums, libraries, surgical suites, and other locations where use of water-based suppressants could irreparably damage electronics or vital archival collections. But alternatives are now preferred for normally occupied areas, including (PFC-410 or CEA-410), C 3 F 8 (PFC-218 or CEA-308), HCFC Blend A (NAF S-III), HFC-23 (FE 13), HFC-227ea (FM 200), IG-01 (argon), IG-55 (argonite), HFC-125, or HFC-134a.

**Conclusions**

Enabling ultrasonic fire system inspection to take place without disrupting cylinder installations means no shut-down, saving time, and, with no requirement for multiple operators, it saves labor costs too. Coltraco Ultrasonics are global leaders in the monitoring of liquefied and non-liquefied gaseous extinguishing systems that protect high-asset value installations and critical national infrastructure.

PORTAGAS®

Portagas® is a world's first technology for non-invasive, non-destructive monitoring of pressurised, inert gas systems.

PORTALEVEL® MAX PLUS

The Portalevel® MAX PLUS is an all-new liquid level indicator with three extended calibration features and a display that will indicate if the sensor is in the GAS or LIQUID


PORTASTEELE® CALCULATOR

The Portasteele® CALCULATOR is the perfect partner to any of Coltraco Ultrasonics' liquid level detectors. It allows you to convert your measured liquid

**https://www.saelig.com/category/coltraco.htm**

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