

Thin Wall Measurement with Nordson's TrueWall AI Technology

Profile:

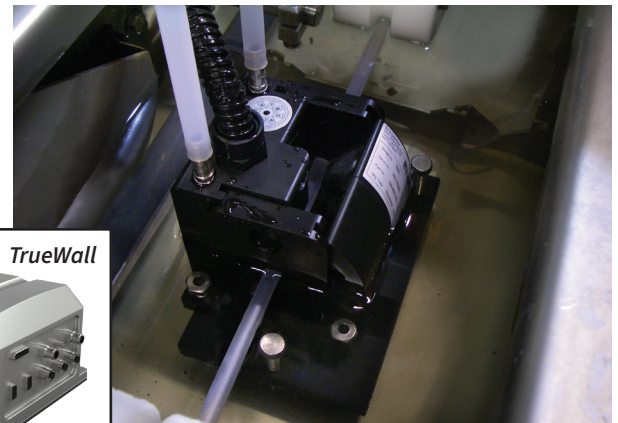
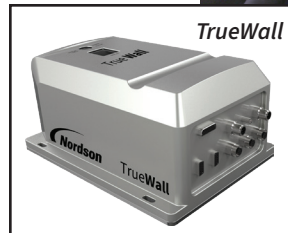
Manufacturers of thin wall plastic tubes

Solution:

TrueWall AI wall measurement technology

Results:

- Highest achievable accuracy through auto setup, tracking and measurement—ensuring the highest possible product quality
- Thin wall measurement mode does not require special transducers, or gauges or electronics
- Extended guiding keeps even the smallest tubes centered
- Provides up to 8 transducer measurements
- Capable of 25 μm (0.001 in.) wall thickness on tubes as small as 250 μm (0.010 in.)
- Unique compact design, specifically for thin wall tube
- Easy to install
- No operator experience, training or skill required
- No tube friction design
- No maintenance required



UltraScan gauge

The TrueWall AI wall measurement system has been proven in a diverse range of plastic tube measurement applications, such as medical tube, automotive tube, heat-shrink tube, and other tube products. The system provides an unmatched solution for measuring the thickness of thin wall tubes. The measurement technology centers around the ultrasonic principle that captures an echo at every boundary between two materials with different acoustic impedances. To obtain the wall thickness measurement, the system measures the time between pulses.

As the walls become thinner, the echo responses get closer until they overlap. This is where a new method for waveform detection is needed. The image below is an actual ultrasonic signal from a thin wall tube. The wall is so thin that you can't see the individual pulses. But with the TrueWall you don't need to see them because it automatically does the work for you! Using advanced Digital Signal Processing techniques, the TrueWall automatically sets up, tracks and measures.

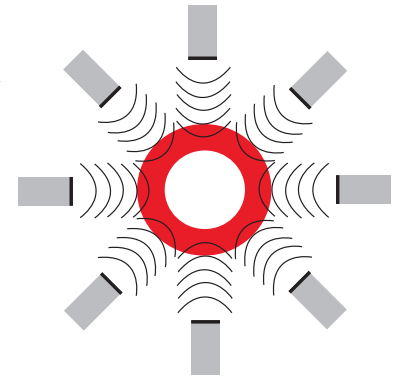


Ultrasonic signal from a thin wall tube

Full Product Coverage

TrueWall accepts signals from up to 8 ultrasonic transducers, giving full measurement coverage of the product. Each transducer is capable of measuring multiple layers of plastic individually. The TrueWall analyzes each wall value to determine the concentricity and the minimum wall thickness of the product. This system can also precisely measure the outer diameter and ovality of products.

- Up to 8 transducers
- Multiple layer measurement
- Concentricity measurement
- Minimum wall measurement
- Outer diameter and ovality



Unique Ultrasonic Technology

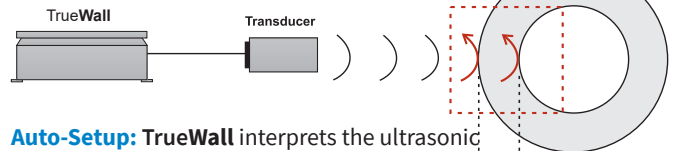
All ultrasonic measurement systems require some form of setup of the ultrasonic waveform. The measurement system must know the proper echoes and positions in the waveform to trigger on and measure from, and the user must set this up.

But the TrueWall measurement system, with its unique and powerful AI, is the world's only ultrasonic system that is capable of completely setting up its own ultrasonic waveforms instantly and automatically. The intelligence of TrueWall provides fully automatic ultrasonic measurement with:

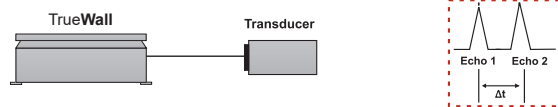
- Auto-search
- Auto-setup
- Auto-tracking

AI Intelligent Measurement

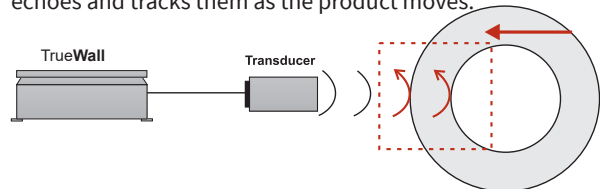
Auto-Search: TrueWall finds the echoes and sets a “window” around them.



Auto-Setup: TrueWall interprets the ultrasonic waveform and identifies the proper echoes.



Auto-Tracking: TrueWall locks onto the proper echoes and tracks them as the product moves.



Automatic Setup

Using revolutionary techniques and the benefits of digital processing technology, the TrueWall is able to automatically detect, set up, and track the ultrasonic signal. This means that when a new product is run, the TrueWall will automatically find the signal and begin taking measurements without the need of any operator adjustment.

- Simple implementation with automated setup and measurement
- High-precision measurement through high-speed digital technology
- Simple and robust gauge head designed for zero maintenance

No Operator Adjustment

- Flexible mounting options include the base of existing cooling trough, walls of the existing trough, or in a separate tank provided by Nordson
- Gauge end seals and separate water fill allow mounting in spray cooling troughs
- Built-in water purge system keeps sensors free of debris and air
- Simple calibration interface to the TrueWall
- Compliant with IP65 (NEMA 4) enclosure standards and CE regulations

The Results:

The TrueWall AI wall measurement system from Nordson provided this tube manufacturer with on-line precision measurements of wall thickness and concentricity. Leveraging advanced ultrasonic technology, TrueWall delivered high-speed, non-contact measurement of wall thickness and concentricity directly on the production line.

Immediate, reliable data coupled with closed-loop process control improved quality, reduced scrap, and dramatically shortened start-up time—from nearly 30 minutes to just seconds. With TrueWall, this manufacturer gained the real-time insight needed to optimize processes, boost productivity, and maintain consistent, high-quality output.

Nordson's non-contact measurement systems can help you dramatically increase productivity and realize bottom-line savings.

For questions or support go to: <https://ndc.custhelp.com/>

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