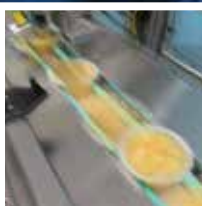


# Product Overview



## Leak Inspection Systems

INNOVATION IN CONTAINER INSPECTION



# User Interface Options



## T100

Compatible with Proximity sensor, CodeVu and CapVu vision sensors, Fill\_ir

Considered TapTone's entry level system, the T100 is an on-line inspection system for cans, bottles and jars that incorporates various sensors for detecting and rejecting containers from the production line. A single conveyor mounted system includes seven optional quick disconnects designed to incorporate one vacuum sensor option, one rejector, five optional input sensors and 1-4 optional outputs for system ready signal or alarm outputs. The user interface has a menu driven keypad, parameter memory for 50 product types, self-diagnostics for troubleshooting, seven language options and a flash memory for easy upgrades.

## T550 \*NEW\*

Acoustic Sensor, Proximity Sensor, Fill\_xr, Fill\_ir, CodeVu, CapVu, Force\*, and Compression\*

Recently redesigned and updated, our new T550 user interface can operate up to three primary inspection sensors simultaneously and will incorporate up to two optional inputs as well. The interface has a color touch screen icon driven display with preset programs for quick product changeover. Display on-screen histograms for product monitoring or system diagnostics. Uses a USB drive for easy upgrades and additional storage of product presets.



*\*Features to be released in 2015. Requires new style Compression (C) or Force (F) sensor for operation*



## T4000 HMI

All sensors EXCEPT TotalVu and SelectVu vision sensors

The T4000 user interface is a standard HMI user interface with the DSP board mounted inside. This interface can operate up to four primary inspections for pressure/vacuum, leak, and fill level from a single interface on a single production line. The interface has a color touch screen in 15 languages, on-screen diagnostics for product monitoring and troubleshooting, preset programs for quick product changeover and multi-tier password protection. The interface also includes two independently programmable reject outputs.



## T4000 PC

Proximity sensor, Fill\_xr

This T4000 user interface is a PC based system with the DSP board mounted inside.

This interface was designed for our high throughput proximity and x-ray fill level customers. The T4000PC utilizes an industrial grade touch screen PC offering easy icon driven menu set up and enhanced data logging to a flash card or USB drive. The interface can communicate and operate more than one sensor simultaneously. This system supports remote diagnostics via Ethernet.



## PRO Series \*NEW\*

All sensors INCLUDING TotalVu and SelectVu vision sensors

TapTone's "plug and play" user interface, the PRO Series user is PC based. Unlike all TapTone's other systems, the DSP boards for this system are mounted inside the individual PRO Series sensors, rather than inside the user interface. Multiple independent sensors can be connected and viewed simultaneously from a single PRO Series user interface. PRO Series sensors can be mounted on a single production line or on multiple production lines, saving both space and cost.

## Other TapTone Technologies

- Vision
- X-ray fill level
- Infrared fill level

Information on these technologies can be found on product specific data sheets and on the TapTone website.

## Proven Technologies, Industry Expertise

With over 40 years of experience in the packaging industry, Teledyne TapTone can help you stay competitive in today's changing market climate. TapTone systems are uniquely designed for rapid product changeover to accommodate the ever evolving requirements of consumer packaged goods. With a global focus on quality and cost control, there has never been a better time to add a TapTone inspection system to your production line.

TapTone has package inspection options for:

- Glass, Metal, and Plastic Containers
- Leak, Vacuum/Pressure, Fill Level, and Vision Inspection
- Individual Containers or Cases

**Acoustic Sensor**

**For closures with no measurable deflection**

Acoustic technology is used to measure pressure or vacuum in containers with metal closures that do not have a measurable lid deflection. Can be configured with an optional proximity sensor for cocked crown detection. Used primarily on metal crowns and ROPP closures.



**Proximity Sensor**

**For metal closures with deflection**

Proximity technology measures pressure or vacuum in containers with metal closures by measuring the lid deflection. Used primarily for canned products or metal button up lids.



TapTone Model Number

A

P

Container Types

Glass

Glass

Metal

Metal

Plastic

Primary Inspection

Vacuum/Pressure

Vacuum/Pressure

TDLC Sensor

N

N

User Interface Options

T550, T4000 HMI, PRO Series

T100, T550, T4000 HMI and PC, PRO Series

Sensor Mounting

Floor/Conveyor

Floor/Conveyor

Sensor Construction

Stainless Steel

Stainless Steel

Inspection Speed

1,500 Containers/Minute Maximum

2,000 Containers/Minute Maximum

Line Space Requirement

30.5 cm (12 in)

30.5 cm (12 in)

How It Works

**Acoustic Technology ▲**

Acoustic technology is used to measure pressure or vacuum in containers with metal closures that do not have a measurable lid deflection. The sensor works by applying a "tap" to the top of each container lid using an electromagnetic pulse which excites the closure. The lid vibrates at a natural resonant frequency "tone" based on internal pressure or vacuum. The resultant "tone" signal is sensed by a microphone. The Digital Signal Processor (DSP) produces a real-time signal spectrum and calculates the resultant frequency of the "tone" for that lid. The frequency is then compared to user set limits. Containers with a frequency outside these limits are rejected.

**Proximity Technology ▲**

Proximity technology measures pressure or vacuum in containers with metal closures by measuring the lid deflection. The sensor produces a continuous magnetic field that monitors the distance between the sensor and the metal lid. The continuous signal is digitally sampled to produce a merit value of the lid profile. The profile value is then compared to user set limits. Containers with lid deflection outside these limits are rejected.

### Compression Sensor (C)

#### For flexible plastic containers

Compression technology detects and rejects leaking and damaged flexible containers. Used to test non-pressurized plastic containers for leaks. The sensor is available in standard or low profile configurations.



### Dual Compression Sensor (DSC)

#### For flexible plastic containers

The TapTone DSC sensor can inspect a wide variety of flexible containers for micro leaks. The design incorporates our patented dual sensor technology and is available in standard or low profile configurations.



### TDLC Sensor

#### Pressure Inspection for Foil and Film Sealed Containers

The TDLC sensor takes a pressure measurement from the top of the container on the seal rather than on the sides yielding a more sensitive measurement on certain container types. This sensor can be configured on our C, DSC, F, and FS Sensors.



## NON-PRESSURIZED CONTAINERS

C or CLP

DSC or DSC-LP

TDLC

Plastic

Plastic

Plastic

Leak (>.508 mm/.020 in)

Leak (>.152 mm/.006 in)

Leak

Y

Y

Y

T550\*, T4000 HMI

T4000 HMI, PRO Series

T4000 HMI, PRO Series

Floor

Floor

Floor/Conveyor

Stainless Steel

Stainless Steel

Stainless Steel

2,000 Containers/Minute Maximum

1.5 m/sec (300 ft/min) Maximum

Dependent on sensor speed (C, DSC, F, FS)

27.3 cm (10.75 in)

72.4 cm (28.5)

N/A

### Compression Technology ▲

Compression technology detects and rejects leaking and damaged flexible containers. As a container passes through the system, dual parallel belts apply force to the sidewalls of the container. This action compresses the headspace of the container which allows a sensor to take a force measurement at the discharge of the system. Utilizing DSP technology, the controller analyzes the measurement and assigns a merit value to each container. If the merit value is outside of the acceptable range, a reject signal activates a remote reject system.

### Dual Sensor Compression Technology ▲

Dual Sensor Compression technology detects and rejects leaking and damaged flexible containers at production line speeds up to 300 feet/minute (1.5 meters/second). The system is designed with dual parallel belts suspended over the customer's existing conveying system. As the container passes through the system, the dual parallel belts apply force to the sidewall of the container. This action compresses the headspace of the container that allows a comparative measurement to be taken at both the infeed and the discharge of the system.

### TDLC Technology ▲

The TDLC sensor takes a pressure measurement from the top of the container on the seal rather than on the sides yielding a more sensitive measurement on certain container types. The sensor can be configured on compression and force systems for inspection of standard or low profile containers with foil or film seals.

\*Feature to be released in 2015

### Force Sensor (F)

#### Pressure inspection on plastic or metal containers

The TapTone Force (F) system will detect leaks and low pressure in LN2 dosed and carbonated containers with internal pressure up to 3.1 bar (45 psi). Optional sensors can be added for additional inspections.



### Force Stainless Sensor (FS)

#### High pressure, high speed pressure inspection

The TapTone FS system will detect leaks and low pressure in LN2 dosed and carbonated containers and aerosol cans with internal pressure up to 11 bar (160 psi). The TapTone FS is manufactured with a stainless steel transport deck and reinforced frame for extra rigidity in high pressure applications.



## PRESSURIZED CONTAINERS

F	FS
Metal	Metal
Plastic	Plastic
Pressure Maximum 3.1 bar (45 psi)	Pressure Maximum 11 bar (160 psi)
Y	Y
T550*, T4000 HMI	T4000 HMI, PRO Series
Floor	Floor
Stainless Steel	Stainless Steel
1.5 m/sec (300 ft/min) Maximum	1.5 m/sec (300 ft/min) Maximum
119.3 cm (47 in)	57.8 cm (22.75)

### Force Technology ▲

Force technology is designed to find leaks and low pressure in LN2 dosed or carbonated containers. As a container passes through the system, dual parallel belts transport the container past a sensor that measures the tension on the sidewall of the container. This action allows the system to measure the pressure inside the container and automatically reject all containers that fall below or above the acceptable pressure range.

\*Feature to be released in 2015



**TELEDYNE**  
**TAPTONE**

Everywhere you look™

# Case System

## Case Inspection for Metal Cans or Glass Jars with Metal Closures

The T4000 Case system is designed for non-contact, non-destructive, 100% automatic container inspection through a sealed cardboard and/or shrink wrapped case. The system offers the option of acoustic or proximity technology to inspect glass jars with metal closures or metal cans for pressure or vacuum after the containers have been sealed in the case. In many applications, the T4000 Case system will detect defects other than low pressure or vacuum. Some examples are missing containers, containers with missing lids or broken bottles, flat sours and damaged cans.

### Features

- 100% non-contact inspection
- Large PC touch screen
- Graphic screen shows defects in case
- Acoustic and Proximity sensor heads (up to 4 heads)
- Quick set sensor bridge for easy product changeover
- Speeds up to 250 cases per minute
- NEMA 4x, stainless steel, water wash down (user interface enclosure and control enclosure)

### Applications

- Vacuum/Pressure inspection in metal cans
- Vacuum/Pressure inspection in glass jars with metal closures
- Missing cans
- Broken or missing glass bottles



## Case System Configuration

The T4000 Case system is a self-standing system that can be configured as follows:

- Proximity inspection: 1-4 proximity sensor heads (single bridge)
- Acoustic inspection: 1-4 acoustic sensor heads (single bridge)
- Combined acoustic/proximity inspection (one acoustic bridge and one proximity bridge)

The system includes a six-foot inspection conveyor for warehouse or other off-line applications. Spray markers can also be added (optional) to mark the location of the faulty containers within the case for easy identification and rework. The system can be ordered without the conveyor for on-line applications.



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*Note: Features and specifications subject to change without notice.*

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