



TapTone

APPLICATION NOTES

News and information from Teledyne TapTone, a leader in the package inspection industry.

CAP INSPECTION USING CapVu™ CAMERA SENSOR

Tested: Dairy Containers

Inspection Desired: High Cap, Tilted/Cocked Cap, Missing Cap

Tested with: TapTone CapVu™ Camera Sensor

The purpose of the test was to prove the effectiveness of the TapTone CapVu™ camera sensor in detecting various capping defects. Packers often lack cap inspection systems after the capper or rely on human inspection to detect defects. The use of a TapTone CapVu camera sensor immediately after the capper will eliminate defects early in the manufacturing process. The camera system is capable of detecting missing caps, high caps, titled/cocked caps and caps that are missing the tamper band.



The TapTone CapVu™ Sensor System

TECHNOLOGY CORNER *How it works*

The TapTone CapVu camera sensor is a non-contact container cap and closure inspection module. The sensor is designed with a high speed digital camera and a LED back light contained in a stainless steel housing. The sensor is cantilevered over the conveyor and no conveyor modifications are required. The CapVu sensor uses vision technology to inspect the cap or closure on containers after they have been filled and capped. A good container is passed through the sensor and the image is stored in the camera. As the production containers pass through the sensor, the high speed camera takes an image at up to 6,000 frames per minute. The image of the production containers are then compared to the image of the good container stored in the camera to determine the proper cap placement. Containers that do not match the good image are rejected. The CapVu sensor can be used to detect missing caps, high caps, tilted/cocked caps and missing tamper bands on glass, plastic and metal containers.

The TapTone CapVu™ Camera Sensor system mounted on a floor stand.



APPLICATION NOTES

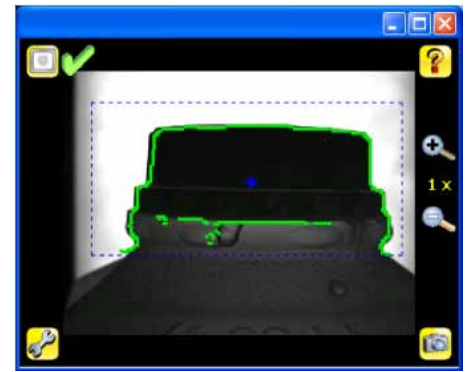
Test

One gallon and half gallon plastic dairy containers were used for the test. The good containers with the properly applied caps were passed through the sensor and the image was saved. Containers with missing caps, high caps and tilted/cocked caps were then passed through the sensor.

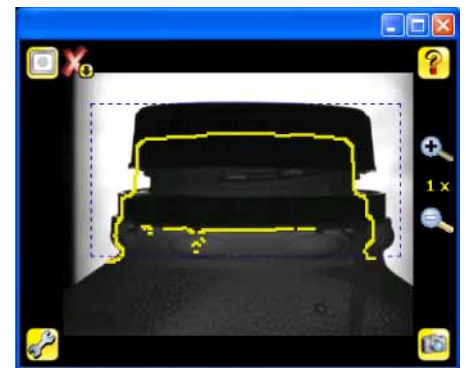
The system was able to clearly differentiate between the good containers and the containers with the missing cap. The system was able to detect high caps and tilted/cocked caps that were .050 inch (1.27mm) higher than the good cap.



Product tested. Full and half gallon containers



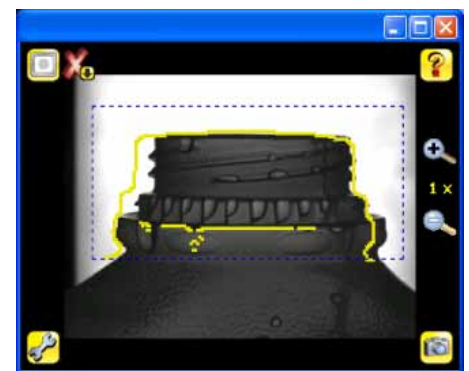
Good Cap Placement



High Cap Defect



Tilted /Cocked Cap Defect

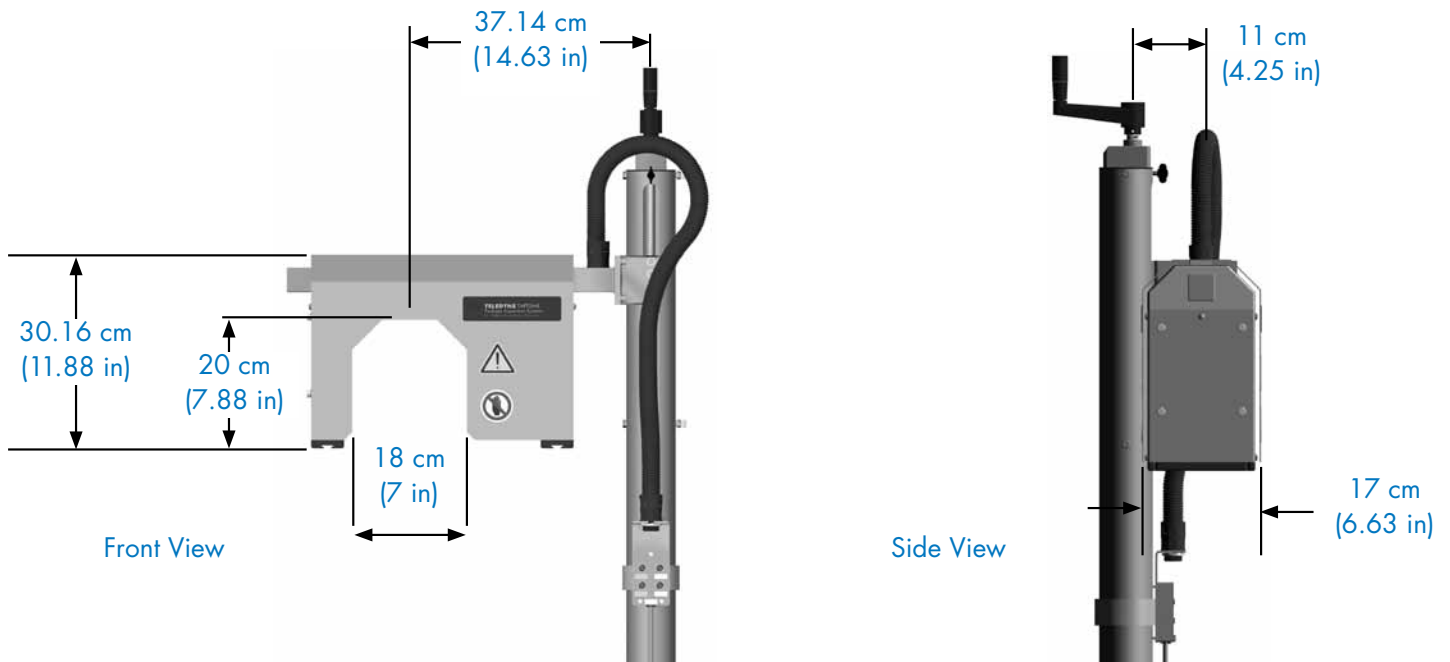


Missing Cap Defect



Camera System Features:

- Image processing up to 6,000 frames per minute
- Built-in color touch screen for easy viewing of images
- Easy programming done on color touch screen
- Logging of last 10 rejected images
- USB port to download images to thumb drive
- Simulation software for viewing saved images on your PC
- RTV Floor stand for easy mounting
- 9.5 in (240mm) of travel for height adjustment
- Digital indicator for accurate change-over



49 Edgerton Drive • North Falmouth, MA 02556 USA
P: +1 508.563.1000 F: +1 508.564.9945 E-Mail: taptone@teledyne.com

3/23/10. Specifications subject to change without notice.
TapTone is a registered trademark of Teledyne TapTone. Copyright 2010, Teledyne TapTone.