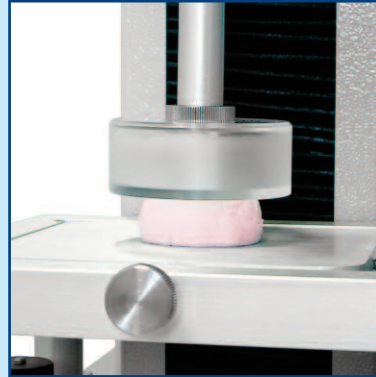# TMS-Pro
Texture Analyzer

**Computer-Controlled Systems
for the Food Industry**

TMS-Pro Texture Analyzer

What is the TMS-Pro Texture Analyzer?

Food Technology Corporation's TMS-Pro range of texture analyzers sets the standard in cost-effective computer controlled texture analysis. Food technologists can manipulate forces and actions applied to their food samples by using our 200 probes and fixtures - you can even use one of our competitor's fixtures, it's that flexible. The broad range of test setup configurations combined with multi-stage program capability with our Texture Lab Pro software means that almost any processing condition in the plant or sensory method of texture analysis can be replicated.
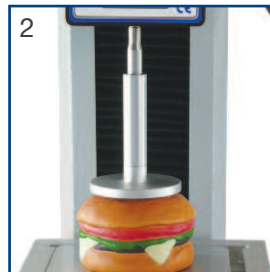

"An objective measure directly related to a food's mechanical performance or behavior"
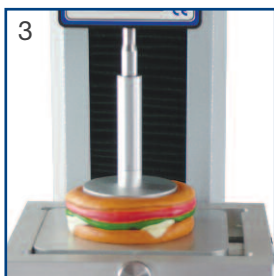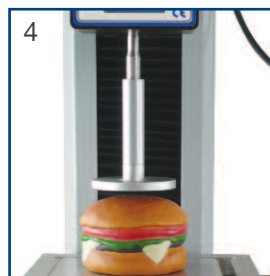
Extrude Stretch

1 The texture analyzer's crosshead moves in either an up or down direction to compress or stretch a food sample. The moving crosshead is fitted with a load cell to measure the foods force response to the deformation.
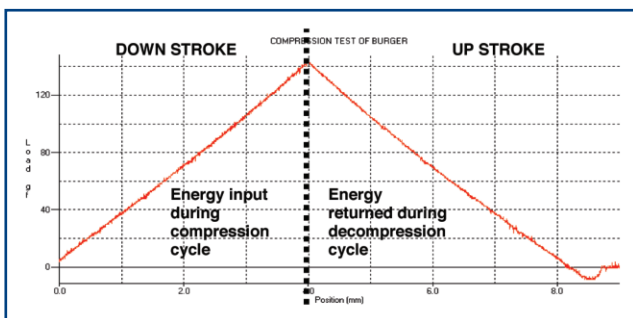
2 In a compression test, the load cell acts just like an upside down laboratory balance. Data collection can be "triggered" to begin when the sample's surface is detected giving a constant start point to repetitive tests.

3 The texture analyzer's crosshead then travels to either a programmed distance or load, recording the force response of the sample to the deformation imposed.

4 The crosshead then returns and the sample responds to the conditions created. Forces are manipulated through the use of probes and fixtures recreating conditions that the food is exposed to during mastication or handling.

COMPRESSION TEST OF BURGER

DOWN STROKE | UP STROKE

Energy input during compression cycle | Energy returned during decompression cycle

Load p

Position (mm)

The energy put into the sample is absorbed, stored or returned. We measure this response and also present it in graphical form to aid in understanding and putting numbers to sensory characteristics. Instrumental results are almost always correlated to sensory panel judgements and sensory characteristics such as hardness, cohesiveness and stickiness can be calculated.

Bend Compress

Texture Lab Pro

Texture Lab Pro Software

Food Technology Corporation's Texture Lab Pro software combines maximum flexibility in test design and data generation with user-friendly operation. Designed by food technologists for food technologists, our software provides:

• A full range of reference library files for automated testing
• Industry standard protocols for TPA, gel testing and ISO referenced procedures
• Intuitive and logical feel with Windows style format

Accompanying support material allows operators to develop test programs with minimal training so that you can start testing almost immediately. Whether you want our systems for the processing floor or the research laboratory you will be surprised at just how simple they are to use and how much useful information you can generate at the click of a button!

"No hidden costs, Texture Lab Pro software and upgrades supplied free of charge as standard - for life!"
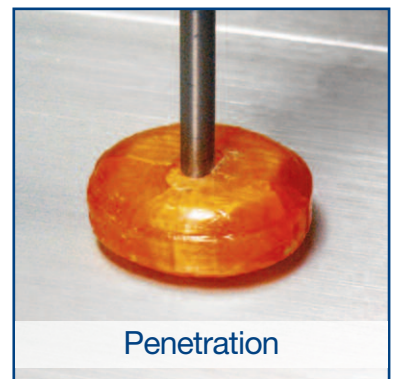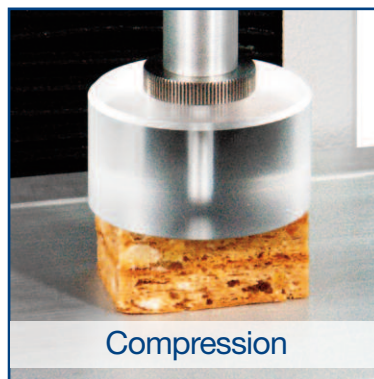
Programming

Squeeze
Peel

A logical programming language means that more experienced operators can set up their own tests easily detecting; Peaks, Fractures, Slopes, and much more in a matter of seconds.

For those of us who don't need to reinvent the wheel the Texture Lab Pro software comes complete with a wide range of detailed library files that automatically detect the most commonly used sensory-based food parameters.
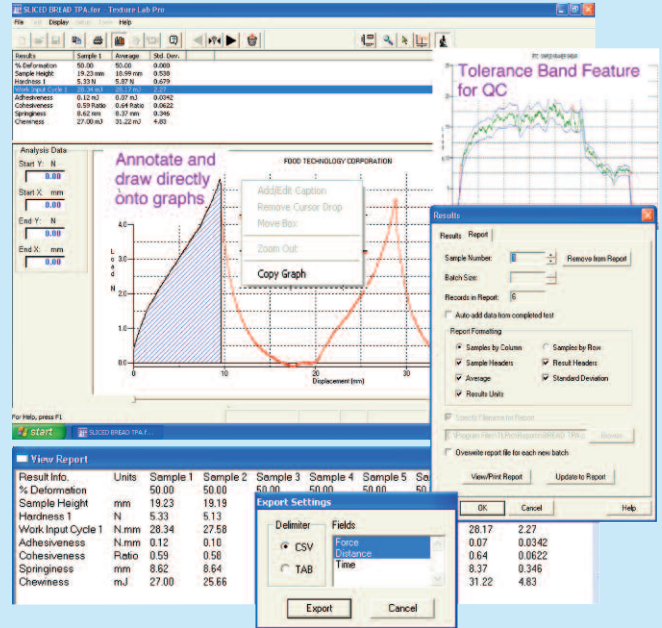
If your application requires something special, we routinely write custom designed test procedures for our customers at no charge. Just give us a call, we are always here to help any way we can.

"Write your own tests or use one of our many library files which automatically calculate established food textural parameters"

Gelatin Bloom

Compression

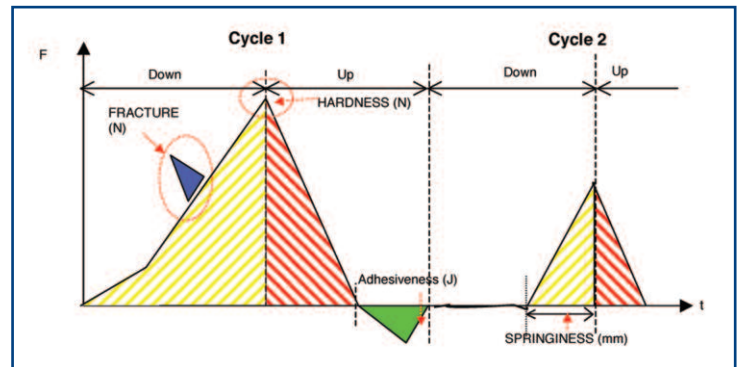Penetration

Texture Lab Pro Features

- **Master & operator modes for test security**
- **Simple-to-use controls and logical programming sequence**
- **Multi-stage programming for unlimited test development**
- **Full set of reference library files for routine testing**
- **Extensive electronic support notes for operation and test design**
- **Wide range of application studies for all food industrial sectors**
- **Automatic graphing facility to display multiple overlays**
- **Graphical interrogation feature and parameter calculation**
- **Automatic calculation of Texture Profile Analysis parameters**
- **Copy and paste option programs for easy report generation**
- **Automated batch report with statistics**
- **Quality Control features: tolerance bands, operator prompts and pass/fail analyses**
- **Direct report export to Microsoft® Excel**

Texture Profile Analysis

Texture Profile Analysis (TPA) is fully automated with the Texture Lab Pro software. TPA has been used for almost 50 years to bridge the gap between sensory and instrumental texture measures.

The traditional calculations and parameters are included along with many of those expanded characteristics highlighted by subsequent research.
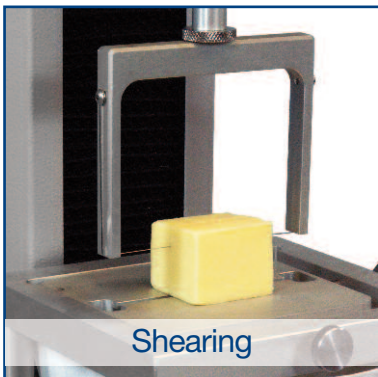

Primary:
- Hardness
- Springiness
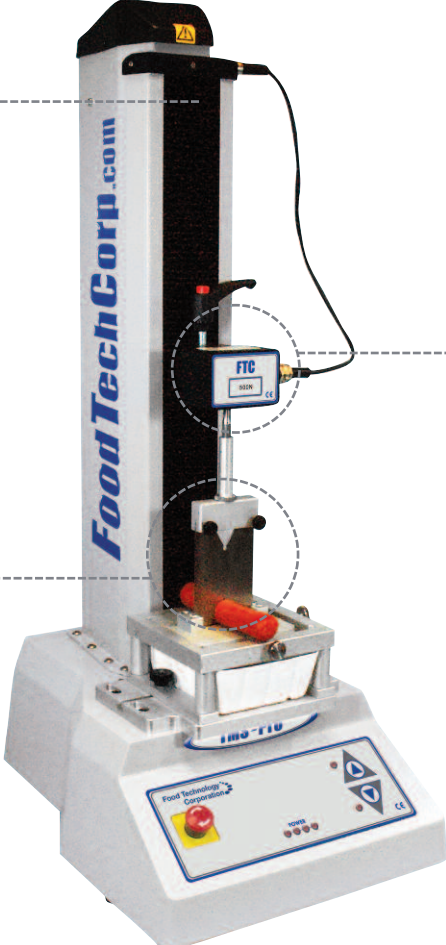- Cohesiveness
- Adhesiveness

Secondary:
- Fracturability
- Chewiness
- Gumminess

Shearing

Extrusion

Snapping

TMS-Pro Technical Overview

The TMS-Pro is a fully programmable computer-operated test system for the laboratory environment. This rugged and portable test system provides high specification analysis at an affordable price with a user-friendly operator interface.

Programmable testing and data capture options in compression, tension or cyclic mode

Run to a load, position, time or break. Multistage programming via PC allows any combination of commands

Over 200 test probes & fixtures compliable with international industry testing standards

USB data output and communication to your PC for real-time graphical representation and control

Super fast 2000 points per second data acquisition rate of position and force to capture the fastest transitions

10 Interchangeable load cells available from 2 to 2500 Newtons that can be changed in seconds for ultimate precision and flexibility

Unlimited test speeds between 1mm and 1000mm/min, over 320mm travel with accuracy better than 0.1% of the selected speed

Universal test table and fixture mounts will accept competitor's fixtures for even more flexibility

System Specification

Force Range	±2500N (562lbf, 255kgf)
Force Resolution	0.015% of selected load cell's range in Newtons
Travel Range	320mm (12.5in)
Position Resolution	2.5 micron (0.0025mm)
Speed Range	1 - 1000mm/min (0.04 - 40in/min)
Speed Accuracy	Better than ±0.1% of set speed
Data Acquisition Rate	16000 readings/sec, filtered to 2000 readings/sec
Load Cells	Intelligent load cells, changeable by the user in seconds
Capacities Available	2, 5, 10, 25, 50, 100, 250, 500, 1000, 2500N (0.45 - 562lbf, 0.2 - 255kgf)
Weight	18kg (40lbs)
Power Supply	120/220 VAC 50/60Hz selectable (150 Watts)

Who is Food Technology Corporation?

Founded in 1966, Food Technology Corporation is the industry's longest standing provider of quality texture measurement systems. With over 40 years experience evolving from the groundbreaking Kramer Shear Press, our company is able to provide systems for the field, factory and laboratory test environments. Our extensive experience in practical food texture measurements, combined with our cost-effective solutions makes us the ideal partner for your texture instrumentation needs.

Food Technology Corporation

45921 Maries Road, Suite 120,
Sterling, Virginia, 20166 USA.

t: 703-444-1870
f: 703-444-9860
e: info@foodtechcorp.com

431-900-04

www.foodtechcorp.com