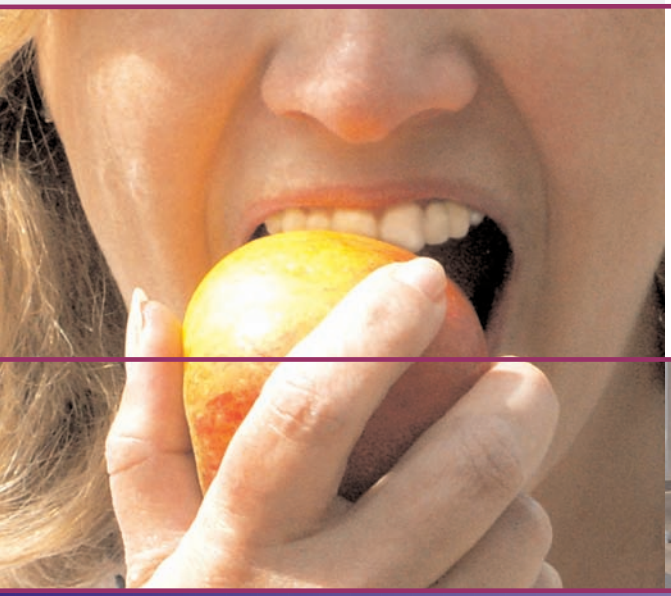
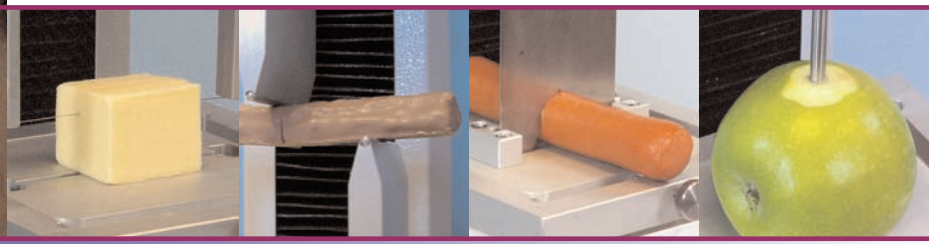


FTC FOOD TECHNOLOGY CORPORATION



Test Cells & Fixtures

www.foodtechcorp.com

Food Technology Corporation

Our Company

Food Technology Corporation (FTC) has provided the food and personal care industries with high quality test solutions for 40 years. Evolving from the ground breaking Kramer Shear Press, FTC has a rich pedigree in providing precision-engineered instrumentation. Designed for field, factory and laboratory environments, FTC test solutions are used by multinationals and small companies alike to reduce manufacturing costs, minimise waste and ensure consistent high quality production.

FTC understand that food texture is above all a human experience. Its analysis must be representative of the handling or treatment by the consumer if measurements are to have any 'real' value. FTC probes and fixtures have been developed to replicate these conditions, whilst ensuring maximum test flexibility and ease of use for the technologist.

All probes and fixtures are meticulously manufactured from food grade materials to conform to ASTM, BS, ISO and DIN international standards. Strict tolerances are maintained and dimensional conformity inspected in accordance with our ISO 9001:2000 quality system.

The versatility of FTC systems facilitates unparalleled testing possibilities, from simple single point analysis with portable force gauges, to sophisticated texture profile analysis using the TMS-Pro universal testing machine. FTC fixtures and probes are interchangeable throughout our product range and may be custom-engineered to meet your individual requirements. Universal fittings accommodate competitor products, allowing you to form parallel measurements between field, factory and laboratory even when using different brands of instrument.

Our applications team are always on hand to provide advice and support to maximise the benefit of your analysis and provide the best solution for your application. If you have any questions please do not hesitate to contact one of our food specialists.

Measuring Systems

TMS-Pro

TMS-Console

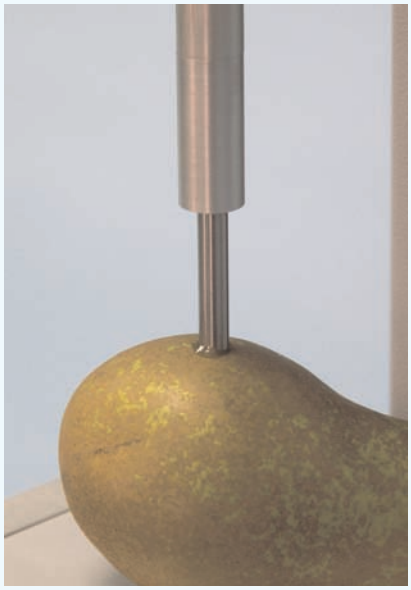
Manual Stand

Contents

Probes & Adaptors

Cylinder Probes

FTC cylinder probes may be used to perform puncture and penetration tests on a wide variety of food products including baked goods, confectionery, dairy products, fruits and vegetables and meats. Eighteen precision engineered stainless steel, Perspex or acetate probes are included in our standard range. Custom designs and geometries are available on request. Universal fittings accommodate competitor products.



	Part No.
TMS 25.4mm Ø Perspex	432-057
TMS 38.1mm Ø Perspex	432-058
TMS 12.7mm Ø black acetate	432-059
TMS 6.35mm Ø black acetate	432-060
TMS 12.7mm Ø Perspex	432-061
TMS 25.4mm Ø Perspex	432-062
TMS 10mm Ø Kobe (for agar gels)	432-063
TMS 10mm Ø st. steel	432-066
TMS 9mm Ø st. steel	432-067
TMS 8mm Ø st. steel	432-068
TMS 7mm Ø st. steel	432-069
TMS 6mm Ø st. steel	432-070
TMS 5mm Ø st. steel	432-071
TMS 4.5mm Ø st. steel margarine probe	432-072
TMS 4mm Ø st. steel	432-073
TMS 3mm Ø st. steel	432-074
TMS 2mm Ø st. steel	432-076
TMS 1mm Ø st. steel	432-077

Conical Probes

FTC offer six Perspex and one stainless steel conical probe with angles ranging from 15° to 90°. Cone penetrometry is traditionally used within dairy products to assess hardness and spreadability. It has also found application in biscuits and other similar brittle products.

	Part No.
TMS 90° Perspex	432-079
TMS 60° Perspex	432-080
TMS 45° Perspex	432-081
TMS 40° Perspex	432-082
TMS 30° Perspex	432-083
TMS 20° Perspex	432-084
TMS 15° st. steel	432-085

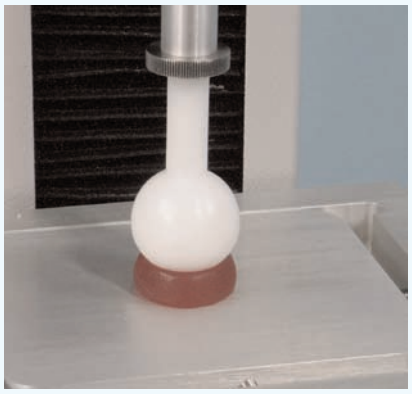
Needle Probes

Available in either 1mm or 2mm diameter, the FTC needle probes are used on fruits, vegetables, confectionery, cosmetics and fats. Values relate to firmness, yield, consistency and even skin or coating characteristics.

	Part No.
TMS 2mm st. steel, 9-10° taper	432-087
TMS 1mm st. steel, 9-10° taper	432-086

Spherical Probes

For determining surface hardness of products such as cheeses, fruits and vegetables, or the fracturability of potato chips, the FTC spherical probe range features eight precision-engineered stainless steel ball-end probes, and two plastic hemispherical probes which replicate squeezing in hand.



	Part No.
TMS 1" Ø ball nylon (Avery test)	432-088
TMS 1/2" Ø ball st. steel	432-089
TMS 10mm Ø ball st. steel	432-090
TMS 8mm Ø ball st. steel	432-091
TMS 1/4" Ø ball st. steel	432-092
TMS 3mm Ø ball st. steel	432-093
TMS 2mm Ø ball st. steel	432-094
TMS 1mm Ø ball st. steel	432-095
TMS 1" Ø hemispherical Perspex	432-096
TMS 1/2" Ø hemispherical acetate	432-097

Auxiliary

	Part No.
FTC 1/2" Dovetail Top Bracket (supplied with 1000N S beam load cells)	432-098
FTC 1" Dovetail Top Bracket (supplied with 2500N S beam load cells)	432-099
Extension Set; M6 50mm, M3 30mm, & 10/32/M6 adaptors & M3 locking screw (supplied as standard)	432-100
TMS Standard Fixture Nut & Bolt Replacements (for Standard Fixture Table & Light Weight 3-Point Bend Jig)	432-101

Load Cells

A range of 10 intelligent load cells compliments the TMS texture analysers. It is recommended that the capacity of the load cell matches the product tested. The broad spectrum of products tested in a typical food laboratory often requires more than one load cell. To prevent confusion FTC load cells are fitted with an automatic recognition feature to warn technologists if a selected test is not compatible with a load cell.

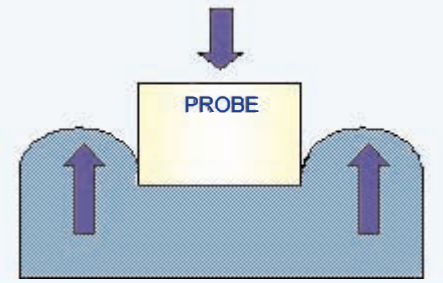
MAX FORCE			TMS-PRO ILC LOAD CELLS	TMS-CONSOLE XLC LOAD CELLS
N	Kgf	lbf		
2	0.2	0.45	879-009-V10	879-027-V10
5	0.5	1.12	879-010-V10	879-028-V10
10	1.0	2.25	879-001-V10	879-029-V10
25	2.5	5.62	879-002-V10	879-030-V10
50	5.1	11.24	879-003-V10	879-031-V10
100	10.2	22.48	879-004-V10	879-032-V10
250	25.5	56.20	879-005-V10	879-033-V10
500	50.9	112.40	879-006-V10	879-034-V10
HIGH FORCE LOAD CELLS FOR USE WITH FTC CODED FIXTURES				
1000	101.9	224.81	*879-067-V10	*879-035-V10
2500	254.9	562.02	*879-008-V10	*879-036-V10

** supplied with FTC top-mounted dovetail fittings for high force applications*

Puncture & Penetration

Fixture Principles

Small diameter cylinders, balls and cones are used to puncture and penetrate a samples surface. The forces generated in the sample depend upon the geometry of the probe used and can be manipulated to accommodate sample irregularities, or replicate handling by the consumer. FTC also offer a range of multiple probe assemblies for the measurement of several test sites in a single sample.



Probe has surface area smaller than that of sample. Probe will puncture sample when sufficient stress is reached, resulting in irreversible damage to the sample.

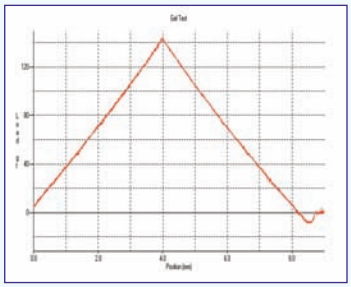
Typical Products Tested

- **Biscuits** to determine hardness
- **Bread** crust and crumb firmness
- **Butter and margarine** penetrometry as quality indicators
- **Chocolate** to measure tempering hardness
- **Fish muscle** profile as fat content indicator
- **Fruits** for ripeness testing in the field
- **Gelatine** Bloom quality measurement
- **Hydrocolloid** functionality and blend development
- **Roasted nuts** to optimise oven profile
- **Sugar confectionery** for sensory correlations

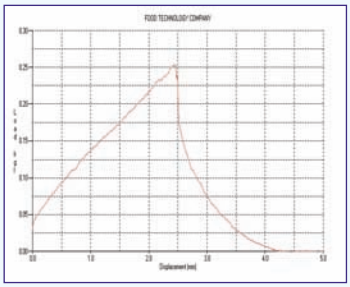
Characteristics

- **Consistency**
- **Firmness**
- **Fracture**
- **Gel Strength**
- **Hardness**
- **Rigidity**
- **Ripeness**
- **Softness**
- **Spreadability**
- **Yield Point**

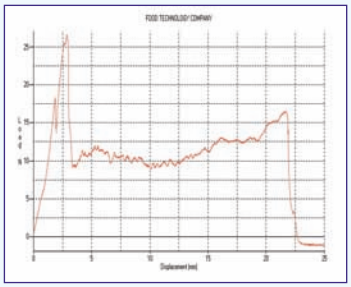
Test Images



Gelatine Bloom strength testing



Wine gum penetration test



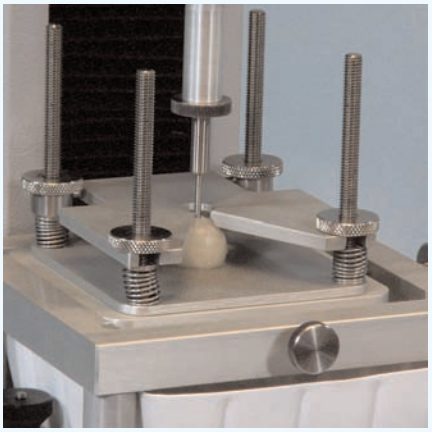
Apple puncture testing

Fixtures

TMS Magness-Taylor Probe Set

3/8" chuck with 3mm, 4mm, 5mm, 6mm and 7mm diameter stainless steel probes each with one flat and one radius end.

Part no. 432-241



TMS Multiple Needle Probe

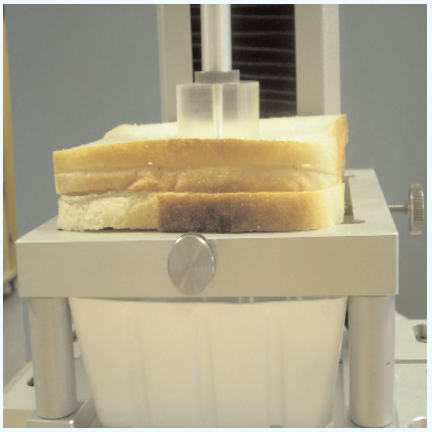
Set of 9 stainless steel needle probes with 15 degree end taper for the measurement of jams, jellies and other inhomogeneous products.

Part no. 432-249

TMS Adaptable Multiple Probe

Set of 4 stainless steel rods fixed to an adjustable plate for individual alignment with corresponding base plate.

Part no. 432-251



TMS Junior Multiple Probe Fixture

Set of 9 stainless steel rods with corresponding base plate for the measurement of burgers and particulate products such as peas, grains and berries.

Part no. 432-252

TMS Multiple Probe Fixture

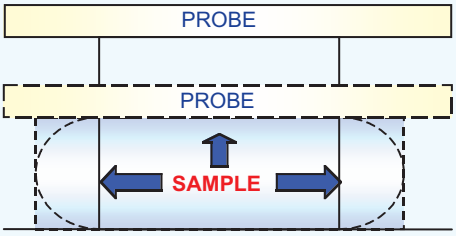
Set of 20 stainless steel rods with corresponding base holder for the measurement of french fries and other baton shaped products.

Part no. 432-253

Compression

Test Principles

Compression testing involves squashing a sample in one direction whilst leaving it unrestrained in the other two. The FTC compression probes are large diameter, flat-bottomed cylinders, or platens, used to squash solid or self-supporting samples. It is important that the surface area of the probe is greater than that of the sample throughout the test if true compressive forces are to be maintained.



Geometry of samples changes as it is squashed. Friction is generated at test interface. The probe area, by definition, should remain greater than the sample surface area.

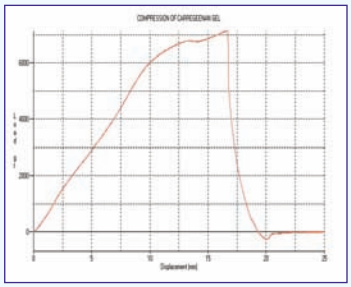
Typical Products Tested

- **Cakes & breads** during development & manufacture
- **Cheeses, butter & dairy spreads** as a quality indicator
- **Eggs** to measure shell strength
- **Extruded snacks** to improve sensory profile
- **Fruits & vegetables** in the field & factory
- **Gelatine & gels** to quantify strength
- **Low fat sausages** to quantify benefits of fat replacers
- **Packaging** to measure functional strength
- **Sugar confectionery** to optimise formulation
- **Tablets** to quantify consistency for drug release

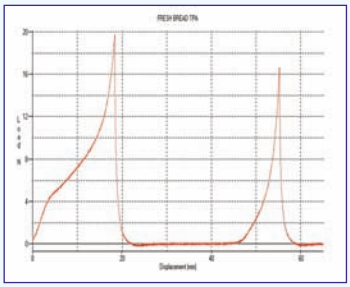
Characteristics

- **Consistency**
- **Crush force**
- **Elasticity**
- **Failure**
- **Firmness**
- **Hardness**
- **Rigidity**
- **Stickiness**
- **Stringiness**
- **Succulence**

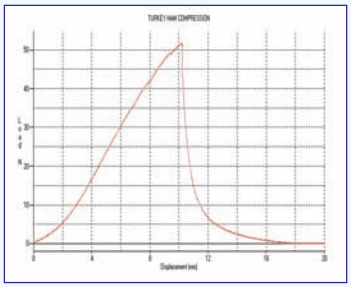
Test Images



Rigidity testing of carregeenam gel



Texture profile analysis of fresh bread



Compression of reformed turkey ham

Fixtures

FTC Texture Profile Analysis Cell

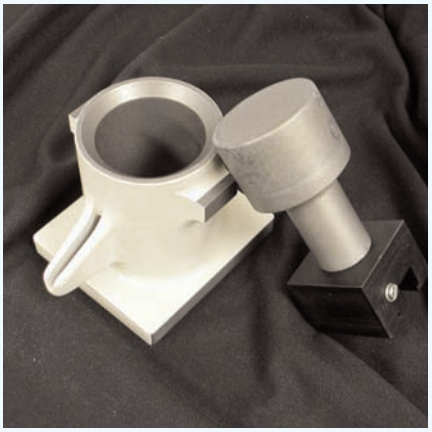
Parallel aluminium test plates with adjustable base. Plate alignment may be adjusted to maintain contact angle with sample surface and create ideal TPA test conditions. For use with 1000N and 2500N load cells.

Part no. 432-254

FTC Succulometer

Heavy duty cylindrical vessel with corresponding plunger. The cylinder part of the fixture is fitted with a spout to allow free water expressed during testing to be expelled and weighed as an indicator of sample succulence. For use with 1000N and 2500N load cells.

Part no. 432-255



TMS 50mm Diameter Platen

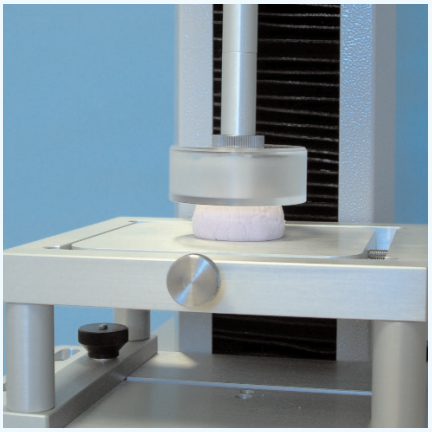
Large 5mm thick aluminium platen with anodised finish for compression testing. Fitted directly to load cell extension piece.

Part no. 432-009

TMS 75mm Diameter Platen

Large 5mm thick aluminium platen with anodised finish for compression testing. Fitted directly to load cell extension piece.

Part no. 432-010



TMS 100mm Diameter Platen

Large 5mm thick aluminium platen with anodised finish for compression testing. Fitted directly to load cell extension piece.

Part no. 432-011

TMS Compression Top Plate

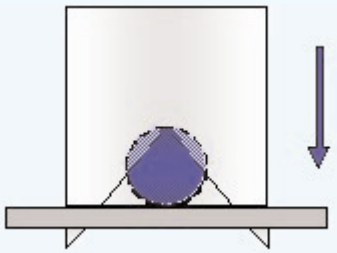
100mm x 150mm rectangular plate for crush testing of large samples.

Part no. 432-013

Shearing

Technique

Precision blades and wires are used to cut through a sample creating a combination of shearing, tearing and compression forces depending upon blade geometry. The blade passes through the sample evaluating its cross-section and accommodating variations in homogeneity. FTC shearing fixtures range from heavy-duty blades developed in conjunction with the USDA to highly sensitive wires for the ISO butter shear test.



Sample is located beneath the shear blade. Stress increases as blade moves down until sample yields and blade starts to cut through.

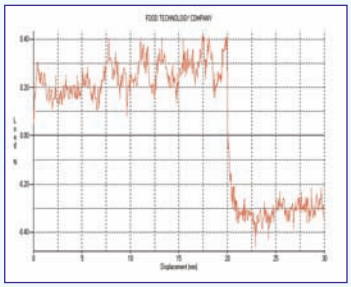
Typical Products Tested

- **Butter** to measure process quality
- **Cheese** to optimise ripening
- **Chewing gum tablet** hardness and crispness
- **Chicken breast & other meats** to optimise muscle texture
- **Confectionery bars** to measure bite profile
- **Pasta** for cooking profile
- **Pastry** to measure toughness at different formulations
- **Sausages** as an indicator of shear toughness
- **Snack bars** to measure cross-section
- **Vegetable** to optimise heat treatment

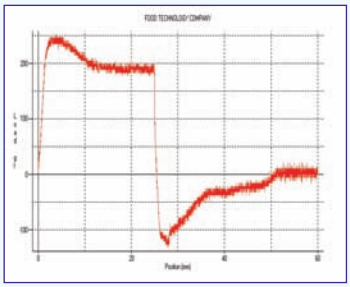
Characteristics

- **Bite Strength**
- **Consistency**
- **Cook Quality**
- **Resistance**
- **Rigidity**
- **Shear Force**
- **Skin Break**
- **Softness**
- **Tenderness**
- **Toughness**

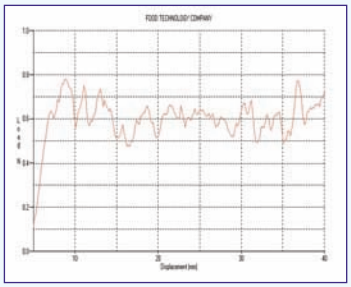
Test Images



Shear profile of fish gel using lightweight blade

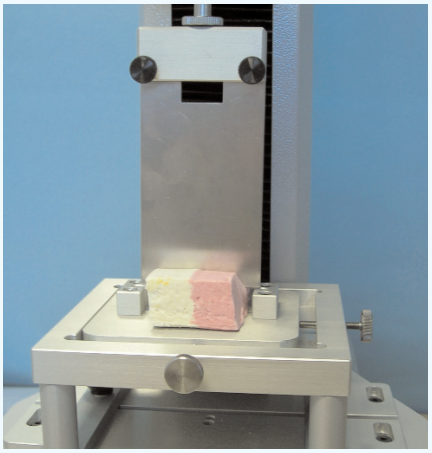


Cutting test of Hot Dog using Warner-Bratzler blade



Cut profile of butter sample following ISO method

Fixtures

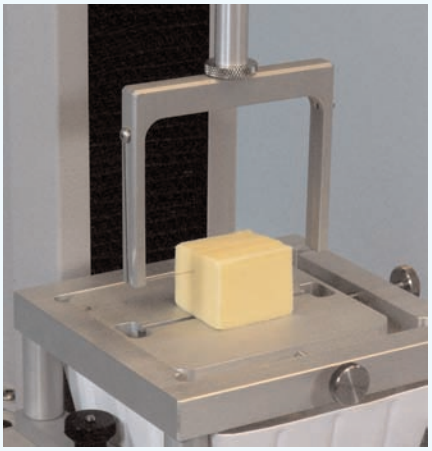


FTC Heavy Duty Blade Set
USDA design, Warner-Bratzler type and flat ended 3.2mm thick aluminium blades for use in high force applications with 1000N and 2500N load cells. Includes base plate for easy alignment and complete shearing through sample.

Part no. 432-014

TMS Light Weight Blade Set
1.2mm thick stainless steel precision blades for accurate testing of low force applications. Set consists of 2 Warner-Bratzler type options, Notched and flat end configurations for maximised test flexibility. Includes base plate for easy alignment and complete shearing through sample. Use with all load cells below 500N capacity.

Part no. 432-245



TMS Wire Shear Probe & Plate
Rigid 80mm frame support supplied with 0.3mm diameter wire conforming to ISO 16305:2005 Butter Firmness standard method. Base plate included for easy alignment and complete shearing of sample. Recommended for applications below 250N.

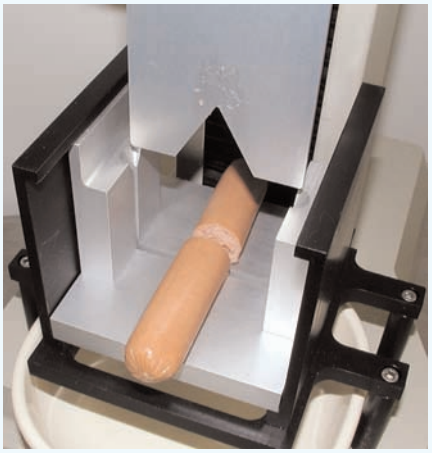
Part no. 432-242

TMS Volodkovitch Bite Jaws
Established test technique used to imitate biting action of front incisors. Consists of upper and lower 3mm diameter knife edges generating compression and shear forces. 1cm sq samples are fitted between knife edges and tested following guillotine action.

Part no. 432-016

TMS Large Knife Edge
Stainless steel blunt knife edge probe for creation of shear forces in sample. Wide angle creates wedge effect in biscuits, hard cheeses, confectionery and pulses.

Part no. 432-017



TMS Perspex Knife Edge
Perspex light weight knife edge for low force shear tests in soft foods (less than 250N) such as nougat and mallow.

Part no. 432-018

TMS Craft Knife
Rigid support frame holding sharpened steel craft blade. Designed to pass completely through sample and measure entire cross-section.

Part no. 432-019

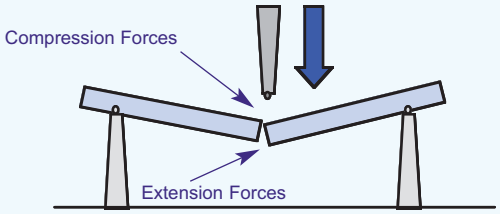
Simulated Child's Jaw
Complies with BS5239:1998 to imitate compressive force within child's mouth.

Part no. 432-020

Snapping

Test Principles

Bending, or snap tests are used to measure the fracture properties of bar or sheet type food products. Samples should be brittle solids with an homogeneous structure. The most popular FTC fixture used for snap testing is the Three-Point Bend assembly. The sample is supported at either end and deformed in its centre causing it to fracture and break at its weakest point.



Significant stress is created within the sample to the point where failure occurs and the sample breaks.

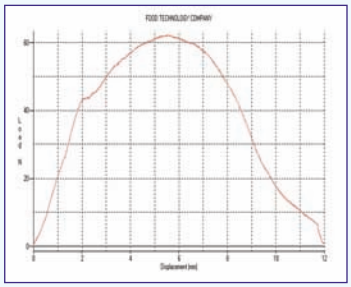
Typical Products Tested

- **Celery sticks** to quantify crispness
- **Chocolate bars** to measure break strength
- **Potato chips** to determine shelf-life crispness & staling
- **Digestive biscuits** to measure effect of oven heating
- **Dry spaghetti & other pastas** to standardise production
- **Potatoes** to compare different varieties
- **Sliced almonds** to compare toasting profiles
- **Snack bars** during development for break strength
- **Tablets** as an indicator of hardness
- **Tortilla** to optimise manufacturing process

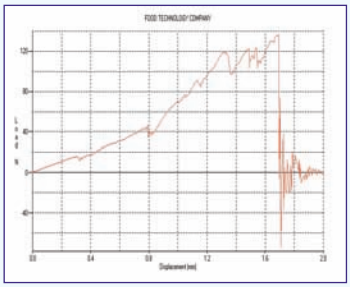
Characteristics

- **Break**
- **Brittleness**
- **Crispness**
- **Crunchiness**
- **Failure**
- **Flexure**
- **Fracture**
- **Hardness**
- **Snap**
- **Work at break**

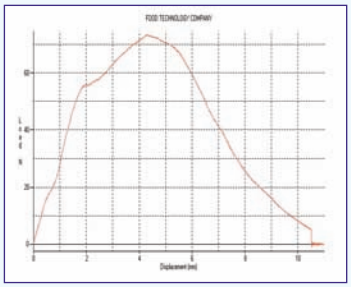
Test Images



Bend profile of soft cookie

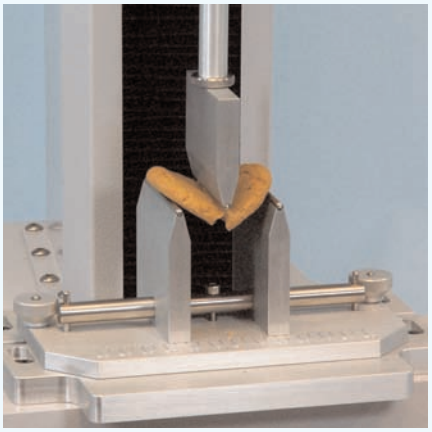


Break strength of spaghetti



Snap force of celery sticks

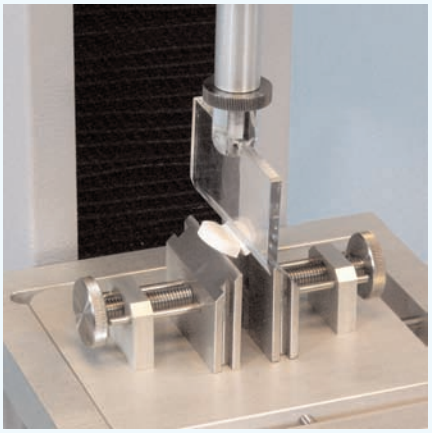
Fixtures



FTC Heavy Duty Three-Point Bend

Large scale three point bend assembly with 85mm high arms and 200mm support span. Ideal for large samples, such as bananas, which are tested whole and generate higher forces. Use with 1000N and 2500N load cells

Part no. 432-024



TMS Light Weight Three-Point Bend

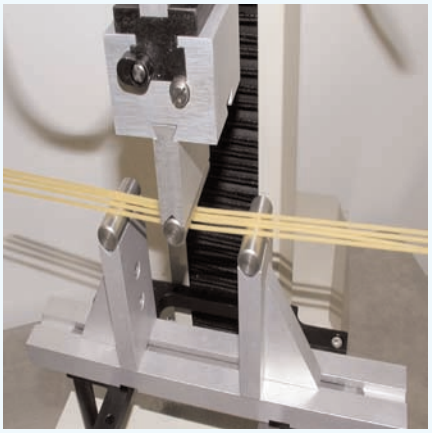
Mid scale three point bend assembly with 60mm high arms and 120mm support span. Ideal for most snapping applications including biscuits, crackers and snack foods where forces are below 500N.

Part no. 432-248

TMS Mini Sample Vice & Three-Point Bend

Small scale three point bend assembly with 1-40mm span for precision fracture of small samples such as tablets. For use with Perspex Knife Edge at forces below 250N.

Part no. 432-247



TMS Spaghetti Snap Fixture

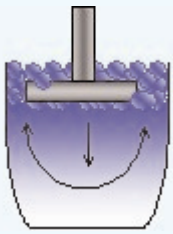
Top and bottom fixing for snap testing of dry spaghetti.

Part no. 432-025

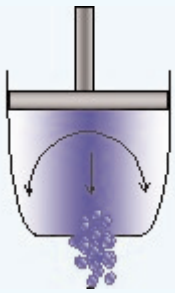
Extrusion

Technique

Extrusion tests are used to displace viscous liquids or semi-sold products not suitable for traditional viscometry. Samples are either extruded in a forward direction through a holding container base or in a backward direction up and around a loosely fitting probe. The FTC product range includes shallow discs to extrude samples in factory type containers, or precision test cells for enhanced manipulation.



Displaced sample flows up and around probe



Displaced sample flows through aperture in base

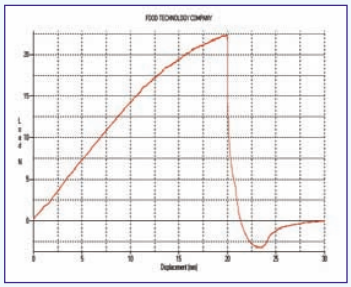
Typical Products Tested

- **Fruit purees** to assess pumpability
- **Fruit topping** with particulates to optimise viscosity
- **Mayonnaise and thick sauces** to correlate with mouthfeel
- **Personal care products** to quantify functional structure
- **Pumpable fats** to measure shear thinning
- **Starch pastes** to assess thickening
- **Thick soups & sauces** for ready prepared foods
- **Weak hydrocolloid gels** to assess thickening
- **Whipped creams** to measure stability
- **Yogurts** to measure affect of formulation changes

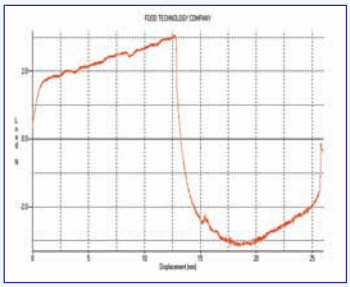
Characteristics

- **Adhesiveness**
- **Consistency**
- **Flow**
- **Internal Structure**
- **Mouthfeel**
- **Stringiness**
- **Thickness**
- **Thinning**
- **Viscosity**
- **Yield Point**

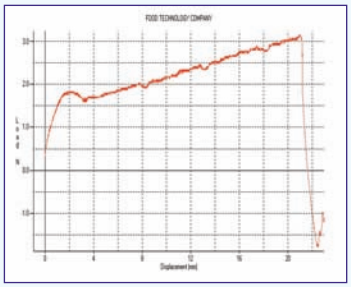
Test Images



Back extrusion of confectionery frosting

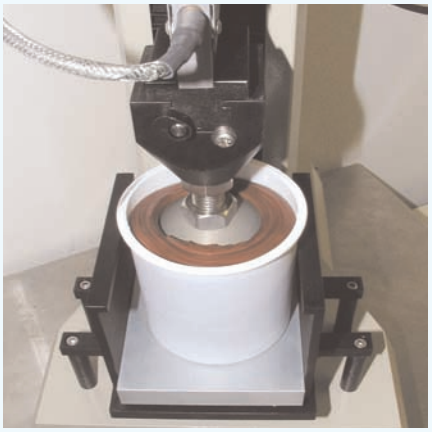


Back extrusion of a low fat yogurt



Forward extrusion of hydrogenated baking fat

Fixtures



TMS Dual Extrusion Cell

Set of 3 cylindrical pots with changeable bottom plates for backward and forward extrusion testing. Includes 4 extrusion plates to accommodate different sizes of sample particulates, ideal for fruit purees and yogurt products.

Part no. 432-026

TMS Extrusion Cone

170 degree 40mm diameter 20mm high Perspex plunger to facilitate air removal during testing.

Part no. 432-027

TMS Extrusion Platen Set

Set of 30mm, 40mm and 50mm diameter aluminium plates each 5mm thick for back extrusion testing in standard factory or consumer packaging.

Part no. 432-029

TMS Aerated Sample Probe

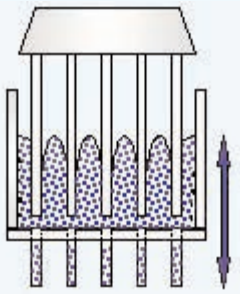
38.1mm diameter rigid wire grid for aerated and mousse type products.

Part no. 432-030

Bulk Analysis

Technique

Bulk analysis is used to measure particulate products where analysis of individual components is not practical or representative. FTC test fixtures are designed to maximise the contact area between probe and sample surfaces. Multiple blades are used in the Kramer shear cell causing combinations of compression, shear and extrusion forces whilst the Ottawa and Universal test cells follow compression to extrude particulate samples.



Large sample size is representative of treatment and handling by the consumer. Increased sample size provides increased reproducibility in highly variable product.

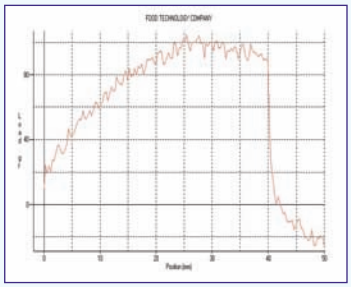
Typical Products Tested

- **Beans & pulses** to assess heat treatment
- **Breakfast cereals** for bowl life testing
- **Cheese curds** during production
- **Cooked pasta** to identify formulation changes
- **Cooking sauces** to optimise heat treatment
- **Meat patties** for toughness & sensory correlation
- **Peas** for standard testing in the field
- **Pickles & preserves** during process development
- **Raw and processed fruits & vegetables** for firmness
- **Rice** for ready cooked packaging

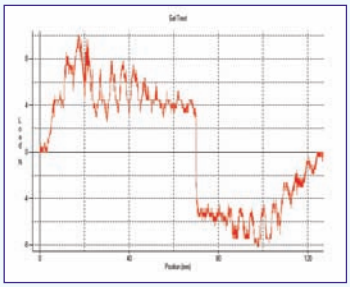
Characteristics

- **Adhesiveness**
- **Cook Quality**
- **Fibrousness**
- **Flow**
- **Shear Hardness**
- **Softness**
- **Stickiness**
- **Tenderness**
- **Toughness**
- **Viscosity**

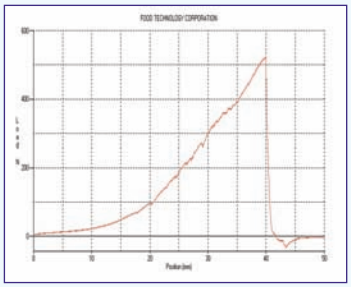
Test Images



Kramer shear profile of blueberry sample

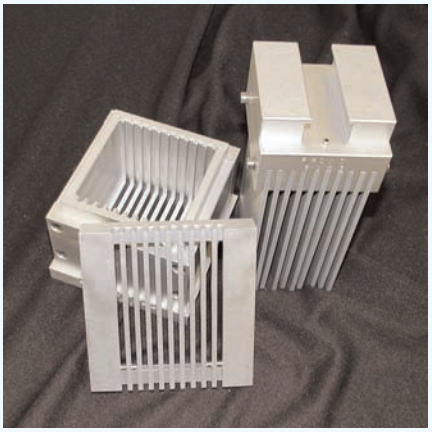


Ottawa compression test on dry own label cornflake



Kramer shear profile of chopped Italian tomato

Fixtures



FTC Standard Shear Compression Cell

Kramer Shear Cell with ten 3.2mm thick parallel blades and corresponding test cell for compression-extrusion-shear testing of inhomogeneous large particulate samples. Generates high forces and is only suitable for use with 1000N and 2500N load cells.

Part no. 432-240

FTC Thin Blade Compression Cell

Kramer Shear Cell. Thirteen 1.5mm thick parallel blades and corresponding test cell for compression-extrusion-shear testing of inhomogeneous small particulate samples. Generates high forces and is only suitable for use with 1000N and 2500N load cells.

Part no. 432-031

FTC Universal Cell

Universal testing cell for backward and forward extrusion testing. Consists of 57mm diameter cast cylinder with slotted, solid and drilled base plates. A 57mm and a 51mm diameter piston plunger is provided to manipulate extrusion conditions. For use with 1000N and 2500N load cells only.

Part no. 432-032

TMS Mini Kramer Shear/Ottawa Cell

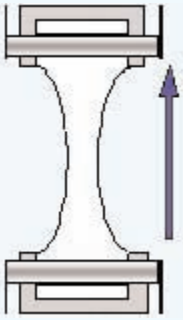
Small scale Kramer shear cell consisting of ten narrow gauge 1.2mm thick removable blades with corresponding 53mm bottom cell for Kramer Shear measurements on soft particulate products. Additional top plungers and blanking plates permit Ottawa cell extrusion testing.

Part no. 432-033

Tension

Technique

Tension tests are used to measure the break or extension properties of a sample. Products are held firmly at each end and stretched until they break at their weakest point. The irregular geometries of food make it very difficult to grip samples. The FTC tension grips accommodate the widest range of sample shapes, imitating handling by the consumer.



Sample is fixed at base. Top jaw moves up and sample is extended until a break is caused at the weakest point.

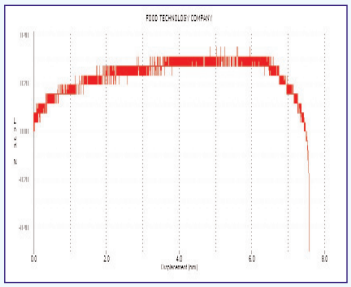
Typical Products Tested

- **Cherry stalks** as a ripeness indicator
- **Chewing gum** sticks for break properties
- **Gummy sweets** extension properties for sensory correlation
- **Meat loaves & bologna** quality assessment
- **Noodles & pasta** for cooked tensile strength
- **Packaging films** for snap evaluation
- **Packaging seals** for integrity & strength
- **Pizza base** tear testing in product development
- **Processed cheese strings** for extensibility in development
- **Salami skin** peel profile for process optimization

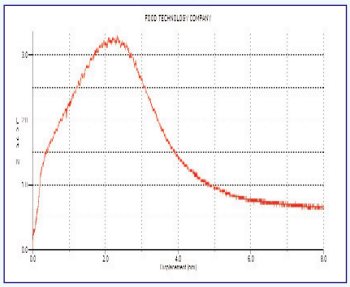
Characteristics

- **Break Load**
- **Deflection**
- **Deformation at Break**
- **Extension**
- **Modulus/Stiffness**
- **Peel Strength**
- **Seal Integrity**
- **Snap**
- **Stretch**
- **Work at Break**

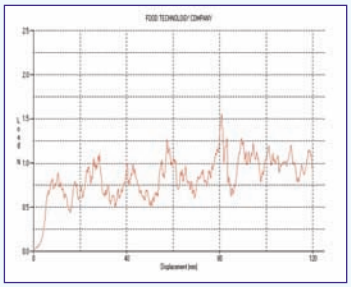
Test Images



Tensile strength of gummy sweet

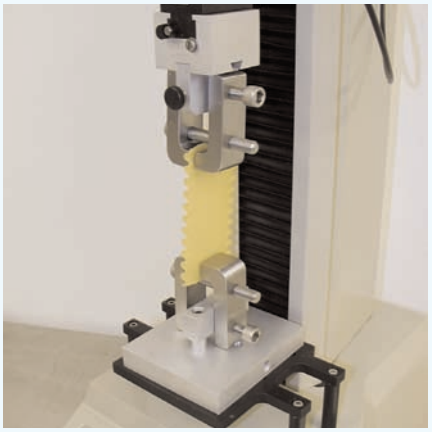


Break profile of chewing gum strip



Peel properties of sausage skin

Fixtures



FTC Tension Test Cell
Two heavy duty grips for both top and bottom fixing of sample during tension testing at high forces with 1000N and 2500N load cells.

Part no. 432-044

FTC Thin Slice Tensile Test Cell
Specialist spiked cell for horizontal tension testing of communated meats and pastry products. Unique configuration allows horizontal positioning of sample.

Part no. 432-045

TMS Extensibility Fixture
Aluminium lower plate with radiused aperture. Corresponding top plate for gripping sample.

Part no. 432-046

Lever Grip
Self tightening 70mm wide serrated roller grip set for top and bottom holding.

Part no. 432-047

Double Cam Grip
Fast action double cam grip set following BS5G178 PART 1.

Part no. 432-048

Film Grips
50mm wide drums each 20mm in diameter. Samples such as spaghetti are wrapped around drums to prevent weak points.

Part no. 432-157

Miniature Vice Grip
Low mass 50mm wide pinch grip for samples up to 4mm thick.

Part no. 432-141

Multi Jaw Grip Fixture
10mm diameter test grip for holding round, irregular geometries such as gummy sweets.

Part no. 432-050

Spring Loaded Roller Grip
100mm wide roller to grip sample and minimise risk of slippage during testing.

Part no. 432-156

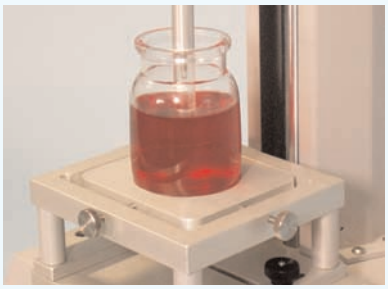
Wire Grip Fixture

Part no. 432-049

Industry Specific Fixtures

Gelatine & Gels

FTC Console and Pro texture analysers conform directly to ISO 9665 and BS757:1975 or AOAC 23.007 recommendations for gelatine Bloom strength measurement. The FTC product range includes all equipment for the preparation, calibration and analysis of Bloom strength. High-level processing power of the TMS Lab Pro software makes detailed analysis of a wide range of other gelled ingredients and products possible. FTC provide a range of cylinders, ball probes and blades specifically for gel investigations.



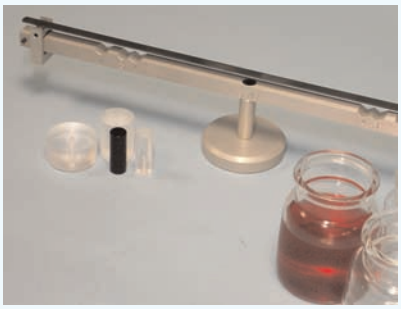
Typical Products Tested

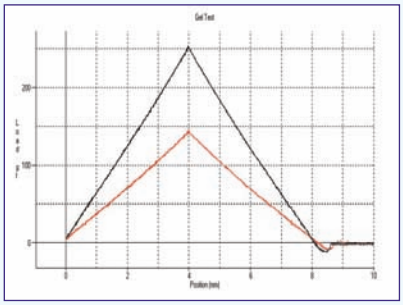
- Agar
- Alginates
- Carrageenan
- Gelatin
- Mixed Polysaccharides
- Pectin
- Starch Gels
- Surimi
- Tara Gum
- Xanthan Gum

Characteristics

- Adhesiveness
- Bloom Strength
- Break
- Deformation
- Elastic Modulus
- Hardness
- Rigidity
- Rupture Point
- Stress Relaxation
- Yield Point

Gelatine Fixtures





Bloom Sample Bottles

Conforms to ISO 9665, GME, AOAC 1985 and BS757 standards. Pack of 10.

Part no. 432-053

Bloom Sample Bottle Stoppers

Conforms to ISO 9665, GME, AOAC 1985 and BS757 standards. Pack of 10.

Part no. 432-054

Dummy Bloom Strip

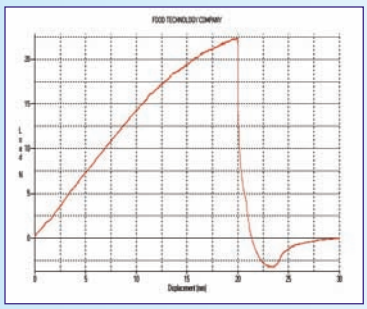
Conforms to ISO 9665, GME, AOAC 1985 and BS757 standards.

Part no. 432-055

Water Baths

Please contact FTC on 00 44 1403 7999 79 for up to date information.

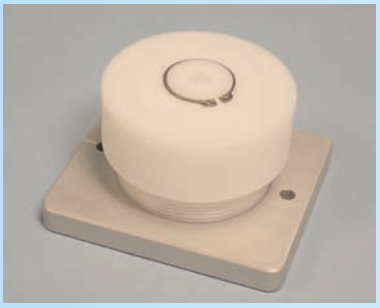
Dough And Bakery

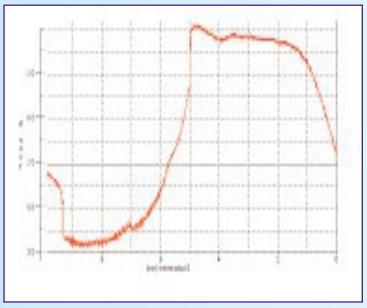


TMS FMBRA Dough Pots

Sample preparation for the testing of bakery dough is critical if reproducible results are to be obtained. The Flour Milling and Baking Research Association (FMBRA) developed a technique to prepare and test short textured biscuit dough direct from the mixer. Although developed for dough testing the preparation set has been used on products as diverse as fishcake mix to confectionery pastes.

Part no. 432-034





TMS Dough Stickiness Fixture

Based upon the original Chen-Hoseney stickiness rig developed at Kansas State University the fixture is used to extrude a short textured dough sample in a controlled manner. The extruded dough is then compressed using a 25.4mm diameter probe and the stickiness or adhesion measured as an indicator of process or formulation variables.

Part no. 432-035

AACC 36mm Ø Cylinder

Part no. 432-036

AACC 21mm Ø Cylinder

Part no. 432-037

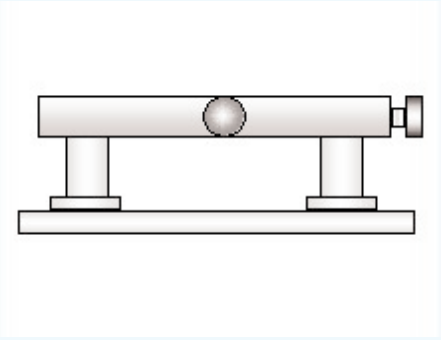
Standardised aluminium cylinders developed by the American Association of Cereal Chemists (AACC) for the measurement of breadcrumb and other bakery products.

Sample Presentation

Technique

The way in which a sample is held or presented to the texture analyser will directly influence the accuracy of results generated. Forces are commonly manipulated with test accessories to replicate consumer handling, but it is also important to secure or present the sample to the instrument as reproducibly as possible. The FTC sample presentation fixtures are specifically designed to accommodate irregular shaped samples or containers. These fixtures prevent sample movement during testing, allowing accurate calculation of characteristics, such as adhesiveness, where it is critical that the sample remains firmly in place during the return stroke of the texture analyser. FTC presentation fixtures also simplify test configuration. Once set up, the technologist can simply test sample after sample with the guarantee of central alignment between test probe and product.

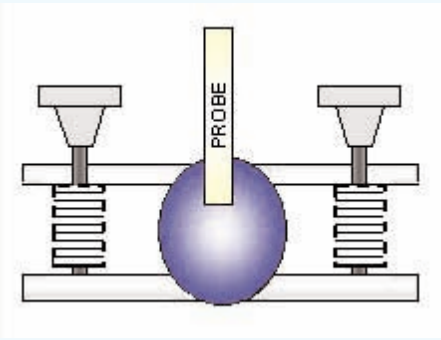
Fixtures



TMS Standard Fixture Table

The standard fixture table is the cornerstone to using FTC test fixtures. Supplied as standard with all TMS-Pro instruments, and as an optional extra to the TMS-Console and Manual products, the base table is designed to accept all competitor fixtures and accessories allowing cross-correlation between different brands of instrument. Quick release fittings enable the technologist to rapidly fit FTC fixtures with precision alignment for reproducible analysis.

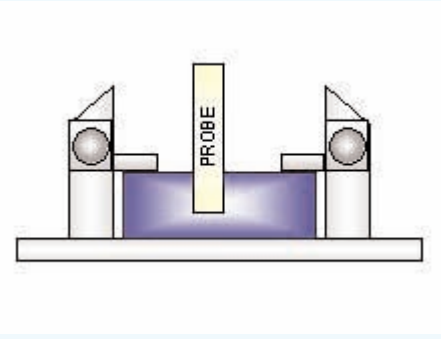
Part no. 432-243



TMS Small Sample Holder

The Small Sample Holder has been designed to accommodate spherical or irregular samples. Three sizes of holding plate are supplied which are fitted above and below samples, maximising test flexibility. The small sample holder is a must for clumsy puncture tests where it is difficult to hold individual samples.

Part no. 432-244

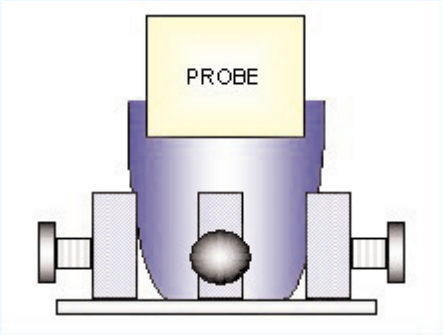


TMS Mini Sample Vice (& Three-Point Bend)

The mini sample vice consists of two adjustable vice jaws that move horizontally to grip the sides of regular shaped samples. 'V' slots in the jaws accommodate tablet type products and prevent movement during puncture and penetration tests. Top jaws with vertical travel are used to firmly fix samples in place increasing result accuracy during decompression of the sample.

Part no. 432-247

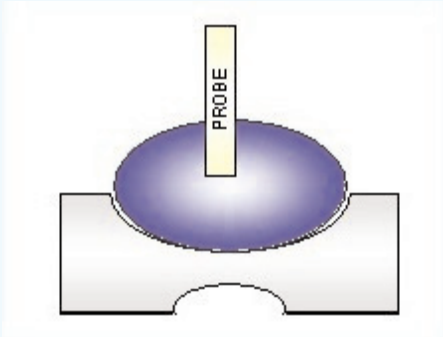
Fixtures Cont'd



TMS Container Grips

This fixture is used in extrusion tests where semi-solid or liquid samples are tested in their consumer packaging or other collection vessel. Soft grip rubber arms hold containers from 10mm to 70mm in diameter firmly. This is critical in measuring adhesion properties of viscous liquids during the return cycle of testing.

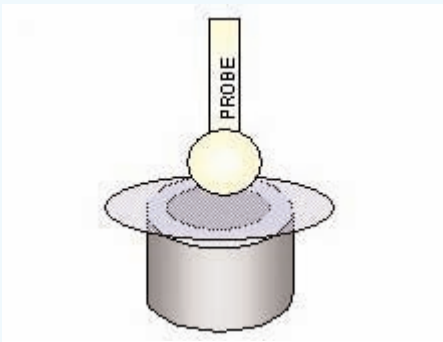
Part no. 432-038



TMS Spherical Sample Holder

This fixture is used to support large diameter spherical samples that do not require holding in place during the return cycle of testing. It is ideal for holding eggs for shell hardness testing or fruits such as pears and avocado from which only compression data is required.

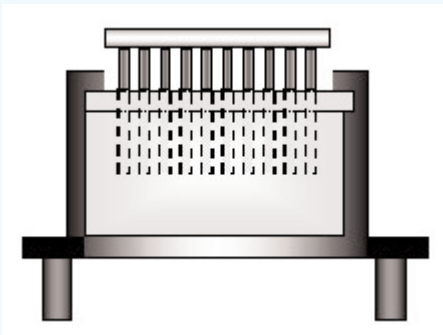
Part no. 432-039



TMS Friable Food Support

The friable food support consists of a hollow ring used to provide 360° support to brittle foods with roughly circular geometries such as potato chips. Based upon original research from the 1960's this fixture is used in conjunction with small diameter ball probes to punch through and measure sample fracture.

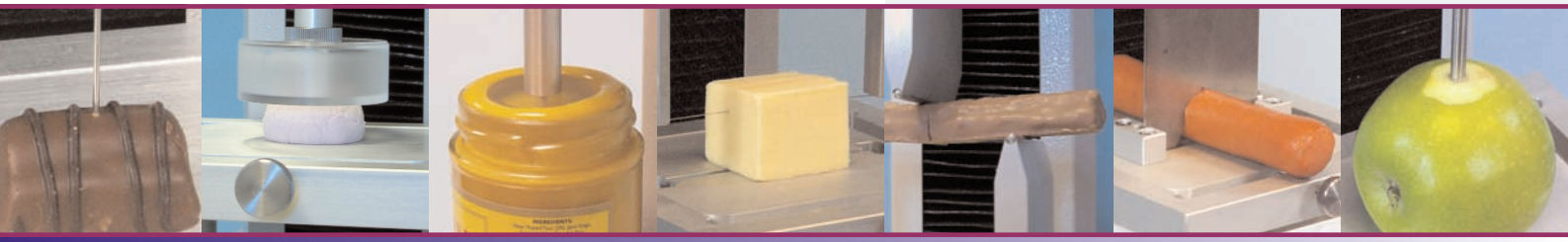
Part no. 432-042



FTC Large Scale Accessory Table

This heavy-duty table is used to support FTC prefix Kramer shear cells. The table is designed to hold the cells in accurate alignment during testing and prevent the automatic cleaning plate from rising up with the blades during the return stroke of the TMS-Pro and Console units.

Part no. 432-043



Food Technology Corporation
45921 Maries Road,
Suite 120,
Sterling,
Virginia 20166
USA

t +1 703 433 9247
f +1 703 444 9860

Food Technology Co Ltd
Newton House,
Spring Copse Business Park,
Slinfold, Nr Horsham,
West Sussex, RH13 7SZ
UK

t +44 (0) 01403 799979
f +44 (0) 01403 799975