FOAM / MATTRESS
Industry Product Guide
Preventive Maintenance and Calibration Program:

The IDM Preventive Maintenance and Calibration (PM&C) program has been designed to make the maintenance and calibration of your valuable testing equipment more cost effective by preventing breakdowns and downtime by regular calibration, service and replacement of defective parts. IDM’s PM&C system takes care of all service and repair needs you may have. It is an on-site maintenance and calibration service available on a regular basis, suitable to your needs and your testing equipment.

The PM&C program is the best way to ensure your testing equipment is maintained in optimum working condition. PM&C team members are supplied with the necessary means to sustain your testing equipment’s peak performance throughout its lifetime, benefiting both you and your equipment. Testing equipment in your facility (or at IDM) will be calibrated using industry-wide, internationally recognised standards or by your specific requirements. Calibrated instruments are labelled accordingly and documented with an IDM full calibration report or certificate of conformance (whichever is applicable). All calibrations are maintained in IDM’s calibration database and you will be notified when your next service/calibration is due. IDM’s Calibration work is comprehensive- adjusting your equipment to give you the right results, whenever possible.

Through this system of scheduled PM&C, IDM can help you improve productivity by reducing down time, minimising unscheduled maintenance and the need for service calls. We schedule in agreed dates and periods for the PM&C program, and give you prior notification so you have time to prepare yourself. This service is available in Australia only at this point of time.

IDM provides OEM services:

- Project development from concept to completion
- Conceptual 3D modelling & precise manufacturing drawings to make your product come to life.
  Design individual components to complete machinery
- Research & development project management
- Over 50 years of experience designing customised instruments and machines
- Designing production machinery & specialists in testing instruments
- Cost-effective design simplification
- Integrating numerous automation technologies such as pneumatic, hydraulic, servo drives, sensor technology, PC control, PLC interfaces, safety devices, linear motion etc.
- Flexible in-house manufacturing utilising CNC lathe & milling machines, general machining, surface grinding & fabrication
Band Saws
BP Series

With 2 blade speeds and a mechanical hand wheel system, the BP Bandsaws are perfect for thicker foam sample preparation (especially for porosity testing with model F0031). These units feature a cast iron table, which is adjusts to 45º, twin 100mm dust chutes, mitre guide and quick-release blade tension mechanism as well as a safety magnetic switch with emergency stop.

**Bedding Impact Tester**  
**Model:** B0008  

The Bedding Impact Tester is used to determine the effects of impact for comparison testing under realistic abuse conditions. The machine consists of a 79.5 ± 1kg platen with a maximum load of 250kg which is used to drop down from specified heights. The machine operates both manually or automatically using an external PC linked to the computer.

**Constant Deflection Compression Tester**  
**Model:** F0026  

The Constant Deflection Compression Tester is designed to measure the change of thickness of a polyurethane sample of 50mm x 50mm, after deflecting the test piece to a specified deflection, at a certain amount of time and temperature.

**Constant Deflection Static Force**  
**Model:** F0027  

The Constant Deflection Static Force instrument determines the loss of indentation force deflection (IFD), loss of thickness and the structural breakdown by visual assessment of polyurethane.

**Cornell Type Tester**  
**Model:** C0044  

Designed for testing and evaluating Innerspring and Boxspring mattresses. There are several different methods used for this type of evaluation; measurements regarding firmness, firmness retention, durability, effect of impact etc. The C0044 is used to test the long term capacity of bedding to resist cyclic loading. The machine consists of a double hemispherical ram head on a manually adjustable shaft. A load cell is located on the ram head to measure the force being applied to the mattress.

**Flammability Tester**  
**Model:** F0009  

Used to measure flame duration and material consumed for small specimens of densities less than 100kg/m, exposed to a small flame with the specimen in a vertical orientation.
Foam Compression Tester (Car Seats, Mattresses)
Model: F0013

Used to evaluate a degree of firmness and hardness, common within the foam and furniture industries, based on a physical property called the indentation force deflection (IFD) and is calculated by determining the force required to deflect the test piece a percentage of its original thickness using a circular indenter. It is operated using the Universal Tester program developed by IDM.

Foam Compression Tester
Model: F0028

The IDM Foam Compression Tester is used for determining the deflection force of flexible cellular polyurethane, with reference to various international standards, based on the ILD and IFD. A smaller version of the F0013 machine.

Foam Compression Tester – Portable
Model: MiniFlex

This bench top operated Foam Compression Tester is designed to automatically determine Compression Load Deflection of flexible cellular polyurethane samples, up to a size of 10cm x 10cm x 5cm thick, and provide compression and recovery curve analysis via PC. An economic solution to foam compression where smaller samples are applicable.

Foam Constant Displacement Foam Fatigue Tester
Model: F0029

The Constant Displacement Foam Fatigue is a floor standing instrument with two daylight samples areas, one on the left and right side of the machine. The centre, top and bottom plates are stationary, while the upper and below centre platens simultaneously move up and down. Compression platens measure 500mm x 500mm. 2 Capacity and 4 Capacity units available.

Foam Constant Load Pounding Machine
Model: F0021

The Constant Load Pounding Machine is used for the determination of loss in thickness and loss in hardness of flexible cellular materials intended for use in upholstery. This test provides a means of assessing the service performance of flexible cellular materials of the latex and polyurethane types used in load-bearing upholstery. The test can be performed on both standard size test pieces cut from stock material and to shaped components.

Foam Impact Tester - Vertical
Model: V0001

The Vertical Foam Impact Tester performs the procedure for determining the dynamic cushioning performance of cellular rubber materials and rigid and flexible cellular plastics, by measuring the peak deceleration of a mass when it is dropped on a test piece. The test described is intended primarily for quality assurance.
Foam Pat Mixer  
Model: MWL5700

A smaller version of model M0004, the Foam Pat Mixer helps produce a well-mixed sample pat, which can be poured to form a sample for testing purposes and quality control. It features Stainless Steel components for easy cleaning, as well as variable mixing speeds for added ease of use.

Foam Pat High Speed Mixer  
Model: M0005

The High Speed Mixer is used for the rapid mixing of foam compounds to produce a well-mixed sample pat, which can be poured to form a sample for testing purposes and quality control. It is made from Stainless Steel for easy cleaning, and featuring automated mixing, as well as variable mixing speeds for added ease of use.

Foam Porosity Tester - Automatic  
Model: F0031

The Auto FPT is used for monitoring the porosity of flexible cellular polyurethane. The machine determines how easy air passes through a cellular structure. Airflow values may be used as an indirect measurement of certain cell structure characteristics. A test piece which is placed in a vacuum chamber cavity and a specified automatic constant differential air pressure is applied.

Foam Porosity Meter  
Model: CellFlo

CellFlo is a pocket sized digital instrument, ergonomically designed with soft grip edges for hand-held comfort. With a digital air flow reading of 0-100 (zero to 100% flow), the unit allows safe monitoring of foam quality at the production line cut-off. This can also assist necessary production adjustments during the run.

Foam Resilience Tester  
Model: F0030

The Foam Resilience Tester has been manufactured to determine the resilience of flexible cellular polyurethane. A steel ball is dropped vertically onto a test piece and the rebound height is measured and expressed as a percentage of the height dropped.

Mattress Compression Tester  
Model F0024

Used to evaluate a degree of firmness common within the mattress and foam industries, either in the laboratory, or on the production line. The circular indentor foot applies a force, while also recording the degree of indentation. To compare test results, test pieces must be of the same size and thickness. The whole article may be used if moulded shapes are being tested.
**Mattress Rollator**
*Model: M0015*

The Mattress Rollator consists of a weighted roller which moves width ways across a test mattress to simulate body movement. The length of stroke to which the Roller moves is very easily adjusted, by sliding the stroke adjustors left or right, to suit the relevant mattress under test. Unloading and loading of the Roller onto the test mattress is done easily via a motor driven lifting assembly.

Options with this machine include with or without safety light curtain and compression testing function.

**Mattress Temperature & Humidity Data Logger**
*Model: M0011*

The Mattress Temperature & Humidity Data Logger has been specially designed and manufactured to measure and data log for temperature and humidity percentage (%).

**Roller Shear Machine**
*Model: R0010*

The Roller Shear Machine is used to determine the resistance to compression fatigue of flexible cellular polyurethane using dynamic roller compression testing. The Roller Shear Machine fatigues a specimen dynamically with a constant force deflecting the material both vertically and laterally. It has been used for many years in the foam industry to determine the percentage loss in thickness.

**Sample Cutting Presses & Tool Steel Cutting Dies**

IDM offers a range of sample cutting presses which are fast and easy to operate. Used for sample preparation of various different sized test pieces, Tool Steel and Ruler Dies of standard and custom sizes can be used and interchanged with ease, allowing a large range of dies to be used with any press.

IDM’s Pneumatic Cutting Press is one of the easiest and versatile cutting presses to operate on today’s market. It is compact in size and fits onto a work table to conserve work space.

**Thickness Gauges for Foam & Lofty Products**
*Model: F0017 (Small & Large)*

The Foam & Lofty products Thickness Gauge gives an accurate measurement of the thickness to be the basis for accurate values of various properties of cellular materials, such as density, tensile strength, tear resistance, and compression set.
Thickness Gauge For High Loft Products
Model: T0022

This unit has been designed to measure the thickness of high loft nonwoven material, by means of a digital readout. Thickness is determined by observing the linear distance that a moveable plane is displaced from a parallel surface by the specimen while under a specified pressure.

Thickness Gauges - Hand Held
Series T0014

Handheld Thickness Gauges can be used on many different materials where an accurate measurement of thickness is required. Different models are available depending on weight and contact point required.

Universal Testing Machines

IDM provides a range of UTM’s which feature multiple testing capabilities including compression testing and tensile testing. UTM’s eliminate the need of having multiple machines to perform various tests (i.e. compression and tensile).

UTM’s offer versatility and the ability to set up dual tests to speed up test set up, production & ultimately reduces operator fatigue & possible setup errors.
If you have any questions, or require assistance with any testing & measuring equipment, please contact:

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