THE *L+M* SEWABILITY TESTER

The **L&M Sewability Tester** has been developed to give a standard reproducible test for sewability, i.e. a test which will indicate to the clothier whether any supplied fabric is capable of being sewn without difficulty. The information supplied by the machine is not subject to variations of sewing conditions or operator skill.

The machine is useful to the fabric supplier:
To ensure that fabric finish comes up to standard.

The machine is useful to the clothing manufacturer:
To ensure that the fabric will give a satisfactory sewing performance.

Advantages of the instrument:

1. Only a small sample of the fabric is needed.

2. The test is rapid and the operating procedure simple. The machine stops automatically and the results are displayed.

3. The versatility of the machine enables other investigations to be carried out, such as effect of fabric finishes and constructions on sewability, studies of needle characteristics and of the optimum needle size for satisfactory sewing of a particular fabric.

PRINCIPLES OF OPERATION OF L&M SEWABILITY TESTER

The L&M Sewability Tester has been developed as a result of research carried out in the Clothing Section of the Textile Department at the University of Leeds.

As a result of this research, it was established that the force required to penetrate a fabric with a sewing needle is related to the sewability of a fabric, that is, its susceptibility to needle damage by bursting or fusing, hence provides a suitable means of assessment of this property.

The ease which a sewing needle can penetrate a fabric is determined by the frictional characteristics of that fabric. In fabrics with low frictional characteristics, the fibres and yarns in the fabric can move easily to allow passage of the needle and hence the penetration force is low and no damage occurs. In fabrics which have high frictional characteristics the fabric components cannot move easily and so the force for penetration by the needle is high. This value may exceed the breaking strength of the yarn and so damage occurs, or alternatively the high frictional forces encountered by the needle will cause generation of heat which in high speed sewing will cause fusing of the fabric.

The frictional characteristics of the fabric are determined by a number of factors. Of prime importance is the method of dyeing and finishing, for example, solvent-scoured fabrics from which lubricants have been removed, possess high frictional characteristics and poor sewability, and fabrics to which lubricants and softeners have been added have low forces for penetration and good sewability.

The **L&M Sewability Tester** enables consecutive readings of force for penetration of the fabric by a selected needle to be measured on a small sample of fabric at a rate of 100 penetrations/min. Using a threshold figure high counts are recorded when the threshold is exceeded. Good sewability is indicated by the absence of 'high' counts.

THE L&M AVERAGING DEVICE

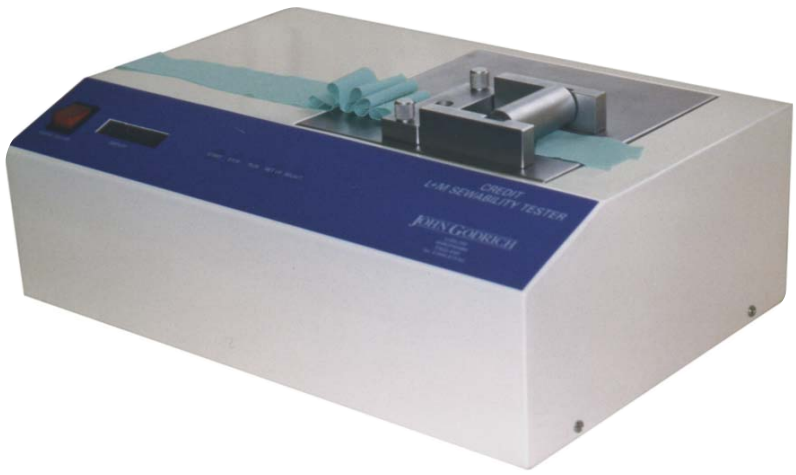
The **L&M Averager** (built into the main machine) will assist in looking at the distribution of penetration forces (particularly important for woven fabrics) and operates in two ways.

Average	This shows the average force on the needle over a period of 100 penetrations and will automatically adjust the average at each successive 100 penetrations.
Force gm	This will show the peak penetration force at each penetration. This can be useful for short-term tests and looking at short-term variation in fabrics.

The average is automatically reset by resetting the total and high count buttons.

While the **Averager** is operating, the high count method of sewability testing is also in operation.

OPTION – Software for PC connection and recording individual penetration forces and results.



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