



James Heal™

OPERATOR'S GUIDE

Tautex

Digital Crimp Tester

Model 520

Covering Serial nos.
520/99/1001 upwards

Extraordinary Testing Solutions

James H. Heal & Co. Ltd.
Halifax, England.



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Setting the Standard

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TABLE OF CONTENTS

	James Heal	4
1	INTRODUCTION	5
1.1	Scope	5
1.2	Standards	6
1.3	Applications	6
1.4	Features	6
2	INSTALLATION	7
2.1	Unpacking	7
2.2	Identification of Parts	7
2.3	Preparation for Use	8
3	OPERATION	9
3.1	Procedure	9
3.2	Ready Lamp	10
3.3	Checking the Force Gauge	10
4	HEALTH & SAFETY	12
5	SERVICE & CALIBRATION	12
6	TECHNICAL DATA	
6.1	Specification	13
6.2	Dimensions	13

JAMES HEAL

At James Heal, we are dedicated to designing and developing high precision testing instruments and test materials for physical and colour fastness testing. Our worldwide service and calibration division and expert technical assistance complement our product range, adding real value to your laboratory testing activities.

Setting the Standard

We are committed to forming close relationships and have established numerous partnerships within the textile industry, from trade and standards organizations, to test houses, customers and distribution partners.

With a heritage spanning more than 140 years, we have evolved and grown through a culture of continuous improvement, resulting in a thorough understanding of the applications, operating conditions and requirements of customers worldwide – from independent testing laboratories and test houses, to fabric suppliers, manufacturers and retailers.

Using knowledge and expertise, we consistently set the industry standard through product innovation and technology, with customer and user needs, present and future, driving our technological advancements. You can be assured that with James Heal, you will always receive the highest levels of product quality and customer service. We have Agents and Distribution partners all over the globe, ensuring locally available product whenever, and wherever you need it.

Areas of Expertise

Textile: Colour Fastness

- Chlorinated Water
- Dry Cleaning
- Dry Heat
- Hot Pressing
- Laundering
- Light
- Perspiration
- Phenolic Yellowing
- Print Durability
- Rubbing
- Washing
- Water

Textile: Physical

- Abrasion
- Bursting Strength
- Compression and Puncture
- Crease and Wrinkle Recovery
- Crimp
- Drape
- Durability
- Flammability
- Mass per unit area
- Pilling and Fuzzing
- Security of Attachments
- Seam Slippage
- Shrinkage
- Snagging
- Spray Rating
- Stretch and Recovery
- Surface Deterioration
- Tear Strength
- Tensile Strength
- Washing and Drying

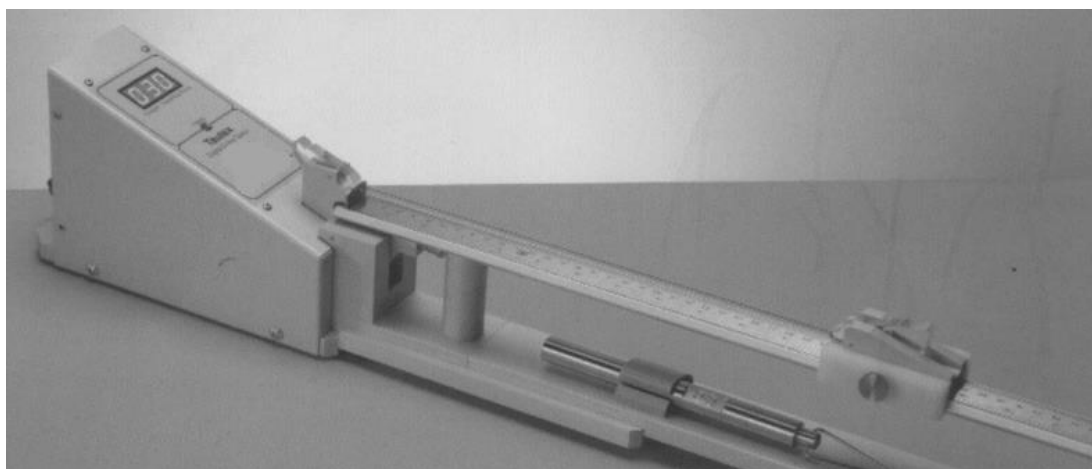
Non-Textile

- Bursting strength of nonwovens, plastics, paper and medical products
- Micro-scratching of laminates, wooden, painted, automotive and high gloss surfaces
- Physical and colour fastness testing of leather
- Rubbing fastness of laminates and wooden surfaces
- Tear strength of paper and plastics

1. INTRODUCTION

1.1 Scope

The **Tautex Digital Crimp Tester** is the most advanced crimp tester available and has been designed to simplify and accelerate the testing process. It can also be used horizontally or vertically.



Tautex provides a means of accurately measuring the length of yarns under known tensions.

The Tautex Digital Crimp Tester works on the principle that the tension applied, to straighten the yarn, is displayed digitally. The correct straightening tension is achieved by clamping one end of yarn into the grip on the pivoting head and the other end into the grip on the sliding head. The sliding grip is then moved slowly until the correct tension is reached and the yarn length is read from the rule.

The Tautex alleviates the need to physically change the tension weight when measuring the length of different types of yarn.

Unlike a conventional Crimp Tester, where tension is applied by an adjustable pivoted weighted arm, Tautex has a single tension range of 0 – 250g and applied tension is digitally displayed.

1.2 Standards

Tautex complies with the following standards:

- ASTM D 3883
- ISO 7211-3
- ISO 7211-5
- Woolmark TM 169

It is essential that reference is made to the appropriate standards as well as to performance specifications issued by your customers.

1.3 Applications

Tautex is used for the following applications:

- To measure yarn crimp or yarn take-up in woven fabrics
- To measure stitch or course length in knitted fabrics
- To isolate the causes of shading / barring in fabrics
- To determine the linear density of yarn, removed from fabrics
- To calculate yarn usage in fabrics

1.4 Features

These are the main features of Tautex:

- Can be used either horizontally or vertically
- Instant digital display of the applied straightening tension
- Dual length measuring scale, with metric and imperial graduations
- Supplied with a straightening tension check weight
- Designed to accelerate the testing process

2. INSTALLATION

2.1 Unpacking

Carefully remove the instrument from its packing and check that the following items are present. Do not dispose of the packing material until all items are found present, correct and undamaged:

- Tautex Model 520
- 250g Check Weight
- Mains Electrical Lead
- Bracket and Assorted Screws for hanging the instrument vertically

2.2 Identification of Parts

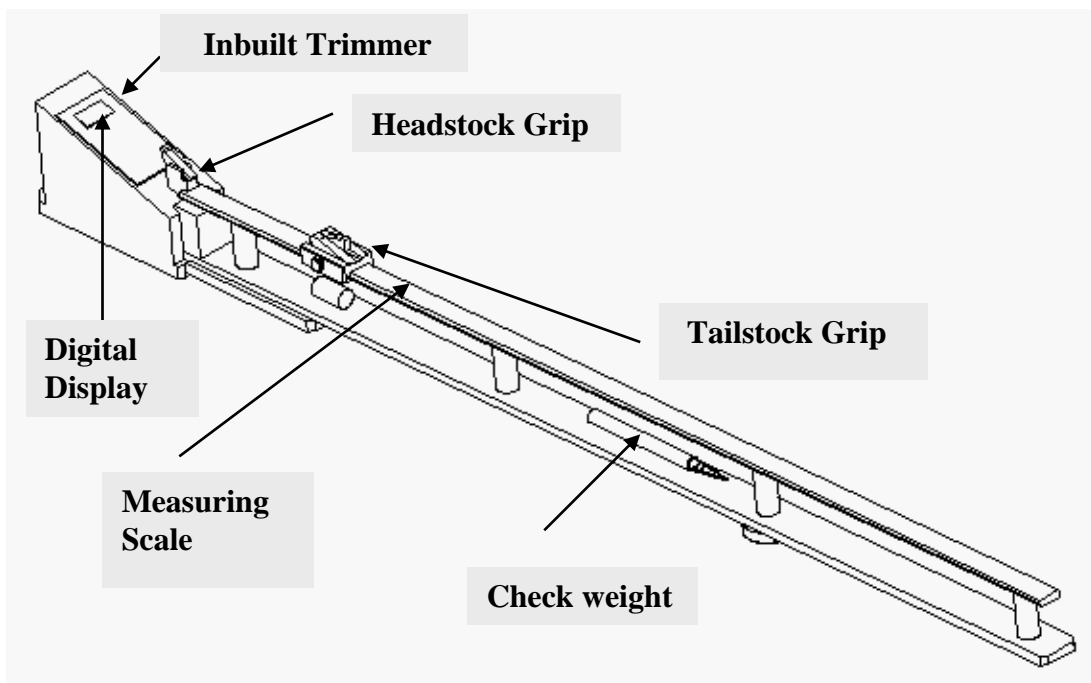


Figure 2

2.3 Preparing the Instrument for Use

Carefully place Tautex on a bench-top for horizontal use or hang it vertically after fixing the support bracket at a convenient height on a wall. Ensure unit is in the vertical plane if using wall mounted. It is strongly recommended to fit the wall bracket even if Tautex is to be used horizontally. This allows the force gauge to be easily checked using the 250g check weight with the instrument in the vertical position.

Using the mains lead supplied connect the instrument to an electrical supply which complies with the following specification:

Single Phase, 100 – 240Volts, and 50 / 60Hz

3. OPERATION

3.1 Procedure

- Switch the Power on. On/off switch on instrument at rear of case.
- Wait until the ready light is illuminated in green.
- Set the test length between the jaws to less than the distance between the marks on the yarn applied to the fabric.
- Put one end of the yarn, where it is marked with a marker pen in headstock jaw.
- Put the other end of the yarn, where it is marked, in the tailstock jaw.
- Move the tailstock jaw gently to the right (or down) until the tension value is registered on the display.
- Read the distance from the face of the tailstock jaw against ruler.
- Calculate crimp according to the test method being used.

NOTE THAT THE TAILSTOCK JAW HAS A KNURLED SECURING SCREW FITTED WHICH IS EXTREMELY USEFUL WHEN USING TAUTEX IN THE VERTICAL MODE. THE SCREW CAN BE LIGHTLY TIGHTENED SO IT PREVENTS THE JAW FALLING BUT LIGHT HAND PRESSURE WILL CAUSE IT TO MOVE.

3.2 Ready Lamp

If the ready lamp is not illuminated, please do not use the instrument. Wait until the ready lamp is illuminated.

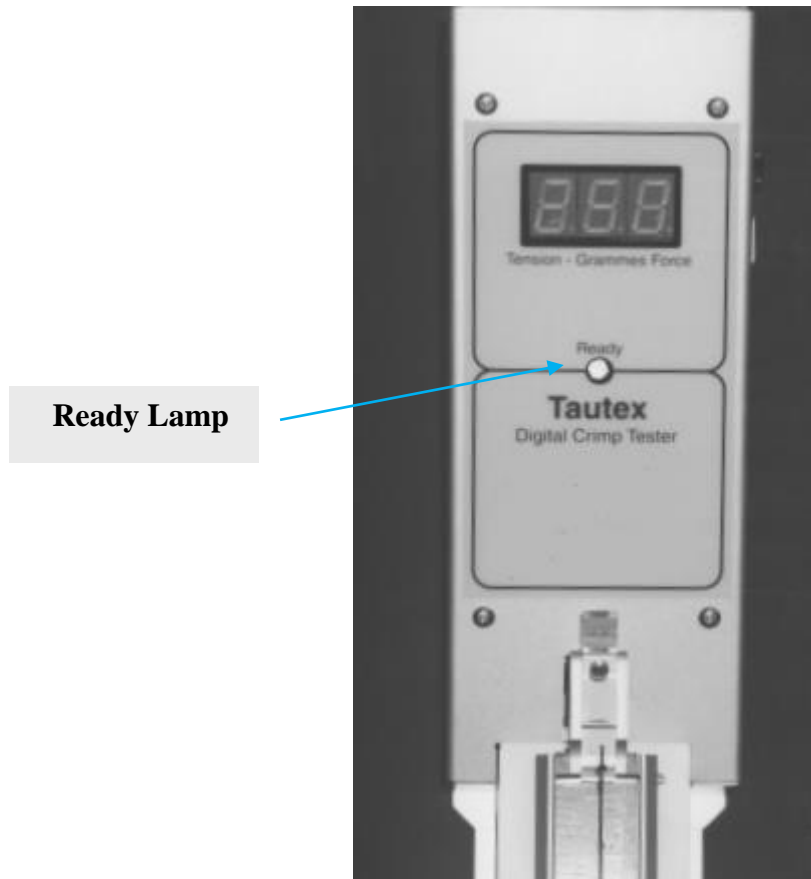


Figure 3

3.3 Checking the Force Gauge

Prior to use for the first time and periodically, check the force gauge with the check weight supplied as follows:

Hang Tautex Vertically

Move the tailstock jaw away from the headstock jaw so it does not interfere with the check weight.

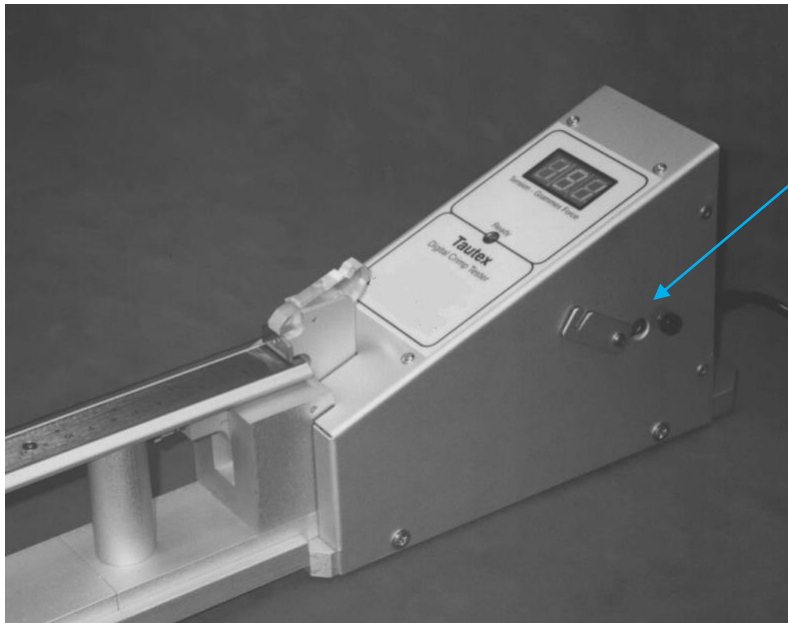
Make a loop of thread through the hole in the check weight and secure the thread with a knot

Place the end of the thread in the headstock jaw centrally and gently lower weight until it is freely suspended from the jaw

Display should read 250g

If not, adjust the trimmer on the unit's side panel with a slotted screw driver until the display shows the correct weight. Trimmer is beneath the pivoted plate as shown in figure.

Trimmer



Trimmer

Figure 4

4. HEALTH & SAFETY

Tautex is CE compliant in all respects and does not in itself create hazards. However, always take care when lifting and moving the instrument to a new position (or location) and take care when using the calibration check weight.

5. SERVICE & CALIBRATION

The James Heal Service & Calibration department provides a totally comprehensive, global support programme. When you buy instrument from James Heal, it is the beginning rather than the end of an association. Our aim is simple - to provide precisely the services you need to maintain and protect the value of your investment.

Please email any enquiries you may have regarding your instrument to support@james-heal.co.uk

In all communications please quote the serial number of your instrument e.g., 520/14/1001.

Between service and calibration visits no regular maintenance is required. Simply keep the instrument free from dust and debris.

6. TECHNICAL DATA

6.1 Specification

Scale length	: 1250mm (approx. 49in)
Graduation	: 1mm and 0.1in
Tension range	: 0-250g
Resolution	: 1g
Overall Dimensions	: Approx. 1580 x 145 x 85mm
Weight	: Approx. 7kg
Power supply	: Single phase, 100-240V, 50/60Hz

6.2 Dimensions

