

# HOT DRAW KNITTER with DRAW FORCE TESTER

## LH-123A HDK-DFT



The textile industry uses knit-dye-grade or draw force measurement when checking the uniformity of the POY production. Before inspecting the POY for dye uptake, it is necessary first to draw and set the yarn. HDK is the only available lab instrument that offers this capability.

Hot Draw Knitter with Draw Force Tester, HDK-DFT, is a precision knitting machine with automatic stitch control system and a Draw Force measurement to check the consistency of the POY production quickly and accurately. It is ideal for use in production control and R&D labs as well as dyeing plants.

The HDK-DFT is the only instrument that provides a knit sample and draw force results on a package at the same time. This test complies with ASTM D 5344, Standard Method for Extension Force of Partially Oriented Yarn.

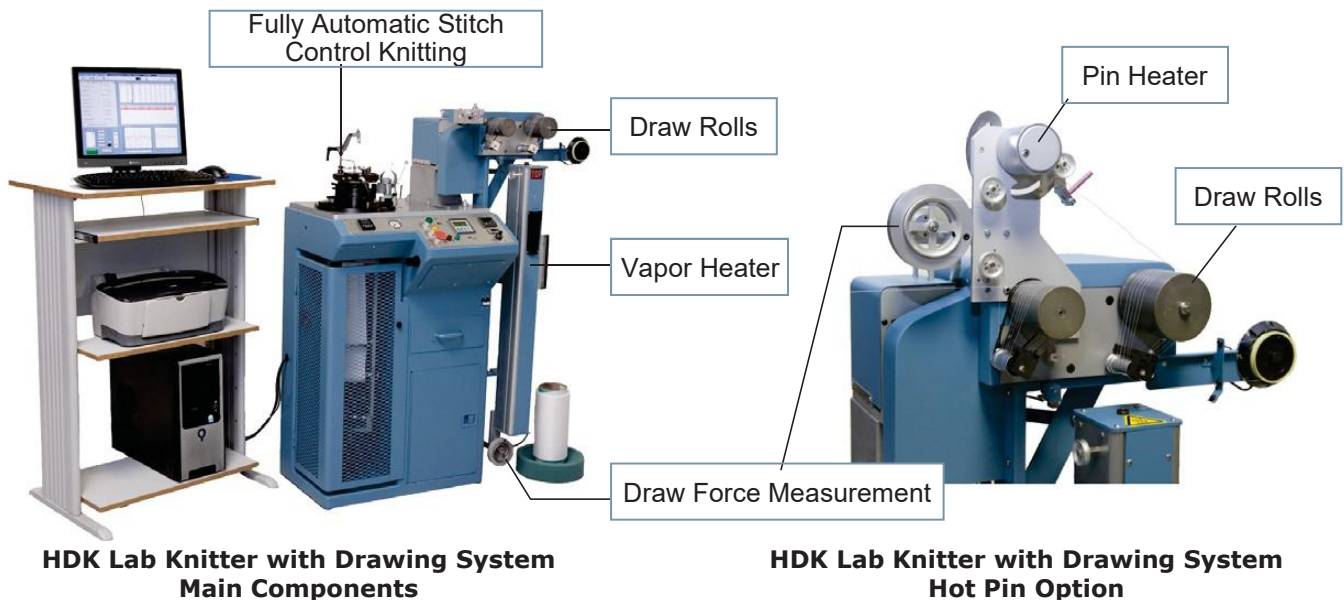
POY, MOY and LOY samples from 10d up to 2000d can be knit with the HDK. (Please consult Lawson-Hemphill to knit higher or lower denier yarns). The machine can be equipped with a non-contact Vapor heater and contact Pin heater to allow testing of both polyester and nylon yarns. Precision Draw ratios are available from 1:1 to 1:3, with increments of 0.05.

Windows based and user friendly DFT software program provides real-time tension data on the yarn as it is being drawn and knitted. Accept/Reject limits can be defined by the operator. The test results and the tension graphs are saved in common file formats. DFT software includes the ability to run draw force tests under increasing temperature levels to determine optimum settings and critical temperatures for the yarn under test.

# HOT DRAW KNITTER with DRAW FORCE TESTER

## FEATURES

- Precision knitting machine with automatic Stitch Control and Draw Force Measurement system
- Provides a standard knit fabric sample and draw force results on the same POY package at the same time to check the uniformity and the consistency of the POY production quickly and accurately
- Complies with ASTM D 5344, Standard method for Extension Force of Partially Oriented Yarn
- Ability knit POY, MOY and LOY yarn samples
- Non-contact Vapor Heater (max 205°C) and contact Pin heater (max 250°C) are available to test polyester and nylon yarns on the same machine
- Precision Draw Ratio rolls from 1:1 to 1:3, with increments of 0.05 are available
- Nine different cylinder sizes to knit yarns from 10d up to 2000d. (Please consult Lawson Hemphill to knit higher or lower denier yarns.)
- Interchangeable knitting cylinders that can be used in all Lawson Hemphill knitting machines
- Maintains constant course length with the Yarn Meterhead to ensure uniform loop size
- Maintains constant tension on the yarn with the Air Servo/Stitch Cam Regulator
- Features fabric take-up assembly to collect the fabric sample under controlled tension



## ADVANTAGES

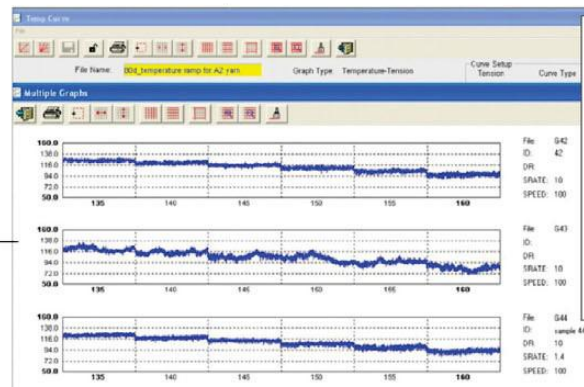
- The only Draw Force testing platform to provide Draw Force data and Knit-Dye Grade on the same yarn.
- Identifies critical temperatures for your product using temp curve analysis
- Reduces labor and raw material costs
- Increases first-quality yields
- Optimizes texturing conditions
- Maximizes customer satisfaction

## HDK-DFT SOFTWARE

Windows based, easy to use Draw Force software features:

- Draw Force statistics with average, min and max tension, SD and CV%
- Continuous monitoring and detection of changes in yarn tension with real-time tension graph display
- Auto or operator defined accept/reject limits to sort out the packages
- Ability to view the tension graphs and test data for multiple or single packages
- Automatic saving of the test settings, results and tension graphs
- Easy to share test report formats

### DFT Temperature Curve Mode

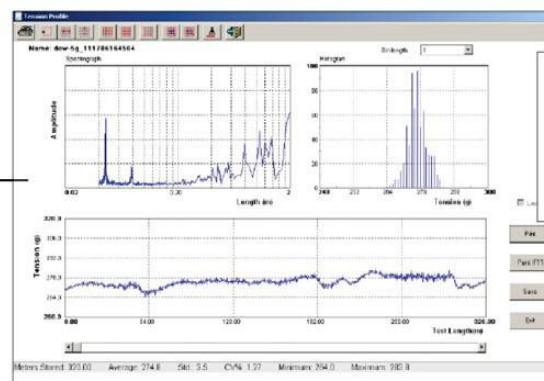


Temperature Curve Software to allow for RAMP or STEP Temperature testing.

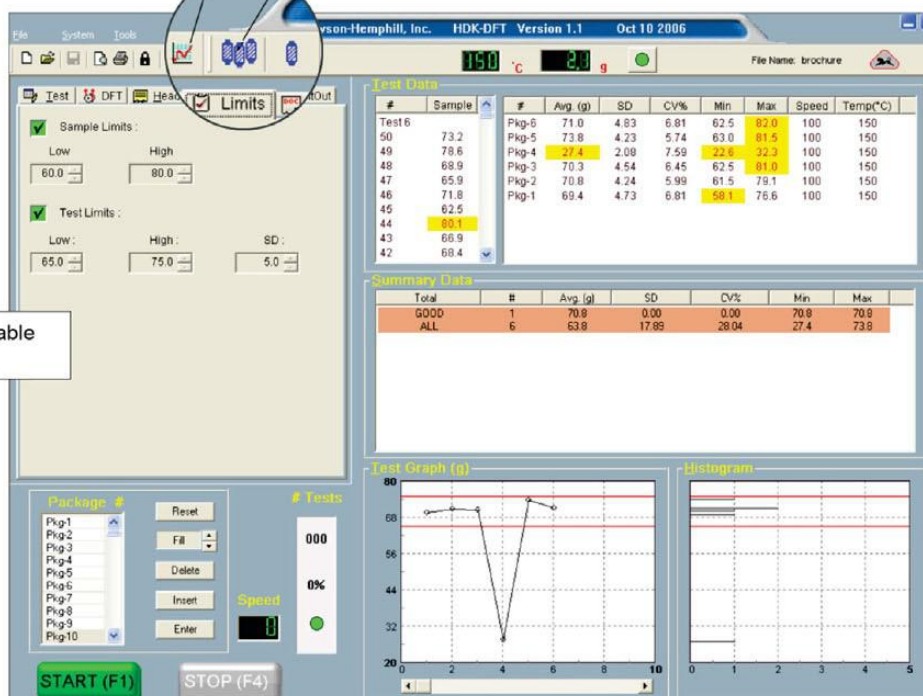
See the Changes in Tension vs. Temperature.

Identify Critical Temperatures for your product.

### View Tension Data for each Package



Tension Graph, Histogram and Spectrogram report for each package



User Selectable Test Limits

Test Results for Individual Packages with Statistics

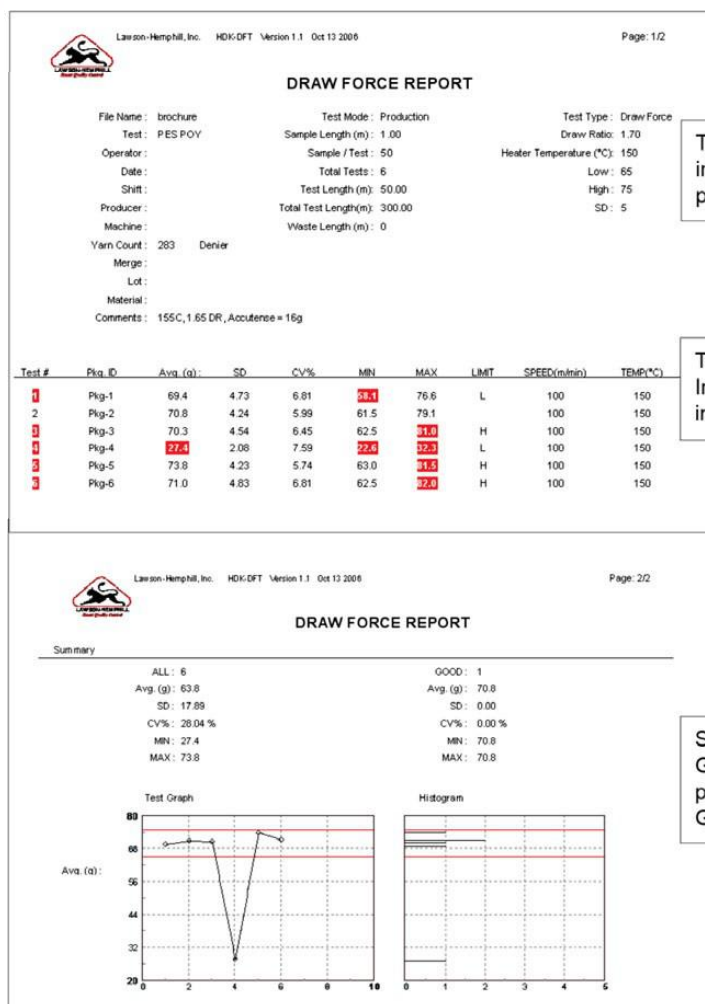
Out of Limit results are highlighted and flagged

Summary of all Packages with Statistical Analysis

Tension Graph and Histogram with Limits

### DFT Software Main Screen

# HOT DRAW KNITTER with DRAW FORCE TESTER



Test Header,  
including Test  
parameter values

Test Results for  
Individual Packages  
including Statistical report

Summary of  
GOOD and ALL  
packages with  
Group Statistics

## DFT PRODUCTION TEST REPORT

### MODEL

LH-123A Hot Draw Knitter-Draw Force Tester

Electrical 110-220 Vac 50-60 Hz  
(consult LH for other power supply)

Air 60 psi, clean air required

Dimensions 1054 x 546 x 1346mm  
(41.5 x 21.5 x 53 inches)

Weight 181kg (400 lbs)

### TECHNICAL SPECIFICATIONS

Pretension Range min-5grams, max-60grams

Linear Input Speed 110 m/min. (maximum)

Heater Temperature 110°C-205°C (vapor heater)  
50°C-250°C (pin heater)

Fabric Tolerance 0.5% from sample to sample or  
machine to machine

Draw Ratio Rolls from 1:1 to 1:3 in increments  
of 0.05 (Contact Lawson-Hemphill  
for other draw ratios.)

Yarn Types POY, Flat or Texturized yarns  
(partially oriented yarn, low  
oriented yarn, medium oriented  
yarn and fully oriented yarn.

Optional Pin Heater, Package Changer

\*All specifications are subject to change.

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