

FTS 6000

Friction Test System

ON THE SURFACE
We touch life first

MACHINES



*A test instrument
dedicated to measuring
the friction properties
of medical devices*

A compact versatile instrument for measuring lubricious coating performance on medical devices.

FTS 6000 Friction Test System

Test samples are easily inserted into one of three sample holders and suspended from the force gauge.

Clamping pressure and friction surface are provided by two silicone rubber pads. Choose from either 60A or 80A durometer pads, or install your own custom friction pad material.

Easily export raw data into an Excel file right on the FTS computer. Transfer files to local network via Ethernet connection or with flash drive.

Creating a test protocol is simple, precise and fast.

MACHINES

Harland automated product platforms designed specifically to apply and test performance materials for your products.



Features:

- Precision, low-vibration vertical motion column
- Parallel clamping motion
- Detailed yet intuitive programmability
- Table-top or Floor-stand versions

Harland Medical Systems offers a compact, versatile instrument specifically designed for measuring lubricious coating performance on medical devices such as catheters, guidewires, pacing leads and similar products. The FTS 6000 Friction Test System measures both surface friction and coating durability by drawing the test sample between two silicone rubber pads clamped at a programmable force. The FTS is an ideal surface property measurement tool for coating development, quality control and competitive product testing.

Dynamic Clamp Control maintains uniform clamp force should sample diameter vary over the length tested.

For years the “pinch test” method has been the standard for measuring the performance of lubricious coatings. The FTS 6000 makes creating, running and analyzing these tests simple, accurate and fast. The FTS system quickly leads you through setting up a test protocol, storing the protocol in memory, running the test and analyzing the results.

There’s no need to attach a separate PC. The FTS 6000 has its own 10.4 inch color touch-screen computer. And you can easily transfer the FTS-generated data to your desktop computer by either connecting to your local network via an ethernet connection, or by simply inserting a USB flash drive

Easy Setup

To run a test simply fasten your sample to one of three available FTS sample holders, select or modify a test protocol and move the vertical transport to the desired starting position. The FTS 6000 does the rest.

Fast Calibration

The FTS force gauge and clamp can be easily calibrated in just a few minutes using the Harland Calibration Kit and on-screen program.

Display of Results

As the test runs, the display shows the test results in both tabular and graphic form. An information bar at the bottom of the screen displays the name of the protocol you are running, the clamp applied force and measured pull force. After the test is complete, the test report summary can be viewed on the screen or sent to an external printer. Or the data can be transferred to a separate computer via your network or with a USB flash drive.

Intuitive Software

The intuitive FTS 6000 software combined with the touchscreen interface makes it easy for operator to create, modify and store new test protocols; and to test samples using those protocols. Password protection assures that only authorized personnel have access to create or edit protocols.

Programmable Test Parameters include:

- Number of test cycles
- Clamping force
- Vertical transport velocity
- Vertical transport acceleration and deceleration time

A test instrument dedicated to measuring the friction properties of medical devices



Test results are summarized in both tabular and graphic form as the test proceeds.



THE 4M FRAMEWORK™

Harland manages all of these elements as an integrated program to provide you with a complete surface enhancement solution tailored to precisely meet your particular technical, functional and economic requirements.



MATERIALS — proprietary chemistries that enable advanced surface enhancement on your medical devices, healthcare disposables or life science products. Harland provides unique, world class chemistry platforms for solving customer surface enhancement challenges.

METHODS — processes and protocols to effectively and efficiently apply and cure surface enhancing materials. Harland creates and validates robust methods that optimize the integration of Materials and Machines to meet your product's requirements.

MACHINES — automated systems designed specifically to apply and test advanced Materials on your device. Engineered to meet your technical, commercial and operating requirements including throughput and total cost of ownership.

MANUFACTURING — with either Harland Contract Coating Services or customer- owned coating operations. Harland is uniquely positioned to offer a full spectrum of surface enhancement manufacturing options based on your manufacturing strategy and volume requirements.

Force Gauge Options

Select from 200 gram, 600 gram or 1000 gram capacity force gauges.

For Measuring	Recommended Force Gauge
Hydrophilic and PTFE Coated Products	200 Gram capacity gauge
Uncoated Products	600 Gram capacity or 1000 Gram capacity gauge

Accessories

- Floor stand with casters and leveling feet . Includes space for optional extended water bath with 56 cm depth permitting testing of longer samples.
- Water bath heater to enable testing at elevated temperatures. Range: 5° C to 70° C above ambient.
- Small diameter sample holder capable of gripping samples up to 0.055 inch diameter.
- Calibration Kit including custom calibrated weights and fixturing.
- On site start-up, installation qualification and training.
- Annual Service and Calibration program



7418 Washington Avenue South
Eden Prairie, Minnesota 55344
USA • 952.941.0475

www.harlandmedical.com

Specifications – FTS 6000 Friction Test System

Maximum Device Diameter	2.0 cm
Maximum Stroke Length:	50 cm
Maximum Sample Test Length	
Table-top Model	25 cm
On Floor Stand	50 cm
Clamp Force Programmable Range	50 grams to 1000 grams
Pull Speed Programmable Range	0.1 to 5.0 cm/second
Pull Force Accuracy	
200 Gram Capacity Force Gauge	± 0.5 grams
600 Gram Capacity Force Gauge	± 1.5 grams
1000 Gram Capacity Force Gauge	± 2.5 grams
Clamp Force Accuracy	± 10 grams
Data Sampling Rate	1 – 10 data samples per millimeter
Heated Water Bath Temperature Range	5° C to 70° C above ambient
Heated Water Bath Temperature Stability:	0.2° C
Display	10.4 inch diagonal 800 x 600 pixel touchscreen
Data Transfer Ports	1 – Ethernet, 4 – USB
Power Requirements	115/230 volt AC 50/60 Hz
Chassis Materials	Powder coated steel and anodized aluminium
Weight	
Tabletop Model	Approx. 90 lbs / 41 kgs
With Floor Stand and Accessories	Approx. 475 lbs / 215 kgs
Dimensions	
Friction Tester	43 in high x 29 in wide x 18 in deep
With Floor Stand	77 in high x 33 in wide x 18 in deep
Calibration	Requires custom set of calibrated weights
Friction Pads	0.5 in x 1.125 in (0.125 in thick) Silicone rubber pads 60A or 80A durometer
Sample Holders	

- Alligator clip style
- Collet style (Sizes: 0.031 in , 0.062 in, 0.093 in and 0.125 in)
- Pin vice style (0 up to 0.055 in)