SHIMPO INSTRUMENTS

Measuring Quality

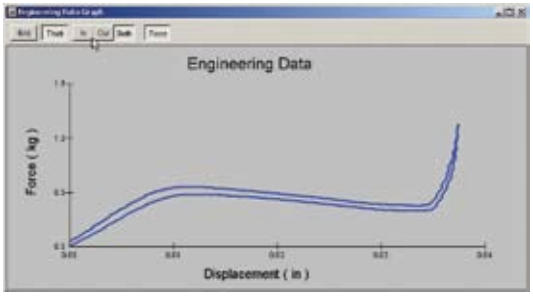
921B Force Displacement Test Station

The 921B Force Displacement Test Station is one of the most versatile, accurate and cost effective test stations of its kind. It features accuracy levels equal to or exceeding those of much more expensive, dedicated systems. It is ideal operating as a stand alone production line tester. The operator is presented with a pass/fail indication for the devices being tested. The Model 921B may also communicate with a PC and provide data for analysis and storage. The analysis includes numerical (tabular) results as well as graphical display of the tested parameters. This line of displacement-force switch test stations has a positional resolution of 0.0001 inches (0.0025 mm). Quality test departments will appreciate the high accuracy readings provided over the complete travel range.

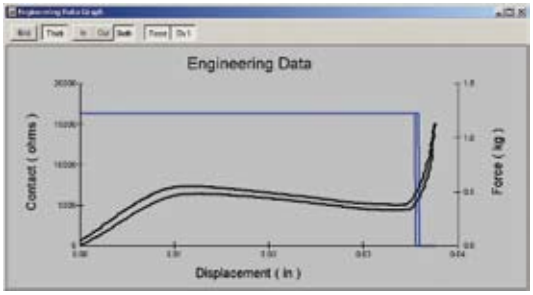
Interchangeable force sensors with ranges up to 50 lb. (22.7 kg)are available. The 921B also permits the user to change the probe tip. The test station performs a calibration on the complete test fixture. This calibration removes the deflection and compression effects that can reduce reading accuracy. The calibration is performed over the range of forces specified in the specifically configured setup.

Invaluable as a test tool for qualifying first article product, audit testing, engineering investigation and life study tests, the 921B can also be used in automated production areas. When integrated with an automatic feed or an x-y positioner, the 921B functions as a cost-effective automated test station ideal for a wide variety of production applications.

The 921B is provided with a user friendly application software that runs on Microsoft Windows™ based PCs. The output data is in Microsoft Excel format that allows easy import of data for statistical process control (SPC).



Force-Displacement Graph



Force-Displacement-Resistance Graph

Features

- *Accurate, fast, repeatable testing of displacement and force parameters*
- *Test to ASTM standards F1570, F1597*
- *Optional resistance channel to check switches*
- *PC-interactive or standalone operation*
- *Provides in-depth test data to fulfill customer requirements*
- *Up to 5000 data points per test*
- *Displays test data in tabular or graphic formats*
- *Head can be mounted in various way to meet user's production line needs*
- *Typically reduces test times by 50% or more*
- *Eliminates deflection errors through automatic deflection compensation*
- *Application software is fast enough to store data files when used on production lines*
- *Graph displacement verses force. Resistance option comapre resistance, force and displacement on the graph*

A Nidec Group Company
SHIMPO All for dreams
NIDEC-SHIMPO AMERICA CORPORATION • Phone: (800) 237-7079 • Fax: (630) 924-0342 • www.shimpoinst.com

921B Specifications

Force	**Range**	0 to 3.60 kg (0 to 127 oz); other available ranges include 0-75.0 g 0-2.65 oz), 0-360 g (0-12.7 oz), 0-2.00 kg (0-70.6 oz) and 0-22.68 kg (0-50.0 lb)
	Resolution	1 g (0.035 oz)
	Abs Accuracy	±0.25% of full scale max
	Repeatability	±0.1% of full scale max
Displacement	**Range**	0 to 62.51 mm (0 to 2.46 inches) programmable
	Resolution	0.00254 mm (0.0001 inch) programmable
	Abs Accuracy	±0.00762 mm (±0.0003 inch) max
	Repeatability	±0.00762 mm (±0.0003 inch) max
Test Speed		As fast as 8 mm/s (0.32 inch/s); as slow as 0.0254 mm/s (0.001 inch/s)
Power Requirements		115/220 V ac, 50/60 Hz, 230 VA
Measurement Units		Metric or English - user selectable
Control Units		11-1/4 H x 19-1/4 W x 20 D inches (28.6 x 48.9 x 50.8 cm) 37 lb (16.7 kg)
Test Head		10 x 4 x 3-1/4 inches (25.4 x 10.2 x 8.3 cm) 6.5 lb (2.9 kg)
Software (Only)		Switch Tester Application for Windows™ control and analysis software package requires an IBM-compatible PC with Pentium processor running Windows™ XP or later
Tested Parameters (FD Mode)	**Actuation**	FMAX = actuation force FMIN = minimum force TMIN = travel @ FMIN TMAX = travel @ FMAX
	Release	FRESTORE = FMIN @ release TRESTORE = travel @ FRESTORE
	Calculation	Tactile ratio = (FMAX - FMIN) / FMAX

Ordering Details

921	Force/Displacement Test Station with Switch Application Software and one range sensor. (Specify required range per below options.)
Force Sensor Ranges: **One included with each test station.** **Note: Additional sensors may be ordered seperately.**	
02	(0-360 g; 0.1 g resolution)
03	(0-75 g; 0.1 g resolution)
05	(0-750 g; 0.2 g resolution)
06	(0-2 kg; 0.5 g resolution)
01	(0-3.6 kg; 1 g resolution)
07	(0-9 kg; 2.5 g resolution)
04	(0-20 kg; 6 g resolution)

Options

Resistance/Voltage Channel (FDR Mode)
Resistance range of 0 - 16 kΩ or voltage range of 0 - 4 V; other resistance/voltage range available. Measures resistance for tactile and non-tactile switches. Tests the following additional parameters: FMAKE, FBREAK, FLOW, TMAKE, TBREAK, TLOW, RMAX, RMIN, RMAKE, RBREAK, RRESTORE, RLOW

109	0 – 4.095 Ω; 1mΩ resolution, 10 mA
110	0 – 4.095 Ω; 1mΩ resolution, 25 mA
107	0 – 1 kΩ/ 0.25 Ω resolution
101	0 – 16 kΩ; 4 Ω resolution
102	0 – 4 V; 1 mV Cable Included
270	Platform: holds test actuator assembly (18" x 18")
271	Platform: holds test actuator assembly (12" x 12")

Windows™ and Excel are registered trademarks of MicroSoft Corporation.

DISTRIBUTED BY:

A Nidec Group Company
SHIMPO All for dreams
NIDEC-SHIMPO AMERICA CORPORATION • Phone: (800) 237-7079 • Fax: (630) 924-0342 • www.shimpoinst.com