PBFT

Peel Back Force Tester

GPD's Peel Back Force Tester with FORCEWare™ software is being used to set peel back standards for the entire industry

GPD Global®

Proven Peel Back Force Measurement

Supplying consistent SMT carrier packaging is critical for customers using SMT pick-and-place machines. Nothing will stop a production line faster than carrier cover tape that doesn't peel back properly. The problem is difficult because tape cover adhesive varies widely from supplier to supplier.

In short, correctly measuring, setting up, recording, and then analyzing carrier tape peel back force is a critical production step. That's why you need GPD's Peel Back Force Tester (PBFT) with FORCEWare™ software. **This is the equipment judged so good it was used to set the peel back force standard for the entire industry.**
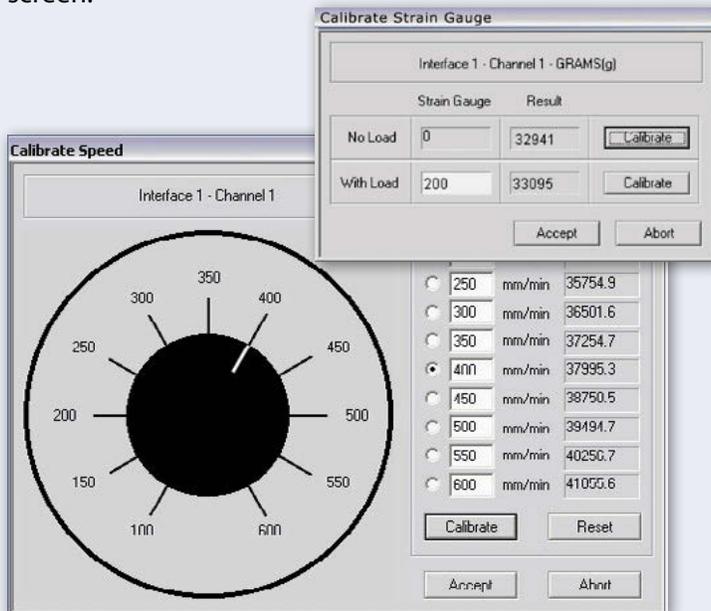
When you manage adhesive peel back force properly...

...you automatically take a big step toward improving *customer satisfaction*

Installation and Set Up

Configuration of the PBFT is quick and easy using the PBFT calibration dial and the strain gauge calibration screen.

Calibrate Strain Gauge

Interface 1 - Channel 1 - GRAMS(g)

	Strain Gauge	Result	
No Load	0	32941	Calibrate
With Load	200	33095	Calibrate

Accept   Abort

Calibrate Speed

Interface 1 - Channel 1

250	mm/min	35754.9
300	mm/min	36501.6
350	mm/min	37254.7
400	mm/min	37995.3
450	mm/min	39750.5
500	mm/min	39494.7
550	mm/min	40256.7
600	mm/min	41055.6

Calibrate   Reset

Accept   Abort

Strain Gauge Verification Kit

This optional kit makes it easy to verify strain gauge calibration and meet ISO requirements for calibrated equipment.

Kit PBT-123 includes 20, 50, 100, & 200 g weights

GPD's FORCEWare™ Software
lets you interface directly with your computer

GPD Global Peel Back Force Tester

Desktop PC   Notebook PC

or

and
via USB connection

FORCEWare™ Software

FORCEWare™ software allows the user to see, analyze, and record minimums, maximums, and average peel back force and speed, as well as standard deviation. GPD Global's FORCEWare™ Software with comprehensive SPC Software Package makes testing and evaluation quick, easy, and accurate.

SPC Analysis

When sufficient SPC data has accumulated, it can be analyzed with any of the various window interfaces shown in the samples here. All you have to do is select the file to be analyzed, a data range, and the type of graph desired. Then simply print out or display the output. (see next page)
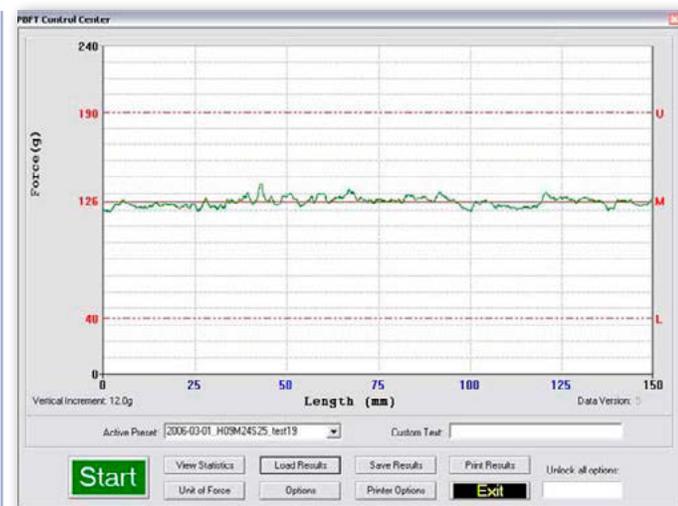
PBFT Control Center Window

The PBFT Control Center Window is used to define test parameters and unit of measure, run a test, and view, print, and save results. This window is also used to view and compare prior test results.
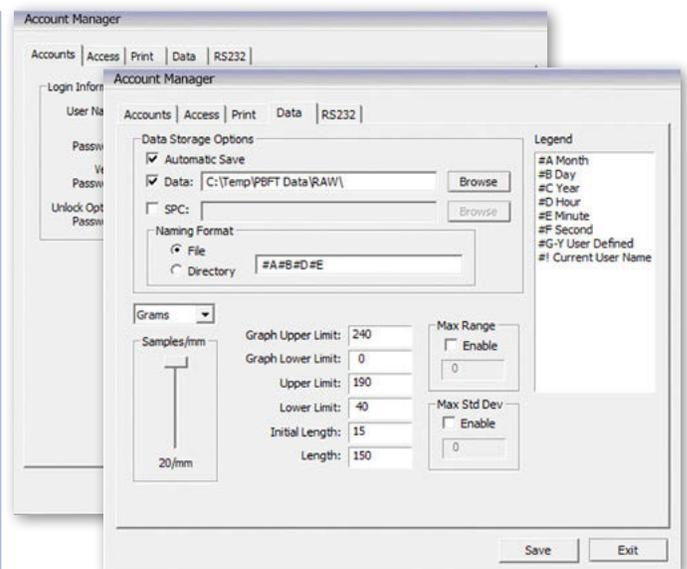
SPC User Creation Window

In addition to generating SPC data reports, the operator can also create separate log-in accounts, as well as implementing vendor defaults. Security features prevent unauthorized tampering.

· Control · Information · More Efficient Production

Test Graph

When a peel back force test begins, its progress displays on the test graph. Upon test completion, specific and summary data are displayed in a Test Results window. Many different graph forms can then be generated.
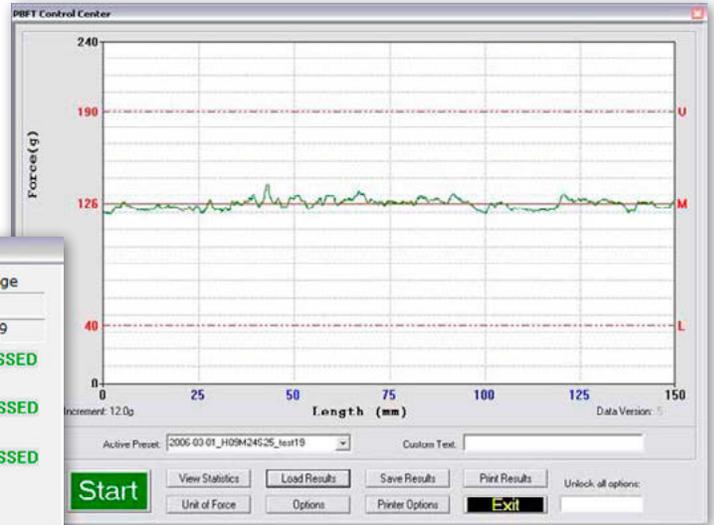
Current Results Chart

Displays complete results of test. Results can be saved and reviewed.

Test Results

	Max	Min	Range
Limit:	190	40	150
Result:	141.34	104.35	36.99

Speed: 600	
Mean: 116.194	PASSED
Standard Deviation: 5.263	PASSED
Std. Dev. Limit: 10.000	
Data Range: 36.99	PASSED
Data Range Limit: 200.00	

Close

## FORCEWare™ Software with SPC Software Package Runs on Windows 10 Pro/ 8 Pro/7 Pro

Now the most accurate method of testing is also the easiest and fastest. With easy to use, point-and-click windows, initial set up is a breeze, and calibration routines for both speed and force are practically automatic. SPC analysis allows the operator to select the files to be analyzed, and pick the appropriate analysis tools. Analysis, and all management results can be printed out for further study or distribution.

· Simplified calibration routine for speed and force
· Selectable sampling rate
· Bright, clear, easy-to-read screens
· Large storage capability for test data, test graphics, and SPC data
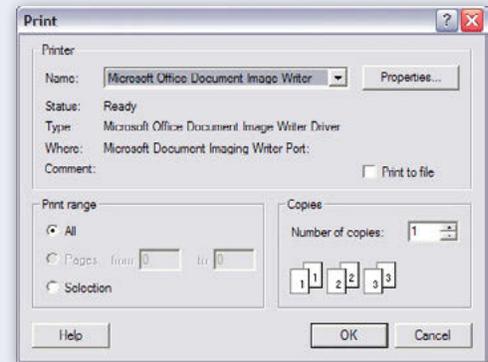
SPC Reports and Labels

SPC test results can be printed in SPC data, line graph, and label formats. The user can control the overall dimensions for all of these formats. User-defined print can also be added at the bottom of the SPC data and line graphs reports.
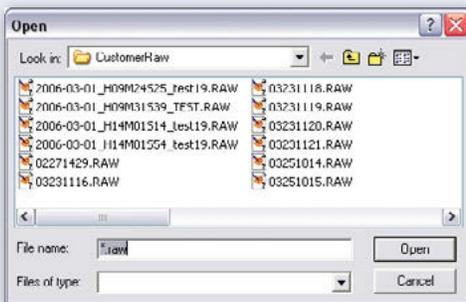
Previous Results Chart

This display is used to load previous results and past tests, in addition to generating additional results output.
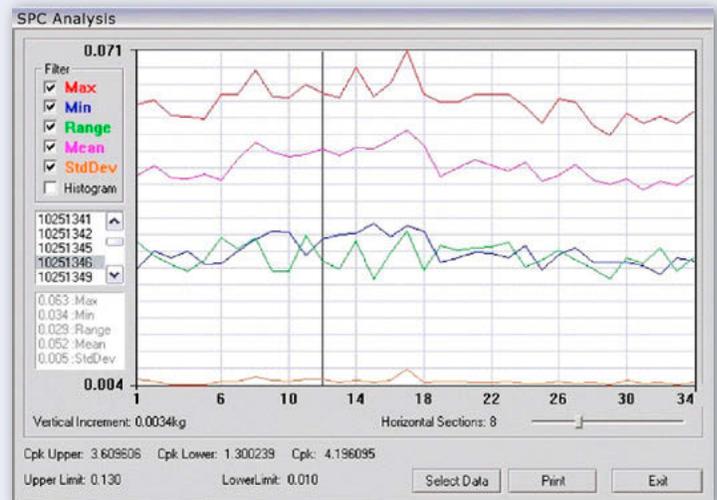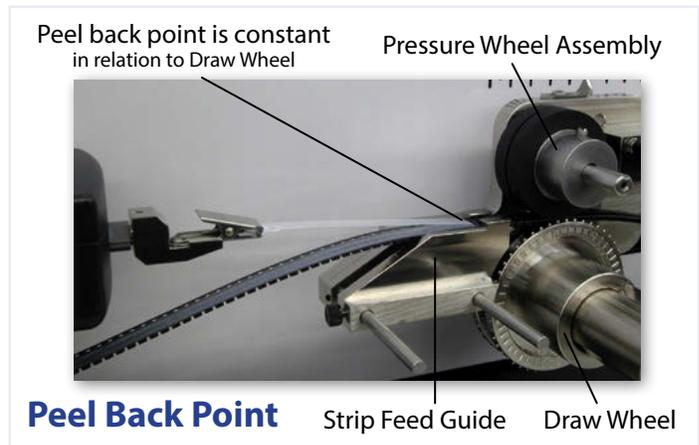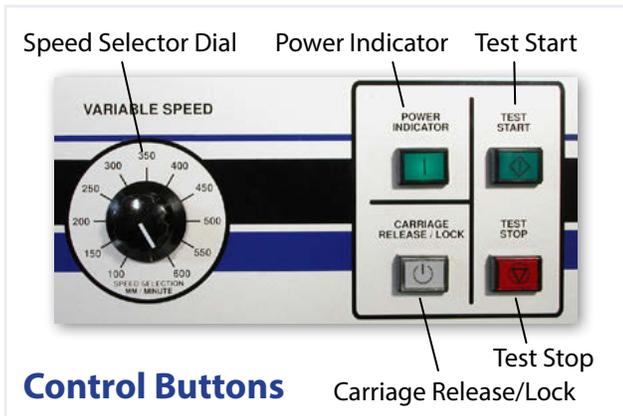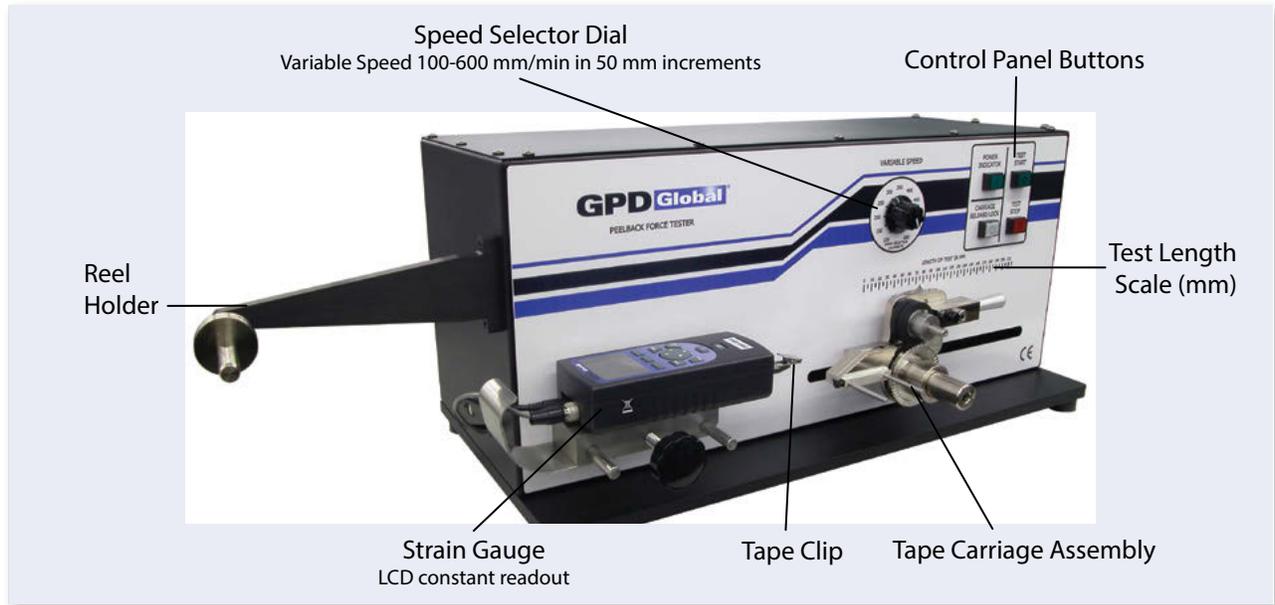
S-Chart, X-Bar Chart, R Chart, and Cpk

Displays trends in spread of standard deviation, mean, range, and Cpk.

Features

of the variable speed Peel Back Force Tester with FORCEWare™ software package

Speed Selector Dial
Variable Speed 100-600 mm/min in 50 mm increments

Control Panel Buttons

GPD Global
PEELBACK FORCE TESTER

Reel Holder

Test Length Scale (mm)

Strain Gauge
LCD constant readout

Tape Clip

Tape Carriage Assembly

Speed Selector Dial

Power Indicator

Test Start

VARIABLE SPEED

POWER INDICATOR

TEST START

CARRIAGE RELEASE / LOCK

TEST STOP

SPEED SELECTION MM / MINUTE

Test Stop

Control Buttons

Carriage Release/Lock

Peel back point is constant
in relation to Draw Wheel

Pressure Wheel Assembly

Peel Back Point

Strip Feed Guide

Draw Wheel

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Battery Charging Cable

Data Output Cable

Zero Display Value

Display

Power On

Units
(kg, lb, N)

2900-0005

Strain Gauge

Built in Compliance with:

- IEC (Europe)
- EIA-J (Japan, Asia)
- EIA (North America): EIA-481-E
- European CE Safety Standards

Applicable Directives:

2014/35/EU Low Voltage Directive (LVD)
Laws for electrical equipment within certain voltage limits

2014/30/EU Electromagnetic Compatibility Directive (EMC)
Conformity is declared to Annex I and II (EMC) 2014/30/EU
Laws relating to electrical magnetic compatibility

2006/42/EC Machine Directive - 1st Edition - December 2009
Conformity is declared to Annex I and II (EMC) 2014/30/EU
Laws relating to machinery

Applicable Standards:

IEC 61010-1:2010+AMD1:2016 CSV
Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1:General requirements.

DESKTOP or NOTEBOOK Capability

Model PBFTVS.USB700 includes a Tape Peel Back Force Tester with GPD Global's FORCEWare™ software and SPC for Windows 10 Pro/8 Pro/7 Pro for use on a desktop or notebook computer utilizing USB specification 2.0.

Specifications

· Peel Back	Force Measuring Range	0 - 250 grams
	Speed	100 - 600 ± 5 mm/minute in 50 mm increments
	Angle	160 - 180 degrees
	Accuracy after Calibration	± 1.0% of Full Scale (equals 2.5 grams)
· Tape	Widths Accepted (mm)	8, 12, 16, 24, 32, 44, & 56 (optional 8 to 120 mm)
	Materials Accepted	Plastic, Paper, Metal
	Configurations	Single or Dual Sprocket
· Power	AC Input Voltage	100 VAC - 240 VAC
	AC Frequency	50/60 Hz
	Consumption	60 watts maximum
	Fuses, Input power module	1 amp, 250 volts
	Fuse, Power supply	2 amps, 250 volts
· Physical	Dimensions	31.8 cm H x 73.7 cm W x 36.8 cm D (12.5" H x 29.0" D x 14.5" W)
	Weight	30 kg (66 lbs)
· Strain Gauge	Accuracy	± 0.25% of full scale
	Data Sampling Rate	Up to 20 samples per second, selectable from FORCEWare™ Software
	Battery life (approximate)	30 hours, continuous use (strain gauge is normally plugged into the PBFT)
	Certification	Calibration norms comply with ISO 10012 and ANSI Z540-1
		Capacity is 2 lbf x 0.001 lbf with accuracy limits at ± 0.25% of full scale ± 1 LSC
· FORCEWare™ Software	Test Range-SPC Analysis	User-defined range
	Test Range-Data Collection	Uses minimum/maximum limits of first file in selected data set
	Print Options	SPC data, Label format, Line Graph format

Customer-Provided Computer Requirements

· Computer	Desktop or Notebook (minimum requirements are dictated by the operating system in use) with 1 available USB 2.0 compatible port.
· Operating System	Microsoft Windows 10 Pro/8 Pro/7 Pro, 32-bit or 64-bit
· Memory	1 GB recommended for 32-bit. 2 GB recommended for 64-bit.
· Printer	Any printer supported by the operating system in use.

GPD Global®

611 Hollingsworth Street, Grand Junction, CO 81505
Tel: +1.970.245.0408 • Fax: +1.970.245.9674 • request@gpd-global.com • www.gpd-global.com