



# Thwing-Albert Instrument Company

**More Than a Century of Testing Solutions**

## **PCA Score Bend Score Bend & Opening Force**

### **Versatile Paperboard & Carton Testing**

The 1270 PCA measures the force to open or bend paperboard and scored paper carton. Force data is vital for accurately configuring machinery that controls cartons on form, fill and seal lines and to analyze carton performance for runnability and quality control.

The ability to predetermine settings in the production of cartons can increase overall efficiency. Maintaining identical package specifications between the producer and the packager has also shown to be of mutual benefit for increasing savings in less reworks, rejects and down-time.

The 1270 PCA also measures spring back after folding providing critical information for sealing or gluing operations.

### **Opening Force**

Measures the maximum force required to open a flat, folded carton along score lines.

### **Bending Force**

An optional bending fixture measures the maximum force to bend a carton sample up to 90°. Measure bending stiffness, score ratio of scored vs. unscored paperboard and carton fold springback force.

### **Coefficient of Friction (COF)**

The 1270 PCA includes necessary software to measure static and kinetic coefficient of friction. The optional COF Fixture allows the 1270 PCA Score Bend to meet additional standards.

(NOTE: COF fixture ordered separately)



1270 PCA Score Bend shown with optional Bending Fixture

### **Features:**

- Software Includes:
  - Test modes for opening force, bending force & COF tests
  - Statistics include average, high, low & standard deviation
  - Spring back of fold test
  - Score ratio test mode of scored vs. unscored paperboard
  - Test result & curve data for PC interface
  - Optional Data Acquisition Software
- Auto-zero & semi-automatic calibration
- Automatic return with overload protection
- RS-232 interface
- Meets TAPPI Standard T577



## Bending Fixture

The Bending Fixture uses a pneumatic clamp that is operated with a foot-control pedal. Pneumatic clamping ensures a secure hold and a higher repeatability than manual clamping. The bending plate exerts the force required to bend the sample up to 90 degrees. A set of three reference plates are included that are used to verify accuracy.

## Physical Specifications

### Dimensions

558.8 mm x 406.4 mm x 1219 mm  
(22 in W x 16 in D x 48 in H)

### Net Weight

68 kg (150 lb)

### Shipping Dimensions

839 mm x 839 mm x 1321 mm  
(33 in W x 33 in D x 52 in H)

## Technical Specifications

### Load Cells

500g, 20N, 50N, 100N

### Force Accuracy

10% to 100% Load Capacity:  
±0.25% measuring value

Less than 10% Load Capacity:  
±0.025% of load cell capacity

### Crosshead Speed

5 - 500 mm/min (0.2 - 20 in/min)

### Air Pressure Requirements

75 psi/5.2 bar

### Angle Measurement Range

Between 0-90° (selectable in 0.1° increments)

### Angle Reading Resolution

0.36° or better

### Position Measurement Accuracy

±0.1% of full scale distance

### Sample Size - Opening Force Mode

From 25,4 to 457,2 mm (1 in to 18 in) when flat

### Sample Size - Bending Force Mode

Up to 152.4 mm (6 in) sample width  
Up to 6.35 mm (0.25 in) sample thickness

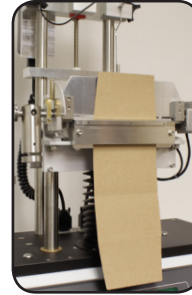
*Specifications subject to change without notice.*

## COF Fixture

Consists of a sample platform that provides a travel distance of 152.4 mm (6 inches). The platform quickly mounts to a support plate above the bending fixture which minimizes time to switch between bending and COF testing. A variety of sample sleds are available to meet your testing needs.



Opening  
Force



Bending  
Force



COF  
Fixture

### Force Units

Grams, ounces, pounds, newtons, kilograms  
(selectable)

### Distance Units

Inches, centimeters, millimeters (selectable)

### Power Requirements

110-120/220-240 VAC @ 50/60 Hz

### Power Consumption

Operating: 33 W Stand by: 28 W

### Fuse Rating

6 amp @ 110 V, 60 Hz  
3 amp @ 220 V, 50 Hz

### Operating/Storage Environment

Air Temperature: 15° to 25° C  
(48° to 88° F)

Relative Humidity: 20% to 60% (Non-Condensing)

### Output

RS-232, Parallel Port, Chart Recorder

### Safety Features

Overload protection system - Electronic  
Angle over-travel limit switch  
Load cell incorporates mechanical limit stops  
Upward and downward motion limit switches  
Emergency stop button

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