

SST-4000

Sonic Sheet Tester

for Fiber/Molecular Orientation Analysis



SST-4000 Sonic Sheet Tester
with optional FD-1 Feeding Device

SST series of fiber orientation testers are for analyzing fiber/molecular orientation of sheets such as paper and plastic film with technique of ultrasonic propagation velocity measurement.

Result of SST analysis has a very good correlation with "Young's modulus" which represents tensile stiffness.

Not only tensile stiffness but also fiber/molecular orientation is a very important property of paper and film sheet for many applications such as high speed and precise color printing to keep good run-ability, converting to strong corrugated paper box structure, etc.



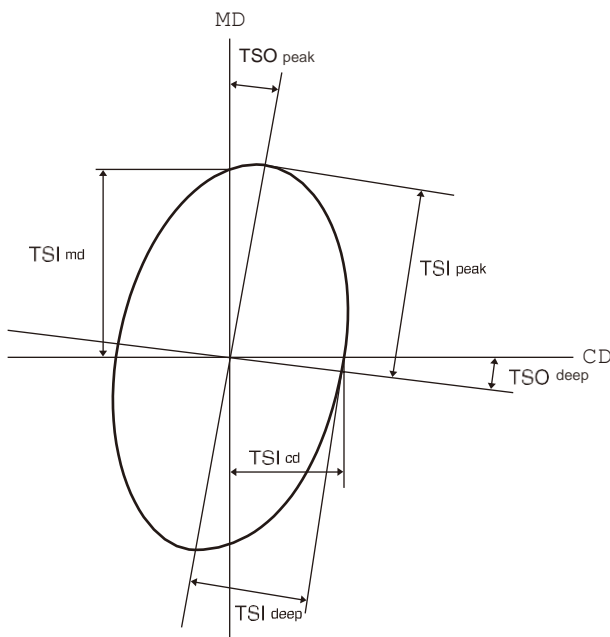
Nomura Shoji Co., Ltd

Definition of TSI and TSO

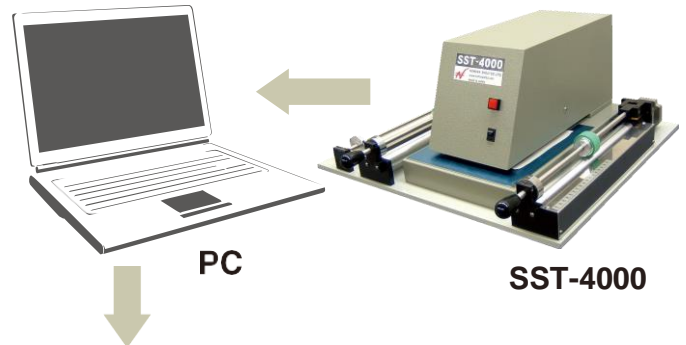
SST measures propagation speed of supersonic pulse in 16 directions (11.25 degree each) with 8 pairs of transmitter/sensor in the sheet, and calculates tow power of velocity V (km/s) of each direction. Since V^2 is very good correlating with 'Young's modulus', SST defines Tensile Stiffness Index " $TSI = V^2$ " and calculates TSI of the machine direction " TSI_{md} " and of the cross direction " TSI_{cd} ".

Also SST calculates Tensile Stiffness Orientation angles for maximum TSI direction " TSO_{peak} " and for minimum TSI direction " TSO_{deep} ".

All measuring operation and data analysis are performed through a screen and a keyboard of a WindowsXP laptop PC.



The indication of analysis data



Single sheet of A4 size (21 x 29.7 cm) or similar size is suitable for "SINGLE SHEET" measurement.

All key measured values and an oval graph are displayed in 15 seconds after measurement.

CD profile measurement can be done with an optional automatic feeding device. The profile is shown on the screen. Measuring interval is selectable between 10 and 1000mm.

Long MD sample is also measurable with an optional automatic feeding device showing the result on the screen.

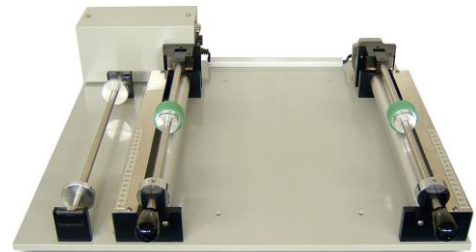
Interval between 10mm and 1000mm is selectable, and maximum measuring point is 65000.

Specifications

Dimensions	D420 x W240 x H250 mm (10.5 kg)
Power	AC 100 -240 V 50/60 Hz 100 W
Air	0.3 - 0.6 MPa, 1 litter/minute
Number of oscillation and detection elements	16
Interval of measuring angle	11.25 degree
Distance of propagation path	120 mm
Velocity measuring range	0.75 - 500 km/s
Velocity measuring accuracy	+/- 0.3 % of FS
Angle measuring accuracy	+/- 0.5 degree
Measuring time	approx. 13 sec

FD-1 Feeding device (Option)

Dimension	D550 x W550 x H128 mm (14.5 kg)
Feeding speed	100 mm/s
Feeding accuracy	+/- 0.5% in 1000mm



FD-1 Feeding device (Option)