Instrument Introduction

The strength of plant stems is a critical factor determining crop lodging resistance. For centuries, lodging in crops like corn, sorghum, and tobacco has posed significant challenges to mechanical harvesting, leading to substantial grain waste due to low mechanization levels. Moreover, lodging causes insufficient light exposure, severely limiting crop yields. Conducting in vivo stem measurements at various growth stages and statistically analyzing population data based on the correlation between fiber layer bending resistance and lodging resistance holds crucial significance for crop cultivation and breeding. Plant stem strength testers employ tension/compression sensors to measure maximum forces generated during stem fracture or yielding through needle penetration, crushing, and breaking tests, thereby quantifying stem strength.

functional characteristics ：

1. Three types of probes: capable of measuring stem bending performance, stem compressive strength, and stem tissue structure (puncture) strength; the adjustable bending support distance is

marked with graduations.
2. Equipped with displacement scale for measurement
3. Compatible with computer testing, capable of data saving and printing, supporting various analyses, and allowing input of speed and area while displaying parameters such as displacement and pressure;
4. Can store 999 test values;
5. Large-screen LCD display with backlighting function and screen digit forward/reverse inversion capability;
6. Automatic shutdown time setting;

7. Battery capacity display with automatic shutdown when 电量 is critically low.

technical parameter ：

Maximum load: 50N (other ranges are customizable, with automatic conversion between N, Kg, and ib units)
Resolution: 0.01N

accuracy ： ±0.5%;

Needle diameter: 1 mm
Span support: Adjustable (maximum 30 cm)
Bending probe: Diameter 5 cm or custom-made
Power supply: 220V/AC;
Continuous battery operation time: 4 to 6 hours;

Stability: Temperature drift: 0.2 uV/℃ (0-60℃);

Zero drift: ≤0.1%/8 hours/FS;

Calibration range: Full-scale calibration;

Environmental temperature: 0～+60℃;

Environmental humidity: ≤80%;

Allowable overload: 150%;
Shut-down time setting: 10-90 minutes.

Model feature differences

AST1A-DY: Maximum load capacity of 500N, resolution of 0.1N, specifically designed for measuring corn, sugarcane, sorghum, etc.
AST1B-DY: Maximum load capacity 500N, resolution 0.1N, specifically designed for measuring corn, sugarcane, sorghum, etc., equipped with a scale

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AST2A-DY: Maximum load capacity 50N, resolution 0.01N, specifically designed for measuring wheat, rice, and other crops

AST2B-DY: Maximum load capacity 50N, resolution 0.01N, specifically designed for measuring wheat, rice, etc., equipped with a scale