



BANBROS ENGINEERING PVT. LTD.

The Precision Measurement People

COMPUTER CONTROL ELECTRONIC UNIVERSAL TESTING MACHINE

- *VALUE*
- *VERSATILITY*
- *PERFORMANCE*



BWDT-5KN

**DESCRIPTION:**

BWDT Series Computer Control Electronic Universal Testing Machine made by Banbros range from 100N to 600KN load capacity with various models like single columns, table type, door frame type etc., is used to perform tension, compression, flexure/bending, shearing, peeling etc., test for metal and nonmetal specimens.

Matched with Banbros design and produced various test fixture, like peel, flexure, puncture, tear, pneumatic grip, belt tension etc., this UTM can be used to almost all materials include but not limited to steel rod, rubber, steel wire, plastic, seat belt, textile, wood, panel etc., mechanical performance inspection. Load weighing system meets or exceeds the requirements of the following standards: ASTM E4, EN10002-2, BS 1610, DIN 51221, ISO 7500-1.

APPLICATION:

Widely used for industrial application, factory quality control, science and research institute, QC &QA college student training, education institute, testing and inspection center, laboratories, construction company, aerospace, mechanical production, electric appliance fields.

Comply with different standards such as ASTM D638, ASTM D695, ASTM D790, ASTM D412, 624, ASTM D882, ISO 527, ISO 37, ISO 604, ISO 178 and other equivalent BS, ASTM, JIS standard.

FEATURES:**LOAD FRAME AND DRIVEN TYPE**

- Compact construction applies aluminium alloy profile load frame cover structure
- Frame are proof loaded to 200% of capacity, with concentric arrangement of the drive lead screw and crosshead guide which assure high accuracy and strong reliability.

Leading Screw**AC Servo Motor**

- Top and middle crosshead processed through shot blasting & baking paint technology, appearance, no corrosion and no need lubrication oil maintenance.
- Adopt Japan Panasonic/FUJI AC servo motor and driving system, ensure transmission and moment of force stable.
- Adopt Circular Arc Profile Synchronous Belt Transmission, eliminate dual direction clearance, prolongs the life of synchronous belt.
- Multiple load cell in one machine available.
- Advanced USA Vishay celtron load cell ensure the force measuring accuracy and repeatability, Overload capacity 150%.
- Compatibility concept for continuous component expansion.



GRIP AND TEST FIXTURE

- Manual, hydraulic, pneumatic tensile test fixture available.
- Removable grip-jaws can be changed rapidly to meet variable wider applications in tension test.
- Versatile test fixture like peeling, shear, bending, flexure, tear, burst, puncture, compression test for kinds of material.



SECURITY FUNCTION

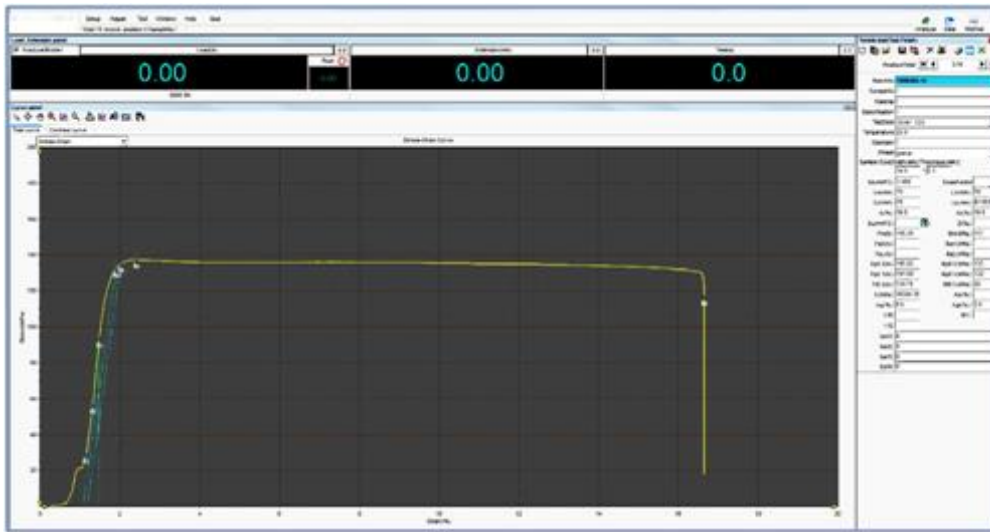
- Sensor of position limitation switch.
- Emergency stop switch.
- Hardware driving system overload protection, over voltage, current protection.
- Software over load protection.

CONTROL SYSTEM, SOFTWARE

- Based on full digital STC8800 measuring and control card; Data collection system use 4 channels of high accuracy 24-digit A/D converter.
- Real time load, deformation, crosshead displacement, test process four kind close loop control.
- Resolution can upto 1/500000, full range without step.
- Level authorization management function: to improve software and data security, can set different password to realize several class authorization management. Different user with different right to operate the machine, avoiding unexpected mistake because human error.
- PC control system, with advantage of high integration, reliable performance, easy adjustment etc. can real time collect test data, on-time display test curve, test data file can be saved as ACCESS and SQL server, convenient for customer's data resource storage.
- Automatically generate the testing report; the testing report can be displayed and printed, also it can be export in Excel/Access Format. Also, the user can edit the report format as requirement in report template.
- Result recall function: after the test and saved, customer can open the test data and re-analysis at any time.
- Results compare: observe several curves at same time, can fold curve or portion enlarge to analyse and compare sample characters.
- Lead-times, Load displacement, Displacement time etc. curve smoothly switch, display test data, save, analysis and print.

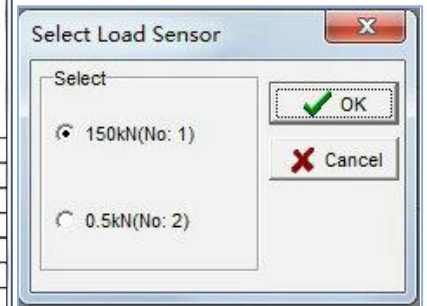


POWERFUL FUNCTION SOFTWARE:



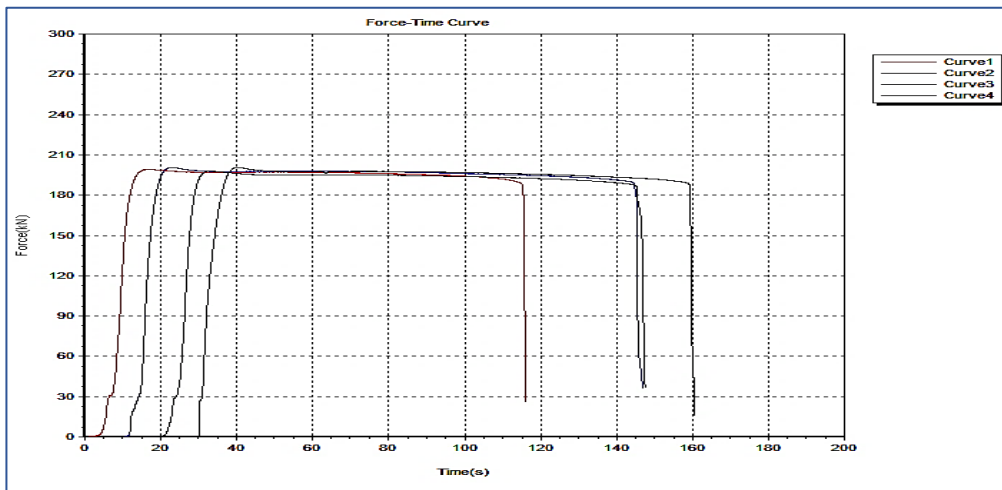
MAIN INTERFACE FOR TEST AND RESULT DISPLAY:

PEEL TEST SAMPLE NUMBER	PEEL SAMPLE FITTING GAP (mm)	PEEL TEST MAXIMUM FORCE (kN)	PEEL TEST SAMPLE THICKNESS (mm)	PEEL TEST SAMPLE WIDTH (mm)	PEEL TEST SAMPLE SEPERATION AREA (see notes)	PEEL TEST SAMPLE FAILURE LOCATION (see notes)	PERCENTAGE DECOHESION IN FUSION ZONE
SAMPLE 1-1	1.5	3.84	32	26	1	1	34%
SAMPLE 2- 1-1	0.8	4.54	32	26	1	2	0%
SAMPLE 3-2	1.2	3.47	32	26	3	1	29%
SAMPLE 4-2-1	2.5	4.85	32	26	3	1	100%
SAMPLE 5-3	0	3.89	32	26	1	3	0%
SAMPLE 6-3-1	1.8	4.37	32	26	1	1	27%
SAMPLE 7-4	1.5	2.91	32	26	3	1	100%
SAMPLE 8-4-1	1	3.96	32	26	3	1	100%



Multiple load cells

TEST REPORT/BATCH TEST REPORT/ CURVE SUPERPOSITION FOR COMPARISON:



**TECHNICAL SPECIFICATION:**

Model No.	BWDT-5KN
Load capacity	5KN (0.4%--100%)
Multiple load cell in one machine function	YES
Load Accuracy	Class 0.5 according ISO7500-1
Load cell overload capacity	150% of rate capacity
Load measuring resolution	1/500000 FS, stepless
Position / displacement resolution	0.001mm
Crosshead travel	1200mm
Tensile test space	1000mm
Compression test space	1000mm
Effective test width	400mm
Standard tensile test fixture	Screw action grip
Compression platen diameter	Φ100mm
Testing speed range	0.0001 mm/min ~ 1270 mm/min, stepless, adjustable arbitrarily
Return speed	1270mm/min
Weight	160kg
Standard Power	220/110V, 50/60HZ, 1 phase
Dimensions	650x540x1350
Analysis software	Smart Test English version
Working system	MS Win7 / Win10

Specifications: -

Load measurement accuracy: +/- 0.5% of applied load from 2% to 100% capacity; extended range down to 1% capacity with accuracy of 1% of applied load

Position measurement accuracy: +/- 0.01% of reading or 0.001 mm, whichever is greater

Deformation measuring accuracy and measuring range: 2% ~ 100%FS, $\leq \pm 0.5\%$

Strain measurement accuracy: +/- 0.5% of indicated load from 0.2% to 100% capacity FS

Speed accuracy: $\pm 1\%$ (0.001~10mm/min), $\pm 0.5\%$ (10~500mm/min)

Operating temperature range: 0 to 38 degrees C (32 to 100 degrees F)

Storage temperature range: -10 to 45 degrees C (14 to 115 degrees F)

Humidity range: 10% to 90% non-condensing, wet bulb method

Power: standard optional voltages 110/220VAC, 50-60 Hz; power must be free of spikes and surges exceeding 10% of the nominal voltage.

**STANDARD ACCESSORIES:**

High stiffness frame	1 set	
Servo driving system: (Japan Panasonic/FUJI Electronic) Servo motor: (Japan Panasonic/FUJI Electronic)	1 set	 
Loadcell (5KN): USA Vishay Celtron	1 set	  
Decelerator and deceleration system	1 set	
Leading screw: (Korean Taijing Precision ball leading screw)	1 set	 
Vice type Tensile test grip	1 set	
Compression test fixture(Φ100mm)	1 set	
USB Hand remote controller	1 set	
Tool kit (screwdriver, spanner etc.)	1 set	
STC8800 control card	1 set	
Professional testing software(Smart Test, English version)	1 set	
<i>Metal tensile testing method (ISO 6892); Plastic tensile testing method (ISO 527)</i>		
<i>Compression testing method (ASTM E9);</i>		
<i>Customize testing method function available.</i>		
Documents (Manual, Test certificate)		