



BANBROS ENGINEERING PVT. LTD.

The Precision Measurement People

COMPUTER CONTROLLED ELECTRONIC UNIVERSAL TESTING MACHINE

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



BWDW-400KN

**DESCRIPTION:**

BWDW 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:**

- Robust frame with high stiffness; 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; 4), 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:

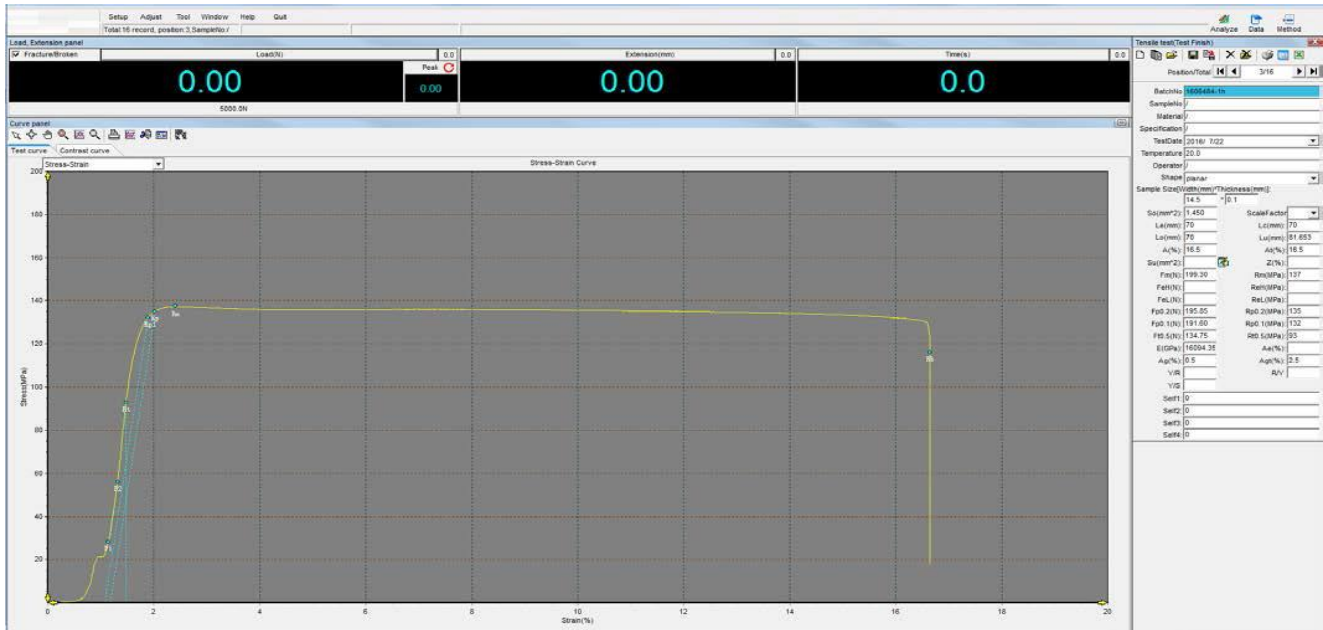
- Sensor of position limitation switch.
- Emergency stop switch.
- Hardware driving system overload protection, over voltage, current protection.
- Software over load protection.

CONTROL SYSTEM, SOFTWARE:

- Based on full digital STC8800 measuring and control card; Data collection system use 4 channel of high accuracy 24 digit A/D converter;
- Real time load, deformation, corsshead displacement, test precess four kind close loop control;
- Resolution can upto 1/500000, full range without step;
- Level authorization management function: to improve sftware 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 adjusment 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 curve at same time, can fold curve or portion enlarge to analyze and compare sample characters.
- Load~Time, Load~displacement, Displacement~time etc., curve smoothly switch, display test data, save, analysis and print.

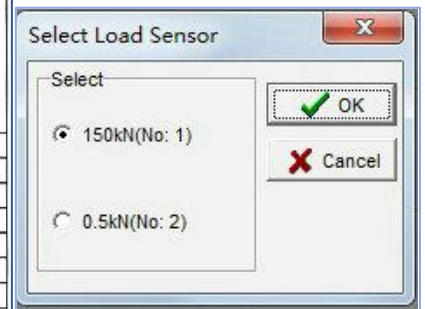


POWERFUL FUNCTION SOFTWARE:



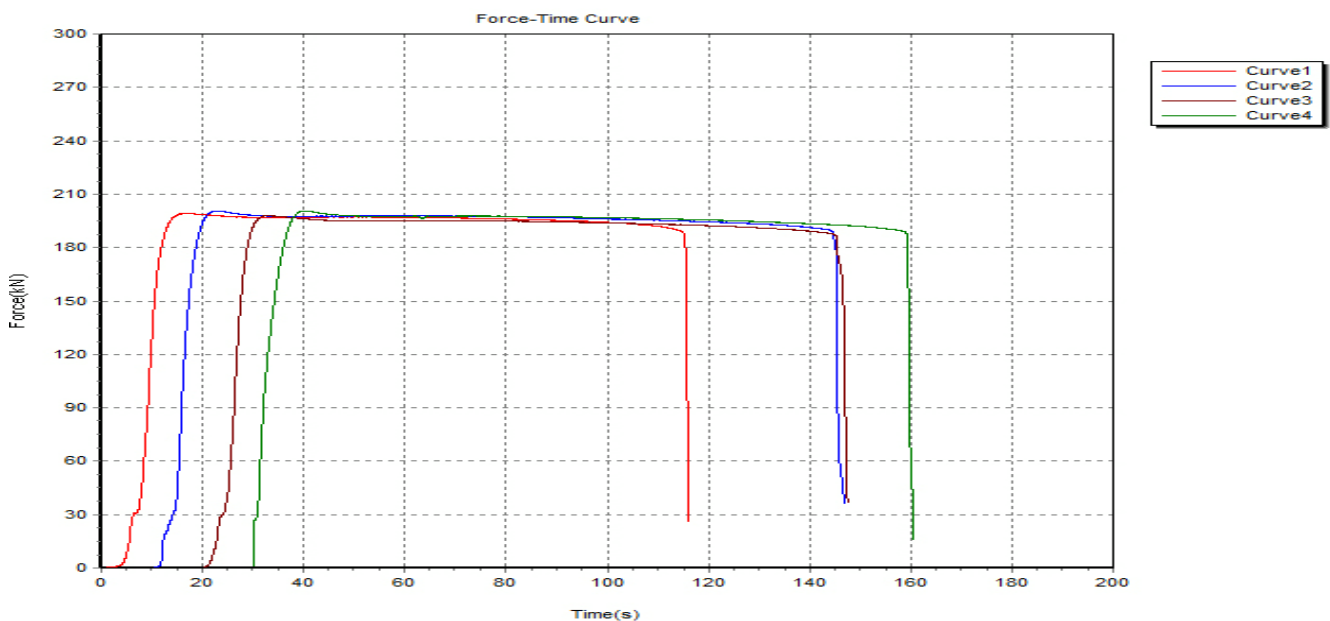
Main Interface for Test and Result Display

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	4.65	32	26	3	1	100%
SAMPLE 5-3	0	3.69	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 cell

Test Report/Batch Test Report/Curve Superposition for Comparison



**TECHNICAL SPECIFICATION:**

Model No.	BWDW-400KN
Load capacity	400KN (0.4%--100%)
Multiple load cell in one machine function	YES
Load Accuracy	Class 1/0.5 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	1100mm
Tensile test space	700mm
Compression test space	750mm
Effective test width(Clearance b/w columns)	600mm
Standard tensile test fixture	Hydraulic automatic grip
Wedge tensile fixture flat specimen range	10-40mm
Wedge tensile fixture round specimen range	Φ10-Φ40mm
Compression platen diameter	Φ120mm
Testing speed range	0.001 mm/min ~ 300 mm/min, stepless, adjustable arbitrarily
Weight	3500kg
Standard Power	380/220V, 50/60HZ, 3 phase
Analysis software	1200×900×2400mm
Working system	MS Win7 / Win10
Frame structure	Single test space

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: ± 0.01 mm/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 380/220VAC, 50-60 Hz; power must be free of spikes and surges












exceeding 10% of the nominal voltage.





Notes: 1. Load weighing system meets or exceeds the requirements of the following standards: ASTM E4, EN 10002-2, BS 1610, DIN 51221, ISO 7500-1. Banbros recommends that systems are verified at installation in accordance with ASTM E4 and ISO 75001. 2. Strain measurement system meets or exceeds the requirements of the following standards: ASTM E83, EN 10002-4, BS 3846 and ISO 9513. 3. These models conform to all relevant European CE Notes: 2. Dual test space structure: Tensile test at upside of crosshead, Compression and bending test at downside of crosshead.

Tensile, Compression and bending test all done at downside of crosshead (the three type test fixture interchange for different test).









STANDARD ACCESSORIES:

Frame (400KN) Top and middle crosshead processed through shot blasting & baking paint technology, appearance, no corrosion and no need lubrication oil maintenance.	1 set	
Servo driving system: (Japan Panasonic/FUJI Electronic) Servo motor: (Japan Panasonic/FUJI Electronic)	1 set	 
Loadcell (600KN): USA Vishay Celtron	1 set	 
Decelerator and deceleration system	1 set	
Leading screw: (Korean Taijing Precision ball leading screw)	1 set	
high strength translational moving type Automatic hydraulic wedge tensile grip (upper and lower grip body)	1 set	
Jaws for flat specimen (10-20mm, 20-30mm, 30-40mm)	Each 1 set (3 sets)	
Jaws for round specimen (φ10-φ20mm, φ20-φ30mm, φ30-φ40mm)	Each 1 set (3 sets)	
Oil pump source for hydraulic clamping tension grip	1 set	



Compression test fixture(Φ 120mm)	1 set	
Bending test adjustable) fixture (Roller diameter 30mm, span 600mm)	1 set	
USB Hand remote controller	1 set	
Tool kit (screwdriver, spanner etc.,)		
STC8800 control card		
Professional testing software(SmartTest, English version)		
<i>Metal tensile testing method (ISO 6892);</i>		
<i>Compression testing method (ASTM E9);</i>		
<i>Flexure testing method (ISO 7438);</i>		
<i>Customize testing method function available.</i>		
Documents (Manual, packing list, certificate)		

**OPTIONAL:**

1	Extensometer (standard gauge 50mm, extension 5/10/25/50mm) For accuracy extension measuring/ elastic modulus / Rp0.2 etc.,	
2	Large deformation extensometer (800mm extension) For rubber etc., large extension sample deformation measuring	
3	Automatic hydraulic wedge tensile grip (General type)	
	Spare jaws: for general wedge grip (300KN) Flat: (0-9mm, 9-18mm,18-27mm); Round: (Φ 4- Φ 9mm, Φ 9- Φ 16mm, Φ 16- Φ 25mm, Φ 25- Φ 32mm)	
4	Automatic hydraulic wedge tensile grip (High strength translational moving type)	
	Spare jaws: for high strength wedge grip (300KN) Flat: (0-7mm, 7-14mm,14-20mm,20-26mm); Round: (Φ 4- Φ 9, Φ 9- Φ 14, Φ 14- Φ 20, Φ 20- Φ 26mm, Φ 26- Φ 32mm)	
5	Spare load cell/ extra small load cell (100N to 300KN)	
6	Various test fixtures (peeling ,shear, bending, etc.,)	
7	Pipe ring stiffness test inner diameter deformation measuring device	
8	Customized Test software (for different material/ components)	