SOHAM impex

UNIVERSAL TESTING MACHINE
MAKE : SI / MODEL : SI-UTM-100

Address : Soham Impex, Vavdi Survey no. 28 Shivam Industrial Area, Street No.3 Plot No.7, Near Sunny Raj Metal, Rajkot - 360004, Gujarat (India) Email us : sohamlathe@gmail.com, Call us : 9824500096

UNIVERSAL TESTING MACHINE
MAKE : SI / MODEL : SI-UTM-100

TECHNICAL SPECIFICATION

→ BASIC UNIT :

- Dual column floor mounted electromechanical testing system.
- Able to perform the experiments for the following loading conditions (1) Tension (2) Compression (3) Bending.
- The stiffness of the frame will be high (> 275 kN/mm) enough to test various classes of materials (Polymers to Ceramics).
- The column length will be high enough to mount a high-temperature furnace and an oven to facilitate sub-zero and high-temperature experiments.
- The data acquisition rate are equal to 5 kHz.
- The unit will be provided with safety and security features so as to avoid damage to the operator and machine.
- Two guide rods are equipped for move cross head up and down with ball screw.
- Continuous operation - 1000 cycles.
- PC communication - LAN.

→ LOAD CELL :

- Load Cell Set 100 kN Class 0.5 1/1000
- within ± 0.5% of the displayed test force for 1/100 to 1/1000 of the load cell capacity.
- within ± 0.3 % error of the indicated test force in the range of 1/100 to 1/1 of the load cell capacity.
- Compatible with JIS 87721 Class 0.5, EN 10002-2 Grade 0.5, ISO 7500-1 Class 0.5, BS 1610 Class 0.5, DIN 51221 Class 0.5, and ASTM E4.

→ FIXTURES AND GRIPS :

- Fixtures and Grips will be provided to perform Tension, Compression and Bending tests at Room temperature and High temperatures.
- Tensile grips will be provided to test both flat and rounded cross-sectional samples.
- Wedge grips capable for holding flat samples with thickness from 0.1 to 12 mm at temperature (-)70 to (+)300 °C).
- Grips capable for holding round samples of diameter from 3 mm to 14 mm.
- Compression plates to test hard and soft materials. Compression Plate diameter 100 mm. Hardness of the compression plate 60 HRC.
- 3 Point Bending fixtures Max 100kN for metal at room temperature. Punch radius 5mm and Support roller radius 15mm. Distance between support 500 mm at least.

Address : Soham Impex, Vavdi Survey no. 28 Shivam Industrial Area, Street No.3 Plot No.7, Near Sunny Raj Metal, Rajkot - 360004, Gujarat (India) Email us : sohamlathe@gmail.com, Call us : 9824500096

UNIVERSAL TESTING MACHINE
MAKE : SI / MODEL : SI-UTM-100

TECHNICAL SPECIFICATION

→ CROSS HEAD :

- Crosshead speed range: 0.0001 to 1000 mm/min
- Cross head return speed: 1500 - 1800 mm/min
- Cross head speed accuracy: ± 0.1 %
- Cross head position control resolution: 8.33 nm
- Crosshead speed and permitted test force: Up to the maximum load capacity for all speed ranges
- Crosshead position measurement detection System: Multi rotation absolute encoder (Battery - less)
- Cross head position detection: Positional accuracy within ± 0.05% of the indicated value, but ± 0.01 mm when the indicated value is below 20 mm
- Fine adjustment of crosshead position, button or dial.

→ EXTENSOMETER FOR ROOM TEMPERATURE :

- Clip-on type extensometer Gauge length 25 mm and max elongation up to 50%.
- 12 mm thick by 31 mm wide and round samples 2 - 25 mm
- Will be left on through specimen failure.
- ISO 6892-1, ASTM E8
- Full bridge, 350 - Ohms strain gaged design for compatibility with nearly any test system.

→ HIGH TEMPERATURE FURNACE :

- Split type tabular furnace.
- The furnace will be able to perform experiments in the temperature range of 300 to 1100 °C.
- Temperature distribution: 300 to 600 °C ± 3 °C, 600 to 800 °C ± 4 °C, greater than 800 °C ± 5 °C (within ± 25 mm of center of test sample).
- Test capacity and temperature limit 100 kN (500 °C or less) 15 kN (1100 °C) (within ± 25 mm of center of test sample).
- Thermocouple cable will be provided separately to measure the actual temperature of the sample.
- Temperature controller.
- Specimen adaptor M18 & M14 size for the round bar. Drawing shared.
- Applicable sample M18 and M14 threaded at both ends 120 (L) mm rod sample with projections. Gauge length size diameter 10 mm.

Address : Soham Impex, Vavdi Survey no. 28 Shivam Industrial Area, Street No.3 Plot No.7, Near Sunny Raj Metal, Rajkot - 360004, Gujarat (India) Email us : sohamlathe@gmail.com, Call us : 9824500096

UNIVERSAL TESTING MACHINE
MAKE : SI / MODEL : SI-UTM-100

TECHNICAL SPECIFICATION

- Sample drawing will be shared.
- The necessary grips / pull rod / cooling the test at high temperatures will be supplied.
- Full details of each components will be provided.

→ EXTENSOMETER FOR FURNACE :

- Gauge length 50 mm, round samples M18 threaded. Gauge length diameter 10 mm.
- 120 (L) mm rod sample with projections M18 threaded at both ends.

→ SOFTWARE :

- Software for Tensile, Compression and Bend Testing.
- The software is capable to print report in word, excel, pdf, export the raw data in excel or csv format.
- The classroom modules, in case of any, will be provided.
- The software will be compatible with the most recent operating system.
- USB camera function.
- Sample size reader function from electronic caliper function and bar code reader function.
- Automatic calculation of elastic modulus function without parameter setting required.
- Test speed sensor feature.
- Graph functions including scale modification and point picking.
- Data Sampling rate:10 kHZ
- Formula customization function for creating custom data processing formulas.
- Security system using 1Ds and passwords.
- 4 types of various axis graph facilities in one window while testing.
- Learning Modules are available in the Help folder.
- USB Camera Function will be Provided for Evidence of Testing.
- ➢ Yes, will be provided automatic calculation of the Elastic Modulus with No Parameters required.
- ➢ Off-Line analysis function makes efficient use of time even during testing.

SOHAM IMPEX PARTNER

Address : Soham Impex, Vavdi Survey no. 28 Shivam Industrial Area, Street No.3 Plot No.7, Near Sunny Raj Metal, Rajkot - 360004, Gujarat (India) Email us : sohamlathe@gmail.com, Call us : 9824500096

UNIVERSAL TESTING MACHINE
MAKE : SI / MODEL : SI-UTM-100

TECHNICAL SPECIFICATION

→ SAFETY FEATURES :

- Two emergency stop buttons at the front surface.
- Upper and lower limits (Photoelectric).
- Touch load detection alarm occurs and the testing machine stops when the test force fluctuates at the time of jog movement, return operation, or movement of the test position.
- Drive motor over current protection alarm occurs and the testing machine stops at the specified value or more jig collision prevention function preventing collision between jigs by registering the size of the jigs.
- Use log save function.
- Power saving features auto mode. Servo power OFF at no operation for 15 minutes LCD back-lightes turn off after set time.
- Sample breakpoint detection feature.
- Type of detection functions: Break Point sensitivity, Break point level, Break point peak level (each detection mode can be switch ON/OFF individually starting point breakpoint detection any value between zero and load cell capacity rated.
- **Breakpoint Sensitivity:** The breakpoint is determined as the point where the test force decreases by more than test force value “A" per second after the breakpoint detection starting point. "A" can be set to any value between 0.005% and 1000% of the rated load cell capacity.
- **Breakpoint Level :** The breakpoint is determined as the point where the test force decreases to B after the breakpoint detection starting point "B" can be set to any value between 0% and 5% of the rated load cell capacity.
- **Breakpoint Peak Level :** The breakpoint is determined as the point where the test force decreases to C% / the peak test force value after the breakpoint detection starting point "C" can be set to any value between 0% and 100%.
- **Self-Maintenance Function :** 10 Year Inspection Announcement Function Backup function (This function can be used in combination with dedicated software).
- **Self-Check Function :** Monitors the following items - Crosshead travelling distance, energization time, servo ON time, power supply voltage, cooling fan speed, number of button operations, number of emergencies stop switch operations, and number of stroke limit operations.
- **Jig Collision Prevention Function :** Preventing collision between jigs by registering the size of the jigs (This function can be used in combination with dedicated software).

→ LOAD CELL :

- 10 kN load cell with the fixtures for Tension, Compression, and Bending.

SOHAM IMPEX PARTNER

Address : Soham Impex, Vavdi Survey no. 28 Shivam Industrial Area, Street No.3 Plot No.7, Near Sunny Raj Metal, Rajkot - 360004, Gujarat (India) Email us : sohamlathe@gmail.com, Call us : 9824500096

UNIVERSAL TESTING MACHINE
MAKE : SI / MODEL : SI-UTM-100

TECHNICAL SPECIFICATION

→ NON-CONTACTING VIDEO EXTENSOMETER AND DIC :

- It will be able to measure strains for both over the range of speeds mentioned by us.
- High strain resolution 0.005% (50 micro strain) local or 0.001% global
- Strain measurement of 2,000%.
- Its will have capability to be used in different UTM machines as well as fatigue machine and It is movable.
- The analysis software includes post-processing features such as minimum / maximum mean and standard deviation, time-slice extraction, stress - strain curve generation. data extraction along lines, etc.
- The images will be recorded such that can be analysed later in DIC.
- It will work for metals, ceramics, plastics, composites, films and biomaterials.
- Modulus and strain will be measured.
- Continuous camera image collection will be supplied.
- Resolution of the extensometer is 1 µm.
- DIC system will be supplied as well with the necessary software.

→ ENVIRONMENTAL CHAMBER :

- An environmental chamber with necessary grips that can test samples under liquid helium environment.
- **W x D x H-300 mm x 300 mm x 600 mm**
- **Temperature range -70 to 300 °**
- **Cooling Liquid N2 system**
- **Temperature distribution-± 1.5°C within +200 mm of H**

SOHAM IMPEX PARTNER

Address : Soham Impex, Vavdi Survey no. 28 Shivam Industrial Area, Street No.3 Plot No.7, Near Sunny Raj Metal, Rajkot - 360004, Gujarat (India) Email us : sohamlathe@gmail.com, Call us : 9824500096