

12

Specification for Microprocessor based Tensile Testing Machine.

A. Major Parameter –

Blue Star make SET-S-Cap. 5000 N or similar.

- 1) Machine-Microprocessor based machine-for determining tensile strength and elongation of a wide range of materials like rubber, plastics, leather, and paper etc. Compression and Bending test is possible through special fixtures.
- 2) Electronic Load Measurement- Load Measurement by Electronic Load-cell ensuring high accuracy.
- 3) Elongation Measuring Device – Built in device, Measurement through cross –head movement by incremental encoder.
- 4) Digital Display for Load and Elongation on 16 x 2 LCD Modules for test result indication.
- 5) Capacity-5000N.
 - (a) Test Limit-100 N-5000 N .
 - (b) No.of Load cells--One

 - (c) Load cell Capacity—5000 N.
 - (d) Load Sub Ranges—(5000 N, 2500 N, 1000 N, 500 N,)
 - (e) Load resolution – 4000 counts for each measuring range.
- 6) Elongation Measuring Device.
Built –in ---Range-600 mm
Resolution-0.01 mm
- 7) Cross Head speed.—100 and 500 mm per minute.
- 7) Grip Separation—25 mm to 700 mm.
- 8) Protection-Over load and over travel protection
- 9) Power Requirement-
415V AC 3 phase 50 cycle for Machine.
230V AC 1 phase 50 cycle for contol Box.
- 10) Accuracy- $\pm 1\%$ of the verification load OR $\pm 0.2\%$ of rated capacity of range employed, which-ever is Greater (Complying IS 1828) .
- 11) Instruction manual including Diagram of machine and electrical circuit diagram –2Nos.

B. Minor Parameter-

- 1) Machine should be powder coated and paint shade should not fade.

C. Concomitant Accessories-(Standard Accessories)

- 1) Rubber grip.
- 2) Suitable grip for “O” ring.
- 3) Die-(As per IS 3400 Part I Type-1, length 115mm)
- 4) Die-(As per IS 3400 Part I Type-2, length 75 mm)
- 5) Die-(As per IS 3400 Part I Type-3 , length 35 mm)
- 6) Press

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D. Optional Accessories

- 1) Grips for flat and round specimen with different inserts.
- 2) Vice type grips.
- 3) Pneumatic grips.
- 4) Fixture for compression test.
- 5) Fixture for bend test/flexural test.
- 6) Shear test attachment.

Grips:

- (a) For dumbbell shape specimen of PVC ,Rubber and polyethylene (right material).Inserts having knurling. Max. Specimen size =35mm wide x10mm thk.
- (b) For strips of PVC, Rubber and polyethene films .Inserts with rubber lining.Max.Strip=50mm wide x 4mm thick.
- (c) For plywood and asbestos.Inserts with fine knurling Max.Specimen size =100mm wide x10mm thick.and 100mm wide x 10 mm thick
- 7) Printer -EPSON L210 inject colour printer or similar to plot load elongation curve and test results. The values of max load elongation, elongation at break shall be recorded by Laser printer.

E. Spare-Nil

F. AMC-not required.

G-Warranty requirement- Required for 24 months from the date of installation and commissioning.

H- Special requirement- Supplier to ensure effective after sale services and supply of spares during and after warranty period for 10 years minimum.

ADME (D)/NKJ - *[Handwritten Signature]*

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Sr.DME (D)/NKJ

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Annexure-II

To be submitted by the firm along with offer.

Tender specification as per Annexure-I	Specification quoted by the firm	Deviation if any with clarification

Signature of firm's