



**B.M.S. College of Engineering, Bengaluru -560019**  
Autonomous Institute, affiliated to VTU

1. Name of the lab: **B. S. Narayan Centre for Structural Integrity Studies**
2. Department: **Research & Development**
3. Location of the lab: **Block H**
4. Faculty in charge: **Dr. Anil Chandra A.R.**    [anilchandraar.mech@bmsce.ac.in](mailto:anilchandraar.mech@bmsce.ac.in)
5. Associated with industry, if any:
6. List of Equipments/facilities along with specifications and photographs + software with versions:



**MTS LANDMARK SERVO HYDRAULIC  
MATERIAL TEST SYSTEM**



**MTS LANDMARK SERVO HYDRAULIC  
POWERPACK**

Landmark 370 Load Frame	
Model Number:	370.25
Load Frame Part Number:	100-506-793
Load Frame Serial Number:	10629574
LVDT Part Number:	39-075-103
LVDT Serial Number:	2964
Test Space Width:	635 mm
Test Height Minimum:	231 mm
Test Height Maximum:	1621 mm
Load Frame Rated Capacity:	250 kN
Actuator Force Capacity:	250 kN
Actuator Dynamic Stroke:	150 mm
Actuator Total Stroke:	176 mm
Actuator Rated Flow:	227 lpm
Manifold Bearing Type:	Active
Date of Manufacture:	1/10/2020
Patent Information: <a href="http://www.mts.com/patents">www.mts.com/patents</a> MTS Systems Corporation 14000 Technology Drive Eden Prairie, MN 55344	

MACHINE SPECIFICATIONS

Hydraulic Power Unit	
Model Number:	515.30
Serial Number:	10631058
Assembly Number:	100-506-800 Rev A
Wiring Diagram:	700-008-258 Rev A
Enclosure Type:	IP40
Supply Rating:	440V / 3PH / 50HZ
Main CB Rating:	150A
Unit FLA / SF FLA:	78 / 88A
Motor FLA / SF FLA:	77 / 87A
SCCR:	65KA
Manufacture Date:	1/15/2020
Working Pressure:	207 bar / 3,000 psi
Flow:	100.7 lpm / 26.6 gpm
HPU weight w/oil:	1021 kg / 2250 lb
Authorized Representative: MTS Systems Ltd. Unit 8, Cirencester Office Park Tetbury Road, Cirencester, GL7 6JJ Glos., United Kingdom MTS Systems Corporation 14000 Technology Drive Eden Prairie, MN U.S.A. 55344-2267	

POWERPACK SPECIFICATION



EXTENSOMETER



COD GAUGE



V SERRATED GRIPS FOR CIRCULAR SPECIMEN (1-19.8 mm dia)



FLAT DIAMOND GRIPS FOR SPECIMENS WITH THICKNESS UPTO 25.4 mm



FRACTURE MECHANICS CLEVIS GRIPS  
SOFTWARES:



COMPRESSION PLATEN FIXTURES

- MTS STATION MANAGER v 6.1B 6836
- MTS MULTIPURPOSE ELITE v 4.5.0.344

7. Major Achievements till date:

- The facility has generated an income of ₹ 5,00,080/- by benefiting a total of 75 users, (26 External, 49 internal users) including faculty, research scholars, UG and PG students.
- Consultancy project of 8 Lakh rupees is approved by Dr. Aruna Kumara P.C., Professor, Department of Mechanical Engineering, MSRIT of which ₹ 2,40,000/- has been received and proportionate work has been completed.
- BSNCSIS Facility user satisfaction survey was conducted and their valuable feedback were collected and documented for performance assessment
- A Two-day workshop on “Determination of Fatigue Crack growth rate (FCGR) and Fracture Toughness (KIC) of Mild steel and Aluminum alloys”, 30-Nov & 1-DEC 2020.
- Fatigue characterization and facility walkthrough during the One-week workshop on “Advanced Manufacturing” organized by the department of Mechanical Engineering, BMSCE, 1-5 MARCH, 2021.
- Laboratory demonstration and hands-on experiment in performing fatigue tests for M.Tech., MSE 1st SEM students 10- APRIL, 2021.
- Training on JIC Fracture toughness by MTS, 27,28- OCT, 2021.
- Training on Digital Image Correlation (DIC) by Josts Engineering, 12 - NOV 2021.
- Training on IR Camera by FLIR, 02-FEB 2022.

8. Photographs

- Front view / Overall view of the lab
- Demonstrating the activities inside the lab
- Achievements, receiving awards, workshops, demo of the prototyping, etc



BSNCSIS RESEARCH FACILITY- FRONT VIEW



BSNCSIS RESEARCH FACILITY- OVERALL VIEW



DIGITAL IMAGE CORRELATION- DEMONSTRATION



TENSILE AND FATIGUE TEST DEMONSTRATION



DEMO ON FATIGUE CHARACTERIZATION USING THERMAL (IR) CAMERA

9. Any other info about the lab:

The B.S. Narayan Centre for Structural Integrity and Studies was established under TEQIP-III Project, March-2020 and is equipped with an MTS Landmark Servo-hydraulic UTM.

MTS LANDMARK SYSTEMS integrate the latest in MTS servo-hydraulic innovation, versatile flextest® controls, proven MTS application software, and a complete selection of accessories to provide highly accurate and repeatable static and dynamic testing across the material testing continuum.

The Test system can be used to perform,

- Quasi-static Tensile & Compression tests
- High Cycle & Low Cycle Fatigue tests
- Fatigue Crack Growth Analysis (FCGR)
- Fracture Toughness Tests - KIC & JIC