**OPERATING GUIDELINES FOR UTM**

**BASIC DETAILS**

1. Maximum capacity : 100kN, UTM

2. Loading Configuration : Tensile, Fatigue test

3. Displacement movement : +/-80mm

4. Sample type : Round or threaded, & Flat Sample

5. Sample Dimension

|  |  |  |
| --- | --- | --- |
| **1.Round threaded** | **Max** | **Min** |
| Length | 300mm | 45mm |
| Diameter | 20mm | 2mm |
| **2.Flat Sample** |  |  |
| Length | 300mm | 45mm |
| Thickens | 18mm | 0mm |

**SAMPLE PREPARATION & TESTING PROCEDURE –**

1. Prepare the sample as per **ASTM** standard
2. Mark the gauge length at round or round threaded & flat sample
3. Mount the sample using suitable grips & wedge
4. Calibration the load cell & strain gauge as per the shunt value
5. Select the crosshead speed as per required strain rate
6. Select the temperature as per the required test conditions
7. Set the test speed rate &DAQ Hz speed rate as per the test required
8. Test the sample up to failure
9. Remove the failed specimen from the gripes after test is over.

**FOR COMPUTER DATA& CHART-**

1. Select the DAQ report test file open the raw data
2. Open the raw data in excel sheet & make arrange the chart and data
3. Excel file save in correct computer location

**TROUBLE SHOOTING-**

1. In case of any abnormal condition with machine **Press Red E Stop** button on front of machine
2. Do not touch the machine & Furnace when test is running
3. When start the test set limits for load, strain

**TEST COUNDUT IN UTM**

1. Tensile room temperature test
2. Tensile high temperature test up to 900c
3. 3 Point bend test
4. Compression test
5. FCP,K1C,J1C test
6. High strain test 10000 fps
7. LCF round sample room & high temperature (900c) tensile test
8. LCF round sample room & high temperature (900c) fatigue test
9. Fatigue flat sample tension- tension test
10. Fatigue flat sample tension- comparison(-20kN) test

**NOTE-**In LCF grips cannot test for flat sample

**COMPRESSION TEST**

**BASIC DETAILS**

**1. Maximum Capacity : 100kN UTM**

**2. Loading configuration : Compression test**

**3. Displacement movement : +/-80mm**

**4. Specimen type : Round**

**5. Specimen Dimension**

|  |  |  |
| --- | --- | --- |
| **Round** | **MAX** | **MIN** |
| Diameter \*Height | Ratio 1:4 | Ratio 1:1 |

**SAMPLE PREPARATION & TESTING PROCEDURE**

1. **Prepare the Specimen as per the ASTM standard**
2. **Mount the Specimen using suitable compression plate**
3. **Calibration the load cell as per the shunt value**
4. **Select the crosshead speed as per required strain rate**
5. **Set the test speed rate & DAQ H2 Speed rate as per the test required**
6. **Test the specimen up to failure**
7. **Remove the failed specimen from the compression plate after test is over**

