PLOT NO. 1131 HARI ENCLAVE KIRARI SLEMAN NAGAR NEW DELHI-110086
2ND PLANT H-936 RIICO CHOPANKI INDUSTRIAL AREA ALWAR RAJSTHAN-301707

RESOTECH SPRING TESTING MACHINE PROPOSAL

Professional Manufacturer of Test Equipment

- **COMPRESSION TEST**
- **ELONGINATION TEST**

MAKE :- RESOTECH
MODEL NO. RESOTECH STM-0003

RESOTECH SPRING TESTING MACHINE

Main Features:

The software consists of function modules such as speed control, parameter input, data processing, result observation, record retrieval, chart display & print, data storage, etc.

Diversified testing methods: test of residual height and deformation of spring under pre-set testing load; test of testing load under preset height or deformation of spring, etc.

Multiple points' data auto-collection: avoid the impact of spring stress on the testing data.

Thus the total testing process is completely automatic.

Overload protection and thus keep the load cell free of damage.

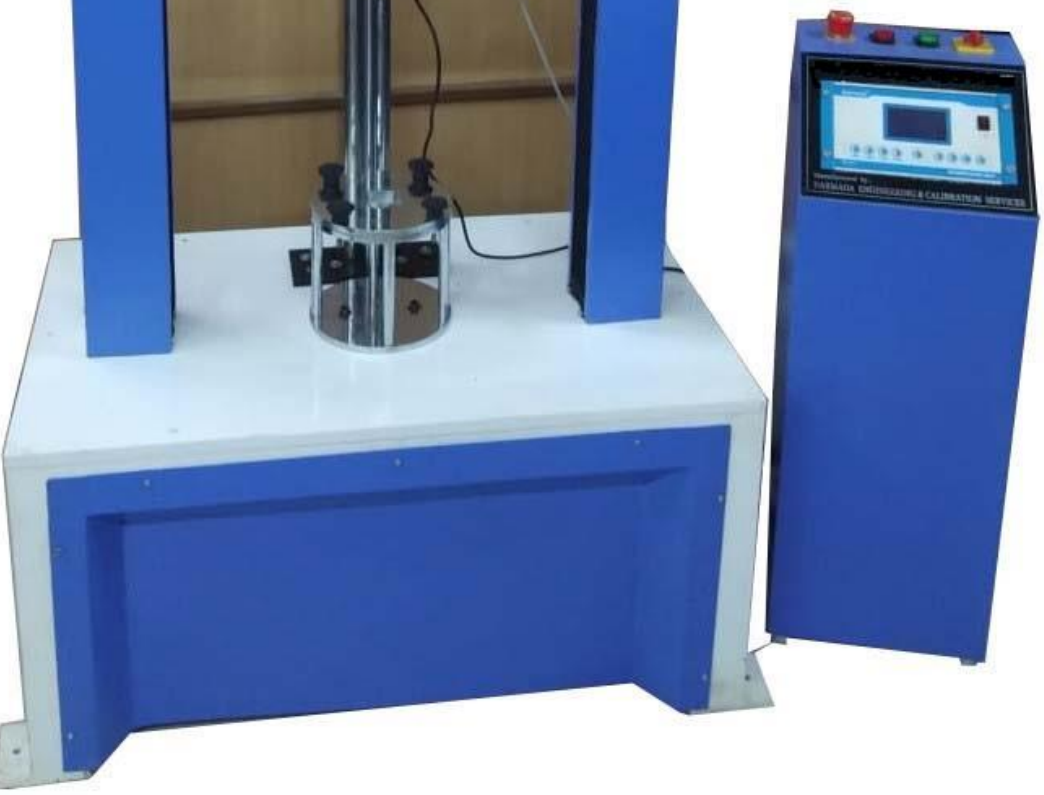
Powerful data-processing and statistic functions; able to plot stiffness curve, calculate spring segment stiffness, plot the normal distribution curve, calculate the index of process capability, etc.

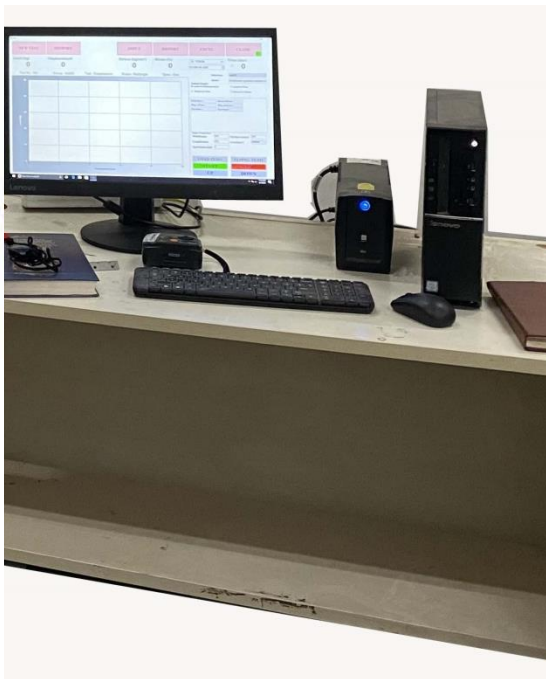
SPRING TESTING MACHINE

Microprocessor Based Panel

Load Accuracy as high as +- 1%

Motor driven threaded columns for quick & effortless adjustment of lower cross-head –to facilitate rapid fixing of test specimen





PRINCIPAL OF OPERATION

Operation of machine is by hydraulic transmission of load from the test specimen through pressure transducer to a separately housed load indicator. The system is ideal since it replaces transmission of load through levers and knife edges, which are prone to wear and damage due to shock on rupture of test pieces. Load is applied by a hydrostatically lubricated ram. Main cylinder pressure is transmitted to the pressure transducer housed in the control panel.

The transducer gives the signal to the electronic display unit, corresponding to the load exerted by the main ram. Simultaneously the encoder fitted on the straining unit gives the mechanical displacement to the electronic display unit. Both the signals are processed by the microprocessor and load and displacement is displayed on the digital readouts simultaneously.

FEATURES

Loading accuracy as high as ± 1%
Suitable at variable speeds to suit a wide range of materials
Continuous roll autographic recorder supplied as standard to enable study of the behavior of materials.
Motor driven threaded columns for quick effortless adjustment
Of lower cross-head-to facilitate rapid fixing of test specimen.
High reading accuracy due to large size and design of dial
Wide range of standard and special accessories, including Servo control mode, Hydraulic grip front loading, Touch screen control panel & load stabilizer
Easy change from plain to threaded and screwed specimens.
Large effective clearance between columns enables testing of standards specimens as well as structures.
Simple controls for ease of operation
Robust straining frame of an extremely rigid construction.
Safe operation ensured by means of safety devices.
Directional control valve provided to change the testing for Analogue to digital mode.
RS 232 serial port to transfer data to computer for analysis/storage evaluation etc.
Printer & PC graphs enable study the behavior of the material.
Simplicity in reading because of digital readouts

STRANING UNIT

This consists of a cylinder motor with chain and sprocket drive and a table coupled with the ram of the hydraulic cylinder, mounted on to a robust base.

The cylinder and the ram are individually lapped to eliminate friction. The upper cross-head is rigidly fixed to the table by two strengthened columns. The lower cross-head is connected to two screwed columns which are driven by a motor.

Axial loading of the ram is ensured by relieving the cylinder and ram of any possible side loading by the provision of ball seating.

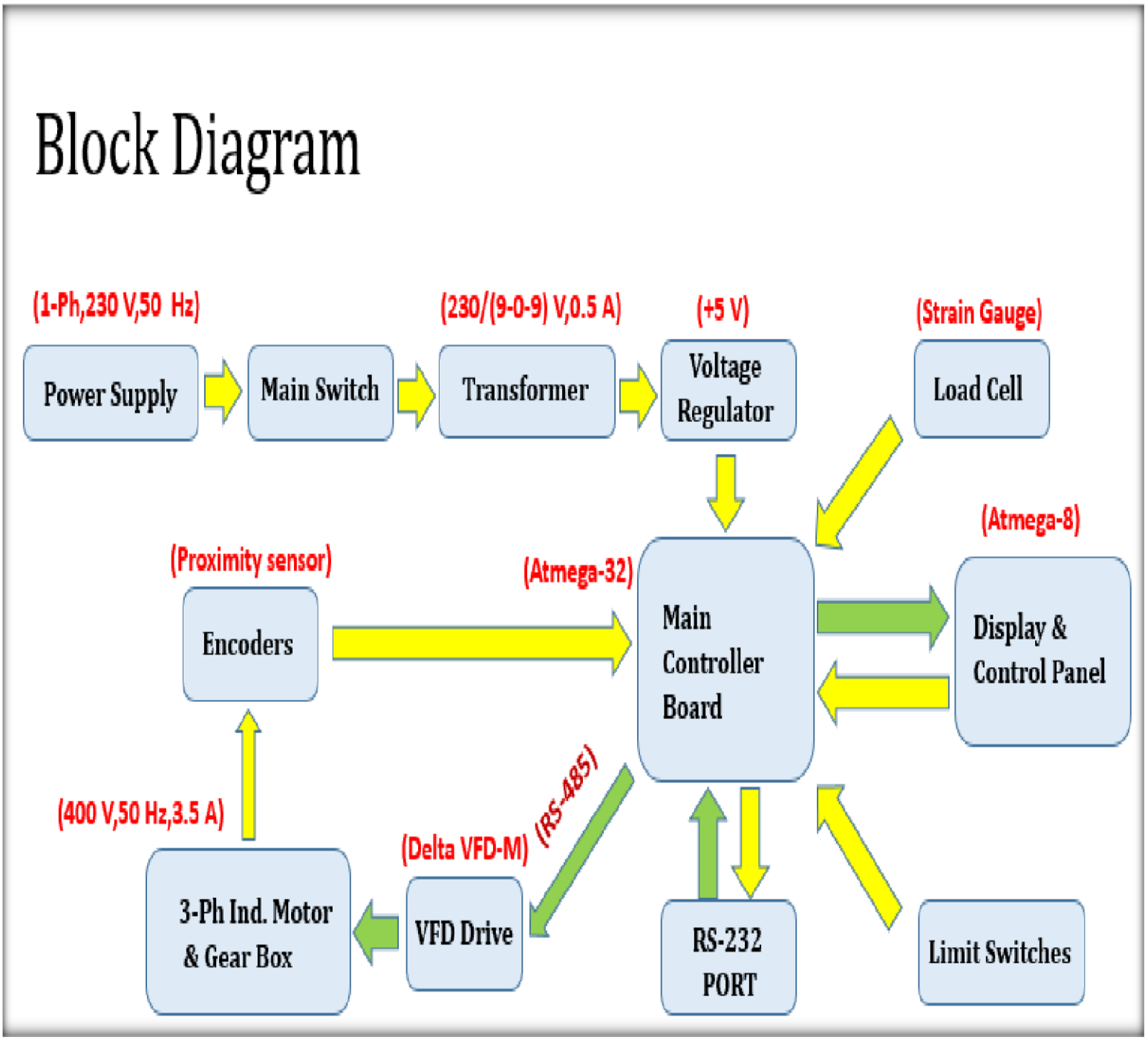
A displacement scale, with a minimum graduation of 1mm, is provided to measure the deformation of the specimen.

Tension test is conducted by gripping the test specimen between the upper and lower cross-heads.

Compression, transverse, bending, shear and hardness tests are conducted between the lower cross- head and the table.

The lower cross-head can be raised or lowered rapidly by operating the screwed columns, thus facilitating ease of fixing of the test specimen.

CONTROL PANEL



Resonance Automation and machines Spring testing machine is closely controlled for sensitivity, accuracy and calibration during every stage of manufacture. Machine is calibrated over each of its measuring range in accordance with the procedure laid down in as per tender specifications.

- Spring to be tested: Both Helical and Flat (Leaf) type
- Type of Test : Tensile & Compression Load Range: 200 Kgf for both Tensile & Compression mode
- Unit of Measurement: Lb/Kgf/Kg/N
- Load Sensor : Suitable Load Cell
- Load Resolution: 0.01 or better
- Load Accuracy: ±0.5% of Reading for 1% to 100% load capacity
- Actuator drive: Digital AC Servo drive with servo motor
- Test Speed: 1-100 mm/min, with resolution of 0.1 mm/min
- Length Sensor: 0.01 mm
- Length Resolution: 0.01 mm
- Speed Accuracy: Better than 0.5%
- Test Height: 0-500 mm
- Coil width/dia. Of spring to be tested: (For both Helical and Flat spring)

  1-Maximum dia. Of spring : 70 mm.

  2-Minimum Dia. Of spring: 1 mm.
- Minimum Coil dia. Of spring to be tested: 1 mm.
- Operating/Test modes: Tensile, compression, provided with suitable grips and fixtures.
- Display results and programming:

  1-Display result in numerical and graphical display on PC monitor

  2-Display shall show spring length during compression, tensile, measured load at different set points, any error, max load, min load etc.

  3-Load vs Height graph, Extractable data to EXCEL, PDF and other formats.
- Control Mechanism: Both automatic and manual through PC.

Safety Features:

- Emergency stop, Over Travel Protection, Over load protection, fixture for holding the springs.

  1-Safety cabinet: cabinet/enclosure for testing area to avoid accident due to deflection of spring during testing.

  2-Test Methods: Test load vs Deflection values at least 4 programmed set points in heights and loads at both compression and tensile mode.

- Test Capability: Load test with length input, Length test with Load as input, Spring rate, Free length.

- Tare: Auto and anywhere below overload setting.

- Testing area: Dual space i.e above and below overload testing.

- Material: SS, Carbon Steel etc

  DESCRIPTION FOR SPRING TESTING MACHINE

- Grip: Fixture for holding the spring during testing(Optional)

- Software features:

- Minimum 4 set points measurement either at preset load or preset length selectable

- Load Vs Deflection/Length Graph

- Units selection of load or length

- Data stored in file format & can be exported to Excel or PDF format

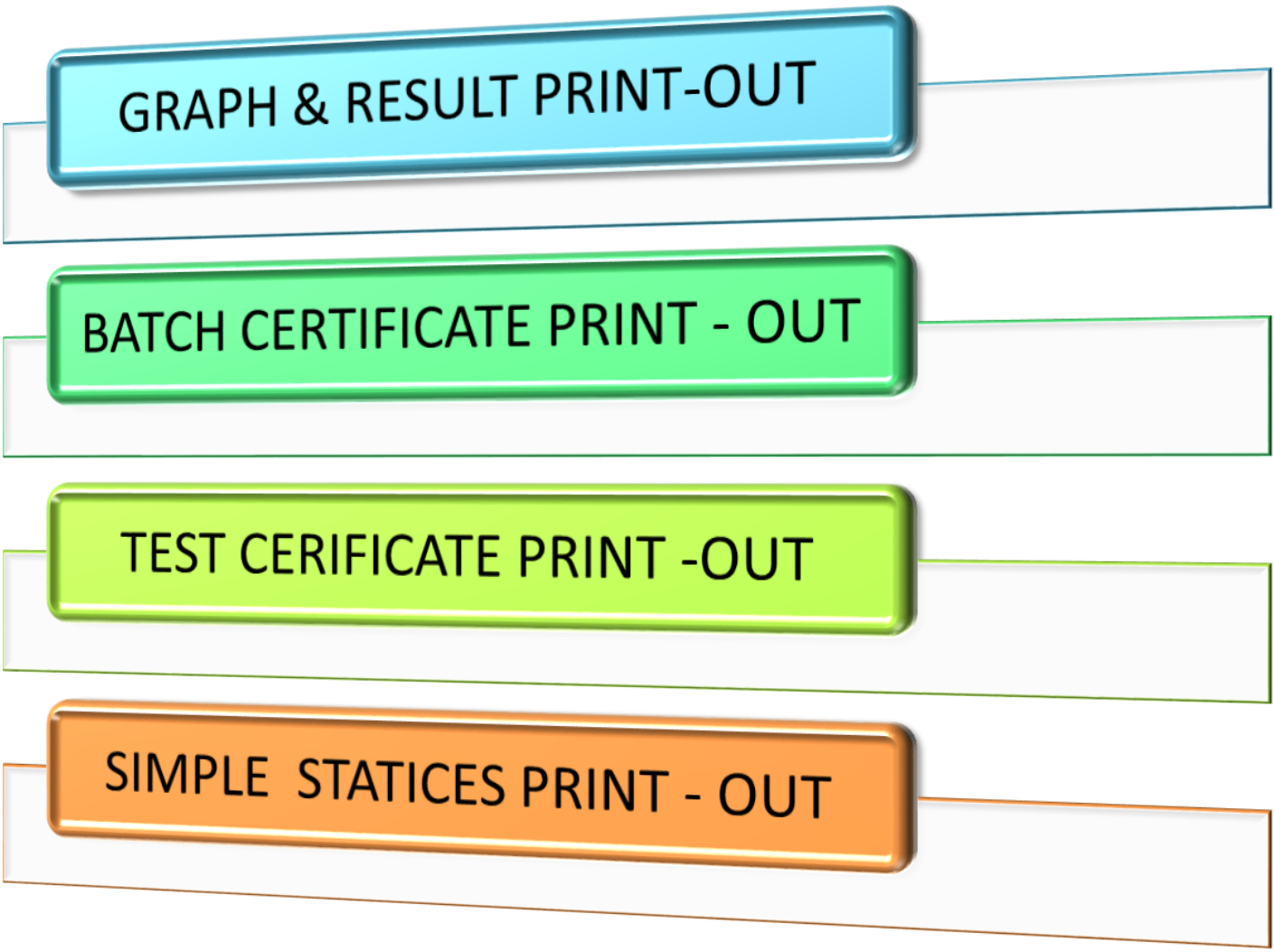
- Load length actual values in display

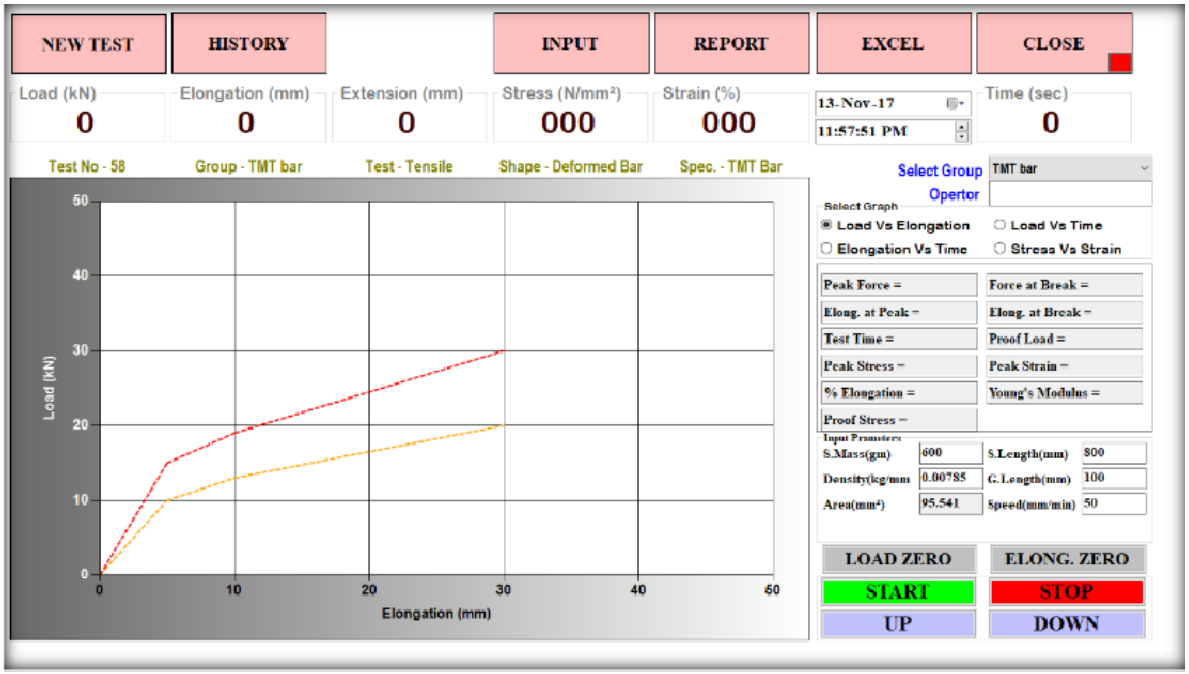
- Power Supply : 1 Ph, 220V±10%, 50Hz AC.

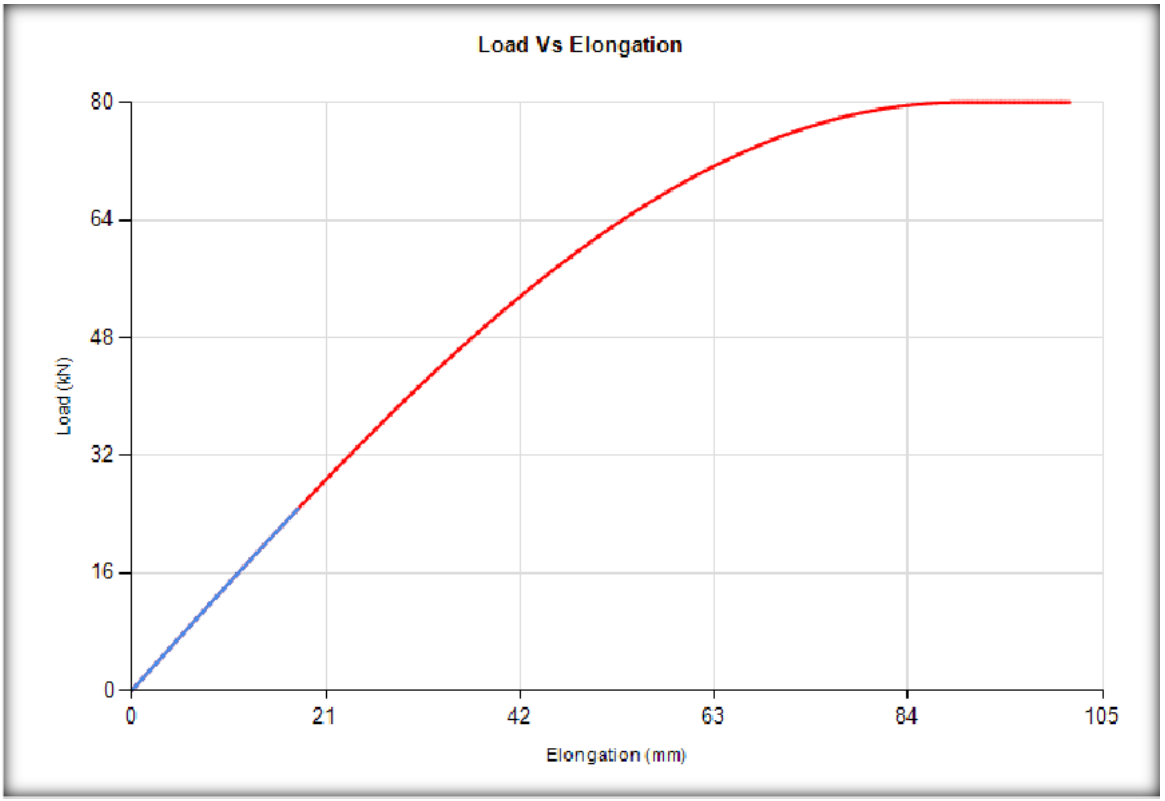
- PC: i-5 processor, 4GB RAM, 500 GB HDD ,OS-WINDOWS 10, 64 bits or better, Monitor: 18.5”, Standard Key Board & Mouse.

- Printer: A4 Laser Printer.

PRINTER PORT FOR PRINTER INTERFACE




NEW TEST
HISTORY
INPUT
REPORT
EXCEL
CLOSE
Load (kN)
0
Elongation (mm)
0
Extension (mm)
0
Stress (N/mm²)
000
Strain (%)
000
13-Nov-17
11:57:51 PM
Time (sec)
0
Test No - 58
Group - TMT bar
Test - Tensile
Shape - Deformed Bar
Spec. - TMT Bar
Select Group
TMT bar
Opertor
Select Graph
Load Vs Elongation
Load Vs Time
Elongation Vs Time
Stress Vs Strain
Peak Force =
Force at Break =
Elong. at Peak =
Elong. at Break =
Test Time =
Proof Load =
Peak Stress =
Peak Strain =
% Elongation =
Young's Modulus =
Proof Stress =
Input Parameters
S.Mass(gm)
600
S.Length(mm)
800
Density(kg/mm
0.00785
G.Length(mm)
100
Area(mm²)
95.541
Speed(mm/min)
50
LOAD ZERO
ELONG. ZERO
START
STOP
UP
DOWN
Load (kN)
Elongation (mm)


Load Vs Elongation
Load (kN)
Elongation (mm)

SOFTWARE TEST SCREEN

NEW TEST

New Test – Old Test data and graph get cleared and ready for new test.

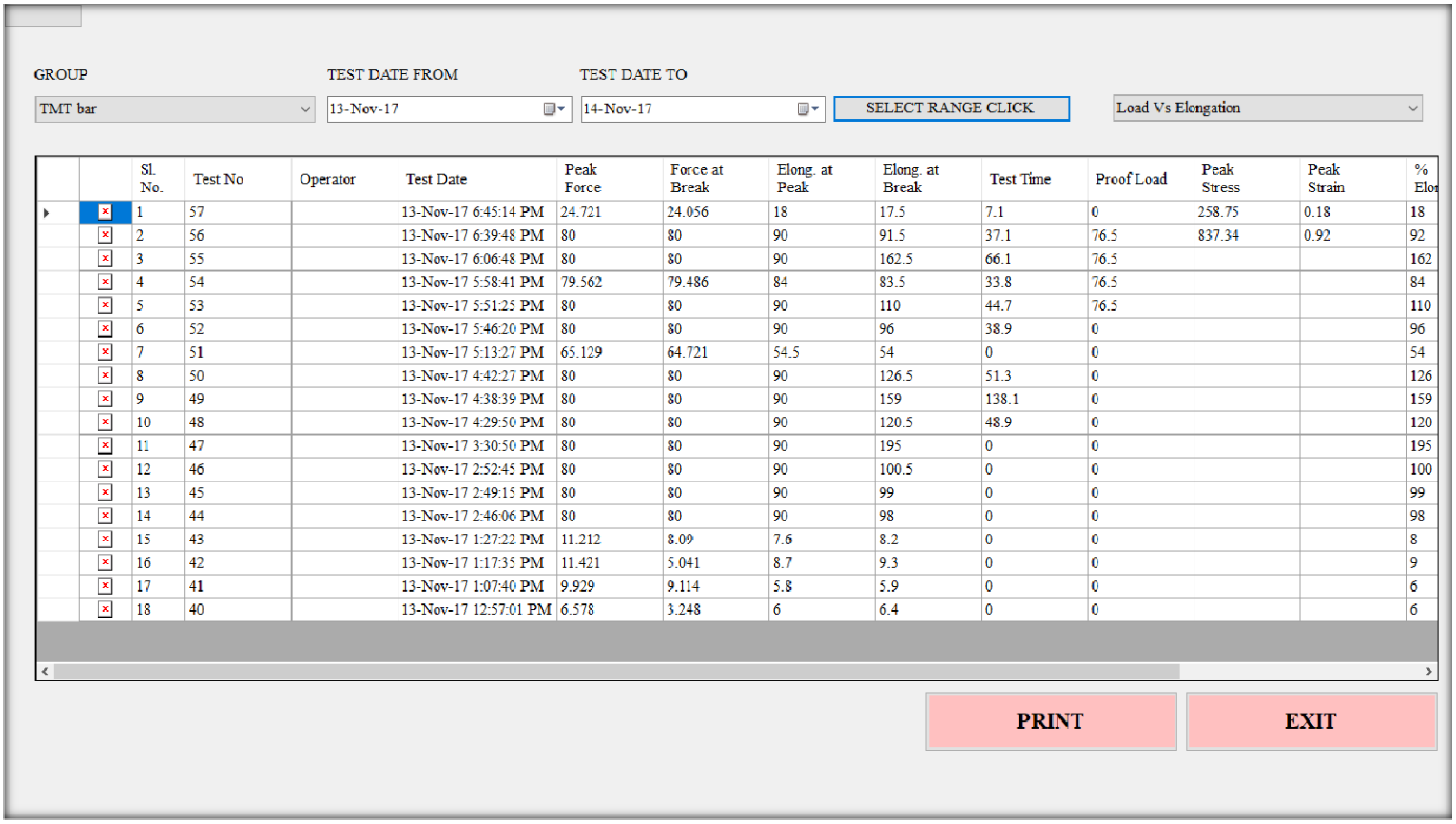
User has to select the group in which he want to do testing.

When user select a group all settings get loaded.

HISTORY

HISTORY

Here user can see all previous test and take print out from here.

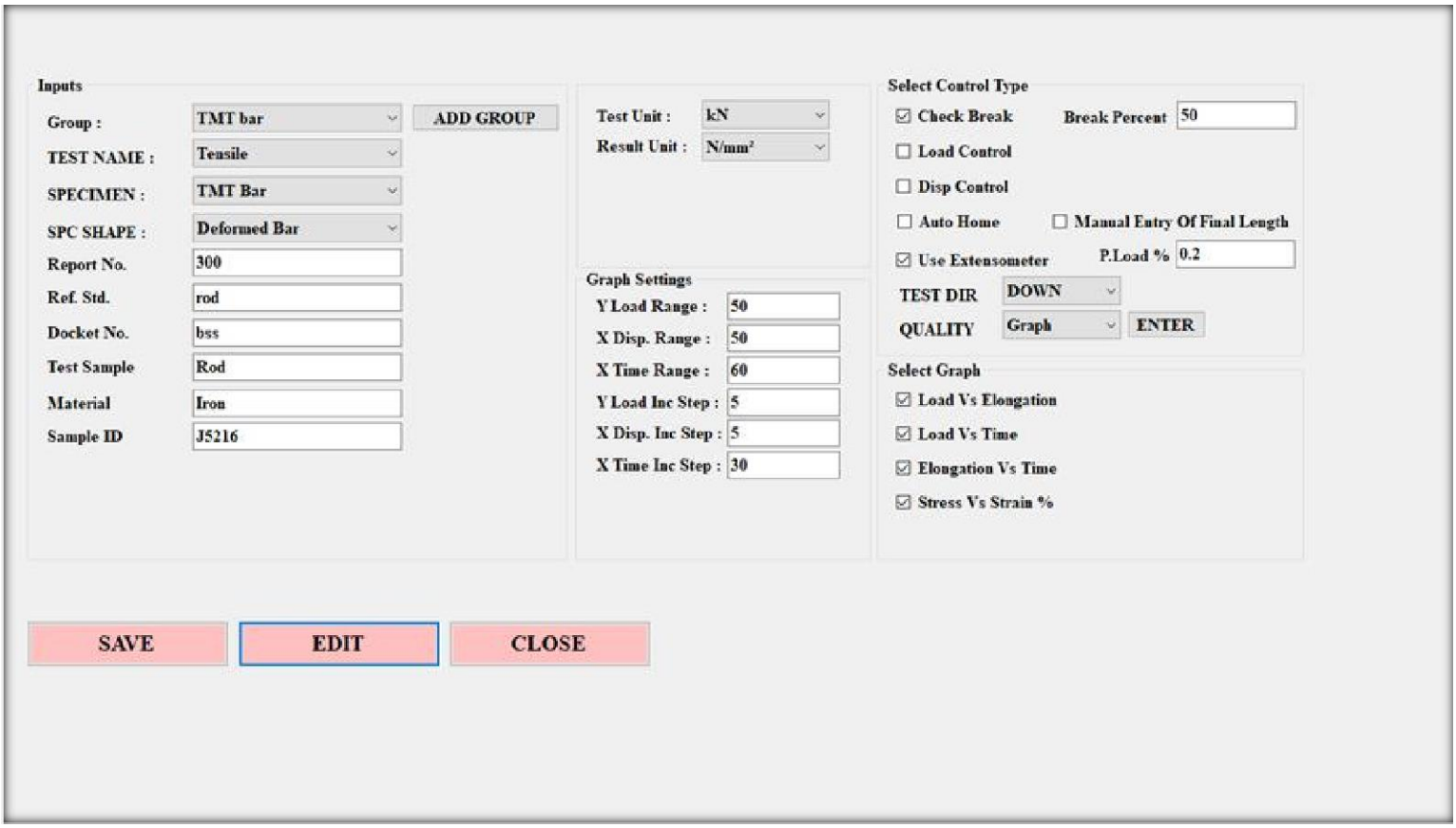


Sl. No.	Test No	Operator	Test Date	Peak Force	Force at Break	Elong. at Peak	Elong. at Break	Test Time	Proof Load	Peak Stress	Peak Strain	% Elo
1	57		13-Nov-17 6:45:14 PM	24.721	24.056	18	17.5	7.1	0	258.75	0.18	18
2	56		13-Nov-17 6:39:48 PM	80	80	90	91.5	37.1	76.5	837.34	0.92	92
3	55		13-Nov-17 6:06:48 PM	80	80	90	162.5	66.1	76.5			162
4	54		13-Nov-17 5:58:41 PM	79.562	79.486	84	83.5	33.8	76.5			84
5	53		13-Nov-17 5:51:25 PM	80	80	90	110	44.7	76.5			110
6	52		13-Nov-17 5:46:20 PM	80	80	90	96	38.9	0			96
7	51		13-Nov-17 5:13:27 PM	65.129	64.721	54.5	54	0	0			54
8	50		13-Nov-17 4:42:27 PM	80	80	90	126.5	51.3	0			126
9	49		13-Nov-17 4:38:39 PM	80	80	90	159	138.1	0			159
10	48		13-Nov-17 4:29:50 PM	80	80	90	120.5	48.9	0			120
11	47		13-Nov-17 3:30:50 PM	80	80	90	195	0	0			195
12	46		13-Nov-17 2:52:45 PM	80	80	90	100.5	0	0			100
13	45		13-Nov-17 2:49:15 PM	80	80	90	99	0	0			99
14	44		13-Nov-17 2:46:06 PM	80	80	90	98	0	0			98
15	43		13-Nov-17 1:27:22 PM	11.212	8.09	7.6	8.2	0	0			8
16	42		13-Nov-17 1:17:35 PM	11.421	5.041	8.7	9.3	0	0			9
17	41		13-Nov-17 1:07:40 PM	9.929	9.114	5.8	5.9	0	0			6
18	40		13-Nov-17 12:57:01 PM	6.578	3.248	6	6.4	0	0			6

INPUT

INPUT

All input settings are set here. Test Unit, Result Unit, Break Checking, Set Load, and Set Disp., whether to use extensometer or not, if proof load required set percentage for proof load, Test Direction and all other input parameters like test type, specimen, shape etc. Graph



REPORT

After each testing the report will be auto generated and saved into specified folder. User can generate a report directly from testing window and from history. range settings also here.

COMPANY NAME

Address

Contact number

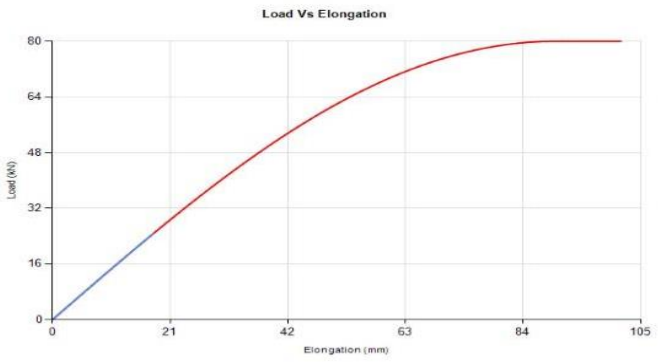
COMPONENT CERTIFICATION LAB

TEST REPORT

Test Report No.: 300 **Test Date:** 14-Dec-17 12:03:02 AM

TEST PARAMETERS

1. Reference Standard :	ROD
2. Docket No. :	Bss
3. Test Speed (mm/min) :	50
4. Test Sample :	SAMPLE ROD
5. Material :	MILD STEEL
6. Title of Test :	TENSILE
7. Sample ID No. :	J5216
8. Area (mm²) :	



TEST RESULTS

Sample No	Max. Load (N)	Max. Displacement / Stroke(mm)	Tensile Strength (N/mm²)	Elongation (%)	Measured Value of Test Piece		
					Thickness (mm)	Width (mm)	Length (mm)
1	80 kN	101 mm		101			
2	24.721 kN	17.5 mm		18			

Tested By,	Checked By,

EXCEL

EXCEL

User save raw test data into excel file using this option. TEST

REPORT FORMAT

EXCEL ,PDF, WORD.

COMPANY CERTIFIED BY

CERTIFICATE

This is to Certify that the Quality Management System of

RESONANCE AUTOMATION AND MACHINES.

HEAD OFFICE- PLOT NO. 1131, HARI ENCLAVE, KIRARI SULEMAN NAGAR, NEW DELHI-(110086)

BRANCH OFFICE- PLOT NO. H-936, RHICO CHOPANKI INDUSTRIAL AREA, DISTRICT ALWAR, RAJASTHAN- (301707)

has been independently assessed and is compliant with the requirements of

ISO 9001:2015

This Certificate is applicable to the following product or service ranges:

MANUFACTURING AND SUPPLYING OF UNIVERSAL TESTING MACHINE, TENSILE TESTING MACHINE, AND AUTOMOBILE COMPONENTS TESTING MACHINE, LEAKAGE TESTING MACHINE, SPECIAL PURPOSE MACHINE AND ENVIRONMENTAL TEST CHAMBER.

Certificate No.: IN8784 1A

Date of initial registration	10 February 2020
Date of this Certificate	10 February 2020
Surveillance audit on or before	09 February 2021
Recertification Due / Certificate expiry	09 February 2023

This Certificate is property of LMS Certifications and remains valid subject to satisfactory surveillance audits.

Director

IAS ACCREDITED IAF

LMS Certification Limited 20 Park Hill, Huddersfield, HD2 1QG, West Yorkshire, United Kingdom. Phone : +44 2089350094

VRC Quality Excellence

CERTIFICATE OF COMPLIANCE

This is to certify that the Product:

HUMIDITY TEST CHAMBER, HOT AIR OVEN, B.O.D INCUBATOR, INCUBATOR SHAKER, SALT SPRAY CHAMBER, COLD CHAMBER

Manufactured by

RESONANCE AUTOMATION AND MACHINES.

HEAD OFFICE- PLOT NO. 1131, HARI ENCLAVE, KIRARI SULEMAN NAGAR, NEW DELHI-(110086)

BRANCH OFFICE- PLOT NO. H-936, RHICO CHOPANKI INDUSTRIAL AREA, DISTRICT ALWAR, RAJASTHAN- (301707)

MACHINERY DIRECTIVE-2006/42/EC

ELECTROMAGNETIC COMPATIBILITY 2004/108/EC

CONSTRUCTION PRODUCTS DIRECTIVE 89/106/EEC

This Certificate is issued under the following conditions:

1. The manufacturer's technical documentation, as required for all devices except devices for self testing and devices has been reviewed and found to comply with the requirements Section 4 & 5.
2. It applies only to the mentioned models of the devices/equipments.
3. The manufacturer is obligated to assure conformity of all the in-vitro devices/equipments of the respective model to the type assessed by the mean of this certificate.
4. Any significant changes in the design or process used to manufacturer the product/equipments or revision to the standards referred above may require special audit by VCS Services Inc.
5. The product liability rests with the manufacturer or his representative in accordance with council directive.
6. After fulfilling the relevant EU legislation requirements, the manufacturer shall affix to each device /equipment, of the above referenced models, CE marking according to the following example:

Certificate No.: VRCS/CE/0245/R01
Date of Initial Registration: 10.02.2020
Date of Issue: 10.02.2020
Date of Expiry: 11.02.2023

Authorized Signatory

The approval is subject to the company maintaining its system to the required standards, which will be monitored by VRC Services Inc. Further clarification regarding the scope of this certificate and the applicability of requirements may be obtained by consulting the organization. Lack of fulfillment of conditions as set out in the Certification Agreement may render this certificate invalid.Any significant changes in the design or process used to manufacture the products, or revisions to the standards referred above may required special audit by VRCS. Above CE diagram is schematic and is used for reference only.The product liability rests with the manufacturer or his representative in accordance with standards.

CE

M-108,1st Floor, Kanhaiya Kunj, Gole Market, Mahanagar, Lucknow -226006, U.P.-India, E-mail: admin@vrcs.in, Website: www.vrcsrt.in

CERTIFICATE

This is to Certify that the Medical Devices – Quality Management System of

RESONANCE AUTOMATION AND MACHINES.

HEAD OFFICE- PLOT NO. 1131, HARI ENCLAVE, KIRARI SULEMAN NAGAR, NEW DELHI-(110086)

BRANCH OFFICE- PLOT NO. H-936, RHICO CHOPANKI INDUSTRIAL AREA, DISTRICT ALWAR, RAJASTHAN- (301707)

has been independently assessed and is compliant with the requirements of

ISO 13485:2016

This Certificate is applicable to the following product or service ranges:

MANUFACTURING AND SUPPLYING OF HUMIDITY TEST CHAMBER, HOT AIR OVEN, B.O.D INCUBATOR, INCUBATOR SHAKER, SALT SPRAY CHAMBER, COLD CHAMBER

Certificate No.: IN8784 1H

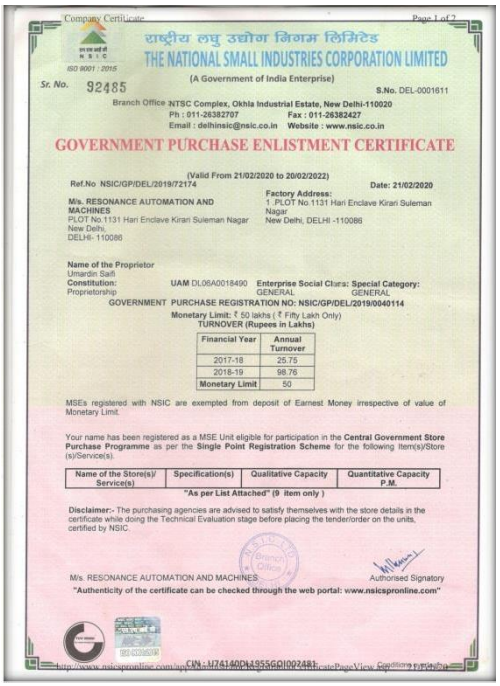
Date of initial registration	10 February 2020
Date of this Certificate	10 February 2020
Surveillance audit on or before	09 February 2021
Recertification Due / Certificate expiry	09 February 2023

This Certificate is property of LMS Certifications and remains valid subject to satisfactory surveillance audits.

Director

IAS ACCREDITED IAF

LMS Certification Limited 20 Park Hill, Huddersfield, HD2 1QG, West Yorkshire, United Kingdom. Phone : +44 2089350094



Company Certificate Page 1 of 2

राष्ट्रीय लघु उद्योग निगम लिमिटेड
THE NATIONAL SMALL INDUSTRIES CORPORATION LIMITED
(A Government of India Enterprise)

Sr. No. 92485 S.No. DEL-0001611

Branch Office :NTSC Complex, Okhla Industrial Estate, New Delhi-110020
Ph : 011-26382707 Fax : 011-26382427
Email : delhinsic@nsic.co.in Website : www.nsic.co.in

GOVERNMENT PURCHASE ENLISTMENT CERTIFICATE

(Valid From 21/02/2020 to 20/02/2022)

Ref.No NSIC/GP/DEL/2019/72174 Date: 21/02/2020

M/s. RESONANCE AUTOMATION AND MACHINES
PLOT No.1131 Hari Enclave Kirari Suleman Nagar
New Delhi,
DELHI- 110086

Factory Address:
1 ,PLOT No.1131 Hari Enclave Kirari Suleman Nagar
New Delhi, DELHI -110086

Name of the Proprietor
Umardin Saifi
Constitution: Proprietorship
UAM DL06A0018490 Enterprise Social Class: GENERAL Special Category: GENERAL

GOVERNMENT PURCHASE REGISTRATION NO: NSIC/GP/DEL/2019/0040114
Monetary Limit: ₹ 50 lakhs (₹ Fifty Lakh Only)
TURNOVER (Rupees in Lakhs)

Financial Year	Annual Turnover
2017-18	25.75
2018-19	98.76
Monetary Limit	50

MSEs registered with NSIC are exempted from deposit of Earnest Money irrespective of value of Monetary Limit.

Your name has been registered as a MSE Unit eligible for participation in the **Central Government Store Purchase Programme** as per the **Single Point Registration Scheme** for the following Item(s)/Store (s)/Service(s).

Name of the Store(s)/ Service(s)	Specification(s)	Qualitative Capacity	Quantitative Capacity P.M.

"As per List Attached" (9 item only)

Disclaimer:- The purchasing agencies are advised to satisfy themselves with the store details in the certificate while doing the Technical Evaluation stage before placing the tender/order on the units certified by NSIC.

M/s. RESONANCE AUTOMATION AND MACHINES

Authorised Signatory

"Authenticity of the certificate can be checked through the web portal: www.nsicspronline.com"

CIN : U74140DL1955GOI002481

Company Certificate Page 2 of 2

राष्ट्रीय लघु उद्योग निगम लिमिटेड
THE NATIONAL SMALL INDUSTRIES CORPORATION LIMITED
(A Government of India Enterprise)

S.No. DEL-0001611 Sr. No. 105092

Branch Office :NTSC Complex, Okhla Industrial Estate, New Delhi-110020
Ph : 011-26382707 Fax : 011-26382427
Email : delhinsic@nsic.co.in Website : www.nsic.co.in

STORE DETAILS CERTIFICATE

(Valid From 21/02/2020 to 20/02/2022)

ANNEXURE TO GOVERNMENT PURCHASES ENLISTMENT CERTIFICATE

NO. NSIC/GP/DEL/2019/0040114 D.T. 21/02/2020

ISSUED TO M/s. RESONANCE AUTOMATION AND MACHINES, DELHI

PLOT No 1131 Hari Enclave Kirari Suleman Nagar , New Delhi, DELHI-110086

Sno	Store(s)/ Service(s) Name	Specification(s)	Qualitative Capacity	Quantitative Capacity PM
1	HELMATE TESTING MACHINE	IS-4141:2015	2000X400X1600mm	15 PCS
2	HELMATE STRIP TESTING MACHINE	IS-4141:2015	1010X700X1220mm	5 PCS.OR
3	QUICK RELEASE MACHANISMS HELMATE TESTING MACHINE	IS-4141:2015	1000X450X1900mm	5 PCS.OR
4	UNIVERSL TESTING MACHINE	ASTM-E 1856	450X400X1600mm	3 PCS.OR
5	SPECIAL PURPOSE MACHINE 1-LEAK TESTING M/C 2-IMPACT TESTING M/C 3-COMPRESSION TESTING MACHINE 4-CARTRIDGE & CERAMIC LIFE TESTING M/C 5-TORQUE TESTING M/C	MS & SS WITH PLC & HMI PNEUMATICS ITEMS	750X1200X1500mm	1 PCS.OR
6	ENVIRONMENTAL TEST CHMABER	ISO-13485:2016	500X500X1200mm	1 PCS.OR
7	HUMIDITY CHAMBER	ISO-13485:2016	450X450X1000mm	1 PCS. OR
8	B.O.D. INCUBATOR CHAMBER	ISO-13485:2016	450X450X1000mm	1 PCS.OR
9	HOT AIR OVEN	ISO-13485:2016	600X600X1200mm	1 PCS.

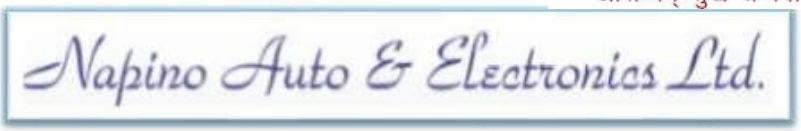
SGS-Gurgaon Haryana
Comments / Note
(Optional)

M/s. RESONANCE AUTOMATION AND MACHINES

Authorised Signatory

"Authenticity of the certificate can be checked through the web portal: www.nsicspronline.com"

OUR VALUED CUSTOMERS



RESONANCE AUTOMATION AND MACHINES

PLOT NO. 1131 HARI ENCLAVE KIRARI SLEMAN NAGAR NEW DELHI-110086

PLANT 2ND H-936 RIICO CHOPANKI INDATRIAL AREA ALWAR RAJASTHAN-301707

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Email: - info@resotechmachines.com
umardin.ramachines@gmail.com

RESOTECH®