



# ELECTRONIC HORIZONTAL CHAIN AND ROPE TESTING MACHINES



## FEATURES

- The MCS's Electronic Horizontal Chain & Rope Testing Machine incorporates design features to enable high accuracy testing with economy, speed and versatility
- Loading accuracy as high  $\pm 1\%$  as per Grade A of BS : 1610-1964 and Grade 1.0 IS : 1828-1975.
- Straining at variable speeds to suit a wide range of materials.
- Motor driven gear shafts for quick and effortless adjustment of test length to facilitate rapid fixing of test specimen.
- High reading accuracy due to large size of dial.
- Wide range of standard and special accessories, including load stabilizer.
- Large effective bed clearance enables testing of a wide range of specimen.
- Simple controls for ease of operation.
- Robust straining frame of an extremely rigid construction
- Safe operation ensured by means of safety devices.
- Fully enclosed and protected Pendulum.
- Precision load cell and microprocessor system for measurement.
- Window based software for PC operation (optional)

## APPLICATION :

MCS Electronic Horizontal Chain and Rope Testing Machine is designed to test chains and ropes under tension.

## PRINCIPLE OF OPERATION :

Operation of the machine is by hydraulic transmission of load from the test specimen to a separately housed load indicator. The hydraulic 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 piston. Main cylinder pressure is applied to specimen through a load cell which senses load. Displacement of the piston is transferred to a rotary encoder through rack & pinion arrangement. Load cell & rotary encoder signals are processed in microprocessor based measuring panel where load & displacement are indicated digitally.

Return movement of the pendulum is effectively damped to absorb energy in the event of sudden breakage of a specimen.

## CONTROL PANEL :

The control panel consists of a power pack complete with drive motor and an oil tank, control valve, and electronic measuring panel.

## POWER PACK :

The unit generates a maximum pressure of 200 kgf / cm<sup>2</sup>. The hydraulic pump provides continuously non-pulsating oil. Hence the load application is very smooth.

## SPECIFICATIONS :

Model	CR-10	CR-20	CR-30	CR-50	CR-100	CR-200	CR-300
Maximum capacity (KN)	100	200	300	500	1000	2000	3000
1st Measuring Range (KN)	0-40	0-80	0-120	0-200	0-400	0-800	0-1200
Minimum Graduation (KN)	0.01	0.02	0.03	0.05	0.1	0.2	0.3
2nd Measuring Range (KN) (Auto selected)	40-100	80-200	120-300	200-500	400-1000	800-2000	1200-3000
Minimum Graduation (KN)	0.025	0.05	0.075	0.125	0.25	0.5	0.75
Distance between gripping heads (inclusive of ram stroke in (mm)	100-3000	100-3000	100-3000	100-3000	100-3000	100-3000	100-3000
Adjustable in steps in (mm)	500	500	500	500	500	500	500
Ram stroke (mm)	500	500	500	500	600	600	600
Ram speed max. (mm/meter)	300	200	150	120	60	50	35
Bed Clearance	320	500	500	550	800	1000	1200
Grips for round bar	10-30 Ø	10-30 Ø	10-40 Ø	20-50 Ø	20-60 Ø	20-70 Ø	20-80 Ø
Grips for wire	10-22 Ø	10-25 Ø	15-35 Ø	15-40 Ø	20-50 Ø	20-60 Ø	20-70 Ø

## CONNECTED LOAD :

HP	1.5	2.5	2.5	3	6	7	9.5
V	400-440	400-440	400-440	400-440	400-440	400-440	400-440
Ø	3	3	3	3	3	3	3

## SPECIAL ACCESSORIES :

These includes load stabilizer, extra long frames, and wide range of accessories offered on request at additional cost.

## HYDRAULIC CONTROLS :

Hand operated wheels are used to control the flow to and from the hydraulic cylinder. The regulation of the oil is infinitely variable. Incorporated in the hydraulic system is a regulating valve which maintains a practically constant rate of crosshead movement.

## MEASURING SYSTEM :

Measuring system of these machines consists of a precision load cell for measuring load, a rotary encoder with rack and pinion arrangement to measure displacement and a microprocessor panel to indicate load and displacement digitally. The panel provides membrane key board to tare load and reset displacement instantly by touch of key. Test results like peak load, displacement at peak load and displacement at rupture U.T.S., % elongation etc. are available on panel.

RS-232C Serial interface is provided to transfer test data to computer. Window based software is available optionally to provide real time plot and data storage on PC.

Software to give print out of test results with graph on Dot matrix printer

## ACCURACY AND CALIBRATION :

MCS,s Electronic Horizontal Chain and Rope Testing Machines are closely controlled for sensitivity, accuracy and calibration during every stage of manufacture. Every Machine is then calibrated over full range in accordance with British Standards 1610-1964 and IS : 1828-1975.

MCS Electronic Horizontal chain Rope Testing Machine comply with Grade "A" of BS : 1610-1964 and Grade 1.0 of IS : 1828-1975. An accuracy of  $\pm 1\%$  is guaranteed from 2% to 100% of full load.

## INSTALLATION :

It is recommended that machines be erected on a foundation.

Details for foundation can be given on request.

MCS reserves the rights of change in the above specifications due to constant improvement in design.

The dimensions given are all approximate.

Manufactured By :

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