

# Universal Toe Load Measurement Device



## Special Features

- Universal Toe Load Measurement Device; suitable for national rail and metro networks.
- Swift Operation with convenient two-way measurement design.
- Equipped with maintenance-free and durable Hydraulic Load Cell
- Calibrated and branded load gauge in stainless steel construction
- Interchangeable and highly designed Clamping attachment
- Convenient tri-rod handle for taking precise measurements

## Specifications

Load Capacity	:	0-22 KN
Sensitivity	:	1 KN
Dual Scale	:	0-22 KN and 0-2200 Kgf
Operating Temperature	:	- 10°C to + 60°C
Measurement Accuracy	:	±1.0 % of Full Scale
Gross Weight (approx)	:	17 KG (All components)



## Description

Toe load measuring device is used to determine the toe load of elastic rail clips or tension clamps during service in the field.

Pujara Engineers offers a new and unique design of toe load measurement device. This specially engineered toe load device uses a hydraulic cell for gauging the load and is capable of measuring the toe load on metro rail & national rail networks. It's modular design helps to use it with ERC and multiple Tension clamp designs.

Device comes with calibrated load gauge with dual load scale of Kilo Newton (KN) and kilogram force (Kgf). Its simple design facilitates a quick two way measurement in single position. A convenient tri-rod handle helps in very controlled lifting of the clamp/clip, which leads to precise measurement of the toe load.

## Guidelines

### Usage

1. Place the device above the rail fastening system, ensuring central placement along and across the rail.
2. Fix the appropriate clamp lifting attachment.
3. Place the hydraulic load cell and gauge assembly, passing the rod of lifting attachment through the center hole of load cell.
4. Engage the tri-rod handle with the threads of rod of lifting attachment.
5. Gently lift the clip/clamp by rotating tri-rod handle in clockwise direction.
6. Take measurements of toe load using 0.1 mm feeler gauge.
7. With same placement of machine; repeat above steps, 2 to 5, to measure toe load for clip/clamp on other side of rail.

### Precautions in Operation

Following precautions shall be observed during working:

1. The operator shall be fully conversant with the using, maintenance and trouble shooting of the device.
2. The operator shall not lean over the device.
3. Use smallest size feeler gauge to take measurements of the load using this toe load measurement device.
4. Ensure that the base of load cell is making complete/parallel surface contact on top of machine frame.
5. Make sure that the clamp lifting device is placed centrally on rail fastening system before attaching it to tension clamp.
6. Handle the Hydraulic Cell and the Load Gauge assembly with care, as it is the only fragile component of device.
7. In case of tension clamps: fix locking bar on pins protruded on jaws of lifting attachment.
8. Both the jaws shall be engaged firmly below tension clamp to avoid the slippage on the application of load .
9. There shall be no oily substance on the surface of jaws or clamp so as to prevent slippage during operation.

### Handling

1. The toe load-measuring device shall be handled with care to avoid physical damage, especially the hydraulic load cell and gauge assembly.
2. Please ensure a jerk free handling of fragile and other components of device.
3. The device when not in use, shall be kept in the box provided with the machine.

### Transportation

The equipment is portable and can be easily carried by one person. It can be transported by mono rail trolley, any other rail vehicle or by any road vehicle.

### Storage

The device shall be stored in a packing box and kept in a dust-free, covered and dry environment.

### Maintenance

1. Threads of Lifting attachment Rod should be lubricated timely.
2. Manufacturer recommend re-calibration of load gauge on yearly basis.

### Consumables

Grease/Oil for lubrication of threads.

### Manpower requirement

One (Skilled)