

Spring Rater – SR – Specification Sheet

the SR by CTW Automation

Standard features:

- Ball screw linear actuation via constant velocity input
- Compressive forces up to 4,500 lbf. / 20kN max
- Test range 17" / 430 mm travel
- Standard 24" / 609 mm opening platen - platen
- 5K Pancake load cell for +/- 5,000 lbf. range
- 4 Clamp cross bar
- Suspension springs, coil-over and elastomer testing
- 110-220 low voltage input
- Live readouts for load and displacement



SR – Coil Over Fixturing



SR – Suspension Spring

Standard Spring perch

- Allows up to 6 3/8" OD spring testing
- 1.0" ID springs

Coil-Over Fixtures via clevis

- 1/2" Clevis set included for coil-over testing

Software:

- CTW Probe for Spring Rating
- Win10 Platform
- Rate Graphs, Force v Displacement
- Numerical reporting
- Overlay multiple collections / springs



The CTW SR-17 uses CTW-Probe Analysis software to allow the user to create and run Tests designed for developing a Rate curve of the given specimen. The User is able to test in the force or the displacement range simply by selecting the desired peak force or peak displacement. The spring is compressed and extended using a constant-velocity input so that data can be collected and viewed in both directions of motion. Various Rate graphs are supplied, Rate vs Force and Rate vs Displacement, as well as a Force vs Displacement graph are all standard. A numerical report is also standard of the software. Because data is collected in both directions, the User can also view and quantify any hysteresis in the spring, coil or elastomer.

Standard system includes (2) spring platens that attach to the load cell thread on top and the actuator on the bottom. These can fit a 1" /25 mm ID spring and up to 6.375" / 162 mm OD. The upper platen can be removed by unscrewing from the load cell stud. The lower platen bolts onto the lower assembly.

Standard system includes (1) set of ½" eyelet clevis fixtures for use with a rod end type dampers. This allows for rating the spring on a coil over assembly.

Standard System Features:

Sensors and signals:

Displacement and **Force** are standard and these are synced based on time.

- Force / load is measure via Interface 5K pancake design with an integrated cable to ensure accurate and repeatable results.
- Displacement is mounted on the centerline of the actuator to deliver a true measure on the axis of load.

Data Acquisition:

Data is collected and converted to digital output via a 16-bit, simultaneous sampling 8 channel USB card. This interface is located inside the frame of the machine for protection and seamless connection between the sensors and the card. A USB cable is supplied to complete the connection to the computer.

Electronics:

CTW uses a proprietary design 5 channel board (standard) to collect the sensor signals before passing them to the data card. There are options for additional channels and sensors if needed including multiple load cells and pressure sensors.

Strokes:

The peak useable travel is 17 inches or 430 mm.

Velocity:

Velocity is a constant-velocity triangle wave input.



Columns:

Columns are 1.50" diameter and standard length provides a test opening of 24" / 609 mm from the end of the load cell stud to the top of the actuator. Longer columns can be purchased in additional 12" / 300 mm increments. This may be needed for testing motorcycle forks or other very long dampers.

Power input:

The SR is powered by a 110/220 low voltage (low amperage) input. Input source is selectable by the User. Amperage supply at 1.3 A(i) for 110 and 0.7 A(i) for 220.

* Note – this would be an outlet you would use for a computer, typically.

Software:

CTW machines are controlled using proprietary CTW Probe analysis software. This allows the User an easy to use, command driven platform to interface with the machine. While simple to use, the software is very flexible for the advanced user to go into further detail and procedures to give quick graphical and numeric data. See website for additional information.

Training:

Training is not required but it is the only way to get the most out of your machine. You are welcome to come to Lexington for training or we can come to you at an additional cost. CTW also provides training videos and help on our YouTube channel.

Support:

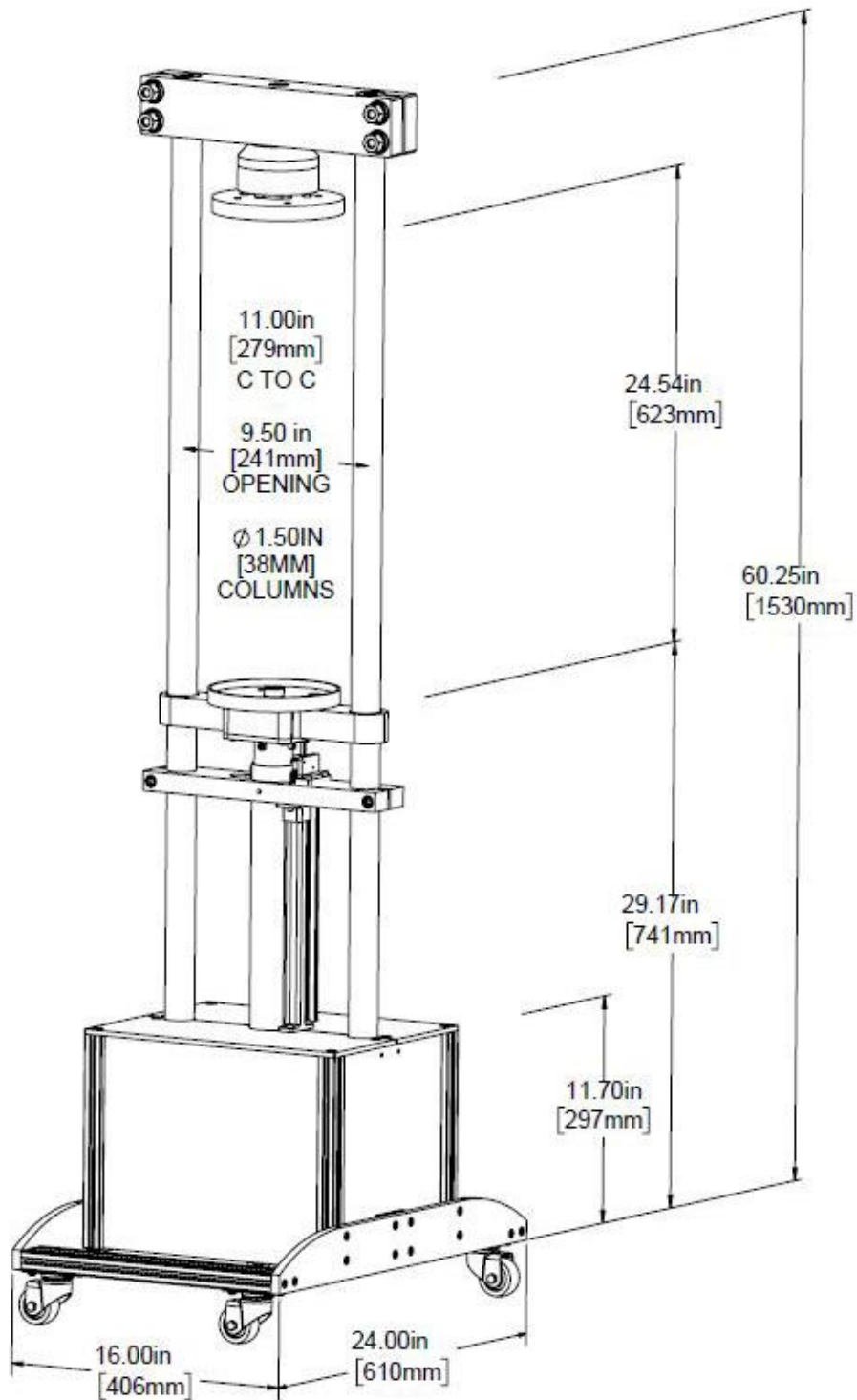
The SR comes with a 1 -Year phone and e-mail support contract as well as use of TeamViewer remote access ability for training and help. We want you to have every opportunity to use and get the most from the machine.

Warranty:

The SR comes with a 1 -Year limited warranty on any item based on failure outside of user misuse.

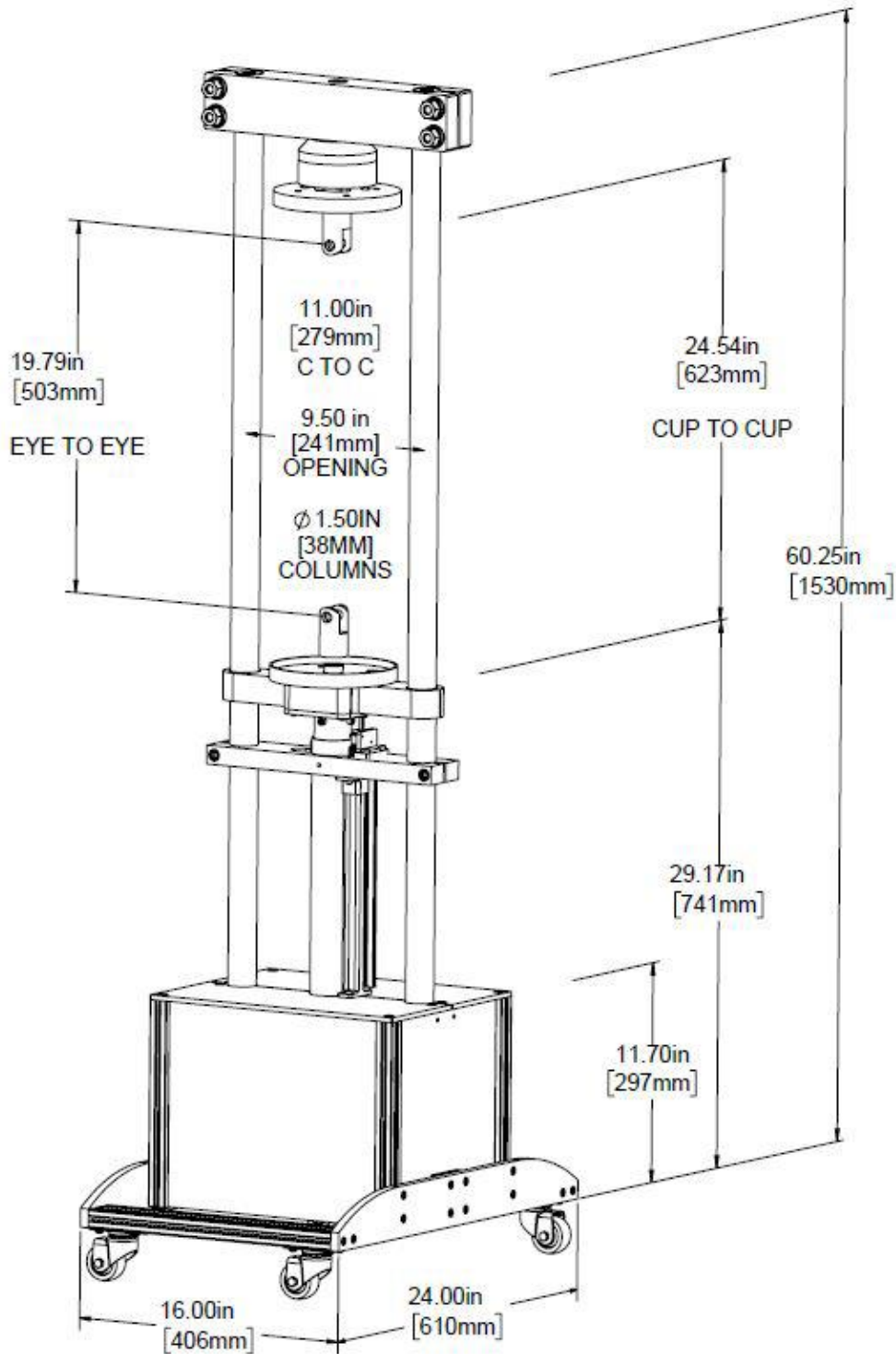
Delivery:

- Customer can opt to pick-up in Lexington, NC but then NC State tax applies
- Shipping – to be determined
 - By ground transport in Continental US
 - International shipping is not a problem



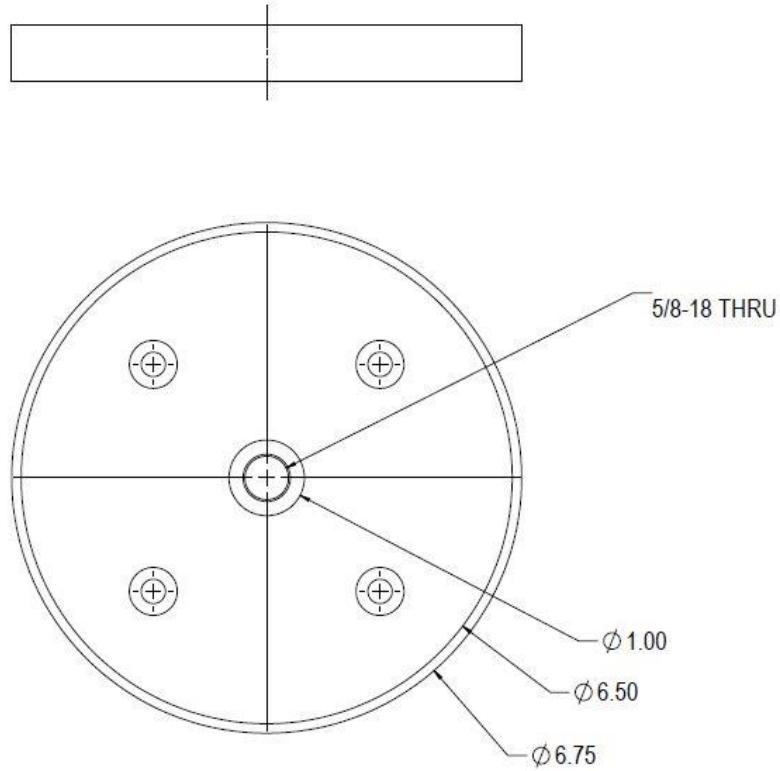
CTW SR - Dimensions for Springs

General Dimensional Outline of SR with standard columns



CTW - SR Dimensions for coil over

Dimensions when using clevis fixtures for coil-over testing



TITLE: SPRING RATER CUP		DRAWING NAME	
		MATERIAL:	FE
		PART NUMBER:	FE
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED BY THIS DRAWING IS THE SOLE PROPERTY OF CAROLINA TEST WORKS AND IS TO BE KEPT IN CONFIDENCE AT ALL TIMES WITHOUT THE WRITTEN PERMISSION OF CAROLINA TEST WORKS & PROMETALS.		CTW-23-011	D
DIMENSIONS ARE IN INCHES TOLERANCES: ANGULAR: ± 0.1 HOLE: ± 0.01 SURFACE: ± 0.005 UNLESS OTHERWISE SPECIFIED (DO NOT SCALE DRAWING)		DATE: 20170309	DRAWN: PERMAN
		SIZE: C	SCALE:

Cup dimensions for ID and OD of spring sizing