

RD7.5 – Shock and Damper Actuator – Specification Sheet

the RD7.5 by CTW Automation

Standard features:

- 7.5 HP AC motor with computer controlled variable speed drive
- 5K Pancake load cell for +/- 5,000 lbf. range
- 4 Clamp cross bar
- Columns for 50.25" / 1275 mm test opening
- Strokes set at 1.0-1.5-2.0-3.0-4.0-5.0-6.0"
 - Or Metric at 20-25-40-50-75-100-125-150-160 mm
- IR-Temperature sensor and quick release mount
- CTW Probe analysis software
- Clevis fixtures, ½" with pins and brass buttons – set
- Input power 200-240 VAC III phase – 36 A(i)
- 1-Year Support package
- Sturdy floor mount frame

Options:

- Longer columns +12"/300mm
- Clevis fixtures (exchange for standard ½")
 - 3/8" or 5/16" – NC
- Range of custom and fixtures including
 - Motorcycle damper & fork
 - Bicycle
 - Extra-large ID / opening
- High voltage 380/440 VAC III phase- 21 A(i)
- Win10 laptop set-up for the dyno
- NIST traceable calibrations
- Safety enclosure / cage / CE

Delivery:

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





The RD7.5 uses CTW-Probe Analysis software to allow the user to create and run Tests of various velocities on one of three strokes to collect force data that is presented in various industry standard graphs. The RD7.5 is a floor model designed to be structurally sound where loading is applied based on FEA analysis. Measurements are taken based on the line of actuation to ensure only the damper or specimen result is recorded.

Standard System Features:

Sensors and signals:

Displacement, Force and Temperature via an infrared non-contacting sensor are standard. **Velocity** is derived from Displacement giving (4) channels to be used in viewing the resulting data.

- 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 sine wave on the axis of load.
- Temperature is mounted on an easy to move, CTW custom quick clamp allowing the User to test any damper at a constant point helping to improve consistency in comparing dampers and changes.

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 RD7.5 comes standard with a choice of stroke spacing of:

- * Imperial spacing 1.0"-1.5"-2.0"-3.0"-4.0"-5.0"-6.0" or
- * Metric spacing 20-25-40-50-75-100-125-150-160 mm

Strokes are changed manually by the User and can be done quickly in less than a minute start to finish. While the different strokes help accommodate different length dampers they also provide a frequency change to gather more information on any damper.

Velocity:

Peak velocity can only be achieved on the largest stroke and the proper three phase voltage and amperage. It is limited by the amount of HP in the motor and for this model it is 7.5 HP. Based on the force of the damper, velocities up to 120.0 in/sec / 3.0 M/sec and as low as a few tenths of an inch/sec. can be achieved. See graphs for more details on force and velocities.



Columns:

Columns are 1.50" diameter and standard length provides a test opening of 50.25" / 1275 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. They are a 2-piece design, attached at the top plate to permanent lower columns inside the covers. This helps in shipping and longer columns options.

Power input:

The RD7.5 runs on 208-240 VAC three (III) phase input @ 36 A(i). There is an option to have a high voltage input allowing the machine to operate on 380-500 VAC III phase @ 21 A(i) (such as Europe and Asia). This is an either-or option (not both); it must be picked at time of purchase.

* Note – Outside of the USA, typically there is only 220 single (low voltage) OR 380/440 three phase (high voltage). That is different than the USA which has a low voltage single and three phase option.

* Note – for peak performance, three phase (III) must be supplied.

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:

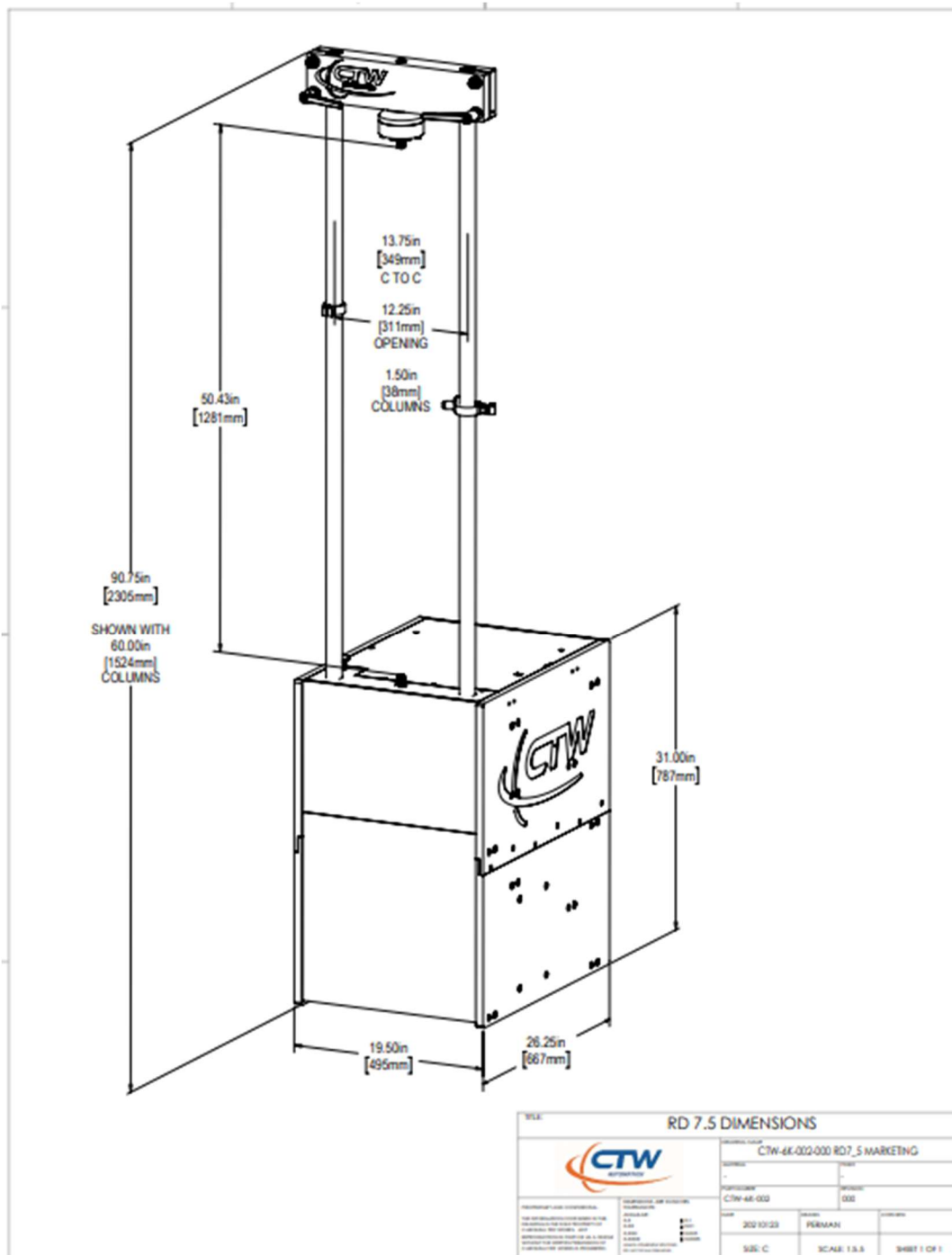
The RD7.5 comes with a 1 -Year phone and e-mail support contract as well as use of TeamViewer remote access ability for training and help. We want you to have every opportunity to use and get the most from the machine.

Warranty:

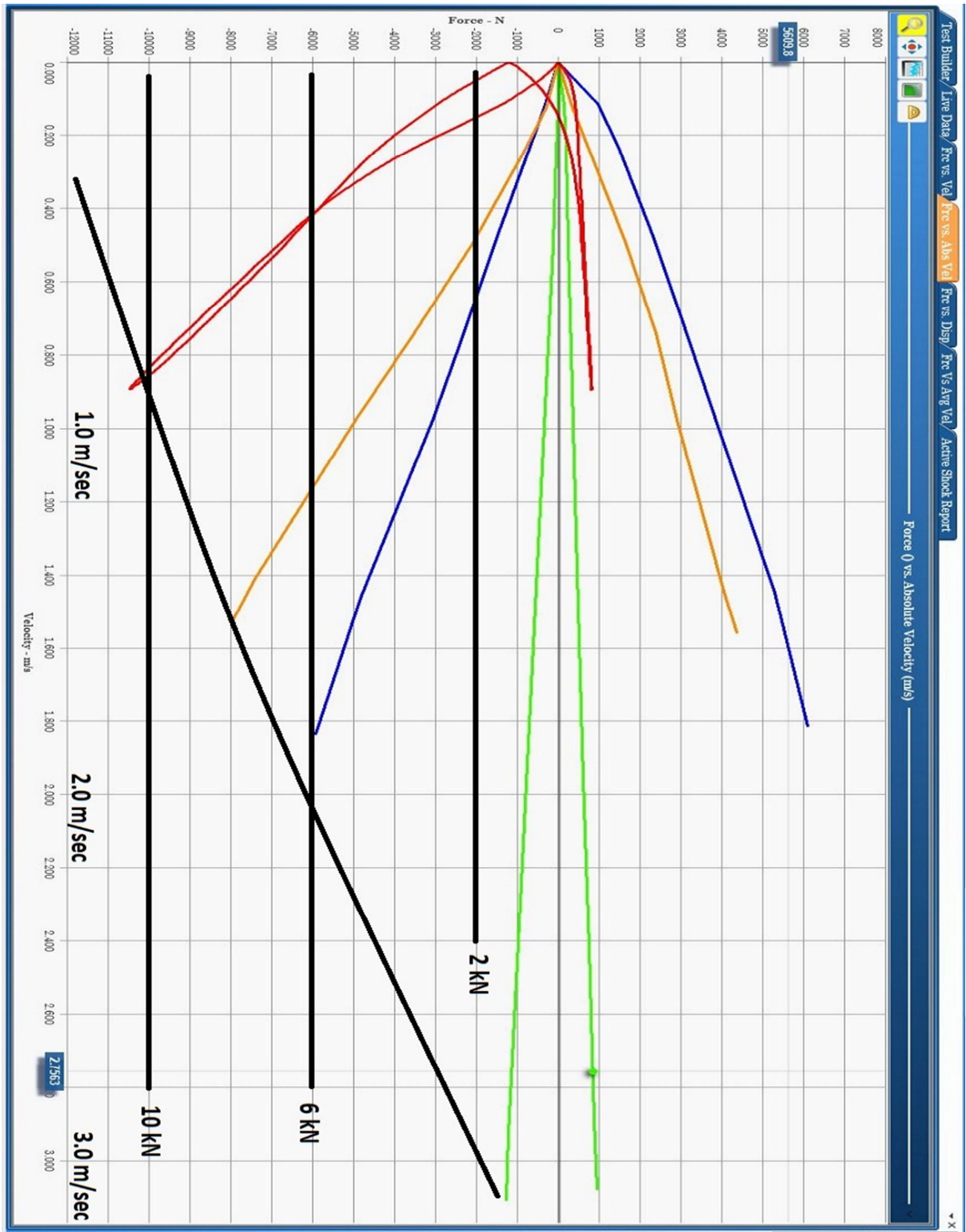
The RD7.5 comes with a 1 -Year limited warranty on any item based on failure outside of user misuse.

Delivery:

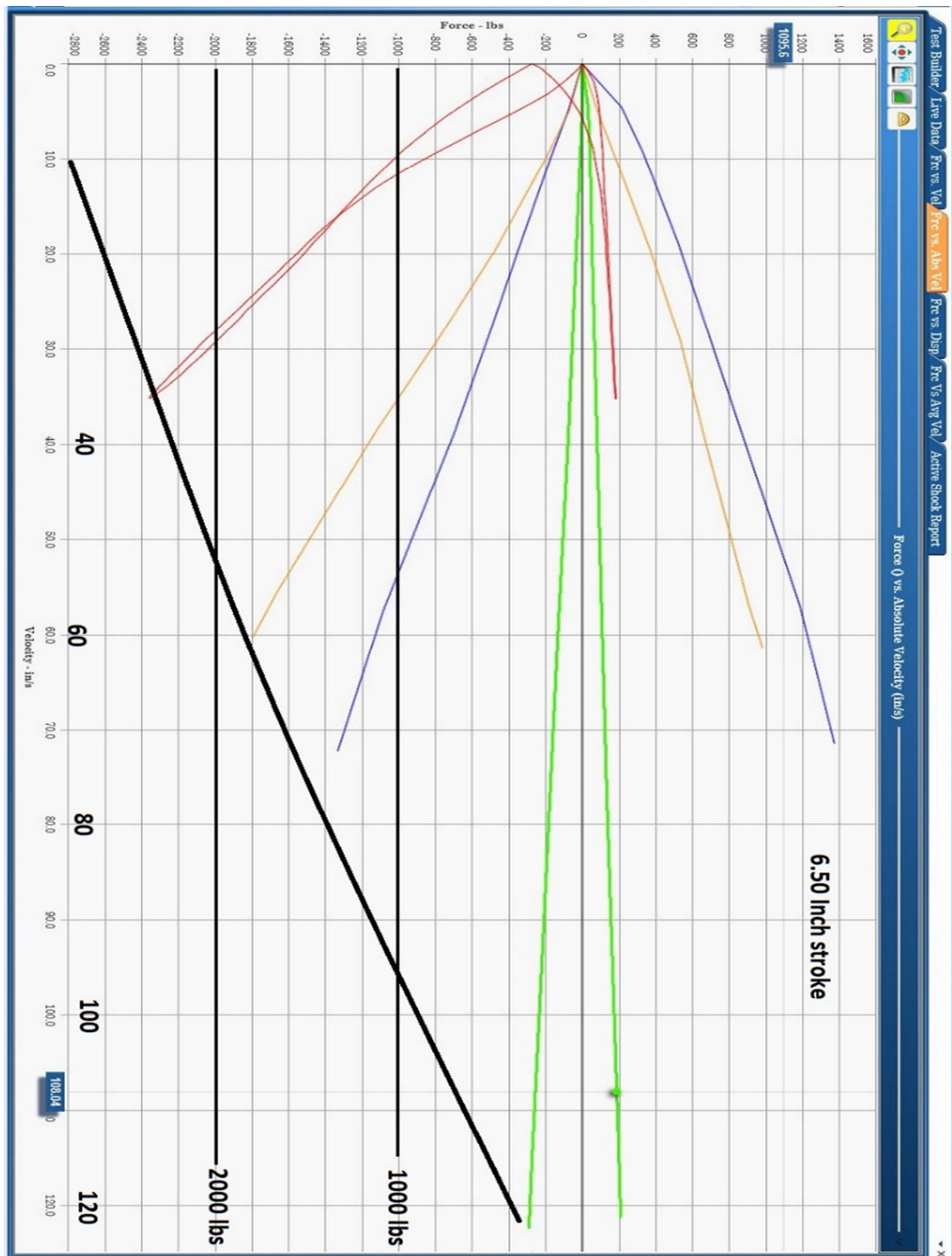
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General Dimensional Outline of RD7.5 / RD10



Power curve of RD7.5 on VAC III / three phase input power - Metric units



Power curve of RD7.5 on VAC III / three phase input power - Imperial units