Unpacking and Setting Up the Rex Calibrator

All Rex calibrators are completely assembled, calibrated, and tested at our plant to ensure a quality product.

Your Rex durometer calibrator is packed nearly completely assembled, however there are some basic steps that must be preformed before using the calibrator for the first time.

1. Unpack all of the parts included with your calibrator, taking special care not to damage any of the pieces in the process. Your calibrator should include: the base/rack assembly, the scale assembly, one set of “A” weights (smaller weights), one set of “D” weights, (2) contact heads, one testing adapter. See illustration for all included parts.

2. After unpacking the calibrator, clean the feet that support the base with alcohol, then place the base assembly on a clean, flat surface that will be free from vibrations. Note: When performing regular cleaning of your Rex calibrator, it is recommended that alcohol be used.

3. Loosen the column lock and gently pull the rack assembly near the top of the column, so that it will be out of the way during installation of the scale, then re-tighten the column lock.

4. Slide the pendulum through the hole in the top of the scale. (see diagram 1)

5. Slide the brass weight on to the pendulum shaft so that the bottom of the weight is flush with the bottom of the shaft. Then tighten the set screw in the brass weight with the included hex wrench.

6. Clean the fulcrum and fulcrum nest with alcohol. Rotate the scale stop to open position, and gently lower the scale into position so that the fulcrum is fully seated in the fulcrum nest, then rotate the scale stop to retain the scale in the reader.

Testing Procedure

1. To properly set the zero on the calibrator, it is important that the calibrator is level. It is possible to level the calibrator using the adjusting wheels and the bulls-eye level. Rotate the wheels as necessary until the bubble is centered inside the bulls-eye.

2. As different types of durometers have different combinations of springloads and indenter shapes, it is necessary to determine the type of durometer that will be tested (this calibrator can be used for types A, B, C, D, DO, O).
Once the type of durometer has been determined, it is possible to select the proper weights and contact head for testing.

**Large Weights** - Types: D, C, DO (10lb. springload @ 100pts.)
**Small Weights** - Types: A, B, O (822g. springload @ 100pts.)
**Brass Contact Head** - Types: D, B
**Aluminum Contact Head** - Types: A, C, DO

3. Insert the proper contact head into the contact head holder. (see diagram 1)

4. Slide the proper weight down the scale (with the pointer on the left side of the weight as it sits on the scale) until the pointer is seated in the proper “zero” position (“0D” for the large weights, “0A” for the smaller weights).

5. With the slide weight in the proper zero position, slide the counterweight onto the scale to the right of the reader and loosen the scale stop. Position the counterweight so that the reader edge is even with the horizontal zero line on the scale. This can be accomplished by first moving the counterweight until the scale is nearly balanced, then turning the fine adjustment screw in the counterweight to exactly balance the scale. Return the scale stop to the closed position and tighten the locking screws in the counterweight.

6. Testing a Rex durometer. Slide the barrel of the gauge into the clamp, then turn the clamp knob until snug. Slightly loosen the tension screw and, using the pinion knob, lower the gauge until the indenter is near the contact head. **Important Note:** If the tension screw is loosened too severely, the rack may slide down on its own and damage the durometer and/or calibrator.

7. When testing an instrument not manufactured by Rex, the included adapter must be used to support the gauge. Clamp the adapter in the clamp with the screw head up. Screw the adapter to the top of the instrument to be tested. Lower the gauge into position (see procedure in section 6).

8. At this point you must check that the indenter of the durometer is aligned with the contact head – a misaligned indenter could cause damage to the gauge or calibrator if the indenter slips off of the contact head while testing. Also, a misaligned indenter could give an erroneous reading due to the fact that this would put pressure on the gauge from the side, rather than straight up and down. If the indenter is not aligned with the contact head, then re-tighten the column lock.

9. Slide the weight to the desired test value, from 10pts. to 90pts. **Note:** Per ASTM D2240 note 9: Due to indentor length tolerances, readings above 90pts. are inaccurate and should not be used.
10. Using the pinion knob, lower the rack/durometer until the scale is no longer in contact with the scale stop, remaining in contact with only the fulcrum nest and the durometer indenter. With the scale supported in this equilibrium position, check the durometer reading. While at Rex we keep our durometers plus or minus one half of a point, according to ASTM a durometer can be considered in calibration if it gives a reading corresponding to the number indicated by the scale plus or minus one point. For instance, with the weight at "70" position, a properly calibrated durometer would read above 69 but below 71.

11. It is strongly recommended that your Rex calibrator be sent back to Rex Gauge Co. at least yearly for calibration and certification.

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IMPORTANT!!!: Did you know that while a gauge can be in calibration on the calibrator it may not be in calibration at all? This is due to the fact that a calibrator checks only one of two variables in durometer setup. A calibrator checks only springload, and not the shape of the indenter. A gauge with a badly bent or chipped indenter will most likely check out on the calibrator, while giving faulty readings on piece-parts and samples of material.

Not recommended for use with models 1500 and H1000 max-hold durometers.

For more information on indenter shapes as well as other information pertinent to calibration and use of durometers check: Standard Test Method for Rubber Property – ASTM D2240. *This is a bought piece of information that can be purchased directly from ASTM.

IF YOU HAVE ANY QUESTIONS OR COMMENTS REGARDING THIS PRODUCT OR ITS USE PLEASE CALL REX GAUGE CO. TOLL FREE AT 1-800-927-3982

Rex Durometer – Made in the U.S.A. Since 1942