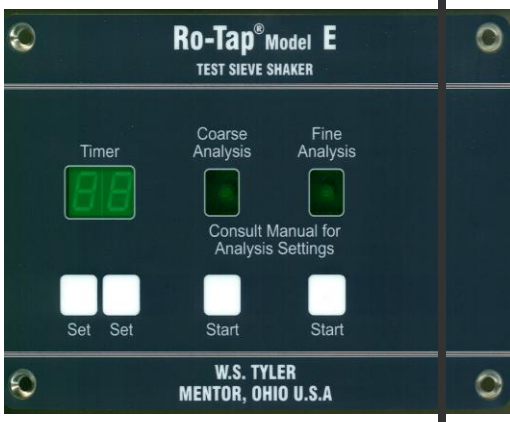

# **Ro-Tap®** E

# Model RX-29-E

# STARTING AND OPERATING




**Set values**
**Actual values**

**Entry keys**
**Left (-)**
**Right (+)**

**Starting the Machine**
Switch on the machine with the ***main switch*** (located at the rear of the unit).
All Indicators on the front panel will read "0".

**Time**
The sieving time is shown in minutes (99 minutes maximum) and appears in the indication field of set values/actual values. The sieving time will countdown to "0". Without setting the sieving time (set point 00) the machine operates continuously.

The sieving time can be fed by one pair of entry keys for each function. The left key decreases, while the right key increases the test time. When pressing one of the keys for a longer moment, the numbers pass quickly.

**Analysis Settings**
There are two amplitude analysis settings***.*** One for ***coarse*** and the second for ***fine material***.

The Model **Ro-Tap® E** features an intermittent operation. Every 10 seconds, the machine will pause for 3 seconds, allowing the sample to settle.

Analysis Guide: If the smallest particle is 1 mm (USA #18) or greater in size, use the COARSE analysis control setting. For all other applications, use the FINE setting.

Each material application is different. Local analysis may be required to determine which control setting will produce the best results.

**Start/Stop**
To start the machine, press the **START** button. As the unit runs, the remaining analysis time will be shown in the display window. To stop the machine, press the **START** button again.

# NEW HAVER TWINNUT CLAMPING SYSTEM

The new 'Haver TwinNut' clamping system perfectly combines the advantages of the previous Classic and Easylock Systems.

**Function:**
The sieve is fixed using the nuts in the same way as the Classic system (1.0 + 3.0).
Varying heights of the sieve tower are achieved by opening the TwinNuts (2.0).

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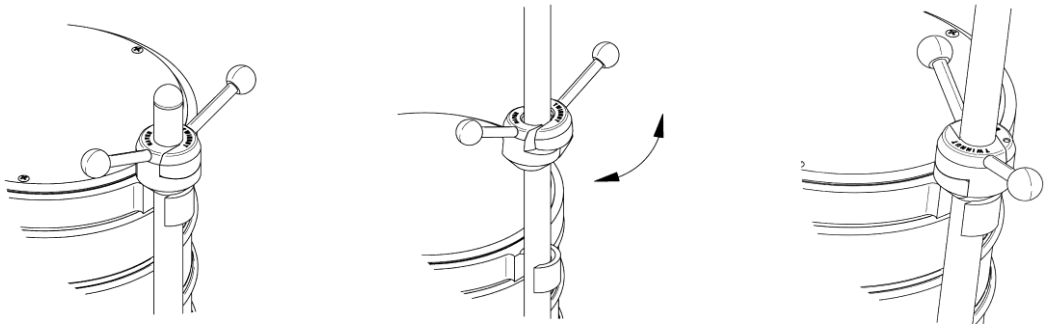

1.0 2.0 3.0

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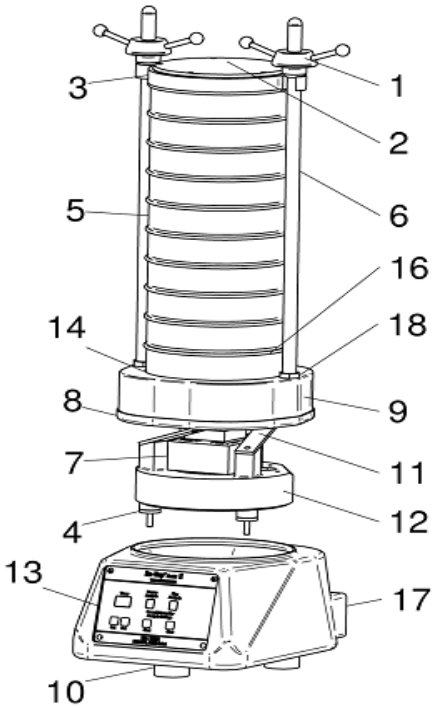
**Advantages:**

- The test sieves can be changed easily and quickly.
- Only a small turn is required to open and close the nuts.
- The wing-handles make the tightening of the nuts eaiser.
- The guide rods of the Classic system can also be used for the TwinNut system (it can be refitted at low cost).
- No grease and dust sensitivity.
- Suitable for every application area.
- Suitable for all HAVER Test Sieve Shakers.

# RX-29 E Ro-Tap® PARTS DIAGRAM AND PARTS LIST




| Item # | Piece | Designation | Article # |
|---|---|---|---|
| 1 | 2 | Nuts for clamping system Easy Lock® | 00560129 |
| 2 | 1 | Inspection glass without hole for machine cover (dry) | 00561499 |
| | 1 | Inspection glass with hole for machine cover (wet) | 00561507 |
| 3 | 1 | Cover with inspection glass | 00561521 |
| | 1 | Cover without inspection glass | 00561514 |
| | 1 | Cover with inspection glass and wide spreading spray diffuser | 00561545 |
| 4 | 3 | Rubber buffer | 66000074 |
| 5 | | Test sieves (sold separately) | |
| 6 | 2 | Guide rods, clamping system Easy Lock®, 660 mm long | 00560154 |
| 7 | 1 | Oscillation magnet | 65300016 |
| 8 | 1 | Rubber profile for vibration body | 00560441 |
| 9 | 1 | Vibration body | 68500312 |
| 10 | 3 | Rubberized pads | 00560014 |
| 11 | 3 | Leaf spring | 68500231 |
| 12 | 1 | Base plate | 68500311 |
| 13 | 1 | Separate control unit | 00560169 |
| | 1 | Front panel with control board | |
| 14 | 1 | Rubber ring for vibration body Ø 204 / Ø 160 | 68500015 |
| 16 | 1 | Sieve pan with outlet | |
| 17 | 1 | Plug connection with main switch and fuse box | |
| | 1 | Plate with cable with screw fitting | |
| 18 | 2 | Counter nut | |
| 19 | 1 | Precision fuse, 20x5 mm, 3, 25 Ampere MT (not shown) | 65100000 |
| 20 | 1 | Rubber seal for cover (not shown) | 00560434 |
| | | ***Call Customer Service for current pricing 800.321.6188** | |

# TEST SIEVE ANALYSIS

**Test Equipment**
Test sieves "nest" together to form a "stack" of sieves. In most sieving tests the 8 inch diameter sieve is used. A test sieve shaker that provides both circular and tapping energy is recommended. Uniform mechanical motion will provide the most consistent results.

**Testing Times**
Free flowing, coarse material requires less time than fine, bulky particles. Once you establish the proper time, duplication of testing becomes extremely important to obtain accurate, repeatable results.

Conduct repeated experimental testing to determine the optimal testing time. For example, perform tests of 5, 10, 15 & 20 minutes. You can determine the optimal time when the results between the different times change no more than .5 to 1 percent. The shortest time should then be used consistently.

**Performing a Sieve Analysis**
You can begin your particle size distribution analysis after you properly collect, prepare and size a sample. Select test sieves with mesh openings that reveal particle distribution at critical sizes. These are usually stated in a product specification or determined by material processing requirements.

To perform the analysis, do the following:

1. Stack the sieves on top of each other with the coarsest (largest) opening on the top of the stack.
2. Put a bottom pan under the finest (smallest) opening sieve. This pan collects "fine" material that passes through the last one.
3. Use a laboratory scale (accurate to .1 gram) to weigh an empty container (such as an extra empty bottom pan) and establish the tare weight.
4. Weigh the sample material.
5. Empty the sample into the top of the stack. Make sure you do not overload the surface as this causes "blinding" or blocking of the openings.
6. Put the stack into the sieve shaker.
7. Place a cover on the top of the stack.
8. Make sure the stack is securely in place.
9. Set the proper length of time to agitate the material.
10. Turn on the shaker and run the test.
11. After the shaker stops, empty the material from the coarsest sieve into the empty container that you weighed in step (3). Use a soft bristle brush to gently brush the underside of the sieve to remove all of the particles.
12. Tap the side of the frame with the handle of the brush to clean the remaining material from the sieve.
13. Weigh the contents in the pan to the nearest 1/10 gram and record the data.
14. Return the material to its original sample container.
15. Repeat steps 11 through 14, using the container referenced in step (3) for each sieve, including the fine material in the bottom pan.
16. Total the weights to make sure the sum of the retained material and the material in the bottom pan is as close as possible to the original weight. Check your specification for allowable variation.
17. Divide the weight obtained from each sieve by the weight of the original sample. Record the percentage for each sieve.
18. Calculate and record the cumulative percentages as required.

The key to successful, repetitive particle analysis is developing standard testing procedures.

**Basic Elements of Testing**

1. Sample Preparation.
2. Test sample sizes or weights.
3. Test Equipment.
4. Testing times or intervals.
5. Recording results.

**Sample Preparation**

When deciding how much material to test, consider the type of material, screen ability of the material and the range of particle sizes.

If the particle range of material representing feed to a screen or product from a crusher is wide, use a large sample (from 500 to 1,000 GRAMS). If the material is finely ground, use a smaller sample of 25 to 100 grams.

Do not use too large a sample in the test. The smaller the sample, the more consistent the results (as long as the sample is properly taken). To obtain an accurate sieve test sample, every particle must present itself to the screen openings for retention or for passing through to the next finer sieve. Make sure the sample is large enough so that the coarsest sieve retains enough representative particles.

For example, if a "stack" contains six sieves, a fine particle must repeat the passing process six times. The fine particles cannot pass through to their proper end when overloading occurs.

As a general rule, limit the size of a sample in weight so that no sieve in the "stack" is overloaded. Overloading usually occurs in testing closely graded materials, where the range of particle size is limited. In such cases, determine the size by capacity of the sieve that retains the largest amount of the sample.

Use the following procedure to determine your sample size:

1. Accurately split out samples of varying weights (25, 50, 100, 150 and 200 grams) with a sample splitter.
2. Run the various samples on the selected sieves for five minutes.
3. Compare the results to get the correct sample size.

When two sample sizes provide similar results, use the larger of the two for your test size. For example, if the 100 gram sample shows approximately the same results as the 50 gram sample, but the 150 grams sample produces differing results, use the 100 gram sample as the correct sample size.
Near-mesh particles (those with dimensions close to the sieve opening) require that you lightly load the sieves. This allows presentation of the particles to the sieve opening many times, which allows maximum opportunity for accurate classification.

**Wet Testing**

Some materials do not test well under dry conditions. If the material is not water soluble, you can perform an accurate sieve analysis with special equipment.

The Sieve Shaker with a Wet Test Kit will be required. The wet test kit ensures there will be no splashing or contamination of the samples.

The test should be performed the same as dry material (previous section) with one exception.
Water, as called for by the test procedure, must be added to the sample prior to the test run.

**Static Electricity**
Some materials generate static electricity during the dry sieving process. When particles "charge" themselves as they come in contact with other particles, they stick to the metal frame and cloth of the sieve. This prevents you from obtaining accurate results.

As a suggestion:

- Add a small amount of talc, activated charcoal, powdered magnesium carbonate or burgess clay to the sample material. For a 100 gram sample add approximately 1 gram of chemical.
- Mix thoroughly to completely coat the particle surfaces.
- Perform the sieve test.

This method may not eliminate static electricity entirely; however, the effect should be significantly reduced and will not affect your test results.