

# Meinzer II<sup>TM</sup>

## Testing Sieve Shaker

### Operation & Set-up Manual

**Model:**  
**18480100**



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# Introduction

Thank you for selecting this high-quality piece of testing apparatus. We appreciate your support and pledge to assist you in the service of your CSC Scientific testing apparatus.

The Meinzer II is a maintenance free, lightweight and portable vibrating shaker that will provide precise, repeatable results time after time.

By utilizing an electromagnetic drive, fixed amplitude and rubber spring mounts, this unit produces the simultaneous vertical and horizontal movement needed for basic dry particle sizing analysis. This unit is ideal for use with aggregates, cements, chemicals, powdered metals, cosmetics, grains, seeds, coal, soils, pharmaceuticals, tobacco, coffee and many other dry components in ground, granular or powder form. Each unit is "burned in" and run continuously for over half a day, guaranteeing performance right out of the box. ***This unit is not recommended for wet sieving operation.***

Besides the physical nuts and bolts, this device is backed by a company with decades of experience in the dedicated service of users in the powder and particulate industries. We look forward to servicing you as well.

# Specifications

## Model Designations and Power Requirements

- Model 18480100 . . . . . 110VAC/60Hz operation. Accepts 8" (203.2mm), 200mm or 3" (76.2mm) diameter sieves

## Timer

- 1 – 60 minutes with automatic shut-off, or continuous run setting

## Dimensional Specifications

- Unit base . . . . . 10" (25.4cm) diameter x 5.59" (14.2cm), plus Clamp Plate 1.18" (3cm)

## Weight

- 37 lbs (17Kg)

## General Specifications

- Durable, powder coated finish
- Unit Capacity. . . . . 8" (203.2mm) or 200mm - 8 full height or 15 half height, plus pan and cover

## Unit ships with

- Operation and Set-up Manual
- 6' (2 meter) Power Cable
- Top Plate Assembly
- Meinzer II Shaker fitted with Clamping Straps and Buckles
- Sieves, pans and covers must be ordered separately.

# Installation & Set-up Instructions

The Meinzer II Testing Sieve Shaker is designed to provide years of trouble-free service. To assure that the device delivers optimum performance, several points must be observed before putting the device into service.

## 1) Installation

Position the machine on a level, sturdy surface to ensure the even distribution of the sample over the sieves during operation.

## 2) Electrical Connections

Verify that the voltage and frequency on the Rating Label at the rear of the shaker corresponds with the electrical power supply being used. If any discrepancy occurs, please consult your supplier or contact CSC Scientific Tech Support for assistance. **Do not connect any power supply other than that stated on the Rating Label. Important! This equipment must be grounded.**

When the power is properly connected, the red rocker switch will illuminate when switched to the "on" position. If the switch does not light, the connector may not be fully inserted or the fuse may be blown. Replacement fuses must be of identical rating.

## 3) Process Timer

The Meinzer II features a mechanical, 1 – 60 minute timer with automatic shut-off. There is also a continuous running time feature. For settings of less than 15 minutes, rotate the knob past the 15 minute mark and then back to the desired setting. Operating periods are increased by rotating clockwise and decreased by rotating counter-clockwise. The timer will commence timing down as soon as the knob is released, regardless of an electrical connection. When the knob is turned counter-clockwise from the "OFF" position to the continuous running mark, "I", the shaker will continue running until the knob is manually returned to the "OFF" position.

## 4) Maintenance

The Meinzer II Sieve Shaker is maintenance free aside from keeping surfaces clean. Simply wipe with a soft damp cloth using a solution of warm water and a mild liquid detergent. **Do not clean your sieve shaker or sieves with solvents.**

## 6) General Advice

The Meinzer II Sieve Shaker is constructed and factory tested to ensure correct operation when connected to the specific electrical supply indicated on the

Rating Label of the machine. Under typical usage, no lubrication or resetting is required. Use of unapproved parts or any alteration to the machine voids the warranty.

For replacement parts, please contact CSC Scientific's Tech Support Team at 800.621.4778 or [meinzerl@cscscientific.com](mailto:meinzerl@cscscientific.com). Please have your serial number ready for prompt service.

**CSC Scientific does not accept any responsibility if the operating instructions contained in this manual are not strictly followed.**

# Performing a Sieve Analysis using the Meinzer II<sup>TM</sup> Testing Sieve Shaker

- 1) Complete set up of the Meinzer II Testing Sieve Shaker per instructions under "Installation and Set-Up Instructions".
- 2) Plug the device into the proper power source (be sure that voltage and cycle requirements are observed).
- 3) Prepare the material sample to be tested using industry-specified sampling and preparation procedures.
- 4) Select the sieves for the analysis.
- 5) Assemble the sieve stack, (coarsest sieve at the top, finest at the bottom) with bottom pan. An extended rim pan may be inserted within the stack to run multiple samples. See **Figure 7 A** in the FAQ's for an example of the extended rim pan. Bear in mind the overall height of the sieve stack may not exceed the capacities shown in **Chart 4A** of the FAQ's.
- 6) Pour the sample to be tested onto the top sieve. Install a standard sieve cover to prevent sample loss.
- 7) Place the sieve stack on the Bottom Plate.
- 8) Cover the completed stack with the Top Plate and secure as follows:
  - Raise the Clamping Latch Lever upwards to expose the Latch Hook.
  - While holding the Clamping Latch with one hand, press the lever on the Cam Buckle with the other.
  - Slide the Cam Buckle along the Strap until it can be engaged into the Clamping Latch hook.
  - Release the Cam Buckle and pull the loose end of the Strap downwards to partially tension. **Do not over tension!** The Clamping Latch lever will remain in the raised position, 20 – 30 degrees from the vertical when partially tensioned. Repeat these steps on the other side.
  - Press both levers down, closing the Clamping Latches to secure the stack. **Do not use excessive force. It may be necessary to loosen the straps slightly to secure.** Repeat the previous action to

release or increase the tension in the strap as necessary to ensure a firm grip.

**Warning: Do not run the machine with unsecured sieves.**

- 9) Set the timer for the desired test interval. For timer setting instructions please refer to item three in the Installation & Set-up Instructions at the front of this manual.
- 10) Once the test is complete, allow the sieve stack to come to a stop.
- 11) Remove the sieve stack and proceed to weigh-up the retained fractions.  
**Warning: Do not attempt to release the Clamping Latches and remove the sieves while the machine is still running.**



# STANDARD SPECIFICATION FOR WOVEN WIRE TEST SIEVE CLOTH AND TEST SIEVES

## ASTM E 11 - 09

### Nominal Dimensions and Permissible Variations for Sieve Cloth and Compliance, Inspection and Calibration Test Sieves

(1)		(2)		(3)	(4)	(5)	(6)	(13)	(14)		(15)
Sieve Designation		Nominal Sieve Opening (in.)		± Y Variation for Average Opening	+ X Maximum Variation for Opening		Resulting Maximum Individual Opening	Typical Wire Diameter	Permissible Range of Choice		
Standard	Alternative								Min	Max	
millimeter		inches		millimeter	millimeter		millimeter	millimeter			
125	5 in.	5		3.66		4.51	129.51	8	6.8		9.2
106	4.24 in.	4.24		3.12		3.99	109.99	6.3	5.4		7.2
100	4 in.	4		2.94		3.82	103.82	6.3	5.4		7.2
90	3 1/2 in.	3.5		2.65		3.53	93.53	6.3	5.4		7.2
75	3 in.	3		2.22		3.09	78.09	6.3	5.4		7.2
63	2 1/2 in.	2.5		1.87		2.71	65.71	5.6	4.8		6.4
53	2.12 in.	2.12		1.58		2.39	55.39	5	4.3		5.8
50	2 in.	2		1.49		2.29	52.29	5	4.3		5.8
45	1 3/4 in.	1.75		1.35		2.12	47.12	4.5	3.8		5.2
37.5	1 1/2 in.	1.5		1.13		1.85	39.35	4.5	3.8		5.2
31.5	1 1/4 in.	1.25		0.95		1.63	33.13	4	3.4		4.6
26.5	1.06 in.	1.06		0.802		1.44	27.94	3.55	3		4.1
25	1.00 in.	1		0.758		1.38	26.38	3.55	3		4.1
22.4	7/8 in.	0.875		0.681		1.27	23.67	3.55	3		4.1
19	3/4 in.	0.750		0.579		1.13	20.13	3.15	2.7		3.5
16	5/8 in.	0.625		0.490		0.99	16.99	3.15	2.7		3.6
13.2	0.530 in.	0.530		0.406		0.86	14.06	2.8	2.4		3.2
12.5	1/2 in.	0.500		0.385		0.83	13.33	2.5	2.1		2.9
11.2	7/16 in.	0.438		0.346		0.77	11.97	2.5	2.1		2.9
9.5	3/8 in.	0.375		0.295		0.68	10.18	2.24	1.9		2.6
8	5/16 in.	0.312		0.249		0.60	8.60	2	1.7		2.3
6.7	0.265 in.	0.265		0.210		0.53	7.23	1.8	1.5		2.1
6.3	1/4 in.	0.250		0.197		0.51	6.81	1.8	1.5		2.1
5.6	No. 3 1/2	0.223		0.176		0.47	6.07	1.6	1.3		1.9
4.75	No. 4	0.187		0.150		0.41	5.16	1.6	1.3		1.9
4	No. 5	0.157		0.127		0.37	4.37	1.4	1.2		1.7
3.35	No. 6	0.132		0.107		0.32	3.67	1.25	1.06		1.5
2.8	No. 7	0.110		0.090		0.29	3.09	1.12	0.95		1.3
2.36	No. 8	0.0937		0.076		0.25	2.61	1	0.85		1.15
2	No. 10	0.0787		0.065		0.23	2.23	0.9	0.77		1.04
1.7	No. 12	0.0661		0.056		0.20	1.90	0.8	0.68		0.92
1.4	No. 14	0.0555		0.046		0.18	1.58	0.71	0.6		0.82
1.18	No. 16	0.0469		0.040		0.16	1.34	0.63	0.54		0.72
1	No. 18	0.0394		0.034		0.14	1.14	0.56	0.48		0.64
micrometer		inches		micrometer	micrometer		micrometer	micrometer			
850	No. 20	0.0331		29.1		127	977	0.5	0.43		0.58
710	No. 25	0.0278		24.7		112	822	0.45	0.38		0.52
600	No. 30	0.0234		21.2		101	701	0.4	0.34		0.46
500	No. 35	0.0197		18.0		89	589	0.315	0.27		0.36
425	No. 40	0.0165		15.5		81	506	0.28	0.24		0.32
355	No. 45	0.0139		13.3		72	427	0.224	0.19		0.26
300	No. 50	0.0117		11.5		65	365	0.2	0.17		0.23
250	No. 60	0.0098		9.9		58	308	0.16	0.13		0.19
212	No. 70	0.0083		8.7		52	264	0.14	0.12		0.17
180	No. 80	0.0070		7.6		47	227	0.125	0.106		0.15
150	No. 100	0.0059		6.6		43	193	0.1	0.085		0.115
125	No. 120	0.0049		5.8		38	163	0.09	0.077		0.104
106	No. 140	0.0041		5.2		35	141	0.071	0.06		0.082
90	No. 170	0.0035		4.6		32	122	0.063	0.054		0.072
75	No. 200	0.0029		4.1		29	104	0.05	0.043		0.058
63	No. 230	0.0025		3.7		26	89	0.045	0.038		0.052
53	No. 270	0.0021		3.4		24	77	0.036	0.031		0.041
45	No. 325	0.0017		3.1		22	67	0.032	0.027		0.037
38	No. 400	0.0015		2.9		20	58	0.03	0.024		0.035
32	No. 450	0.0012		2.7		18	50	0.028	0.023		0.033
25	No. 500	0.0010		2.5		16	41	0.025	0.021		0.029
20	No. 635	0.0008		2.3		15	35	0.02	0.017		0.023

Column 3 - These numbers are only approximate but are in use for reference; the sieve shall be identified by the standard designation in millimeter or micrometers

**Table 1**

**INTERNATIONAL STANDARDS ORGANIZATION (ISO)  
PREFERRED NUMBER SERIES**

Values in millimeters unless specified as micron ( $\mu$ ).

R 20/3	R 20	* R 40/3	Equivalent in inches	R 20/3	R 20	* R 40/3	Equivalent in inches
125	125	125	4.921			1.7	0.0669
	112		4.409		1.6		0.0630
		106	4.173	1.4	1.4	1.4	0.0551
	100		3.937		1.25		0.0492
90	90	90	3.543			1.18	0.0465
	80		3.150		1.12		0.0441
		75	2.953	1	1	1	0.0394
	71		2.795		900 $\mu$		0.0354
63	63	63	2.480			850 $\mu$	0.0335
	56		2.205		800 $\mu$		0.0315
		53	2.087	710 $\mu$	710 $\mu$	710 $\mu$	0.0280
	50		1.969		630 $\mu$		0.0248
45	45	45	1.772			600 $\mu$	0.0236
	40		1.575		560 $\mu$		0.0220
		37.5	1.476	500 $\mu$	500 $\mu$	500 $\mu$	0.0197
	35.5		1.398		450 $\mu$		0.0177
31.5	31.5	31.5	1.240			425 $\mu$	0.0167
	28		1.102		400 $\mu$		0.0157
		26.5	1.043	355 $\mu$	355 $\mu$	355 $\mu$	0.0140
	25		0.984		315 $\mu$		0.0124
22.4	22.4	22.4	0.882			300 $\mu$	0.0118
	20		0.787		280 $\mu$		0.0110
		19	0.748	250 $\mu$	250 $\mu$	250 $\mu$	0.0098
	18		0.709		224 $\mu$		0.0088
16	16	16	0.630			212 $\mu$	0.0083
	14		0.551		200 $\mu$		0.0079
		13.2	0.520	180 $\mu$	180 $\mu$	180 $\mu$	0.0071
	12.5		0.492		160 $\mu$		0.0063
11.2	11.2	11.2	0.441			150 $\mu$	0.0059
	10		0.394		140 $\mu$		0.0055
		9.5	0.374	125 $\mu$	125 $\mu$	125 $\mu$	0.0049
	9		0.354		112 $\mu$		0.0044
8	8	8	0.315			106 $\mu$	0.0042
	7.1		0.280		100 $\mu$		0.0039
		6.7	0.264	90 $\mu$	90 $\mu$	90 $\mu$	0.0035
	6.3		0.248		80 $\mu$		0.0031
5.6	5.6	5.6	0.220			75 $\mu$	0.0030
	5		0.197		71 $\mu$		0.0028
		4.75	0.187	63 $\mu$	63 $\mu$	63 $\mu$	0.0025
	4.5		0.177		56 $\mu$		0.0022
4	4	4	0.157			53 $\mu$	0.0021
	3.55		0.140		50 $\mu$		0.0020
		3.35	0.132	45 $\mu$	45 $\mu$	45 $\mu$	0.0018
	3.15		0.124		40 $\mu$		0.0016
2.8	2.8	2.8	0.110			38 $\mu$	0.0015
	2.5		0.098	<b>R*10</b>	36 $\mu$		0.0014
		2.36	0.093	32 $\mu$			0.0013
	2.24		0.088	25 $\mu$			0.0010
2	2	2	0.079	20 $\mu$			0.0008
	1.8		0.071				

\* Same as ASTM E 11 USA Standard Sieve Series

R\*10 = Tenth root of ten ratio

R 20 = Twentieth root of ten

R 20/3 = Every third number of R 20 Series

R 40/3 = Every third number of fortieth root of ten series

**Table 2**

**COMPARISON TABLE  
INTERNATIONAL TEST SIEVE SERIES**

INTERNATIONAL ISO 3310-1:2000	AMERICAN ASTME 11-01		BRITISH BS410:2000		CANADA CGSB-8.2-M88	FRANCE AFNOR NFX11-501		GERMANY DIN (ISO) 3310-1:2000		JAPAN JIS
	Aperture mm	Opening mm	Equiv. inch/No.	Aperture mm		Equiv. BS Mesh	Aperture mm	Tamis No.	Aperture mm	
125.00	125.00	5"	125.00							
112.00			112.00							
106.00	106.00	4.24"	106.00							
100.00	100.00	4"	100.00		100.00	100.00		100.00		
90.00	90.00	3 1/2"	90.00		90.00	90.00		90.00		
80.00			80.00							
75.00	75.00	3"	75.00							
71.00			71.00		71.00	71.00		71.00		71.00
63.00	63.00	2 1/2"	63.00		63.00	63.00		63.00		
56.00			56.00							
53.00	53.00	2.12"	53.00		53.00	53.00		53.00		
50.00	50.00	2"	50.00		50.00	50.00		50.00		50.00
45.00	45.00	1 3/4"	45.00		45.00	45.00		45.00		
40.00			40.00							
37.50	37.50	1 1/2"	37.50							
35.50			35.50							
31.50	31.50	1 1/4"	31.50		31.50	31.50		31.50		
28.00			28.00		28.00	28.00		28.00		
26.50	26.50	1.06"	26.50							26.50
25.00	25.00	1.00"	25.00		25.00	25.00		25.00		
22.40	22.40	7/8"	22.40		22.40	22.40		22.40		22.40
20.00			20.00		20.00	20.00		20.00		
19.00	19.00	3/4"	19.00							19.00
18.00			18.00			18.00		18.00		
16.00	16.00	5/8"	16.00		16.00	16.00		16.00		16.00
14.00			14.00		14.00	14.00		14.00		
13.20	13.20	.530"	13.20							
12.50	12.50	1/2"	12.50		12.50	12.50		12.50		12.50
11.20	11.20	7/16"	11.20		11.20	11.20		11.20		11.20
10.00			10.00		10.00	10.00		10.00		
9.50	9.50	3/8"	9.50							9.50
9.00			9.00			9.00		9.00		
8.00	8.00	5/16"	8.00		8.00	8.00		8.00		8.00
7.10			7.10		7.10	7.10		7.10		
6.70	6.70	.265"	6.70							6.70
6.30	6.30	1/4"	6.30		6.30	6.30		6.30		
5.60	5.60	No.3 1/2	5.60	3	5.60	5.60		5.60		
5.00			5.00			5.00	38	5.00		5.00
4.75	4.75	No.4	4.75	3 1/2						
4.50			4.50			4.50		4.50		
4.00	4.00	No.5	4.00	4	4.00	4.00	37	4.00	2E	
3.55			3.55	5		3.55		3.55		
3.35	3.35	No.6	3.35							
3.15			3.15		3.15	3.15	36	3.15		
2.80	2.80	No.7	2.80	6	2.80	2.80		2.80		
2.50			2.50		2.50	2.50	35.00	2.50		
2.36	2.36	No.8	2.36	7						
2.24			2.24			2.24		2.24		
2.00	2.00	No.10	2.00	8	2.00	2.00	34	2.00	3E	
1.80			1.80			1.80		1.80		
1.70	1.70	No.12	1.70	10						
1.60			1.60		1.60	1.60	33	1.60		
1.40	1.40	No.14	1.40	12	1.40	1.40		1.40		1.40
1.25			1.25			1.25	32	1.25		
1.18	1.18	No.16	1.18	14				1.20	5	
1.12			1.12		1.12	1.12		1.12		
1.00	1.00	No.18	1.00	16	1.00	1.00	31	1.00	6	
900µ			900µ			900µ		900µ		
850µ	850µ	No.20	850µ	18						850µ
800µ			800µ		800µ	800µ	30	800µ		
710µ	710µ	No.25	710µ	22	710µ	710µ		710µ		710µ

**Table 3**

**COMPARISON TABLE  
INTERNATIONAL TEST SIEVE SERIES**

<b>INTERNATIONAL ISO 3310-1:2000</b>	<b>AMERICAN ASTM E 11-01</b>		<b>BRITISH BS410:2000</b>		<b>CANADA CGSB-8.2-M88</b>	<b>FRANCE AFNOR NFX11-501</b>		<b>GERMANY DIN (ISO) 3310-1:2000</b>		<b>JAPAN JIS</b>
Aperture mm	Opening mm	Equiv. inch/No.	Aperture mm	Equiv. BS Mesh	Aperture mm	Aperture mm	Tamis No.	Aperture mm	Approx. DIN No.	Aperture mm
630µ 600µ 560µ 500µ	600µ 500µ	No.30 No.35	630µ 600µ 560µ 500µ	25 30	500µ	630µ 560µ 500µ	29 28	630µ 600µ 560µ 500µ	10 12	600µ 500µ
450µ 425µ 400µ 355µ 315µ	425µ 355µ	No.40 No.45	450µ 425µ 400µ 355µ 315µ	36 44	400µ 355µ 315µ	450µ 400µ 355µ 315µ	27 26	450µ 430µ 400µ 355µ 315µ	14 16	425µ 355µ
300µ 280µ 250µ 224µ 212µ	300µ 250µ 212µ	No.50 No.60 No.70	300µ 280µ 250µ 224µ 212µ	52 60 72	250µ	280µ 250µ 224µ	25	300µ 280µ 250µ 224µ	20 24	300µ 250µ 212µ
200µ 180µ 160µ 150µ 140µ	180µ 150µ	No.80 No.100	200µ 180µ 160µ 150µ 140µ	85 100	200µ 180µ 140µ	200µ 180µ 160µ 140µ	24 23	200µ 180µ 160µ 150µ 140µ	30 40	180µ 150µ
125µ 112µ 106µ 100µ 90µ	125µ 106µ 90µ	No.120 No.140 No.170	125µ 112µ 106µ 100µ 90µ	120 150 170	125µ 100µ 90µ	125µ 112µ 100µ 90µ	22 21	125µ 112µ 100µ 90µ	50 60 70	125µ 106µ 90µ
80µ 75µ 71µ 63µ 56µ	75µ 63µ	No.200 No.230	80µ 75µ 71µ 63µ 56µ	200 240	71µ 63µ 56µ	80µ 71µ 63µ 56µ	20 19	80µ 75µ 71µ 63µ 56µ	80 110	75µ 63µ
53µ 50µ 45µ 40µ 38µ	53µ 45µ 38µ	No.270 No.325 No.400	53µ 50µ 45µ 40µ 38µ	300 350 400	45µ	50µ 45µ 40µ	18 17	50µ 45µ 40µ	120	53µ 45µ 38µ
36µ 32µ 25µ 20µ	32µ 25µ 20µ	No.450 No.500 No.635	36µ 32µ 25µ 20µ	440	36µ	36µ 32µ 25µ 20µ		36µ 32µ 25µ 20µ	130 200	32µ

**Table 4**

**RECOMMENDED REPRESENTATIVE  
BULK VOLUMES OF TEST SAMPLES  
Used in 8" (203mm) Testing Sieves**

Standard Sieve Designation		Bulk Volume of Material	
Standard	Alternate	Recommended Volume of Material for Test Sample	Maximum Permitted Volume on Sieve on Completion of Sieving
25.0mm	1.00"	1800cm <sup>3</sup>	900cm <sup>3</sup>
22.4mm	7/8"	1600cm <sup>3</sup>	800cm <sup>3</sup>
19.0mm	3/4"	1400cm <sup>3</sup>	700cm <sup>3</sup>
16.0mm	5/8"	1000cm <sup>3</sup>	500cm <sup>3</sup>
12.5mm	1/2"	800cm <sup>3</sup>	400cm <sup>3</sup>
11.2mm	7/16"	800cm <sup>3</sup>	400cm <sup>3</sup>
9.50mm	3/8"	600cm <sup>3</sup>	300cm <sup>3</sup>
8.00mm	5/16"	500cm <sup>3</sup>	250cm <sup>3</sup>
6.30mm	1/4"	400cm <sup>3</sup>	200cm <sup>3</sup>
5.60mm	No. 3 1/2	400cm <sup>3</sup>	200cm <sup>3</sup>
4.00mm	No. 5	350cm <sup>3</sup>	150cm <sup>3</sup>
2.80mm	No. 7	240cm <sup>3</sup>	120cm <sup>3</sup>
2.00mm	No. 10	200cm <sup>3</sup>	100cm <sup>3</sup>
1.40mm	No. 14	160cm <sup>3</sup>	80cm <sup>3</sup>
1.00mm	No. 18	140cm <sup>3</sup>	70cm <sup>3</sup>
710μ	No. 25	120cm <sup>3</sup>	60cm <sup>3</sup>
500μ	No. 35	100cm <sup>3</sup>	50cm <sup>3</sup>
355μ	No. 45	80cm <sup>3</sup>	40cm <sup>3</sup>
250μ	No. 60	70cm <sup>3</sup>	35cm <sup>3</sup>
180μ	No. 80	60cm <sup>3</sup>	30cm <sup>3</sup>
125μ	No. 120	50cm <sup>3</sup>	25cm <sup>3</sup>
90μ	No. 170	40cm <sup>3</sup>	20cm <sup>3</sup>
63μ	No. 230	35cm <sup>3</sup>	17cm <sup>3</sup>
45μ	No. 325	30cm <sup>3</sup>	15cm <sup>3</sup>
38μ	No. 400	25cm <sup>3</sup>	12cm <sup>3</sup>

The recommended weight of material for a sieve test sample is calculated by multiplying the bulk volume figure in Column 3 by the particular bulk density in grams per cubic centimeter of the material, rounded out within a tolerance of ±25 percent.

**Table 5**

**BULK DENSITY OF PULVERIZED MATERIALS IN FREELY POURED CONDITION<sup>a</sup>**

Material	Average Weight lbs./ft. <sup>3</sup>	Average Weight g/cm <sup>3</sup>	Material	Average Weight lbs./ft. <sup>3</sup>	Average Weight g/cm <sup>3</sup>	Material	Average Weight lbs./ft. <sup>3</sup>	Average Weight g/cm <sup>3</sup>
Alumina	44	1.23	Fullers earth	30 to 40	0.48 to 1.04	Rubber, chopped	36	0.58
Aluminum, calcined	128	2.05	Garnet	168	2.69	Rubber, ground	20	0.32
Aluminum oxide	122	1.96	Glass beads	76	1.22	Phosphate rock	75 to 85	1.20 to 1.36
Aluminum shot	96	1.54	Glass, crushed	66	1.06	Salt, flake	61	0.98
Ammonium nitrate	48	0.77	Glass cullet	93	1.49	Salt, rock	66	1.06
Ammonium - sulfate	61	0.98	Granite, crushed	95 to 100	1.52 to 1.60	Salt, table	75	1.20
Bauxite ore	75 to 85	1.20 to 1.36	Gravel	90 to 100	1.44 to 1.60	Sand	90 to 100	1.44 to 1.60
Bentonite	50 to 65	0.80 to 1.04	Gypsum, calcined	58	0.93	Sand, silica	90 to 100	1.44 to 1.60
Bicarbonate of soda	57	0.91	Gypsum, crushed	90 to 100	1.44 to 1.60	Sawdust	18	0.29
Borax	50 to 61	0.80 to 0.98	Iron ore	120 to 150	1.92 to 2.40	Seacoal	42	0.67
Boric acid	58	0.93	Kaolin	160	2.56	Shale	100	1.60
Calcite	90	1.44 to 1.68	Kyanite	68	1.09	Shot, metal	230	3.69
Calcium carbide	75	1.20	Lime, ground	60	0.96	Silica, flour	27	0.43
Calcium carbonate	49	0.79	Lime, hydrated	25	0.40	Silica, gel	45	0.72
Calcium chloride	64	1.03	Limestone, crushed	85 to 100	1.36 to 1.60	Soapstone, pulverized	40	0.64
Calcium phosphate	57	0.91	Limestone, agricultural	70	1.12	Soda ash, light	25 to 35	0.40 to 0.56
Carbon black	24	0.33	Magnesite	106	1.70	Soda ash, heavy	55 to 65	0.88 to 1.04
Cellulose powder	16	0.26	Magnetite	155	2.49	Soda, bicarbonate	57	0.91
Cement, portland	90 to 100	1.44 to 1.60	Manganese ore	120 to 136	1.92 to 2.18	Sodium nitrate	78	1.25
Cement clinker	75 to 80	1.20 to 1.28	Marble, crushed	90 to 95	1.44 to 1.52	Sodium phosphate	43	0.69
Chrome ore	140	2.25	Metals, powdered			Sodium sulfate	96	1.54
Clay	30 to 75	0.48 to 1.20	Aluminum	80	1.28	Steel grit	228	3.66
Coal, anthracite	55	0.88	Copper	169	2.71	Stone, crushed	85 to 95	1.36 to 1.52
Coal, bituminous	50	0.88	Copper-lead	364	5.84	Sugar, granulated	5	0.80
Coke breeze	25 to 35	0.40	Iron	243	3.90	Sugar, powdered	37	0.59
Coke, petroleum	25 to 40	0.40 to 0.64	Nickel	263	4.22	Sulphur, crushed	50 to 65	0.80 to 1.04
Copper ore	100 to 150	1.60 to 2.40	Stainless steel	240	3.85	Talc, powder	34	0.55
Coquina shell	80	1.28	Tantalum	300	4.80	Talc, granular	44	0.71
Corn starch	40	0.64	Mica	42	0.67	Traprock, crushed	105 to 110	1.68 to 1.76
Diatomaceous earth	31	0.50	Ore, sintered	144	1.83	Triple superphosphate,		
Dicalcium phosphate	64	1.03	Oyster shells, ground	29	0.47	granular	64	1.03
Dolomite, crushed	90 to 100	1.44 to 1.60	Perlite ore	65 to 75	1.04 to 1.20	Tungsten carbide	550	8.82
Feldspar, crushed	65 to 84	1.04 to 1.35	Plaster, calcined	64	1.03	Urea prills	43	0.69
Ferrophosphorous	196	3.14	Polyethylene pellets	36	0.58	Vermiculite ore	80	1.28
Fire clay	80	1.28	Polyethylene powder	18	0.29	Wood chips	13	0.21
Flour, wheat	24	0.38	Poly vinyl chloride	30	0.48	Zinc dust	144	2.31
Flour, maize	37	0.59	Potash	77	1.23	Zirconium oxide	200	3.22
Fluorspar	90 to 120	1.44 to 1.92	Potassium carbonate	79	1.27	Zirconium sand	162	2.60
Fly ash	49	0.79	Pumice	40	0.64			

<sup>a</sup> - Where a single figure is given, it represents an actual weight of a typical average sample of the material recorded by a research laboratory; therefore, the figure can be expected to vary from sample to sample of the same material.

**Table 6**

**LIST OF ASTM PUBLISHED STANDARDS ON SIEVE ANALYSIS PROCEDURES  
FOR SPECIFIC MATERIAL OR INDUSTRIES**

Material	ASTM Designation	Title of Standard	Sieve No. or Size Range
Aggregates	C117-95	Standard Test Method for Materials Finer Than 75- $\mu$ m (No.200) Sieve in Mineral Aggregates by Washing	No.200
	C136-01	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates	3½ in. - No.200
	C142-97	Standard Test Method for Clay Lumps and Friable Particles in Aggregates	1½ in. - No.20
	C330-00	Standard Specifications for Lightweight Aggregates for Structural Concrete	1 in. - No.100
	C331-01	Standard Specifications for Lightweight Aggregates for Concrete Masonry Units	¾ in. - No.100
	D4791-99	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate	
	D5821-01	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate	
Asbestos	D2589-88 (1997)	Standard Test Method for McNett Wet Classification of Dual Asbestos Fiber	No.4 - No.325
	D2947-88 (1997)	Standard Test Method for Screen Analysis of Asbestos Fibers	
Carbon black	D1508-99	Standard Test Method for Carbon Black, Pelleted-Fines and Attrition	No.100
	D1511-00	Standard Test Method for Carbon Black-Pellet Size Distribution	No.10 - No.120
	D1514-00	Standard Test Method for Carbon Black-Sieve Residue	No.30 - No.325
Cement	C184-94	Standard Test Method for Fineness of Hydraulic Cement by the 150- $\mu$ m (No.100) and 75- $\mu$ m (No.200) Sieves	No.100 & No.200
	C430-96	Standard Test Method for Fineness of Hydraulic Cement by the 45- $\mu$ m (No.325) Sieve	No. 325
	C786-96	Standard Test Method for Fineness of Hydraulic Cement and Raw Materials by the 300- $\mu$ m (No.50), 150- $\mu$ m (No.100), and 75- $\mu$ m (No.200) Sieves by Wet Methods	No.50 - No.200
Ceramic	C325-81 (1997)	Standard Test Method for Wet Sieve Analysis of Ceramic Whiteware Clays	No.100 - No.325
	C371-89 (1999)	Standard Test Method for Wire-Cloth Sieve Analysis of Nonplastic Ceramic Powders	No.70 - No.325
Coal	D197-87 (1994)	Standard Test Method for Sampling and Fineness Test of Pulverized Coal	No.16 - No.200
	D4749-87 (1994)	Standard Test Method for Performing the Sieve Analysis of Coal and Designating Coal Size	5 in. - No.400
Coatings	D3214-96	Standard Test Methods for Coating Powders and Their Coatings Used for Electrical Insulation	
	D3451-01	Standard Guide for Testing Coating Powders and Powder Coatings	
Coke	D293-93 (1999)	Standard Test Method for the Sieve Analysis of Coke	4 in. - No.200
	D5709-95 (2000)	Standard Test Method for Sieve Analysis of Petroleum Coke	3 in. - No.200
Enamel	C285-88 (1999)	Standard Test Methods for Sieve Analysis of Wet-Milled and Dry-Milled Porcelain Enamel	No.40 - No.325
Glass	C429-01	Method for Sieve Analysis of Raw Materials for Glass Manufacture	No.8 - No.200
	D1214-89 (1994)	Test for Sieve Analysis of Glass Spheres	
Magnesium	D2772-90 (1997)	Standard Test Method for Sieve Analysis of Electrical Grade Magnesium Oxide	
Metal Bearing ores	E276-98	Standard Test Method for Particle Size or Screen Analysis at No.4 (4.75-mm) Sieve and Finer for Metal-Bearing Ores and Related Materials	No.4 - No.200
	B214-99	Test for Sieve Analysis of Metal Powders	No.80 - No.325
Metal Powders	D451-91 (1996)	Standard Test Method for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing Products	No.6 - No.100
	D452-91 (1997)	Standard Test Method for Sieve Analysis of Surfacing for Asphalt Products	No.12 - No.200
	D546-99	Standard Test Method for Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures	
Perlite	C549-81 (1995)	Standard Specification for Perlite Loose Fill Insulation	
Pigments and paint	D185-84 (1999)	Standard Test Methods for Coarse Particles in Pigments, Pastes and Paints	No.325
	D480-88 (1999)	Standard Test Methods for Sampling and Testing of Flaked Aluminum Powders and Pastes	No.100 - No.325
	D1921-01	Standard Test Method for Particle Size (Sieve Analysis) of Plastic Materials	down to No.400
Porcelain	C285-88 (1999)	Standard Test Methods for Sieve Analysis of Wet-Milled and Dry-Milled Porcelain Enamel	No.40 - No.325
	C92-95 (1999)	Tests for Sieve Analysis and Water Content of Refractory Materials	3 in. - No.200
Refractories	D2187-94 (1998)	Standard Test Methods for Physical and Chemical Properties of Particulate Ion-Exchange Resins	No.8 - No.100
Resins	D5461-93 (1998)	Standard Test Method for Rubber Additives-Wet Sieve Analysis of Powdered Rubber Chemicals	
Rubber additives	D502-89 (1995)	Standard Test Method for Particle Size of Soaps and Other Detergents	No.12 - No.100
Soap	E359-00	Standard Test Methods for Analysis of Soda Ash (Sodium Carbonate)	
Soda ash	D421-85 (1998)	Standard Practice for Dry Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants	No.4 - No.40
	D422-63 (1998)	Standard Test Method for Particle-Size Analysis of Soils	3 in. - No.200
	D1140-00	Standard Test Methods for Amount of Material in Soils Finer Than the No.200 (75- $\mu$ m) Sieve	No.40 - No.200
	D2217-85 (1998)	Standard Practice for Wet Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants	No.10 - No.40
Soil			
Vermiculite	C516-80 (1996)	Standard Specification for Vermiculite Loose Fill Insulation	¾ in. - No.100

**Table 7**



# Meinzer II<sup>TM</sup>

## Frequently Asked Questions

**1. What are the vibrations per minute for the Meinzer II?**

A 60Hz machine will produce 3,600 vibrations per minute.

**2. What sort of maintenance is required for the Meinzer II?**

The Meinzer II just needs to be kept clean. No lubrication or resetting of parts is required. Any alteration or unauthorized maintenance will void the warranty.

**3. Can test sieves for the Meinzer II be calibrated/certified?**

Yes. Please contact our Customer Service Team at 800.621.4778 or [meinzerII@cscscientific.com](mailto:meinzerII@cscscientific.com).

**4. How many sieves can fit in on the Meinzer II?**

Please refer to **Chart 4A** for details on the Meinzer II sieve capacity.

**Chart 4A** **Meinzer II Sieve Capacity**

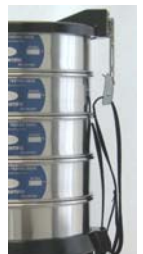
	Half Height (min/max)	Full Height (min/max)	Pan	Cover
8" (203.2mm) or 200mm	4/15	2/8	1	1

**5. My Meinzer II is making a lot of noise and the sieve stack is rattling in the machine. What is wrong?**



**Figure 5A**

The sieve stack may have been improperly secured. Failing to fully clamp as in **Figure 5A** or adequately tighten the straps as in **Figure 5B** will cause the sieve stack to rattle. For instructions on how to properly build and secure your test sieve stack, please refer to step 8 in *Performing a Sieve Analysis using the Meinzer II Testing Sieve Shaker* in the front of this manual.



**Figure 5B**



**6. What is the warranty on the Meinzer II?**

The Meinzer II carries a one year limited warranty against defective material and workmanship.

**7. What is an extended rim pan? Do I need this for my test?**

An extended rim pan is manufactured with a skirt around the bottom so it can be received by a sieve below it. This will allow the user to run multiple samples in one stack. The extended rim pan can be inserted mid-stack to collect fines of sample one and the bottom pan will collect fines from sample two. See **Figure 7A** for an example.



**Figure 7A**

**8. The fuse has blown in the machine. How do I change it?**

**The fuse must be replaced with one of identical rating.** To replace the fuse, perform the following:

- Disconnect the machine from the power supply.
- Unscrew the central cap of the fuse holder.
- Remove the holder and fuse.
- Remove the blown fuse from the fuse holder and place the new fuse in the metal spring in the central cap.
- Fit the cap and fuse back into the holder and screw in completely. **Do not over tighten.**

**9. Does CSC Scientific have a repair facility nearby?**

CSC Scientific is pleased to offer telephone repair support for Meinzer II Testing Sieve Shakers. Contact a member of our Tech Support Team at 800.621.4778. Alternatively, machines may be sent in to our location in Fairfax, VA for extensive repair or refurbishing. **Contact us for information on how to prepare your machine for receipt and service by our Repair Department.**

**10. My questions have still not been answered.**

For further technical support, please contact our Tech Support Team at 800.621.4778 or at [meinzerII@cscscientific.com](mailto:meinzerII@cscscientific.com). We'd be glad to assist.

