

PARTICLE ANALYSIS

HAVER STANDARD

INDIA PRIVATE LIMITED (In joint venture with Haver & Boecker, Germany)

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ABOUT US

Haver Standard India Pvt Ltd (HAST) is the largest manufacturer of wire mesh and demister pads in India, and the only company manufacturing sieves in India which are compliant to DIN, ISO and ASTM standards. We are also a renowned producer of silver granular and wire mesh catalysts for over 50 years and cater to more than 60% of Formaldehyde plants in India.

We have been in the wire weaving business since 1958, and since 1988 we have an active joint venture with Haver & Boecker, Germany who are in this business since 1887. We are ISO 9001-2015 compliant since 1996.

Based on our combined expertise of more than 100 years of experience in wire fabric technology, we provide innovative systems for particle analysis and the most suitable woven wire cloth for every demand. Meticulous handling of production processes, with special attention to quality control measures, is the hallmark of our company. Emphasis on quality is instilled into every process right from the bottom to the top. This combined with our mindset of continuous learning and improvement, ensures that we deliver high quality products and service at competitive prices.



PARTICLE ANALYSIS

In numerous industrial manufacturing and machining processes, only a careful analysis of materials and substances can lay the foundations for achieving the best results.

Based on expertise and more than 100 years of experience in wire fabric technology, Haver & Boecker and HAST provide innovative systems for particle analysis which continue to set new standards in functionality, precision and reliability, with guarantee of maximum security of investment.

These can be used for:

- Sand
- Earth
- Construction Materials
- Foodstuffs
- Recycling
- Chemicals
- Plastics
- Glass
- Ceramic
- Fertilizers
- Granulates
- Varnishes, paints and special coatings

Haver and Boecker is certified to ISO 9001:2008 and is a leading member of the International Standards Committee for Test Sieves (ISO TC 24).

The Particle Analysis Products we offer are:

- Test Sieves
- Sieve Shakers -Electromagnetic drive and Ro-Tap
- CPA for photo-optical particle analysis - based on digital image processing technology that detects, analyses and counts up to 10,000 particles from 10 µm to 400 mm every second.
- Ultrasonic Sieve Cleaners
- Sample splitters/reducers

Accessories pertaining to the above





TEST SIEVES

HAST provides with Haver & Boecker the right test sieve for every screening task. Examples include robust designs made from plates with square perforation to ISO 3310-2 for screening road-building stone, concrete additives, gravel, sand, ballast or – with slotted plates to ISO 5223 – for testing grain.

Classic test sieves with wire mesh sieve bottoms are available over the entire standard range of mesh sizes from 0.02 mm to 125 mm.

The particularly smooth surface of the frames prevents cross contamination, and the sieve fabric retains its tension exceedingly well even after intensive use. The Haver test sieve range covers a wide spectrum of applications and materials and provides the optimum design for every operational requirement, with precision frames made from stainless steel in all common diameters from 76.2 mm to 400 mm.

Some common applications are:

- Pharmaceuticals
- Chemicals
- Minerals
- Cement
- Research Centres
- Food and Spices
- Fertilizers
- Tobacco

TEST SIEVES – Indian-made with imported mesh

We also manufacture SS test sieves of 200 mm and 8" diameters using 'test sieve grade' wire cloth from Germany according to ASTM and DIN ISO standards, the only company doing so in India.

Specifications of Test Sieves:

- 1. Compliant to DIN ISO 3310-1 and ASTM E11-16 standards.
- 2. Dia: 200 mm and 8 inch.
- 3. Full Height Depth to mesh: 50 mm, Height: 65 mm.

Half Height - Depth to mesh: 32 mm, Height: 47 mm.

- Sieve mesh is 'test sieve grade' from Germany which ensures consistency in the openings throughout the sieve and will give you accurate results time and again.
- 5. The openings in the sieves provided by us are from 125 mm to 20 microns (0.02 mm).

- 6. Sieve Mesh: SS316, Sieve Frame: SS304, Test Sieve Lid and Pan: SS304.
- 7. Mesh is uniformly tensioned, welded and no soldering process is involved except for sieves of 20 and 25 micron.
- 8. HSN code: 7326

Benefits:

- Being of international quality, the life and the results achieved through our sieves will be far more accurate than any locally bought sieves. Our test sieves are equivalent to a measuring instrument.
- The price will be much more economical than a direct import.
- A particularly smooth surface of frames prevents cross-contamination, the sieve fabric retains its tension exceedingly well even after intensive use and an extremely stable sieve structure guarantees a long life.
- Accurate and consistent results.







TEST SIEVES – HAST Price List (2020-21)

Opening (mm)	Price (INR)	Opening (mm)	Price (INR)	Opening (µm)	Price (INR)		Opening (µm)	Price (INR)
125 mm	4900	6.7 mm	4900	900 µm	4320		50 µm	4900
112 mm	4900	6.3 mm	4900	850 µm	4320		45 µm	4900
106 mm	4900	5.6 mm	4900	800 µm	4320		40 µm	4900
100 mm	4900	5 mm	4800	710 µm	4320		38 µm	7700
90 mm	4900	4.75 mm	4800	630 µm	4320		36 µm	7700
80 mm	4900	4.5 mm	4800	600 µm	4320		32 µm	7700
75 mm	4900	4 mm	4800	560 µm	4320		25 µm	9680
71 mm	4900	3.55 mm	4800	500 µm	4320		20 µm	33500
63 mm	4900	3.35 mm	4800	450 µm	4320		Pan	1880
56 mm	4900	3.15 mm	4800	425 µm	4320		Lid	3640
53 mm	4900	2.8 mm	4800	400 µm	4320	l		
50 mm	4900	2.5 mm	4680	355 µm	4320			
45 mm	4900	2.36 mm	4680	315 µm	4320			
40 mm	4900	2.24 mm	4680	300 µm	4320			
37.5 mm	4900	2 mm	4680	280 µm	4320			
35.5 mm	4900	1.8 mm	4320	250 µm	4320			
31.5 mm	4900	1.7 mm	4320	224 µm	4320			
28 mm	4900	1.6 mm	4320	212 µm	4320			
26.5 mm	4900	1.4 mm	4320	200 µm	4320			
25 mm	4900	1.25 mm	4320	180 µm	4320			
22.4 mm	4900	1.18 mm	4320	160 µm	4320			
20 mm	4900	1.12 mm	4320	150 µm	4320			
19 mm	4900	1 mm	4320	140 µm	4320			
18 mm	4900			125 µm	4320			
16 mm	4900			112 µm	4320			
14 mm	4900			106 µm	4320			
13.2 mm	4900			100 µm	4320			
12.5 mm	4900			90 µm	4900			
11.2 mm	4900			80 µm	4900			
10 mm	4900			75 µm	4900			
9.5 mm	4900			71 µm	4900			
9 mm	4900			63 µm	4900			
8 mm	4900			56 µm	4900			
7.1 mm	4900			53 µm	4900			

- Above prices are exclusive of 18% GST.
- Prices are Ex-Works Halol, Dist. Baroda.
- Compliance certificate is provided free of charge with each sieve.
- Calibration certificate: In-house calibration which is compliant to ASTM or DIN ISO standards @ Rs.2500/- per sieve + GST. NABL certification also available.

SIEVE SHAKERS – Electromagnetic Drive

Make: Haver & Boecker Germany

Parameters	EML 200 Pure for dry sieving	EML 200 Premium for dry sieving	EML 200 Premium Remote for wet & dry sieving				
Sieving action	3 dimension sieving action						
Drive	Electromagnetic	Electromagnetic					
Testing applications	20 micron - 125 mm						
No. of sieves	Effective height 50 mm: 9 s	ieves and 1 FH pan					
	Effective height 32 mm: 15	sieves and 1 HH pan					
Sieves dia	50 - 203 mm						
Sample weight	3 kg approx.						
Weight of sieve set	8.7 kg max.						
Operating voltage	110 - 230 V, 50 - 60 Hz						
Digital timer/clock	0-99 minutes or permanent	operating					
Sound emission	≤ 70 dB _A						
Operation type	Interval - fixed, 10 sec	Interval / Constant - adjustable	Interval / Constant - adjustable				
Amplitude	2: fine and coarse	free selectable free selectable up to 3 mm up to 3 mm					
Program memory locations	No	01 - 49	01 - 49				
Dimensions (mm)	385 D x 285 W x 900 H	385 D x 295 W x 800 H	385 D x 295 W x 800 H				
Weight w/o sieves	37 kg approx.	37 kg approx.	40 kg approx.				
Price: classic clamps	Rs. 2,40,000 + GST	Rs. 2,71,000 + GST	Rs. 3,15,000 + GST				
Price: twin nut clamps		Rs. 2,86,000 + GST	Rs. 3,25,000 + GST				
Image							

Available at extra price:

- Reduction pieces to accommodate test sieves of 76 mm, 100 mm & 150 mm diameters.
- Twin nut clamps.
- Sound enclosure for reduction of noise level up to 28 dB(A).

SIEVE SHAKERS – Electromagnetic Drive

Make: Haver & Boecker Germany

Parameters	EML 315 Digital Plus	EML 450 Digital Plus			
	T - dry & N - wet sieving	T - dry & N - wet sieving			
Sieving action	3 dimension sieving action				
Drive	Electromagnetic				
Testing applications	20 micron - 125 mm				
No. of sieves	Ø 300 / 305 / 315 mm	Ø 400 mm			
	7 FH sieves & 1 FH pan	13 FH sieves & 1 FH pan			
	13 HH sieves & 1 FH pan				
Sieves dia (mm)	200, 203 (8"), 250, 300,	200*, 203 (8"), 300, 305 (12"),			
	305 (12"), 315 mm	315, 350, 400, 450 mm			
Sample weight	6 kg approx.	15 kg approx.			
Weight of sieve set	21 kg max.	42 kg max.			
Operating voltage	230 V or 110 V with transformer, 50 - 60 Hz				
Digital timer/clock	0-99 minutes or permanent operating				
Sound emission	≤ 70 dB _A	73 dB _A			
Operation type	Adjustable, 10 sec	Adjustable, 10 sec			
Amplitude	Constant, self-readjusting up to max. 2 mm				
Program memory locations	0 - 10	0 - 10			
Power consumption	ca. 410 VA with full charge	ca.1200 VA with full charge			
Dimensions (mm)	404 D x 440 W x 1000 H	585 D x 575 W x 1300 H			
Weight w/o sieves	53 kg approx.	135 kg approx.			
Price with classic or twin nut clamps	On request	On request			
Image					

* Adapter is required

SIEVE SHAKERS – Electromagnetic Drive

Make: Haver & Boecker Germany

Parameters	UWL 400 : T - dry sieving, N - wet sieving,				
	H - square Beechwood frame sieves				
Sieving action	3 dimension sieving action				
Drive	The most powerful sieve shaker of Haver & Boecker				
	having two rotary current unbalanced motors				
Testing applications	Round sieves : 20 micron - 125 mm				
	Beechwood frame sieves : 45 micron to 125 mm (recommended for sieving coarser material)				
No. of sieves	Ø 400 mm : 12 FH sieves & 1 FH pan				
Sieves dia (mm)	200*, 203 (8"), 300, 305 (12"), 315, 350, 400, 450 mm,				
	300 x 300, 500 x 500 mm				
Sample weight	20 kg approx.				
Weight of sieve set	50 kg max.				
Operating voltage	230 V, 50-60 Hertz				
Digital timer/clock	0-599 minutes				
Sound emission	\leq 70 dB _A				
Operation type	No interval				
Amplitude	2.5 mm				
Program memory locations	None				
Power consumption	2 x 0.15 = 0.3 KW				
Revolutions	1500 R/min				
Dimensions (mm)	600 D x 600 W x 1260 H				
Weight w/o sieves	190 kg approx.				
Clamps	Classic and Twin nut options for T & N Special appliance and clamping system for H				
Price for all options	On request				



SIEVE SHAKERS – Ro-Tap

Make: W.S.Tyler, USA

Parameters	Ro-Tap RX-29-10 for dry sieving	Ro-Tap RX-30 for dry sieving	Ro-Tap RX-94 duo shaker for dry sieving			
Mode of operation	Two-dimensional: horizonta	, circular and vertical, tapping m	otion			
Testing applications	2" down through 20 µm	4" down through 25 µm	2" down through 20 µm			
Sieves dia	8" or 200 mm	12" or 300 mm	8" or 200 mm, 2 stacks			
No. of sieves	6 FH with 1 FH pan	4 FH with 1 FH pan	2 stacks of 6 FH sieves			
		6 FH with 1 HH pan	with 1 FH pan			
	13 HH with 1 HH pan	8 HH with 1 HH pan	2 stacks of 13 HH sieves			
			with 1 HH pan			
Sample weight	approx. 3 kg	approx. 6 kg	approx. 2 x 3 kg			
Operating voltage Wired for single phase current	At 1425 RPM, 50 Hz, 230V	At 1425 RPM, 50 Hz, 230V	60 Hz or 50 Hz current 115V or 230V			
Digital timer/clock 99 minute, tolerance 0.1 second						
Oscillations/minute	278 ± 10					
Oscillations displacement	1-1/8" x 7/16"	1-1/8" x 7/16"				
Taps/minute	150 ± 10					
Usage	Heavy duty					
Noise level	approx. 85 dB	approx. 85 dB				
Dimensions (inches)	28 W x 21 D x 25 H	28 W x 21 D x 25 H	30 W x 27 D x 26 H			
Weight w/o sieves	82 kg	82 kg	100 kg			
Price	Rs. 2,30,000 + GST	On request	On request			
Image						

Available at extra price:

- Reduction kits to accommodate smaller diameter test sieves: 8" to 3", 8" to 6" and 12" to 8" diameters
- Sound enclosure for reduction of noise from approx. 85 dB to 78 dB
- Wet Sieving option for RX-29-10

SIEVE SHAKERS – Ro-Tap

Make: W.S.Tyler, USA

Parameters	Ro-Tap RX-812 Horizontal Sieve shaker for coarse testing applications			
Mode of operation	Horizontal, Oscillating motion			
Testing applications	2" down through 150 μm (100 mesh)			
Sieves dia	203 mm (8") or 200 mm 305 mm (12") or 300 mm			
No. of sieves	6 FH with 1 FH pan	4 FH sieves with 1 FH pan		
(Quick change adapter enables use of both 8" and 12" dia test sieves)	13 HH with 1 HH pan	6 HH sieves + 1 HH intermediate pan 8 HH sieves + 1 HH pan		
Sample weight	approx. 3 kg			
Operating voltage	Wired for single phase current 50 or 60 Hz, 230V or 115V			
Timer	0 - 99 minutes	<u>i</u> . <u>i</u>		
Oscillations/minute	278 ± 10 (60 Hz), 231 ± 10 (50 Hz)			
Oscillation displacement	1-1/8" x 7/16"	7.00		
Drive	Electric motor with worm gear			
Usage	Heavy duty			
Noise level	≤ 70 dB _A			
Dimensions (inches)	23" W × 15" D × 13" H			
Weight w/o sieves	25 kg			

Parameters	Rotary Sifter RX-20			Image
Mode of operation	Rotary/Tapp	ing motion		
Testing applications	1" down through 20 μm			
Sieves dia	200, 203 mr	n (8"), 300 m	m	
No. of sieves	FH	НН	IH	L M.
12" diameter	6 + 1 pan	13 + 1 pan	10 + 1 pan	
8" diameter	10 + 1 pan	20 + 1 pan		
Sample weight	Is based on sample amount, density, material and sieve size			K
Operating voltage Wired for single phase current	115 V / 60 Hz, 4.7 Amps 230 V / 50-60 Hz			
Digital timer with LED display	0 - 99 minut	es (+/- 1 secc	ond)	
Drive	1/4 HP continuous-duty motor		notor	
Dimensions (inches)	19" W x 24" D x 58" H			
Weight w/o sieves	98 kg			

It offers a faster conversion from 8" to 12" or 200 to 300 mm dia sieves at the turn of a knob and inserting turntable in the correct slot. The totally enclosed cabinet allows safe, dust-free operation. Individual tapping hammers assist passage of near-size particles. There are a total of 10 hammers.

CPA – Computerised Particle Analysis

Make: Haver & Boecker Germany

The CPAs provide computerised analysis for particle size and particle shape of dry and non-agglomerating bulk material. These are based on digital image processing technology that detects, analyses and counts up to 10,000 particles from 10 µm to 400 mm every second.

The material sample is optimally dosed by a vibrating feeder whose amplitude is automatically regulated. In the measurement channel, the particles fall between an LED light source and a digital line-scan camera and are scanned using the backlight technique as they free fall. The scanning range of the line scan camera is larger than the measurement channel width so that no partially scanned or completely undetected particles at the edges falsify the results.

There are three Laboratory models that offer analysis of all particle sizes and shapes (within their measuring range) in real time, reproducible measuring results and Intuitive handling due to the newest CPA software. The details of which are given below.

In addition, there are three Industrial models, the CPA 4-1, CPA 4-2 and CPA 4 Conveyor.

Parameters	CPA 2-1 HR (High Resolution)	CPA 2-1	CPA 2 Conveyor
Camera	CCD-Line camera		
Lighting source	LED		
Protection class	IP 54		
Interfaces	BUS-Ext, USB, GigE (so can	be operated using a notebook)	
Measuring range	10 micron to 4 mm	20 micron to 30 mm	36 micron to 45 mm
Feeder width	65 mm	55 mm	65 mm
Operating voltage	230 V, 50 Hz or 115 V, 60 H	Z	1
Horizontal resolution	2048 pixels	2927 pixels	2048 pixels
Pixel frequency	60 MHz	100 MHz	60 MHz
Dimensions (L x W x H)	730 x 260 x 360 mm	800 x 200 x 355 mm	940 x 260 x 580 mm
Weight	Approx. 16 kg	Approx. 16 kg	Approx. 27 kg
Advantages	Even powder which is hard to convey can be measured, High speed measuring	Very good performance ratio, High speed measuring	Particles will be aligned (length/width), Automatic feeder cleanout
Image	Mana to 2.1 m		

Technical Data

SAMPLE SPLITTERS / DIVIDERS

Make: Haver & Boecker Germany

Representative test samples can be easily and reliably reproduced with the help of these devices. The Haver sample splitter forms two representative partial quantities by means of alternately arranged apertures in the splitter head.

i. Sample splitters made from galvanized sheet steel (includes 1 rack and 1 divider made from galvanized steel with 3 receivers having grab handles – 8 l)

RT 75: 6 divisions, 74 mm = 3"
 RT 50: 8 divisions, 50 mm = 2"
 RT 37.5: 12 divisions, 37.5 mm = 1 ¹/₂"
 RT 25: 16 divisions, 25 mm = 1"

ii. Sample splitters made from lacquered sheet steel (includes 1 rack made from lacquered sheet steel, 1 divider made from stainless steel and 3 receivers of tinned sheet – 1.75 l

1. RT 12.5: 18 divisions, 12.5 mm = ½" 2. RT 6.3: 12 divisions, 6.3 mm = ¼"

iii. Sample splitters made from lacquered sheet steel
(includes 1 rack made from lacquered sheet steel,
1 divider made from stainless steel and 3 receivers
plastic laminated – 2 l

1. RT 12.5: 18 divisions, 12.5 mm = $\frac{1}{2}$ "

2. RT 6.3: 12 divisions, 6.3 mm = 1/4"

Technical data

Parameters	RT 75	RT 50	RT 37.5	RT 25	RT 12.5	RT 6.3
Openings [mm]	75	50	37.5	25	12.5	6.3
Divisions	6	8	12	16	18	12
Max. Material feed size (mm)*	approx. 50	approx. 33	approx. 25	approx. 16	approx. 8	approx. 4
Receiver volume [Litre]	8	8	8	8	1.7 / 2	
Divider material	galvanized sheet steel				stainless ste	eel
Dimensions [mm]	620 x 260 x 420			300 x 250 >	< 270	







SAMPLE SPLITTERS / DIVIDERS

Make: W.S.Tyler, USA

Riffle type sample splitters SS-50 & SS-100 can be used to divide or halve dry materials such as cement, gravel, powdered ores, coal, coke, sand, soils, etc. They reduce a large sample to a quantity suitable for making sieve tests.

The splitter maintains representative particle size distribution. Material poured into the hopper is divided into two equal portions by a series of chutes that discharge the material alternately in opposite directions into separate pans.

Technical data

Parameters	SS-50	SS-100	
Discharge chutes	14 - 1/2" width	16 - 1" width	
Hopper	6.75" W x 11" L	9" W x 20" L	
Pans	10.5" L x 5.5" W x 4.5" D	19" L x 6.5" W x 5.25" D	
Max. Particle size	1/8 inch	1/4 inch	
MOC	Stainless Steel	Stainless Steel	
Includes 3 pans + 1 flat sample scoop		3 pans + 1 flat sample scoop	
Dimensions 12" W x 14" D x 12" H 30 W x 36 D x 30 H cm		22" W x 16" D x 16" H 56 W x 41 D x 41 H cm	
Image			

The RX-18 is a 16:1 inclined plane type splitter comprising a series of holes and prisms which divide the sample material flowing across it into fractions of the complete sample. The material which falls through the holes and into the pan behind the splitter is 15/16 of the total volume. The material that reaches the bottom of the table is 1/16 of the total sample volume and is collected in a sample pan. The sample splitter is set at a 45° angle of inclination, however additional holes on the side are provided to set the splitter at a 60° angle.

Technical data

Parameters	RX-18
Discharge chutes	16 : 1
Max. Particle size	1/2 inch
MOC	
Frame	Aluminium with removeable legs
Feed hopper & geometric pattern	Abrasion resistant Steel
Dimensions	18" W x 27" D x 36" H
Shipping weight & volume	22.7 kg & 2.44 m2



ROTATING SAMPLE REDUCERS

Make: Haver & Boecker Germany

The Haver rotating sample reducer produces small but representative quantities of solids and suspensions at the rate of 1:8, 1:10 and 1:30. It combines three dividing methods in one unit and provides the best possible sample reducing available today with an accuracy of 99.9%.

The sample is fed into a dividing cone that emulates the process of quartering and coning. It has an integrated adjustable feeder with continuous regulated vibration intensity. Easier material flow is caused by high rotation speed of the cone (approx. 100 U/min). The individual samples are collected in 250 ml and 500 ml glass screw-top bottles which can be easily and reliably secured by means of a quick release clamp.

The sample material on the surface is accelerated outwards by rotation and is divided through guide channels to form individual samples. In this way even sluggish flowing materials such as cement and limestone can be divided with high accuracy.

The rotation and number of dividing channels enable variable dividing conditions to be achieved up to 3000 dividing steps per minute. Suitable for dry and wet division.



hnic	
nnic	

Parameters	HAVER RPT 1:8	HAVER RPT 1:10	HAVER RPT 1:30		
No. of funnels	8	10	30		
Max. feed volume	4000 ml	2500 ml	300 ml		
Max. particle size	10 mm	10 mm	2.5 mm		
Hopper	Ø 10 mm	Ø 10 mm	Ø 5 mm		
Dimensions	609 x 383 x 660 mm (L x W x H)				
Operating voltage	230 Volt or 110 Volt with transformer				
Frequency	50-60 Hertz				
Weight	approx. 30 kg				

ROTATING SAMPLE REDUCERS

Make: W.S.Tyler, USA

The RX-230 Spinning Riffler uses a vibratory feeder to provide a constant flow of material from the stainless steel hopper. The vibrating feeder then feeds the sampling tubes from 1 to 16 individual samples. Each sample can then be capped and stored immediately, with minimal handling and little chance for outside contamination.

Spin riffling is the method of choice for sampling accuracy and reliability for dry, free flowing particles. This unit will virtually eliminate operator error and bias associated with other types of sampling devices.

The RX-230 includes a 16 port dividing head, a set of 16 standard tube sample vessels, a sample drum to contain the vessels and a hopper plate for positioning the vessels in the drum.



Technical data

Parameters	HAVER RPT 1:8
No. of funnels	16
Max. feed volume	1 Litre
Max. particle size	3.2 mm
Hopper	Ø 7.7 inch
Dimensions	20.5" × 13" × 23" (D × W × H)
Operating voltage	90V - 277V, 2.5 Amp single phase
Frequency	47-63 Hz
Weight	35.83 kg

ULTRASONIC SIEVE CLEANERS (USC)

Make: Haver & Boecker Germany

The Haver USC test sieve cleaners guarantee that sieves are cleaned thoroughly and gently while at the same time saving energy. They have proved to work outstandingly well in conjunction with Haver USC cleaning fluid.

- The cleaning liquid should be diluted in relation 1:10. Instructions are printed on the bottle.
- These are high-quality USCs with highest European safety standards, conformity and reliability.
- This device will last for years if handled correctly. Additionally the cleaning results are very good especially when cleaning fine mesh.

Parameters	USC 200 S USC 500 S		USC 200 Multi
Number of sieves cleaned	1 1		5
Sieve diameter	≤ 230 mm	≤ 500 mm	≤ 230 mm
Volume	6 litres	70 litres	40 litres
Liquid holding capacity	3-5 litres	57 litres	40 litres
Outlet	-	Ball valve G 1/2	Ball valve G 1/2
Oscillation tank (inside)	Ø 240 x 140 mm	Ø 600 x 245 mm	500 x 300 x 300 mm
Oscillation tank and housing	SS	SS	SS
Outside dimensions	Ø 304 x 335 mm	Ø 650 x 455 mm	560 x 360 x 500 mm
Weight	5 kg	21 kg	27 kg
Gross weight	10 kg	23 kg	32.5 kg
Time switch	0 - 30 min or continuous	operation	I
Operation voltage	230 - 240 V	230 - 240 V	220 - 240 V
	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
HF-Frequency	37 kHz	37 kHz	35 kHz
Power consumption total (W)	150 W	600 W	2 x 1000 W/per.
Ultrasonic power effective (W)	150 W	600 W	4.50 A
Ultrasonic max. peak power (W)	600 W	2400 W	F6A
Sound pressure level (L _{DAU}) 37/80 kHz	<70	<70	80
Allowable surrounding temperature	5° to 40°	I	I
Allowable relative humidity up to 31°C	80 %		
Defrosting not allowable	х		
Protection class	IP 20		IP 33
Included in delivery	1 synthetic cover 1 SS sieve rack 1 litre cleaning fluid	1 SS cover 1 SS insert basket 5 litres cleaning fluid	1 SS cover 1 SS sieve rack 5 litres cleaning fluid
Image			

ULTRASONIC FREQUENCY VARIATION (UFA)

Make: Haver & Boecker Germany

The HAVER UFA is especially designed for the sieving of powders at critical particle size cuts of \leq 300 micron. The screen is excited by means of ultrasonic wave at continuously varying frequency.

Technical Data

Clamping ring	ø 200 mm, 203 mm, 300 mm, 400 mm
Converter	Connector cable included
Analogue generator	AGS35-100 Weight: 3.3 kg Ultrasonic power: 20-100 W (stepless adjustment) Operating modes: continuous / pulsating Protection class: IP 65
Digital generator	DGS35-50-T Weight: 3.6 kg Ultrasonic power: 50 W max. Protection class: IP 65





Your advantages at a glance:

- Increase of throughput of bulk materials \leq 300 μ m
- Clogging tendency is reduced and disintegration of agglomerated material is promoted
- Sieving performance is increased and sieving times shortened
- Permanent sieve mesh cleaning effect with less mechanical wear on the screens
- Several test sieves can be agitated at the same time with a single generator



UFA Clamping ring:

The woven sieve cloth is continuously vibrated at a uniformly distributed, varying frequency. These high frequency vibrations reduce frictional resistance between the material particles and the sieve mesh. This type of sieving support greatly accelerates the sieving process.

The special feature of this process

The frequency variation requires no elaborate modulation of the agitated mechanical system (analysis sieve) as opposed to the conventional resonance process. The plug-and-play solution allows a simple and flexible vibration of standard analysis sieves.

BALL-PAN HARDNESS TEST KIT

Make: Haver & Boecker and W.S.Tyler (only pan)

The Ball-Pan Hardness Test determines degradation resistance of granulated activated carbons. It requires a brass pan (203 mm dia) and 15 nos. each of steel balls of size ½ inch (12.7 mm) and 3/8 inch (9.5 mm).

The Ball-Pan has an 8 mm thick hardened brass bottom dished out at 1.092 mm inner radius to give a 3.2 mm thickness at its center. The bottom plate is mounted in a standard full-height sieve frame with extended rim for stacking. The Ball-Pan requires a standard sieve pan to nest properly in the Ro-Tap sieve shaker. In use, a 100 ml sized sample is placed in the pan with the 30 steel balls and run for 30 minutes in a Ro-Tap Sieve Shaker. The heavy pan is loosely stacked (free to rotate) with five regular 8 in sieves, sieve pan, and cover. "Hardness" of the activated carbon sample is determined by degradation resistance as measured by sieving the ground sample.

Weight of pan: 4 kg approx.





• The Test sieve have a particularly smooth surface to prevent cross-contamination, extremely stable sieve structure guarantees a long life and sieve fabric that retains its tension exceedingly well even after intensive use.

• Test sieves made from SS frames are suitable both for hand sieving as well as for dry and wet sieving.

• Please do not use alkaline cleaning liquids to clean the test sieves as it will compromise the durability and function of the adhesive seam. We recommend the Haver USC cleaning liquid.

A) Standard Round Test Sieves

Test sieve wire mesh made from SS woven wire cloth and SS304 frames compliant to DIN ISO 3310. Aperture size range from 125 mm to 20 μ m.

Haver & Boecker	. Germanv		Diamet	er	1	Inner frame height		MOC
	, connairy		76.2 m	76.2 mm (3")		25 mm		SS
			50 mm			25 mm		SS
Analyzenseb DIN ISO 3310-1 NF ISO 3310-1 86 410-1 Nemprash			100 mr	100 mm		45 mm		SS
			120 mr	120 mm		40 mm		SS
Nennmaschenweite (w): 2 mm	Siebboden: E	dentari dentari dentari	150 mr	n		50 mm		SS
	Siebrahmen. 2 Septe-Nt.1	216204	200 mr	n		32 mm		SS
HAVER & BOECKER OHG D-59	302 OELDE Made In Germany		203 mr	n (8")		50 mm		SS
			250 mr	n		55 mm		SS
			300 mr	n		60 & 30 r	nm	SS
			305 mr	n (12")		60 mm		SS
			315 mm		75 mm		SS	
		350 mm		60 mm		SS		
			400 mm		65 mm		SS	
			450 mr	n (18")		70 mm		SS
W.S.Tyler, USA	Diameter	FH fra	ame	IH fra	ame	HH frame		МОС
		Outer	Inner	Outer	Inner	Outer	Inner	
STANDARD TEST SIEVE	76.2 mm (3")	1.75"	1.25"			1.25"	0.625"	SS, BR-SS
1 500 µm	6 inch	2.625"	1.75"			1.875"	1"	SS
NA PLINA THE STORES	10 inch	4"	3"					SS
	200 mm	2.625"	2"			1.875"	1"	SS, BR-SS
	203 mm (8")	2.625"	2"			1.625"	1"	SS, BR-SS, BR
USA STANDARD TEST SEVE	300 mm	3"	2.375"			2"	1.375"	SS
	305 mm (12")	4.25"	3.25"	3"	2"	2.625"	1.625"	SS, BR-SS, BR
AND NALLY 120 CONT	450 mm (18")	5.5"	4.5"					SS, BR-SS

B) Test Sieves having Perforated plates with square holes - Haver & Boecker, Germany The perforated plates (except 350 mm & 450 mm)* are of Galvanized steel, compliant to ISO 3310-2. These sieves have to be stored in a dry place and must be cleaned and dried after use.							
	Diameter	Inner height	Aperture size range				
	200 mm	50 mm	4 mm - 125 mm				
	200 mm	32 mm	4 mm - 22.4 mm				
	203 mm (8 inch)	50 mm	4 mm - 22.4 mm				
	250 mm	55 mm	4 mm - 125 mm				
Sten of Links	300 mm (297.5 mm)	60 mm & 30 mm	4 mm - 125 mm				
	305 mm (12 inch)	60 mm	4 mm - 125 mm				
	315 mm	75 mm	4 mm - 125 mm				
	350 mm - SS plates*	60 mm	4 mm - 125 mm				
	400 mm	65 mm	4 mm - 125 mm				
450 mm (18 inch) -SS plates* 70 mm 4 mm - 125 mm							

C) Test Sieves for Cereal, Tobacco and Aggregates - Haver & Boecker, Germany These test sieves have longish holes.

Test Sieves for Cereals • Conforming to ISO 5223 • 200 mm dia x 32 mm inner height • Perforated plate : SS and Galvanised steel • Aperture widths x 20 mm Length (mm) : 1, 1.7, 1.8, 1.9, 2, 2.2, 2.25, 2.5, 2.8, 3.55 mm Test Sieves for Tobacco: Conforming to CORESTA				
Dia x inner height 200 dia x 50 mm	Perforated plate of SS Apertures : 2.38 x 31.75 mm (gap between slots 2.78 mm) 2.0 x 50 mm 1.7 x 50 mm	Metal Wire cloth of SS 		
200 dia x 32 mm		Apertures : 2.8, 1.7 mm		
203 dia x 50 mm		Apertures : 2.38 x 31.75 mm (gap between slots 2.78 mm) 2.0 x 50 mm 1.7 x 50 mm		
203 dia x 32 mm		Apertures : 2.8, 1.7 mm		



F) Gold Standard Sieves

In these sieves tolerances of openings are reduced by 50% compared with the ISO and ASTM standards.

Haver & Boecker, Germany	W.S.Tyler, USA
• 200 mm dia x 50 mm inner height	• 8" diameter full height and half height SS test sieves
• Aperture sizes: 25 μm to 2.5 mm	• Aperture sizes: 850 μm to 25 μm
 Tolerances of openings reduced by 50% compared with ISO 3310-1 	 The permissible variation of average opening as allowed by ASTM E11 is reduced by 50%
	 Designated as "masters" for internal quality assurance programmes
	• Each test sieve is optically examined, serialized, and supplied with complete NIST traceable doc

G) Alpine Air Jet Sieves - Haver & Boecker, Germany

These sieves are used in the Alpine air Jet Sieve Shaker which is used for extremely fine particles that tend to agglomerate and therefore clog up the sieve. The particles on the sieve fabric are dispersed briefly by air flow exiting the slotted nozzle that rotates in the sieving chamber before they are drawn downwards through the sieve apertures by the suction of the vacuum machine. This leads to successful sieving of difficult materials and reduces sieving time.



SS sieves conforming to ASTM E11, DIN ISO 3310, BS ISO 3310

- 1. Sieve shaker model e200 LS with transponder chip: 203 mm dia x 28 mm inner height (Tyler provides in Ø 200 mm) Aperture size range: 4 mm to 20 μm
- Sieve shaker model 200 LS-N without transponder chip: 203 mm dia x 28 mm inner height Aperture size range: 4 mm to 20 μm
- 3. Sieve shaker model 200 LS with sealing ring for older model (Tyler also provides these sieves)
 200 mm dia x 25 mm inner height Aperture size range: 2.5 mm to 20 µm

H) Interchangeable Screens for Haver Test Sieves with Cast Aluminium frames -Haver & Boecker

These sieves are used particularly by the sand/gravel industry. Being made of alloy, they are much heavier than the standard test sieves and are to be used on the EML 450 Sieve shaker. The sieve frames are not being produced anymore but the sieve screens are.

TEST SIEVES – Haver & Boecker and W.S.Tyler + HAVER CONES



HAVER CONES

Haver Cones are used for determining the absorption capability of granular products based on the Westinghouse method.

SST -	 Conforming to DIN SPEC 1155 - DIN CEN/TS = winter and road service area maintenance equipment / solid absorbents intended for road usage Comply with the French norms NF V 19-002 = per litre / determination of absorption capability and water retention capacity Clean dipping of the material into a liquid due to the 300 thick wire in the rim. MOC : SS wove wire cloth 					
	70 dia x 75 mm height 70 dia x 75 mm height					
1	0.355 mm w 0.224 mm d 0.355 mm w 0.2					
	0.250 mm w	0.160 mm d	0.250 mm w	0.160 mm d		

TEST SIEVE ACCESSORIES & OPTIONS



Test Sieve Certification at HAST, Vadodara

Compliance certificate is provided free of charge. This certificate indicates that the wire mesh roll from which the test sieve is made was checked at random and found compliant. This testing and certification is done in Germany using a microscope by Haver & Boecker, who are qualified to manufacture test sieve grade wire cloth.

Calibration certificate:

Test sieves are finely calibrated measuring devices, which must be certified, checked in operation, and regularly monitored for which HAST provides Test Sieve Calibration certificate at extra charge.

- The examinations are performed with an automatic, non-contact, computerised video imaging, dimensional measurement system with an accuracy of +/- 0.5 of a micron.
- Examined to the current ASTM and ISO specifications. NABL certification also done.
- Products are sterilised and supplied with document that includes statistical information on opening sizes and wire diameters.



Sieve pan with outlet nozzle for wet sieving - Haver & Boecker

Sieve pans collect the sieve underflow of bulk material. These are the fine particles. Please note that you need test sieves with discharge nozzle for wet sieving. Sieve pans with diameters up to 203 mm are equipped with bevel bottoms, larger sieve pans made from stainless steel with plane bottoms.

Intermediate Ring and Pan - Haver & Boecker

These are offered for all SS test sieves. Intermediate rings are used together with less than 3 test sieves to increase the sieve tower as a specific height is needed for Haver Sieve Shaker.



Intermediate pans enable more than one sieve analysis to be done simultaneously with one Sieve Shaker.



Test Sieve Holder - Haver & Boecker

The Sieve holder with its space saving design enables to 5 test sieves with diameter of 200 mm or 203 mm be stored in safety.

TEST SIEVE ACCESSORIES & OPTIONS



Drip-off Weight Test Set - Haver & Boecker

The Haver Drip-off Weight test set is used for tests on products in the fish & meat processing industry, tinned fruits and vegetables. After introducing the products the tilting device can be fixed at an angle of inclination of approx. 17°-20°

The set includes a test sieve w 2.8 mm, an intermediate pan and a sieve pan with discharge nozzle.

Cleaning Brushes - W.S.Tyler, USA

These brushes are made specifically for the cleaning and upkeep of all your test sieves and will not damage or hinder their performance or quality.

- Turn the test sieve over a receiving pan.
- Gently brush the underside of the mesh using a circular motion.
- Gently tap the sieve frame with the brush handle to remove any particles that may cling to the frame.
- Sieves can be washed in a warm water and mild detergent solution.
- Allow adequate time to dry before using the test sieve.

Nylon Brush-

Is used for 120 mesh and finer sieves. It has a wooden handle with nylon bristles. $6'' L \times 2''$ dia.

Brass Brush-

Is used for 100 mesh and coarser sieves having wooden handle with brass bristles. 7" L x 0.5" W (dia. of each bristle is approx.0.15 mm).

Test Sieve Wire Meshes in Roll Form - Haver & Boecker

We also provide in roll form the Wire Meshes from Germany of 'test sieve grade' that conform to DIN ISO 3310-1 and ASTM E11-16 standards.



Additional Pasted Seam - Haver & Boecker

To prevent the fixing of particles between woven wire cloth and tension ring of a test sieve by choosing an additional pasted seam above or below the woven wire cloth.

Sealing Ring - Haver & Boecker

Normally every Test Sieve having SS frames are equipped with a PVC sealing ring, which is temperature-resistant until approx. 130 oC. On demand we provide your test sieve with a VITON sealing ring (heat resistance from -15 oC to +200 oC).

Rubber Balls and Rubber Cubes - Haver & Boecker

Rubber balls and rubber cubes belong to products for sieving support. They are placed on the test sieve and clean the aperture sizes during the sieving process to speed it up.





EML 200 SERIES ACCESSORIES



Sound Absorbing Cupboard - Haver & Boecker

Test sieve shakers can be used in sound absorbing cupboards in order to reduce the noise level in laboratory environment. This measure enables the noise level to be reduced by up to 28 dB (A) depending on the machine type and material.

Double observation doors in sound absorbing cupboards for the HAVER EML 450 digital plus and HAVER UWL 400 provide a better access to the machine.

Haver EML 200	600 x 1200 x 600 mm (W x H x L)	59.4 kg
Haver EML 315	800 x 1200 x 600 mm	67.8 kg
Haver EML 450	1000 x 1800 x 800 mm	113.2 kg
Haver EML 400	1000 x 1800 x 800 mm	113.2 kg

Twin Nut Clamps - Haver & Boecker

The Haver Twin Nut clamping system is an improvement over the classic clamping system where, by a small turn, the nuts can be opened and closed enabling easy and quick changing of test sieves on the sieve shaker.





Wet Sieving Retro Fit Kit - Haver & Boecker

Our Haver Test Sieve Shakers with external control gear can be used for dry and wet sieving. For dry sieving you need a cover with inspection glass and a closed sieve pan, for wet sieving a cover with wide spreading spray diffuser and a sieve pan with discharge nozzle.

Reduction kits - Haver & Boecker

Reduction kits are used to accommodate test sieves of smaller diameters on the Haver EML series sieve shakers. One piece is assembled in the lid and the other below the sieve pan.

Reduction kits are available from 203 mm (8") to 76.2 mm (3 mm), 100 mm & 150 mm dia.

- The 8" to 3" kit can be used on EML200 Pure and Premium sieve shakers.
- EML 200 Premium remote supports only 100 mm reduction piece.
- These cannot be used on Ro-Tap Sieve Shaker.



EML 200 SERIES ACCESSORIES

CSA Software - Haver & Boecker, Germany

The Haver CSA Software 5.0 enables PC aided analysis of standard sieve systems. Three versions of this CSA software are vailable which differ in the scale of functions. The results of measurements are documented for quality assurance purposes and can be introduced within the CSA software into statistics and reports due to complex data processing. Simple and precise reports are produced within the software along with complex graphical display and detailed documentation. It allows connection of different types of scales and test sieve shakers. Report designer allows own design of the test. CSA Software 5.0 works under the following operating systems: Windows XP, Windows Vista, Windows 7.0 and Windows 10.

You can download the Haver CSA from

https://www.haverparticleanalysis.com/en/media/haver-csa/. To gain insight in the evaluation software you can test the Haver CSA Network for 30 days free of charge.



FUNCTIONS	HAVER CSA BASIC	HAVER CSA EXPERT	HAVER CSA NETWORK
Input of sieve sets, materials and customers; Analysis report; Protocol (ISO 2591c+ ISO 66165) Particle Size account (ISO 66141)	Х	Х	Х
Statistic functions, e.f. for materials and customers		Х	Х
Expanded account, Example: Sauter mean diameter		Х	Х
Account of AFS-numbers according to VDG-data sheet	Х	Х	Х
Definition of particle limits; Loading of comparable data		Х	Х
Graphics: RRSB-Net, cumulative oversize distribution curve	Х	Х	Х
Data bank functions, Example: searching and reporting		Х	Х
Data export to Excel		Х	Х
Import of aged data		Х	Х
Take over of external data in the context of LIM's-systems; Example: samples and batch numbers			Х
Transfer to external systems (LIMS) by txt-data-connections			Х
The systematic logging and analysis of all processes (audit trail)		Х	Х
Automatic data storage (different modes - daily/monthly)		Х	Х
User management with authorization asignment		Х	Х

RO-TAP ACCESSORIES



W.S.TYLER Sound Enclosure R-30050

- Heavy 18-gauge steel construction
- Fully insulated with 1 in. thick (2.5 cm) metal-faced acoustic foam inner lining on the sides effectively reduces noise levels from approximately 85 to 78 dB
- Hinged top cover with automatic lift cylinders, latches, and air ventilation hose
- Attractive, sturdy steel construction with anchor brackets for fastening to floor or foundation.
- 24 x 35 x 29 in. (610 x 88.9 x 73.66 cm), 40.8 kg

W.S.TYLER Test Stand R-40041

Specifically designed for RX-29 and RX-30 Ro-Tap Sieve and RX-812 Coarse Sieve Shaker, the Ro-Tap Test Stand can be used with or without the Sound Enclosure Cabinet.

- Allows for relatively fast, simple installation and set-up of the Ro-Tap Sieve Shaker.
- Attractive, sturdy steel construction, with anchor brackets for fastening to floor or foundation.
- The Ro-Tap has to be bolted down. It can be bolted down to the test stand or to a work bench or to the ground. The Ro-Tap will be mounted onto the sound enclosure which will be bolted to the stand. The stand can be bolted to the floor.
- 20" x 32" x 28" (W x D x H)







W.S.TYLER Wet Sieving Kit

Allows for testing in wet environment for material that is insoluble in water. For use with Ro-Tap RX-29 and RX-94. Available for 200 mm & 8" dia test sieves of RX-29 and 8" dis test sieves of RX-94.

The kit includes cover, pan with spout, hoses and clamps. Kit weight : 12.25 kg

W.S.TYLER Reduction Kits

Reduction kits are used to accommodate test sieves of smaller diameters on the Ro-Tap sieve shakers. Conversion kits offer reductions from 12" to 10" & 12" to 8" Also from 8" to 6" & 8" to 3"





RO-TAP ACCESSORIES

W.S.TYLER Ro-Tap Maintenance Kits

To ensure lasting dependable service, Ro-Tap Sieve Shakers must occasionally be upgraded with parts that are long-wearing, durable, and cost-effective. Maintenance kits are available for the replacement of parts due to normal wear and tear. W.S.Tyler recommends the use of these kits as a means to minimize down-time due to minor repairs. The purchase of a minor maintenance kit is also recommended with each new Ro-Tap Sieve Shaker.



Part No.	Description	Includes
10121	Minor Maintenane Kit (RX-29, RX-30, RX-94)	2 Eccentric Discs 1 Flange Bushing 1 Bearing 1 Cork Plug Pk 2 Flange Bearings
10122	Major Maintenance Kit (RX-29)	1 Minor maintenance Kit 1 Timing Belt 1 Upper Carrying Plate 1 Cam Gear 1 Timing Belt Pulley
10123	Major Maintenance Kit (RX-94)	1 Minor Maintenance Kit 1 Timing Belt 1 Cam Gear 1 Timing Belt Pulley

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