

ADVANCED CLEANING GRADING AND SORTING EQUIPMENT FOR THE FOOD PROCESSING INDUSTRY



Spectrum Industries is a leading manufacturer of Cleaning, grading and Sorting equipment such as Pre-Cleaners, De-stoners, Gravity Separators, Graders and Optical Sorting machinery including the necessary conveying equipment, in order to offer Complete end to end solutions for the processing of food grains, seeds and nuts.

VIBRO CLEANER

THE HEAVY DUTY SPECIFIC CLEANING MACHINE

Spectrum Vibro-Cleaners are used for removing large impurities such as stick, buck and leaves as well as small impurities such as fine dirt and sand from good product in seed cleaning and processing plants for cleaning of all kinds of crops such as grain, seeds, corn, wheat, rye, soybeans, oats, millet and paddy etc.

They are provided with two vibrating screens, the top screen removes oversize material while the bottom screen eliminates fine dirt and sand. The vibration of the deck containing the screens is provided by means of unbalanced vibratory motors mounted in the center of the machine. The vibrating deck is mounted on four flexible multi-element springs, thus ensuring that there is minimum or negligible transfer of vibration from the vibrating deck to the machine structure.

The deck inclination, stroke and angle of throw are adjustable for optimum performance. Automatic Screen cleaning is provided by means of the Rubber ball tray system that ensures consistent and effective cleaning of the screens. The Screens are easily removable and the machine is provided with a swing down type door for easy access and change or cleaning of screens.

The machine has a highly efficient Aspiration System that includes Hopper aspiration for pre-screening aspiration as well as outlet aspiration for post screening aspiration. The Aspiration system which is easily adjustable provides an Air Wash of the product in order to rid it of dust, loose husk and fibres.



TECHNICAL FEATURES

- Deck inclination, stroke and angle of throw are easily adjustable.
- Flexible multi-element springs ensure minimum or negligible main structure vibration
- Automatic Screen cleaning by means of Rubber ball tray system.
- Trouble free performance due to the use of unbalanced vibratory motors
- Minimum maintenance with no lubrication required.
- Easy access to screens for cleaning and changing.

SPECIFICATIONS



FM 70723
ISO 9001:2000 CERTIFIED

Description	VC-90	VC-125	VC-180	VC-240	VC-300
Power Required in HP	3.5	4.5	5	6	8
Capacity perhour in Tonnes	1-1.5	3-4	5-6	7-8	9-10
NettWeight in Kgs.	400	600	800	1000	1200
Gross Weight in Kgs.	495	730	975	1240	1420
Shipping Volume in Cu. Mtrs.	2.5	3.5	4.5	6.75	8.75

Note:

- Capacities are only indicative and have been specified for Wheat only and therefore may vary for different commodities.
- In View of Improvements in design, Specifications are subject to change without prior notice.

DE-STONER VACUUM TYPE

THE HIGH EFFICIENCY VACUUM TYPE DE-STONING MACHINE

Spectrum Vacuum De-stoners are used for separating heavier impurities such as stones, glass, metal etc., from food grains and seeds such as wheat, corn, peas, paddy, sesame, coffee, peanuts etc. as well as any other dry granular material.

The principle used is the stratification of the product into heavier and lighter fractions by forcing air through the bed of material. This is achieved by means of a Suction fan connected to the machine or by connecting the machine to a Central Aspiration System.

The vibration of the deck is achieved by means of unbalanced vibratory motors mounted below the product discharge end of the machine. The Vibrating deck pushes the heavier material in contact with the deck upwards towards the stone discharge spout. The lighter good material flows down the inclined, vibrating deck and exits through the clean product spout.

The inclination of the vibrating deck and the stroke of eccentric motion can be finely adjusted to achieve the optimum degree of separation. The de-stoning efficiency is extremely high with consistent and trouble free performance.

A wide variety of deck screens are available to suit specific need. All adjustments can be made with ease and minimum of operator training.



TECHNICAL FEATURES

- Dust free operation due to vacuumised system
- No maintenance due to the use of unbalanced vibratory motors.
- Deck inclination and stroke can be finely adjusted.
- Easy control of air flow and feed rate.
- Windows provided for on-line product viewing

SPECIFICATIONS

Description	VS-50	VS-75	VS-100	VS-150
Power Required in HP	0.66	1	1	1
Capacity per hour in Tonnes	0.75-1	1.5-2	3-4	5-7
Nett Weight in Tonnes	250	300	350	450
Gross Weight in Kgs.	350	425	500	625
Shipping Volume in Cu. Mtrs.	1.5	2.25	3	4.25

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DE-STONER-PRESSURE TYPE

THE HEAVY DUTY PRESSURE TYPE DE-STONING MACHINE

SpectrumPressureDe-stoners

are used for separating heavier impurities such as stones, glass, metal etc., from food grains and seeds such as Lentils, Legumes, Coffee, Peanuts etc. and other dry granular material.

The principle used is the stratification of the product into heavier and lighter fractions by forcing air through the bed of material. This is achieved by means of pressure fans located in the body of the machine, below the vibrating deck. The vibrating deck pushes the heavier material in contact with the deck upwards towards the stone discharge spout. The lighter material flows down the inclined, vibrating deck and exits through the clean product spout.

The inclination of the vibrating deck, speed of eccentric motion, feed rate and the air flow can be individually adjusted to achieve the optimum degree of separation. A wide variety of deck screens are available to suit specific applications.

All adjustments can be made with ease and minimum of operator training.

TECHNICAL FEATURES

- Can be connected to a Central Aspiration System.
- Provided with clean product and stone discharge spouts.
- Hood with windows provided for on-line product viewing.
- Deck inclination and stroke can be finely adjusted.
- Easy control of air flow and feed rate.

SPECIFICATIONS



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Description	DS-120	DS-120H	DS-180	DS-180H	DS-210	DS-120H
Power Required in HP	5.75	5.75	6	6	6	6
Capacity perhour in Tonnes	3-4	3-4	5-7	8-10	8-10	8-10
NettWeight in Kgs.	715	775	900	1080	1080	1200
Gross Weight in Kgs.	850	950	1100	1270	1270	1420
Shipping Volume in Cu. Mtrs.	3.5	4.75	5	5.75	5.75	7.25

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VIBRO GRADER

THE HEAVY DUTY GRADING MACHINE

Spectrum Vibro Grader can be used for grading grains by virtue of their size. The inclination of the screens, stroke and the angle of throw are adjustable, resulting in perfect and uniform classification. It can be used for a wide variety of applications such as for coffee, peanuts, corn, fried gram, beans, peas etc.

Large screens are provided with maximum number of holes to obtain high outputs. Vibration of the screens is provided by means of vibrators mounted in the centre of the machine. The vibrating deck is mounted on four rubber springs, thus ensuring that the vibrations of the machine frame are reduced to a minimum.

The screens can easily be changed by swinging down the inlet door and sliding them out

The screen cleaning is automatic by means of rubber balls thus ensuring that maximum holes are available at any time for proper grading. A wide variety of rubber balls thus ensuring that maximum holes are available at any time for proper grading. A sighting pass is provided to enable continuous observation of the functioning at the machine. Outlet spouts are provided with individual partitions and bagging device.



TECHNICAL FEATURES

- Easy and quick change of sieves possible.
- Automatic cleaning of screens by means of rubber balls.
- Drive by means of vibrators mounted in the centre of the machine.
- Adjustable screen inclination is provided
- The angle of throw and strokes are also adjustable.

SPECIFICATIONS



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Description	VG-90S	VG-122S	VG-180S	VG-240S	VG-300S
Power Required in HP	1.5	1.5	2	3	3
Capacity per hour in Tonnes	1.5-2	2.5-3.3	4-5	6-7	8-10
NettWeight in Kgs.	440	640	840	1030	1280
Gross Weight in Kgs.	535	770	1010	1250	1500
Shipping Volume in Cu. Mtrs.	2.5	3.5	4.5	6.25	8.5

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GRAVITY SEPERATOR

THE HEAVY DUTY SPECIFIC GRAVITY SEPERATOR

Spectrum Gravity Separators are used to separate products of the same size but with difference in specific weight. They can be used effectively to remove partially eaten, immature and broken seeds to ensure maximum quality of the final product. They may be used to separate and standardise coffee, peanuts, corn, peas, rice, wheat, sesame and other food grains.

These Gravity Separators have a rectangular deck so that the product travels a longer distance resulting in cleaner separation of light and heavy particles and the lowest percentage of middlings.

The product flows over the vibrating deck in which pressurised air is forced through causing the material to stratify according to its specific weight. The heavier particles travel to the higher level and the lighter particles travel to the lower level of the deck.

In order to obtain efficient separation by specific weight the pressurised air supply needs to be accurately adjusted and this is accomplished by having individually adjustable air fans to control the volume of air distribution at different areas of the vibrating deck. The table inclination, speed of eccentric motion and the feed rate can be precisely adjusted with ease and minimum of operator training.

TECHNICAL FEATURES

- Can easily separate granular materials according to the weight of the product.
- Easy deck removal for cleaning.
- Multi-fan system for accurate control of air.
- Precise Control of air, feed rate and speed of deck motion.
- Easy adjustment of deck inclination in both longitudinal and transverse directions.

SPECIFICATIONS



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Description	GS-120	GS-165	GS-210	GS-320	GS-400	GS-500
Power Required in HP	6	6	6	8.5	11.5	17
Capacity perhour in Tonnes	0.75-1	1.25-1.5	1.5-1.75	2.5-3	4-5	6-8
NettWeight in Kgs.	715	820	1080	1340	1675	2124
Gross Weight in Kgs.	845	970	1270	1600	1990	2525
Shipping Volume in Cu. Mtrs.	3.5	4.4	5.75	8.25	10	12.5

Note:

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S-4001 PRISMA SORTER

THE HIGH RESOLUTION CAMERA BASED COLOUR SORTER

The **SPECTRUM S-4001 PRISMA** series CCD Camera based Colour Sorters are a result of colour sorting machinery manufacturing experience of over two decades, at Spectrum industries.

The **S-4001 PRISMA** use advanced digital 2048 pixel CCD Line Scan Cameras that produce a very high resolution image of the object.

The machine has LED Solid State Lighting that provides High Intensity long life stable lightning.

Large Format Lenses with digital automatic LED backlights are employed to ensure highest quality imaging of the product, which is also displayed on a 15" Colour LED TFT screen, for online viewing and monitoring of the product. The resultant data is compared with pre-set parameters, to reject the defective product using ultra-fast, long life, custom designed pneumatic ejectors

The **S-4001 PRISMA** has the ability to detect and reject over 200,000 objects/minute with a defect size of even 0.025mm sq.

The **S-4001 PRISMA** is fully computer controlled with automatic calibration and self-check procedures.

TECHNICAL FEATURES

- High Resolution 2048 pixels CCD Cameras
- LED Solid state high intensity long life stable lightning.
- On-line live visual display of product being sorted on 15" Colour LED TFT screen.
- Ultra-fast long life pneumatic ejectors with response time of 1ms and life of up to 5 billion cycles.
- Automatic cleaning of viewing area by wiper system.
- Automatic online calibration with self-check procedures.
- Fully computer controlled.

SPECIFICATIONS

Air Requirement	
Pressure	7 Bar(100 PSI)
Consumption	15-50 Ltr/sec(32-110cfm) approximate depending on the rejection rate.
Air Quality	Free of Oil, water and dirt

Electrical Requirement	
Voltage	230 V AC Single phase
Frequency	50Hz
Power	2 Kw

Note:

- Available in capacities ranging from 1 to 12 ton per hour.
- In View of Improvements in design, Specifications are subject to change without prior notice.



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S-4001 MAXIMA TRICHROMATIC SORTER

THE NEW REVOLUTION IN COLOUR SORTING

The **SPECTRUM S-4001 MAXIMA** series Trichromatic, RGB (Red, Green, Blue), CCD Camera based color sorters are the culmination of the efforts of constant R & D in color sorting systems, of over two decades at Spectrum Industries.

The **S-4001 MAXIMA** use advanced 5400 pixel x 3, Tri-linear RGB, CCD Line Scan Cameras to scan the product in the Red, Green and Blue region of light in order to identify even subtle defects in product quality.

The **S-4001 MAXIMA** is available with Penta-chromatic, LED Solid State High Intensity lighting for far sharp illumination of the product being sorted. The combination provides high resolution imaging that is displayed on a 15" Colour LED TFT screen, for online viewing of the product. The resultant data is compared with pre-set parameters, to reject the defective product using ultrafast, long life custom designed pneumatic ejectors.

The **S-4001 MAXIMA** has the ability to detect and reject over 200,000 objects/minute with a defect size of even 0.025mm sq. The Penta-chromatic LED solid state lightning provides high intensity stable lightning with extremely long life, giving the machine the ability to sort multiple products with ease on the same machine, without any requirement whatsoever to change the lightning for sorting multiple products.

The **S-4001 MAXIMA** is fully computer controlled with automatic calibration and self-check procedures. Instant change over from one product sort to another is possible, using pre-stored sorting Algorithms.

TECHNICAL FEATURES

- Trichromatic RGB (Red, Green & Blue), CCD Line Scan cameras.
- High Resolution with 5400 pixels 3, tri-linear CCD Camera,
- Penta-chromatic LED Solid state high intensity long life stable lightning.
- On-Line live visual display of product being on 15 Colour LED TFT screen.
- Ultra-fast long life pneumatic ejectors with response time of 1ms and life up to 5 billion cycles.
- Automatic cleaning of viewing area by wiper system.
- Automatic online calibration with self-check procedures.
- Fully computer controlled.

SPECIFICATIONS

Air Requirement	
Pressure	7 Bar(100 PSI)
Consumption	15-50 Ltr/sec(32-110cfm) approximate depending on the rejection rate.
Air Quality	Free of Oil, water and dirt



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Electrical Requirement	
Voltage	230 V AC Single phase
Frequency	50hz
Power	2 Kw

Note:

- Available in capacities ranging from 1 to 12 ton per hour.
- In View of Improvements in design, Specifications are subject to change without prior notice.

SBS-4001 PRISMA MAXIMA CAMERA SORTER

THE BELT TYPE MONOCHROMATIC & TRICHROMATIC CCD CAMERA SORTERS

The **SPECTRUM SBS-4001 PRISMA** & the **SBS-4001 MAXIMA** are Monochromatic and Trichromatic CCD Camera based Colour Sorters and are a result of over two decades of R & D at Spectrum industries.

These Belty type Colour Sorters are ideal for sorting brittle products such as Raw & Blanched Peanuts, Cashewnuts, Almonds etc. As well as non-free flowing material such as Raisins, Fresh and Dehydrated Vegetables such as Onion, Garlic, carrot cubes etc.

The **SBS-4001 PRISMA** use advanced digital 2048 pixel CCD Line Scan Cameras that produce a very high resolution image of the object.

The **S-4001 MAXIMA** use advanced 5400 pixel x 3, Tri-linear RGB, CCD Line Scan Cameras to scan the product in the Red, Green and Blue region of light in order to identify even subtle defects in product quality.

The machines have LED Solid State Lighting that provides High Intensity long life stable lightning.

Large Format Lenses with digital automatic LED backlights are employed to ensure highest quality imaging of the product, that is also displayed on a 15" Colour LED TFT screen, for online viewing and monitoring of the product. The resultant data is compared with pre-set parameters, to reject the defective product using ultra-fast, long life, custom designed pneumatic ejectors.

The machines have the ability to detect and reject over 200,000 objects/minute with a defect size of even 0.025mm sq. They are fully computer controlled with automatic calibration and self-check Instant change over from one product sort to another is possible, using pre-stored sorting Algorithms.

TECHNICAL FEATURES

- High Resolution Monochromatic 2048 pixels CCD Cameras or 5400 pixels 3, tri-linear Full Colour CCD Camera
- Monochromatic or Penta-chromatic LED Solid state high intensity long life stable lightning.
- On-line live visual display of product being sorted on 15" Colour LED TFT screen.
- Ultra-fast long life pneumatic ejectors with response time of 1ms and life of up to 5 billion c
- Automatic cleaning of viewing area by wiper system.
- Automatic online calibration with self-check procedures.



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SPECIFICATIONS

Air Requirement	
Pressure	7 Bar(100 PSI)
Consumption	15-50 Ltr/sec(32-110cfm) approximate depending on the rejection rate.
Air Quality	Free of Oil, water and dirt

Electrical Requirement	
Voltage	110/230 V AC Three Phase
Frequency	50/60 Hz
Power	2-5 Kw

Note:

- Available in capacities ranging from 1 to 12 ton per hour.
- In View of Improvements in design, Specifications are subject to change without prior notice.

COFFEE HULER

CROSS BEATER TYPE COFFEE HULLER

Spectrum Cross Beater type **Coffee Hullers** are extremely efficient in hulling both parchment and dry cherry coffee. Reduced friction between beans prevents generation of dust and results in minimum loss of good product due to breakage of the beans.

Coffee is fed through the hulling cylinder and forced through the perforated screen by the cross beaters. A powerful Aspirator then separates the husk and peels from the coffee beans.

An Oscillating screen, adjusted by a stepless adjustable drive separates hulled and unhulled coffee. In the oscillating screen, unhulled coffee moves towards the center of the screen and is collected through a duct whereas the hulled coffee beans move towards the outer rim of the screen and is discharged through an outlet duct.

Swing down doors allow quick and easy access to the hulling cylinders for cleaning or replacement of blades and perforated screen.

Individual motors attached to the Huller, Aspirator and Oscillating screen ensures constant speeds resulting in optimal and smooth performance.

TECHNICAL FEATURES

- Efficient : Higher output with lower power consumption.
- Less wastage : No loss due to generation of coffee dust or breakage of beans.
- Durable : Four times reversible wear resistant hulling blades provided.
- Easy maintenance: Quick change of hulling blades and perforated screens possible.
- Reliable : Individual motor drives provided for trouble free performance.

SPECIFICATIONS

Description	CH-25 B1	CH-50 B1	CH-100 B1	CH-200 B2	CH-400 B2
Power Required in HP	8	12.75	23.75	48.5	89
Capacity perhour in Kgs.	250	500	1000	2000	4000
NettWeight in Kgs.	750	1100	1400	1700	4800
Gross Weight in Kgs.	1000	1400	1750	2100	5600
Shipping Volume in Cu. Mtrs.	6.5	9	16	27.5	43.5

Note:

- Capacities are indicated for output of Green Coffee beans.
- In View of Improvements in design, Specifications are subject to change without prior notice.



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COFFEE PEELER POLISHER

THE HEAVY DUTY PEELER POLISHER

Spectrum Coffee Peeler Polishers are specially designed for treatment of dry parchment coffee. When fitted with Phosphor bronze cone and liners, they provide a fine polish and colour to the coffee beans. The machines can be used for peeling and polishing or for only polishing to remove the silver skin. Since the machine performs both peeling and polishing operations simultaneously, there is no necessity for passing the parchment through a huller prior to polishing. This not only saves considerable energy but also prevents the coffee beans from damage and heating.

The **Coffee Peeler Polisher** is provided with an intake hopper, Hopper Slide Gate for feed regulation, flanged and sealed ball bearings, discharge spout with control door and counter weight, suction fan and aspiration piping and shaft suitable for Electric Motor.

The **Coffee Peeler Polisher** is provided with independent drives for the Hulling Shaft and the Aspiration Blower. It is also provided with a hinged lower section for easy tilt down for cleaning purposes.

Capacities range from 250 kgs per hour to 4000 kgs per hour. When the parchment is fed at the right moisture content, the machines produces green coffee without beanbreakage and with uniform degree of polishing.

TECHNICAL FEATURES

- Available with Cylinder and Cone having Phosphor bronze liners.
- Independent drives for hulling Shaft and Aspiration Blower.
- Easy tilt down of lower section for cleaning purposes.

SPECIFICATIONS



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Description	PP-25	PP-50	PP-100	PP-200	PP-400
Power Required in HP	10	15	23	45	82.5
Capacity perhour in Kgs.	250	500	1,000	2,000	4,000
NettWeight in Kgs.	575	650	900	2,350	7,200
Gross Weight in Kgs.	750	850	1,300	2,700	8,000
Shipping Volume in Cu. Mtrs.	4.0	4.25	4.75	8.6	14.5

Note:

- Capacities are indicated for output of Green Coffee beans.
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success through Innovation

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