

Latest Technologies in Cleaning Grading & Handling of all kinds of Seeds ,Pulses ,Spices,Fruit & Vegetable Produce

INTERNATIONAL EXHIBITION & CONFERENCE ON PROCESSED
FOOD

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ROAD,JAIPUR ,*

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FROM

*OSAW AGRO INDUSTRIES PVT. LTD.
AMBALA CANTT
HARYANA*



AGROSAW POST HARVEST MACHINERY

Seed Pre-cleaner/ Grain cleaner

Seed Grader/ fine cleaner

Indented cylinder graders/length graders

Specific gravity separator

Destoner positive pressure type

Seed Treaters/ Film coaters

Batch Type Dryers

Inclined flight belt conveyor

Bucket Elevator

Dust Aspiration system

Processing Machines

Brief descriptions of the processing machines used in a seed processing plant are given hereunder.

1 Cleaner /Grader

The air screen cleaner is the basic machine in almost all seed processing plants. The air screen cleaner uses three cleaning principles viz aspiration, scalping and grading. A common air screen cleaner for processing seed uses two air blasts and two screens. The first air system removes dust and light chaff before the seed reaches the first screen. The first screen allows the good seed to drop onto the second screen. The large foreign material rides over the first screen and is discarded. The second screen is a grading screen.

2 Specific gravity separator

Seed of same size and general shape can often be separated because they differ in specific gravity. This difference is very useful in removing light immature seed or heavy sand and rocks to improve the purity and germination of crop seed.

3 Indented cylinder

Seed of the same width and thickness can sometimes be separated by taking advantages of difference of length. Indented cylinder can do very precise separation by using length difference. The indented cylinder separator is a rotating almost horizontal cylinder with a movable horizontal separating trough mounted inside it. Thousand of half round indents line the inside surface of cylinder.

4 Elevator

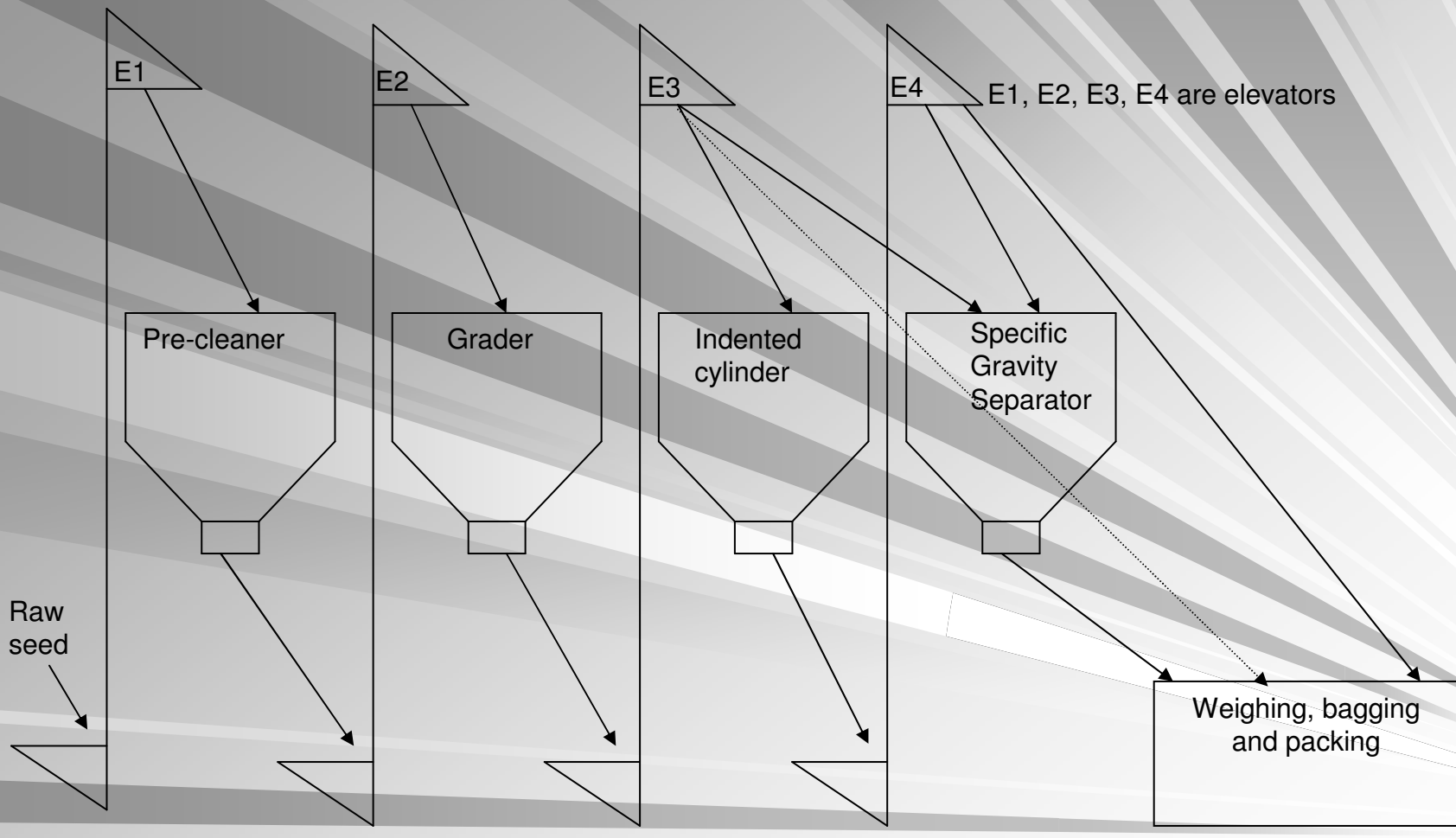
Single leg bucket elevator consisting of receiving hopper, boot, bucket, belt, boot pulley, leg, head pulley, motor, drive and discharge spout will be used for conveying seed from one machine to another machine. It will lift the seed from the ground vertically upward and discharge it from top to the different machines. This type of elevating machines requires less power and floor area.

Layout and Process Flow Operations

Process flow operation enables processing of seed through suitable machines. Elevators are provided with bypassing arrangements to bypass certain machines, if use of any machine is not needed in subsequent operation in particular seed lot. For example, all the lots may not need use of indented cylinder grader or specific gravity separator and hence in such case the elevator direct the seed to the next process by bypassing these units.

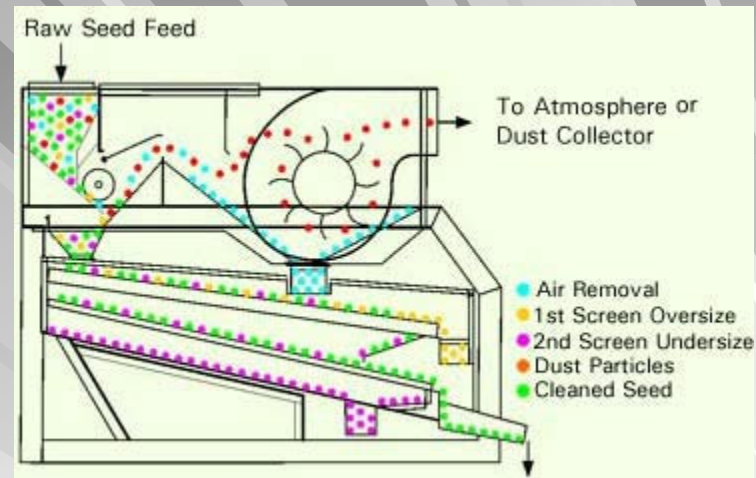
Layout of the plant will be made in a way to ensure minimum travel both vertical and horizontal to avoid injury to seed.

Layout plan and process flow chart are given in Figs 4 and 5



Layout of seed processing machines

AIR SCREEN GRAIN CLEANER/ SEED CLEANER MODEL-PC-5



No. of Screen	: 2
Size of each screen	: 122 x 180 cms (W x L)
Screen Inclination	: Variable
Top	: Fixed
Middle & Bottom	: Fixed

Screen Perforation
Cleaning Device : Nylon Brush

No. of Aspiration : One

Fan Capacity : 3500 CFM at 75 mm
WGSP

Fan Speed : 1400 RPM

Electric Motor
Blower : 4 HP, 3 Phase, 380-440
V

Screen Cradle,
Feed & Nylon Brush : 1.5 HP, 3Phase, 380-440
Drum V

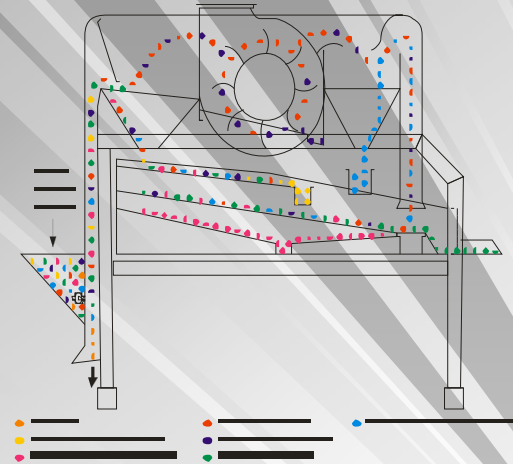
O.A. Size (LxWxH) : 225 x 180 x 235 cms

Suitable for cleaning of almost all types of cereals,
Pulses, Spices, Oil Seeds, Vegetable Seeds,
Coffee Beans etc

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SEED GRADER / FINE CLEANER MODEL-DELUX



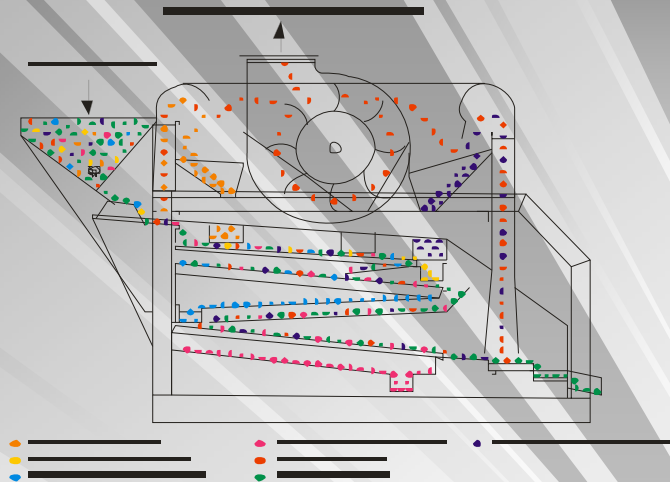
Technical Specifications	
Capacity	: 1 TPH (Based on wheat)
No. of Screen	: Two
Size of each screen	
Top	: 66 x 74.5 cms (W x L)
Bottom	: 66 x 130 cms (W x L)
Screen Inclination	: Fixed
Screen Perforation	
Cleaning Device	
Top	: Beaters
Bottom	: Nylon Brushes
No. of Aspiration	: Two
Fan Capacity	: 4500 CFM at 75 mm WGSP
Fan Speed	: 980 RPM
Electric Motor	: 5 HP, 3 Phase, 440 V
Q.A. Size (L x W x H)	: 316 x 146 x 256 cms

Suitable for cleaning and grading of almost all types of cereals, Pulses, Spices, Oil Seeds, Vegetable Seeds, Coffee Beans etc.

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Seed Grader / Fine Cleaner –Coral NB



Technical Specifications	
Capacity	: 2 TPH (Based on wheat)
No. of Screen	: Three
No. of Scalping	: One
No. of Grading	: Two
Size of each screen	
Top	: 112 x 130 cms (W x L)
Middle & Bottom	: 112 x 143 cms (W x L)
Screen Inclination	: Fixed
Total Screening Area	: 4.65 M ²
Screen Perforation	
Cleaning Device	
Top	: Beaters
Middle & Bottom	: Nylon Brush
No. of Aspiration	: Two
Fan Capacity	: 6500 CFM at 75 mm WGSP
Fan Speed	: 980 RPM
Electric Motor	: 7.5 HP, 3 Phase, 440 V
O.A. Size (L x W x H)	: 343 x 210 x 272 cms

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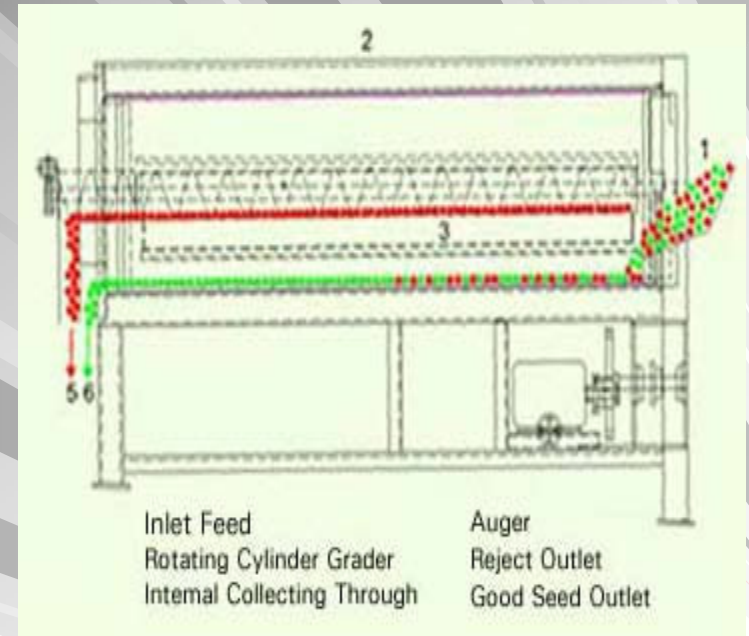
Designed for Grader /Fine Cleaning of Spices



Specifications

Capacity	: 1-1.2 TPH (Based on wheat)
No. of Screen	: Three
Size of each screen	: 90 x 100 cms (W x L)
Top	: 89 x 180 cms (W x L)
Bottom	
Screen Inclination	: Fixed
Screen Perforation	
Cleaning Device	: Beatures
Top	: Nylon Brush
Bottom	
No. of Aspiration	: Two
Fan Capacity	: 4500 CFM at 75 mm WGSP
Fan Speed	: 900 RPM
Electric Motor	: 7.5 HP, 3 Phase, 440 V

INDENTED CYLINDER GRADER



Indented cylinder seed graders are used for additional separation or upgradation of seeds, grains of various crops on length basis after size or sieve cleaning. They are also used for removing weed seeds, broken or cut, round grains, materials longer than the desired crop seeds.

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SPECIFIC GRAVITY SEPARATORS



Application

The Machine is specifically meant for removing impurities and achieving very high grading quality in any free flowing granular material, grains all types of seeds, spices, etc. It removes the impurities and upgrades the material on the principal of specific weight.

Technical Specifications			
	G-2	G-4	G-6
Cap. (based on Wheat)	1.5 to 2 TPH	3 to 4 TPH	5 to 6 TPH
No. of Fans	3	5	7
Size of Deck (mm) W x L	800 x 1590	1040 x 2340	1150 x 3100
Type of Deck	Rectangular Type	Rectangular Type	Rectangular Type
Electric Drive : Fan	4	7.5	10
HP : Deck	1.5	2	3

Destoner



Application

The Machine is used for removal of heavy foreign contaminants like stones, metallic and glass pieces, etc. from grains and seeds of all crops. It works on the principle of weight/gravity separations with stratification by positive pressure fan

Salient Features

- All steel welded construction.
- Compact & rugged design.
- Very low power consumption.
- Rectangular Vibrating Deck.
- Silent and smooth operation.
- Dynamically Balanced Fan.

Total recovery of grains/Seeds without wastage during destoning operation.

The machine is pre-wired from electric motor to panel. The unit is supplied complete with electric motor and panel.

Made on CNC machine and powder coated paint.

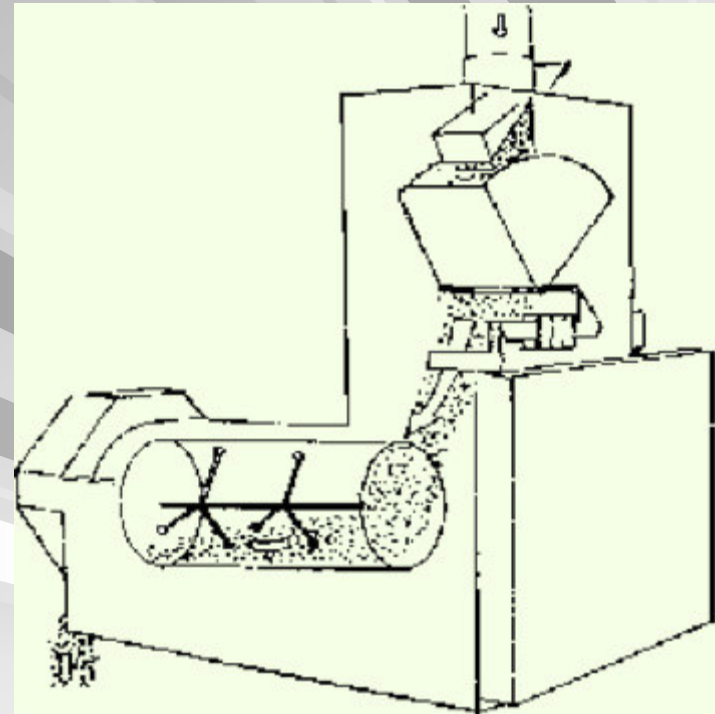
Electronic timer with solenoid valve provided for discharge of stones depending on the commodity to be de-stoned.

Technical Specifications	
	D-2 PEX
Cap. (based on Wheat)	1.5 -2 TPH
Size of Deck (mm)	890 x 480
Electric Power	0.5 HP
Overall Size (mm) L x W x H	1060 x 782 x 1360

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UNIVERSAL TREATOR



Disinfection is one of the most important measures for the Protection of seeds against attacks by fungi pests etc. Fungicides and pesticides are available in Powder or Liquid form.

[LINK](#)

BUCKET ELEVATORS

SALIENT FEATURES

Designed for long service life and gentle handling of the material.

Designed and built for rugged duty.

Canvas/Rubberised pullies.

Heavy duty regreasable pillow block head shaft bearing.

Heavy duty regreasable flange type boot take up bearing.

Die Pressed M.S. Buckets/other types optional.

Self cleaning type V-shaped boot.

Inspection doors located on up leg for bucket service.

Capacities calculated at water level cup fill rating for realistic capacities.

Self cleaning type V-shaped boot.

Inspection doors located on up leg for bucket service.

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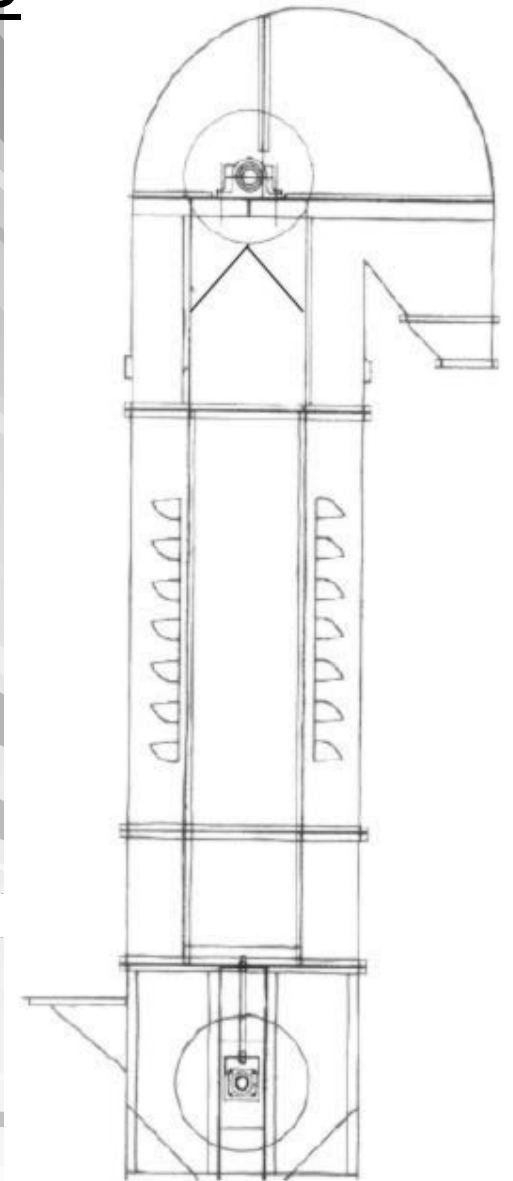
Split bonnet/head cover for ease of maintenance of head section.

Optimum belt speeds calculated to ensure long term wear, proper discharge and minimum material damage.

Inclined flanged discharge transition.

Feed inlet hopper with grating. Adjustable discharge deflector plate for maximum discharge.

Chances of seed damage between bottom Pulley and belt are minimised.



INCLINED FLAT BELT CONVEYOR (PVC)



Capacities : 2 to 15 TPH (Based on wheat)
Discharge Height : Upto 6 meters

- Damage to the seeds/grains occur mostly at the discharge point in centrifugal type Vertical bucket elevators. Some seeds also get crushed/damaged at various points.

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BATCH TYPE DRYER

The Dryer is suitable for drying of all type of grains/seeds, cereals, pulses, oil seeds, fodder seeds, grass seeds, spices.....



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DUST ASPIRATION SYSTEM



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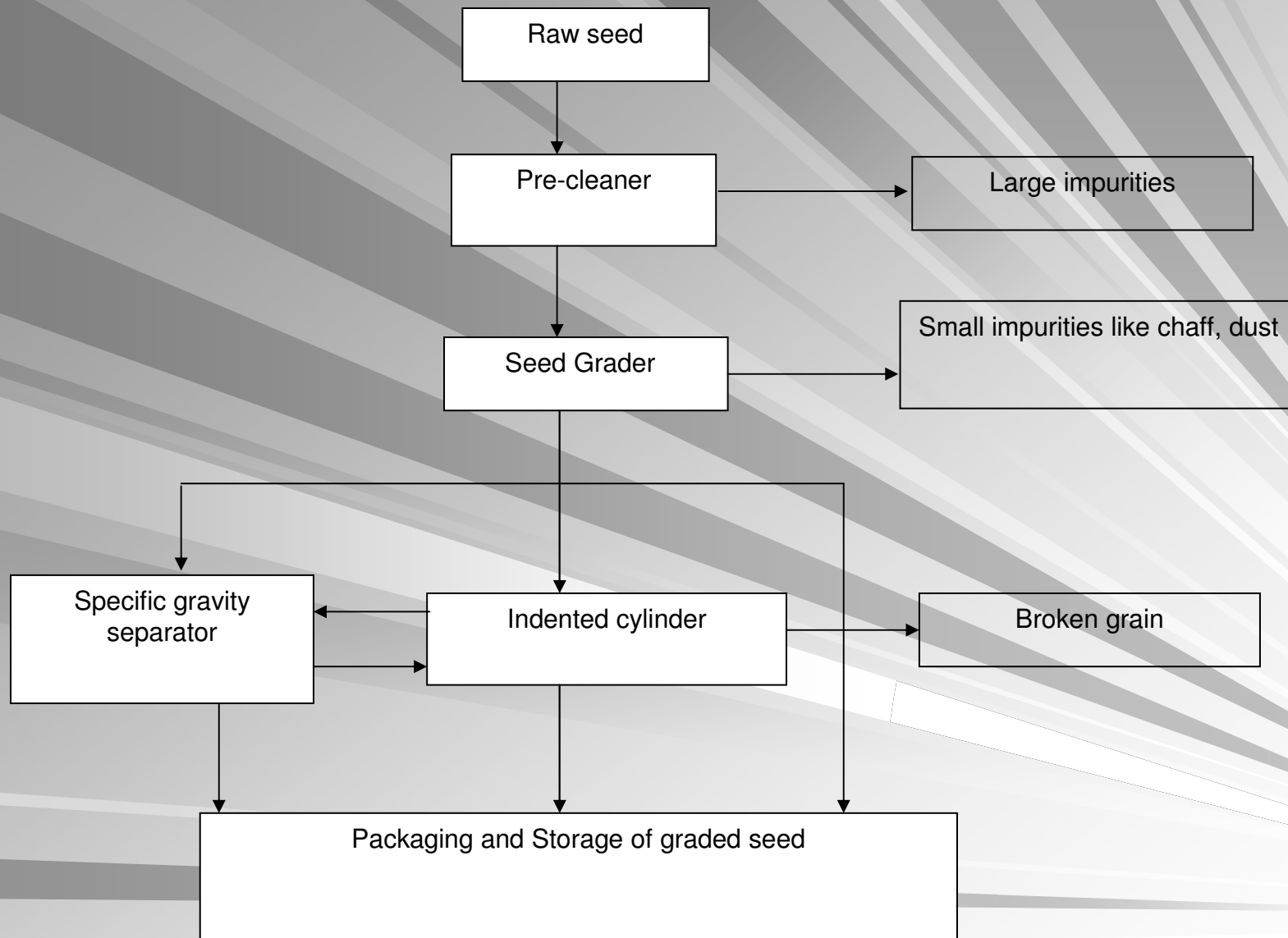
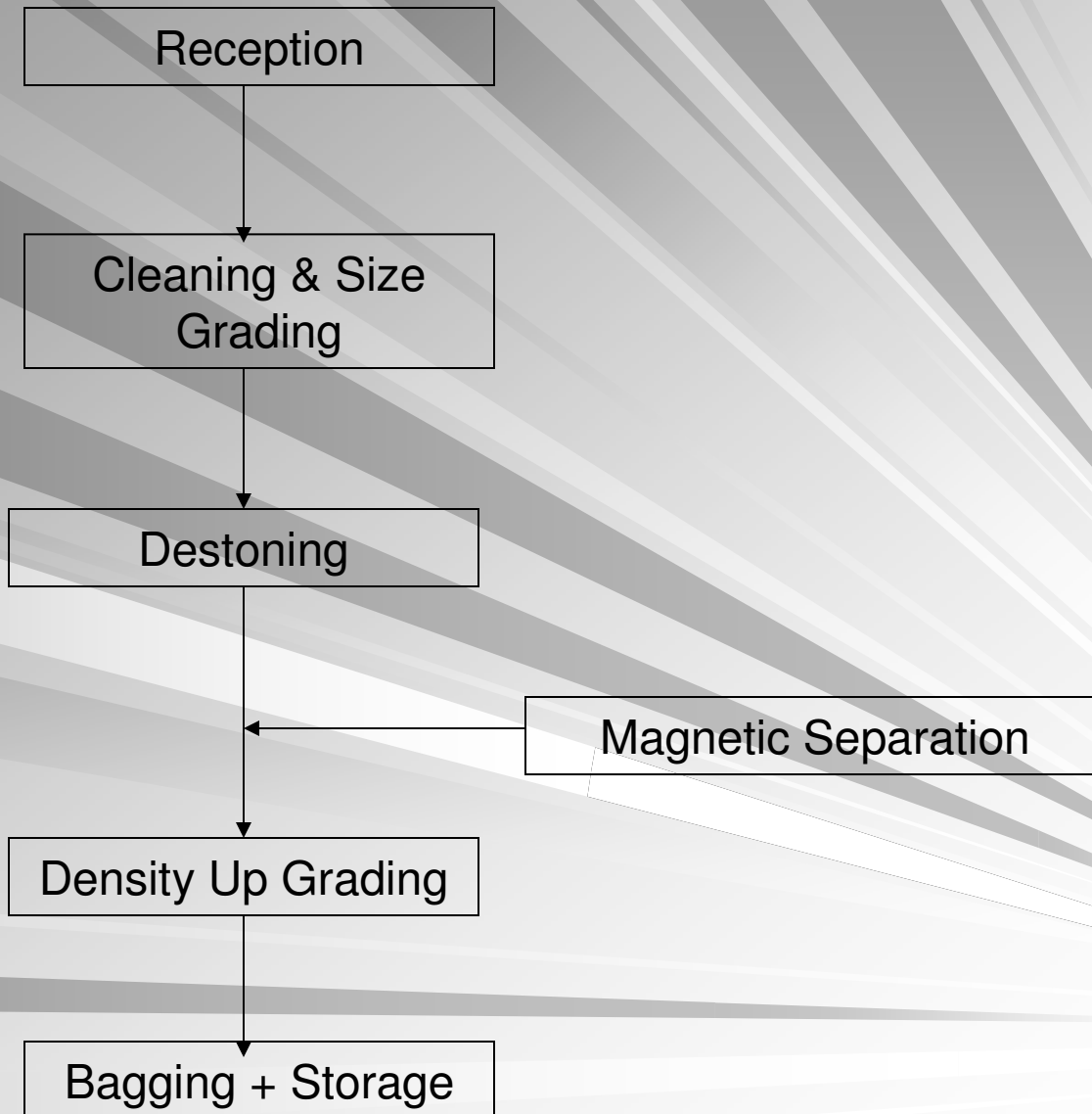
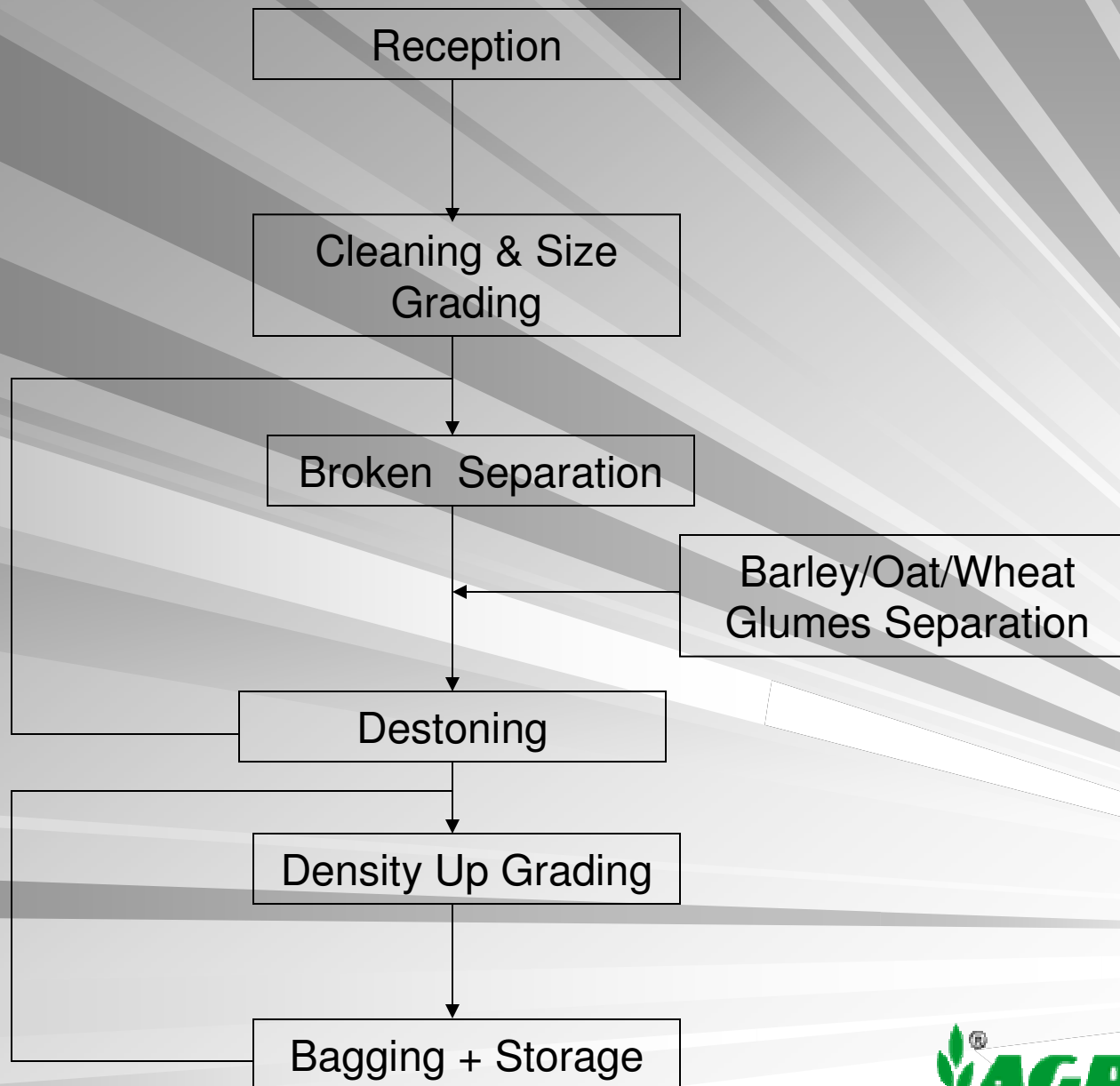


Fig. 5 Process flow chart of seed processing

Process Flow For Spice Cleaning Plant



Process Flow For Grain Cleaning Plant



VARIOUS PLANTS DESIGNED & MANUFACTURED BY AGROSAW

- WASHING, SORTING & GRADING PLANT FOR ROUND FRUITS AND VEGETABLES LIKE TOMATO, APPLE, ORANGES, KINNOWS, SWEET LIME ETC.
- SORTING AND GRADING LINE FOR POTATOES, ONIONS.
- SORTING AND WAXING LINE FOR BANANAS.
- MANGO SORTING, WASHING AND GRADING PLANT.
- MULTI PURPOSE FRUIT AND VEGETABLE GRADING LINE.
- FRUIT JUICE PREPARATION PLANT.
- TOMATO PUREE PREPARATION PLANT.
- AROMATIC OIL DISTILLATION PLANT.



WASHING, SORTING & GRADING PLANT FOR ROUND FRUITS
AND VEGETABLES LIKE TOMATO, APPLE, ORANGES,
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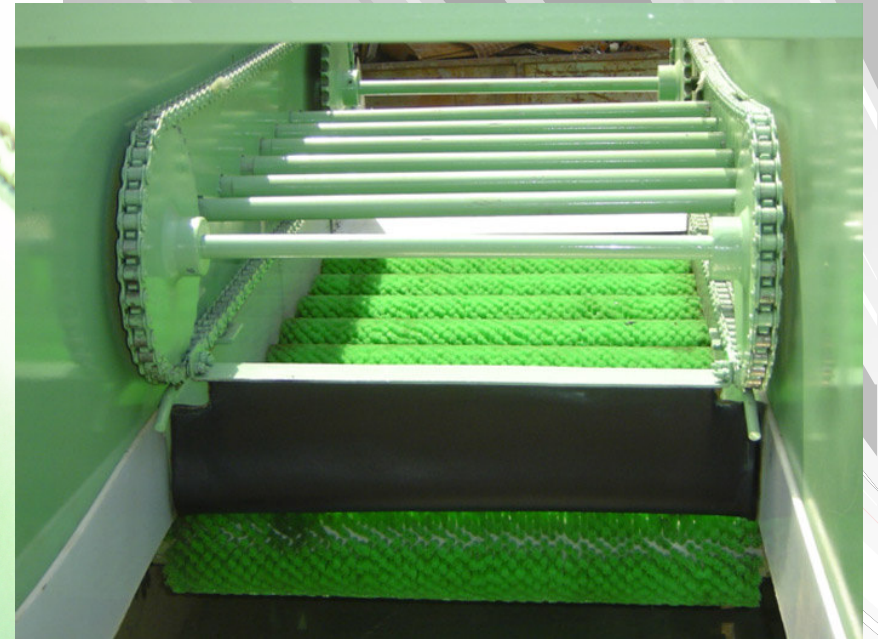
DETAILS OF THE PLANT

THE PLANT IS COMPOSED OF:

- **FEEDING CUM SORTING
CONVEYOR**
- **WASHER & SPONGER**
- **SIZE GRADER**
- **WAX APPLICATION MACHINE**
- **HOT AIR DRYER**
- **PACKAGING MACHINE**



FEEDING CUM SORTING TABLE (BELT TYPE)



WASHER CUM SPONGER



SIZE GRADER

 **AGROSAW**™





WAX APPLICATION MACHINE



INFRA RED DRYER



SHRINK WRAPPING MACHINE

GRADING PLANT INSTALLED AT MALDA



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OTHER PLANTS DESIGNED & MANUFACTURED BY AGROSAW

- SORTING AND GRADING LINE FOR POTATOES, ONIONS.
- SORTING AND WAXING LINE FOR BANANAS.
- MANGO SORTING, WASHING AND GRADING PLANT.
- MULTI PURPOSE FRUIT AND VEGETABLE GRADING LINE.
- FRUIT JUICE PREPARATION PLANT.
- TOMATO PUREE PREPARATION PLANT.
- AROMATIC OIL DISTILLATION PLANT.

OUR CUSTOMERS

CIPHET, ABOHAR	:	KINNOW GRADING PLANT FRUIT JUICE PLANT
PAU, LUDHIANA	:	FROZEN CARROT & CAULIFLOWER PLANT
TNAU, TAMILNADU	:	TOMATO GRADING PLANT
C.G,RAJYA BEEJ NIGAM	:	POTATO GRADING PLANT TOMATO GRADING PLANT BANANA WAXING PLANT
UDAIPUR AGRIL UNIVERCITY	:	ORANGE GRADING PLANT
W.B.S.F.P.& H.D.C.L	:	MANGO GRADING PLANT
K.V.K, JHALAWAR	:	ORANGE GRADING PLANT
COLLEGE OF HORT	:	FRUIT JUICE PLANT
FRL,DRDO	:	SEABUCKTHORN HARVESTOR
RELINACE INDUSTRIES LTD	:	POTATO/ONION GRADING PLANT FRUIT JUICE PLANT
ANAND AGRICULTURAL UNI	:	:ALOE VERA GEL PROCESING PLANT :AROMATIC OIL DISTILLATION PLANT
INNOVA AGRI BIO PARK	:	MULTIPLE VEGETABLE GRADING PLANT

ESSENTIAL OIL DISTILLATION PLANT



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(ISO 9001 : 2000 CERTIFIED COMPANY)

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Deals In : Handling, Design, Development, Manufacturing
And Supply of Seeds, Grains, Spices, Fruits And
Vegetable Processing Plants & machineries on Turnkey Basis



THANK YOU

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