



LOCUS[®]

Innovation, Technology & Manufacturing



Mr. Vinay Pawar

Founder

Qualif'n: D.M.E., A.M. Ae. S. I., CPL (F.A.A USA)

ISO 9001: 2015 (IAS-USA)

Factory locations:



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GSTIN: 29AAIFL8178L1ZF



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website

www.LocusExim.com | www.Locus.co.in

LOCUS GROUPS OF COMPANIES

ABOUT US

Our team conducts work on the core foundation of exceptional levels of client satisfaction. Their expertise and diverse outlook consistently provide us veracity, ingenuity and diligence in our business practices. Our team consists of highly experienced professionals including product development managers, trained technicians, quality assurance officers and sales and marketing personnel. Our differences indeed add values to the company and help us to unite towards our goal.

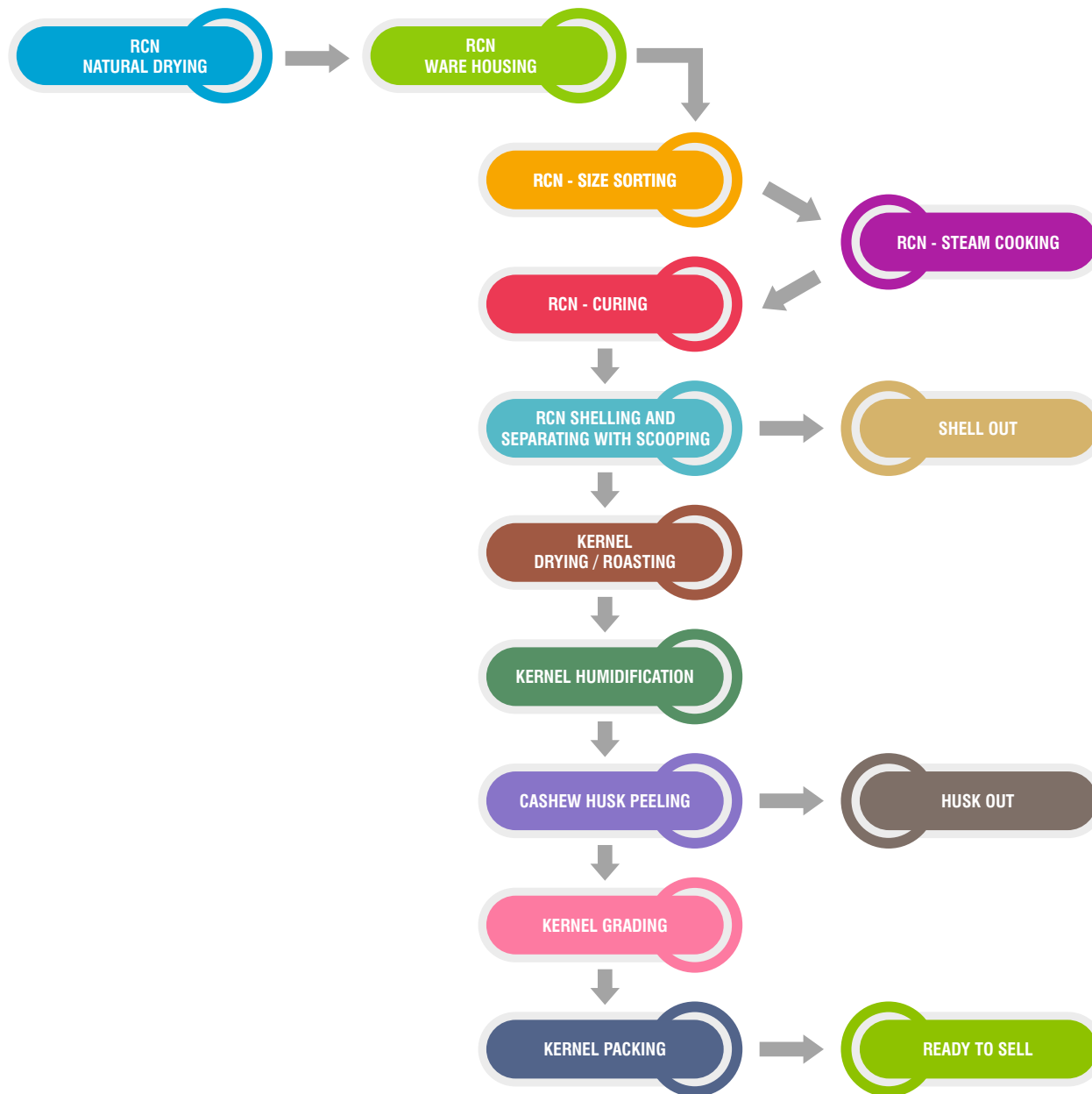
LOCUS EXIM Founded in 2010, we are reckoned among the prominent manufacturers, exporters and suppliers of Raw Cashew Nut processing entire range of machines and Supply of complete automated mechanised solutions. All our products are an amalgamation of avante-grade components and the advanced technologies. As a result, they are cost effective, durable and reliable. Our products are appreciated for their matchless features like ergonomic designs, rugged construction, efficiency, fine surface finishing and reasonable prices. Besides, as one of the reliable service providers, we are also providing the services of automated turn key solution consultation and after sales services. Manpower reduction is up to 70-75 % as compared to manual processing. Our mechanised technology is very unique, innovative and incomparable to others supplier in India.

With Locus exim scope of supply enables large capacity of raw cashew processing set-up can be done with minimum area, man-power and under a single roof. This is hard to achieve using other machinery suppliers in India, but can be achieved with our scope. Space requirement will vary approximately 2000- sq.ft. per metric tonne RCN processing(for machinery).

Project consultation will include layout preparation guidelines, customised supply of machines as per requirement of clients, execution of entire machinery installation and commissioning, and prompt after sales service.

ABOUT US

RAW CASHEW PROCESS FLOW CHART



RAW CASHEW GRADING MACHINE

SPECIFICATION:

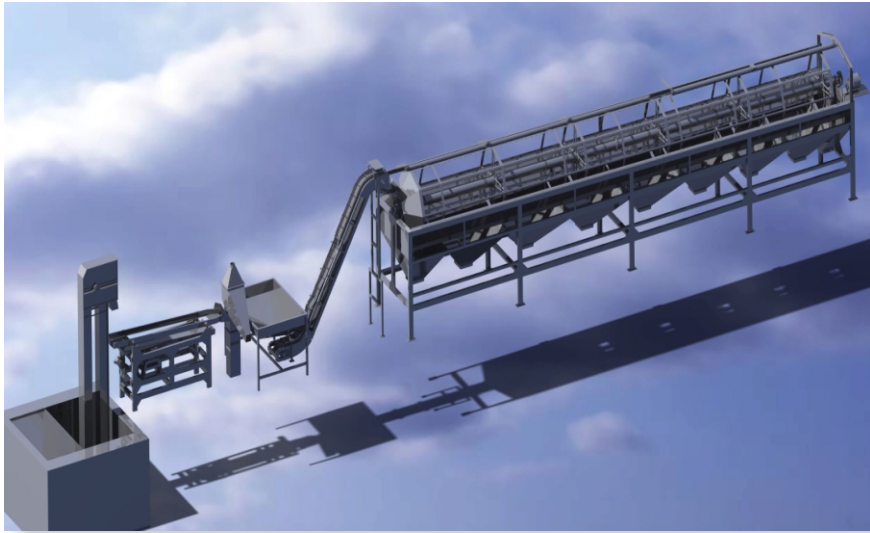
- **Capacity:** As per customers requirement. Example: 200 / 400 / 500 /1000 / 1500 kg / hour

Separates:

- 5 kinds of raw cashew with different sizes (A+,A,B,C,D) for below 800 kg/hr cap.
- 9 kinds of raw cashew with different sizes (A+, A,A1,B,B1,C,C1,D,D1) for above 800 kg/hr cap.
- Feeding System: Hopper in a pit, vertical elevator and Vibro-mechanism with SS sheets and MS frame for dirt cleaning.

- **Power:** 1 - 5 Hp: 3 Phase, 415 Volts
- **Process:**
 - In this process we separate different sizes of cashew nuts with the help of electric calibrator. This calibrator has holes of different dimensions, starts from 18 mm to 24 mm to separate nine differ grades.
 - Screening of dirt, soil small stones, debris are separated during this process by Vibro mechanism.
 - Grading helps to understand the quality of raw material present in the stock in advance, facilities furt for management to take processing decision based on finished product requirement as per market
 - Perfection in grading of nuts directly affects the Shelling, Broken, Uncut, Un-scooped ratio.
 - Later in shelling and separating process we adjust the cutting machines blades according to raw cashew size for better cutting performance.
 - Under perfect cooking / roasting and grading we have reached >3% broken & 10% uncut (Un-scooped+Half Cut) ratio in first cutting / feeding attempt, which is best in the industry.
- For High Capacity Projects greater than 20 MT Raw Cashew Processing, Multiple System of Grading system are added and inter-connected through conveyors making an combined system.





RAW CASHEW COOKER

RCN STEAM ROASTING/ COOKING PROCESS:

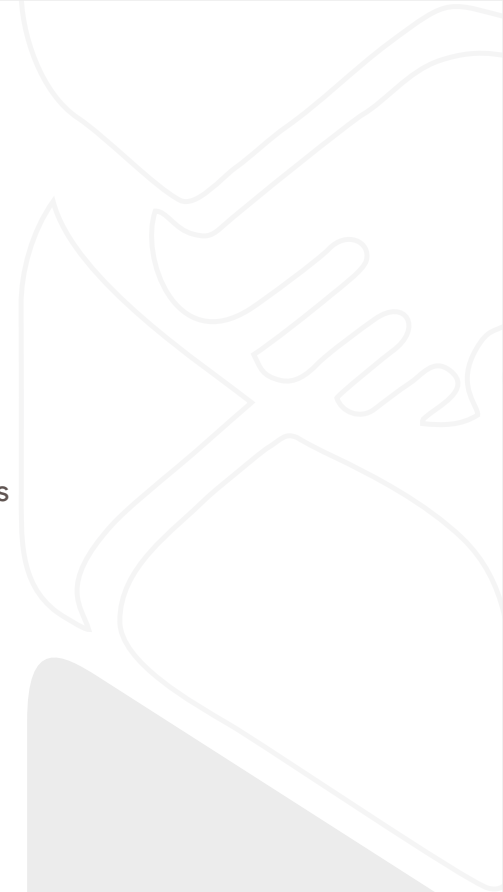
- **Capacity:** As per the customer's requirements.
- **Example:** 300 / 600 / 1000 kg/ 1200 kg per etc. batch cooker capacity
- **Fuel:** Steam from Boiler through Non- IBR piping and fittings.

APPLICATION & PROCESS:

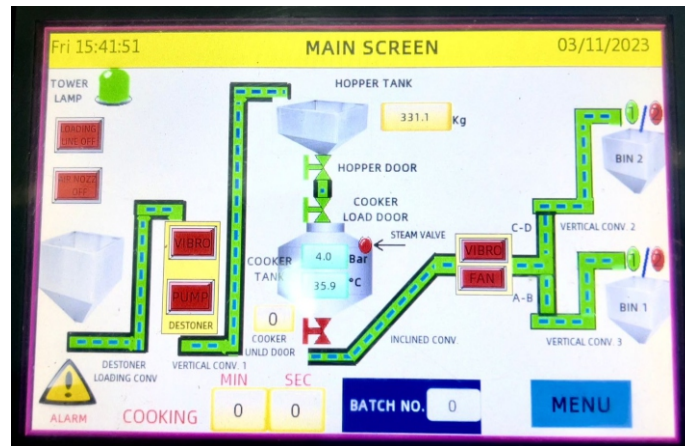
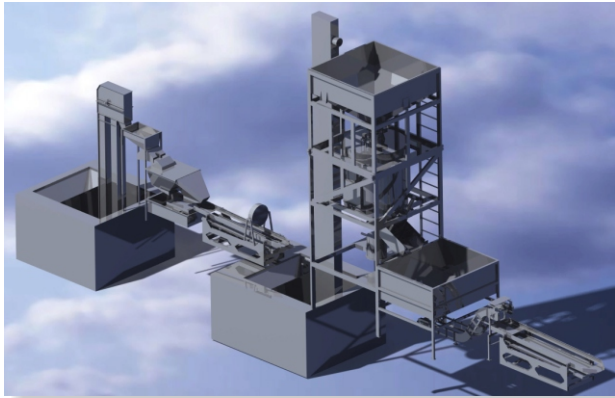
- Graded RCN gunny bags are fed ground level hopper in the PIT and vertical conveyor, which transfer to water washing RCN system. This Eliminates heavy large size stones, metals, scraps etc. The washed RCN is transferred directly on vibro-mechanism with Fan Mounted to drain excess water.
Imp note: RCN must be cooked within 1 hour water washing system, else will hamper the quality of kernels.
- Cashew steaming / cashew roasting helps to cut /break and separate shell and kernel easily by making the outer shell hard and brittle.
- After steaming, the nuts are air cured by spreading out on the floor in the shade / gunny bags / curing trolleys / curing vertical bins. Vertical curing bins can be customised based upon project requirements.
It can vary from 4 MT RCN to 50 MT RCN capacities depending upon project requirements

FULLY AUTOMATIC LOCUS COOKER OPERATIONS CONSISTS OF FOLLOWING FEATURES :

- Auto feeding by hopper and vertical conveyor.
- De-stoner and water washing system.
- Vibro-mechanism for water straining with SS sheets and MS Stand.
- Overhead hopper with weighing automation auto-cutoff system.
- Auto Cut off timer for steam input valve.
- All doors, Over head hooper outlet, Cooker inlet and Cooker outlet pneumatically operated.
- PLC panel: Pressure and temperature sensors, touch screen, programmable auto operation and data log history.
- Auto-Unloading hopper and further conveyor transfer for curing section.
- Locus cooker design achieves more than 95% efficiency for uniform cooking through out the batch, which further helps in the quality and performance next stage machinery.



RAW CASHEW COOKER



RCN CURING SECTION

- Vertical bucket elevators.
- Pneumatically operated conveyor outlet and selection hopper outlet.
- Curing Bins 10 MT capacity (5 MT RCN cap. partition each).
- Curing Bins material MS perforated sheets and frames.
- Supplied with detached frames and all material.
- Final assemble on site with clients labor and welding scope of cost.

Process Description:

- After completion of RCN cooking process, it is unloaded on 1,200 kg capacity perforated hopper, and from there it is transferred through conveyor system to 5 MT capacity RCN curing bin.
 - Meanwhile, RCN which was cooked and cured the previous day is fed to the 'RCN shelling and separating line' from the 5 MT capacity curing bin filled the previous day. Selection of curing section unloading is done remotely by mechanism provided below curing bin.
- High Capacity curing Bins can be manufactured as per requirements. Kindly note that Locus will supply pre-fabricated parts, which will be further assembled and fabricated on factory site.



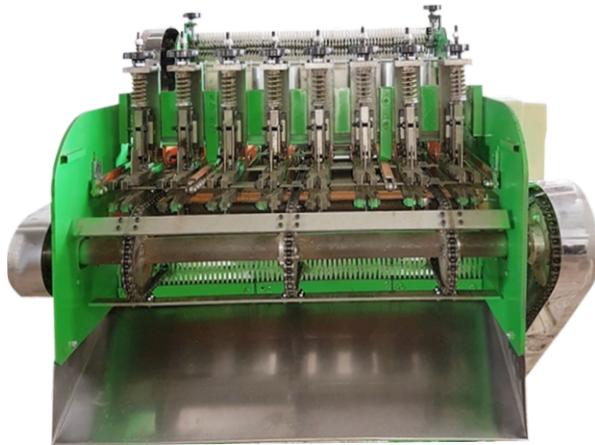
RAW CASHEW SHELLING MACHINE

SHELLING MACHINE MODELS

- 6 Horizontal cutting blade : Capacity 100-160 kg/hr
- 8 Horizontal Cutting blade: Capacity 180-260 kg/hr
- 10 Horizontal cutting blade: Capacity 240- 320 kg/hr
- 12 Horizontal cutting blade: Capacity 350 - 450 kg/hr
- Broken: < 8 %, - One go shelling : 85 - 95 %
- Each Shelling machine is set for two sizes either A/B or C/D

SHELLING MACHINE FEATURES:

- Robust Desing with higher capacity shelling.
- High Speed Steel and carbide blades enables longer operations without sharpening.
- Horizontal guides eliminates any cross cut of raw cashew



RAW CASHEW SHELLING AND SEPARATING SYSTEM

INCLUDES THE FOLLOWING MACHINES:

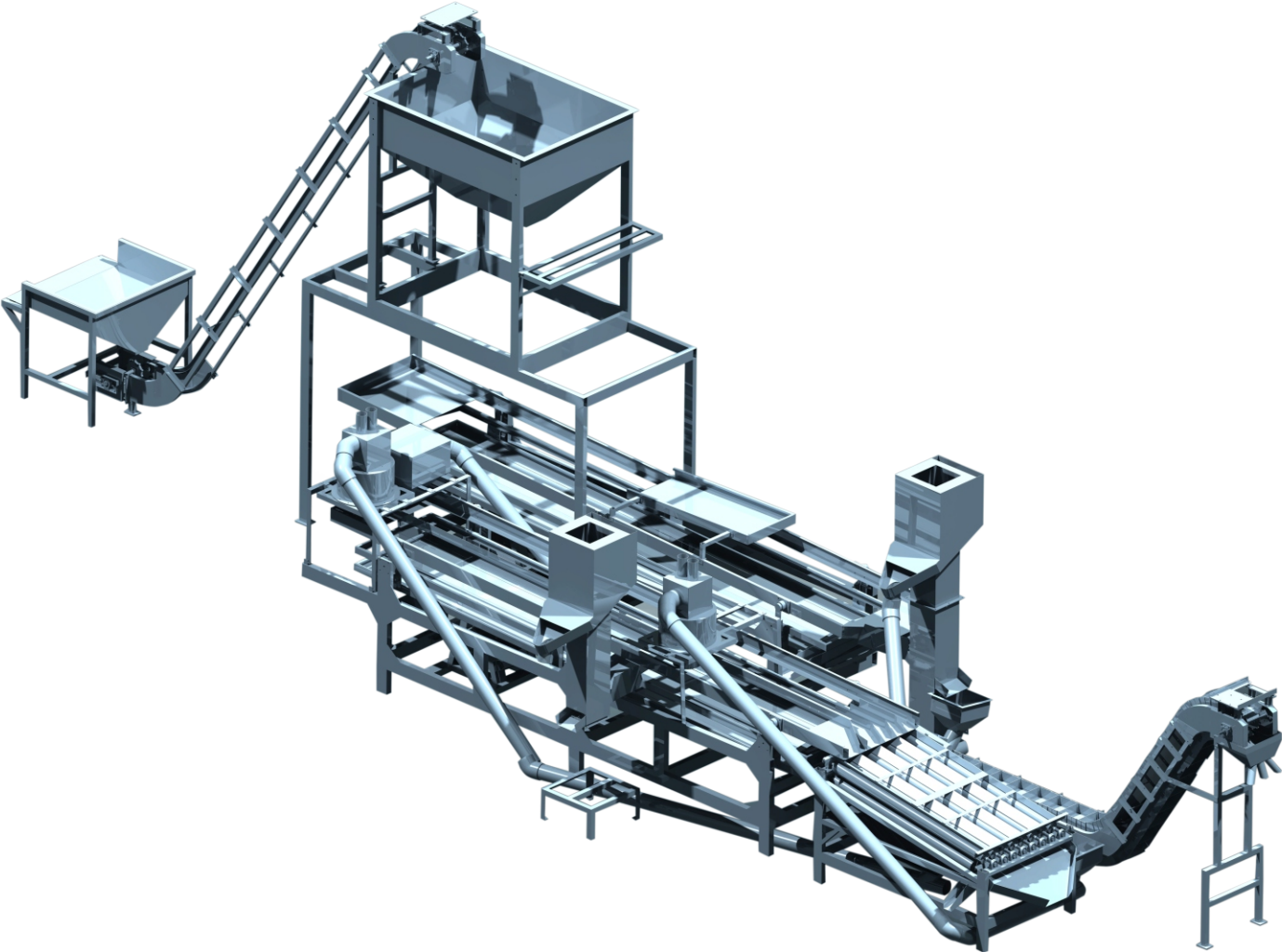
1. Feeding Hopper
2. Conveyor and Overhead Sharing hopper
3. Primary Vibratory- Separator
4. Kernel Separator
5. Blower-2 Hp, 2 no's
6. Blowing Grader for Shells & Un-scooped
7. Inspection Table
8. Scooping Machine-1
9. Secondary Vibratory- Separator
10. Scooping Machine-2
11. Roller Grader
12. Inspection Table
13. Blower-2 Hp
14. Uncut & Un-scooped Separator
15. Kernel Carrying Conveyor
16. Input Hopper
17. Inspection Conveyor
18. Sharing Piping
19. Control Panel & VFD Unit.

FEATURES

- Cashew Shell, Kernel, Uncut, Half Cut, Un-scooped Material as separate output get by complete automation, with minimum labor intervention and in within very less time.
- Around 85-95% work will be done by machines, only 5-15% RCN and Machines error needs to be done manually.



RAW CASHEW SHELLING AND SEPARATING SYSTEM



AUTO TRAY FILLING WITH HOPPER AND CONVEYOR:

- Variable speed belt food grade.
- Dryer Tray loading on conveyor.
- Auto feeding through bucket elevator and hopper.
- Both hopper made SS 304 sheets.
- Overhead hopper capacity 400 kg kernels.
- Auto-tray filling machine fills the tray automatically with very high speed around 4-5 tray per minute.



CASHEW KERNEL DRYER

- The kernels after removed from the shells have to be dried in order to loosen the red skin (husk) adhering to the kernels for easy peeling.
- The kernels loaded in trays will be mounted on trolleys and will be kept in the dryer/hot chamber.
- The inside temperature of the chamber will be maintained uniformly to preserve the original color of the cashew kernels.

BATCH PROCESS & FEATURES:

- Temperature: 60-90 c, depends on cashew quality & origin.
- Batch Duration: 6-9 hours. Capacity Kernels per batch: Ranges from 120kg - 1500kg / per batch.
- Fuel used: Steam from boiler through Fin tubes/ Electric through heating coils which is connected to
- Non-IBR piping, Valve and fittings
- With insulated body, Trolleys, trays, Heat Exchanger and air circulation fans at both sides with electronic temperature Controller.
- Design featuring uniform temperature manatainance throughout the batch.



KERNEL HUMIDIFICATION PROCESS

- Capacity: As per project requirement. (200 / 500 / 700 / 1000 / 1500 Kg Per Batch)
- Power: 3-6 HP
- Power source: 380V-50Hz (3 phase) or 220V – 50Hz (1 phase)
- Time: 5-12 hours, depending upon surrounding air humidity & method used.
- Ideal Humidity: up to 3.5-4.5% before putting it into peeling machine.

APPLICATION:

- This process is done to increase the moisture content of cashew kernel.
- It helps to control the broken percentage & peeling quality.
- This is done in humidification chamber, which is an enclosed chamber using ultra sonic humidifier process boosted by forced circulation of air flow with the help of fans.



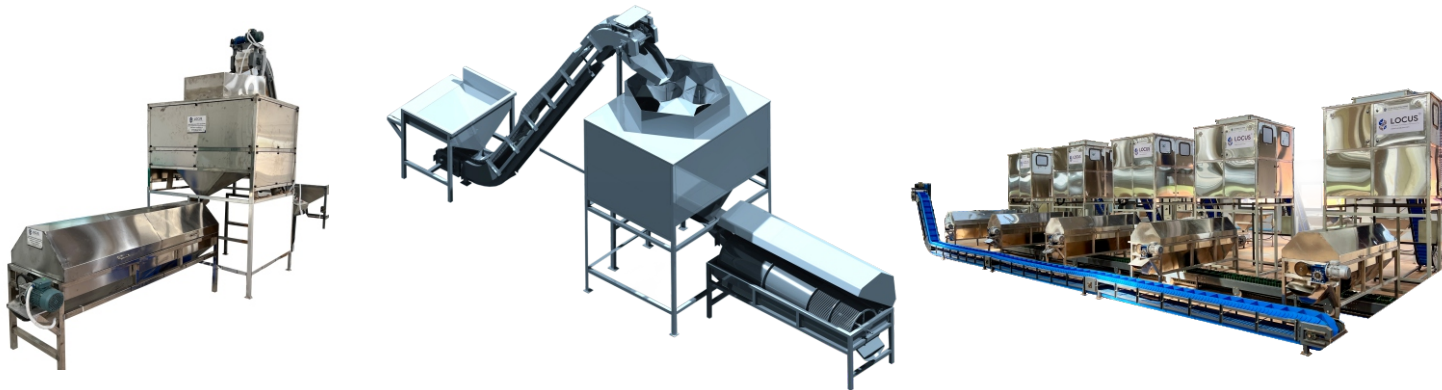
CASHEW KERNEL HUSK PEELING MACHINE

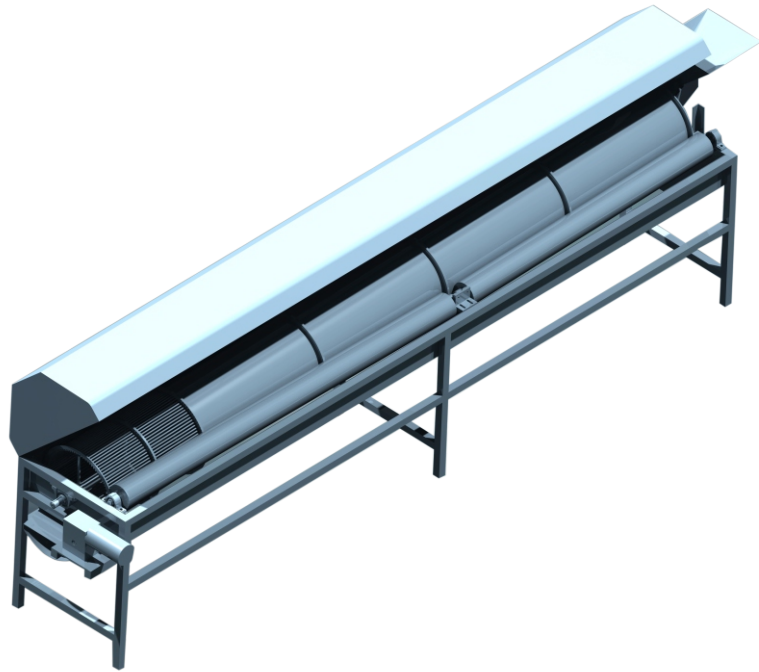
- Capacity: 50 / 100 / 200 / 250 / 300 / 400 kg of kernel /hr.
- Percentage of clean kernel: from 75% - 90 %
- Percentage of broken: from 9% - 16 % (Including inlet broken by shelling of 4-6%)
- Required moisture of inlet raw material: 3.5 - 4%
- Required electric power supply for one Units of peeling machine:5HP
Requires Compressor Screw Type along with: Refrigerated Air Dryer, Oil Filter, Air Filter and Receiver tank.

PROCESS:

- This process is used for removal of brown colour husk (testa) present on Kernel.
- After Drying & Humidification Kernels proceeded for peeling machine which uses air turbulence by timed nozzles to create Friction with Husk to loosen it.
- All material is SS 304 sheet with control panel.
- After peeling the kernels passes through piece separator which separates whole cashew kernels into broken nuts in four different grades.

For High Capacity Projects greater than 20 MT Raw Cashew Processing, Multiple System of Peeling system are added and inter-connected through conveyors making an combined system





SPLIT GRADING MACHINE

- Capacity: 200/400 KG/hour
- All sheets and touching surface Ss304
- Perforated sheets of different sizes grade different sizes of broken nuts such as (BB, BB1, WB, WS, LWP, SWP).

HUSK CLEANING MACHINE

- Sorts and separates all types of cashew kernel pieces from peeling husk.





INSPECTION CONVEYOR

- Variable speed drive,
- Food grade belt drive.
- Aluminium extrusion frame.
- Divider and touching surface sheet is SS 304.
- Auto- magnetic vibrator feeder for control flow.
- Increases speed of manual inspection with half the Labour require.

VITA TIN PACKING WITH BELL JAR ASSEMBLY

- Includes Safety Valve and Pressure gauge, Vacuum pump, necessary pipe fittings, and accessories for local wholesale Indian market.
- Pneumatic actuator for lifting bell jar assembly.
- Creates vacuum before flushing Carbon Dioxide / Nitrogen Gas for longer shelf life of packed cashew kernels





TIN FILLING MACHINE:

VACCUM PACKING MACHINE FOR EXPORT MARKET

- 25 lbs and 50 lbs brick form.
- Vertical Vacuum Packaging Machine.
- Input & Output Conveyors. Vibratory Settling Platform
- Co2 pre heater + regulator (ESAB).
- Platform digital weighing balance + roller conveyor.
- Set of Former + Sleeve – 25 and 50 lbs – SS304.
- Hopper, Vibratory feeder, Hair & light particle remover and Cyclone Separator



CASHEW KERNEL SIZE GRADING AND COLOR SORTING MACHINES

CASHEW KERNEL SIZE GRADING MACHINE:

FEATURES :

- Camera Image based technology.
- Customizable Colour/size Grading in Single Pass.
- Capacity models available: 50, 75, 125, 175 and 200 kg/hr throughput whole kernels.
- 95% Accurate Size and Color Grading.
- 12 Camera Vision Technology.
- Less than 2 % broken
- **Program1:** Colour grading =W1, W2, Mild Defects (SW) , Major Defect (Spots), Husk (for Hand peel), Testa (Recycle to Peeling machine), Rejects
- **Program2:** Size grading=W180/W210, W240, W320, W400/W450, Defects, Husk, Rejects



VACCUUM FRYING MACHINE

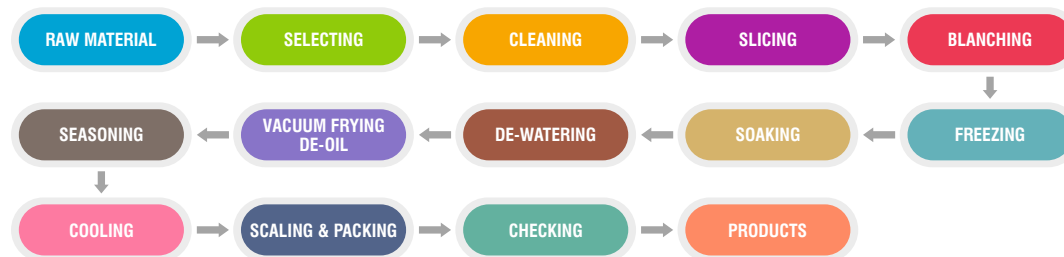
VACCUUM FRYING TECHNOLOGY:

- Vacuum frying is a developed method of conventional frying process under low pressure and low temperature, which improves the quality attributes of fried food products. Vacuum frying is a better and healthier alternative to conventional frying.
- Vacuum frying is achieved at lower temperature than conventional frying, therefore vacuum-fried products have
 - i) better nutritional quality (due to retention of essential phytochemicals and essential nutrition),
 - ii) enhanced colour (due to lesser oxidation), and
 - iii) lesser oil degradation.
- One of the the health benefit of vacuum frying is that vacuum fried products contain lesser oil content compared to conventional fried products. Lower operating temperature during vacuum frying reduces 94% of acrylamide formation all the while maintaining the original texture/colour, organoleptic, and nutritional properties of the raw material. Acrylamide is recognised as a potential carcinogenic compound found in fried snacks, which is formed by the Maillard reaction.
- Vacuum frying is an efficient method to produce fruit and vegetable snacks with the necessary degree of dehydration without excessive darkening or scorching. The products are crispy and retain original taste and flavour as of the natural foods. Vacuum frying can be used to fry high sugar fruits and fresh vegetable in order to produce various kinds of snacks which cannot be done by conventional frying.

APPLICATIONS:

- Vacuum-frying process has been successfully adopted for processing different fruits (Jack fruit, Ripe Banana, Papaya, Kiwi, Pineapple, Banana, Guava, Mango, Peach, etc.), vegetables (Okra, Bitter-gourd, Sweet Potato, Potato, Pumpkin, Carrots, Garlic, Onion, Mushroom, Beet root, etc), variety of nuts (Cashew Nuts, Almonds, Ground nuts, etc.), lentils, fried fish, shellfish, chicken, etc. into fried chips-like products.

TECHNICAL FLOW CHART



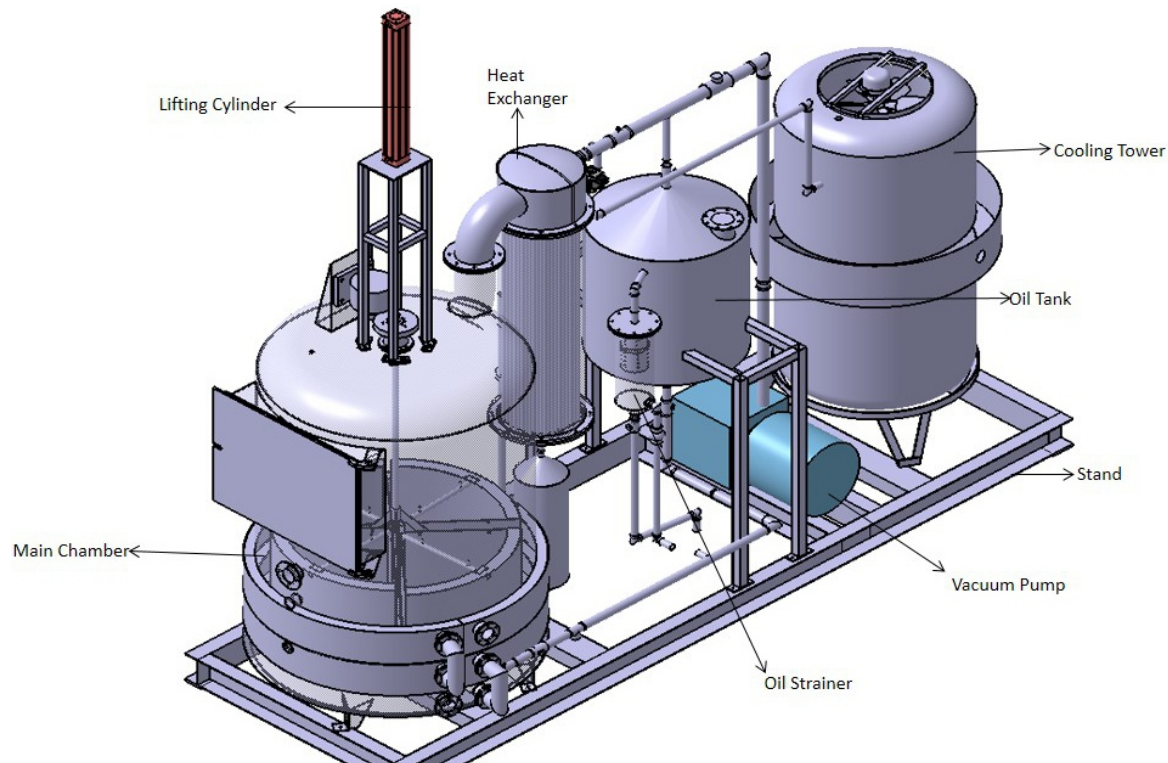
STANDARD MACHINE OPERATIONS:

- Thermic Fluid/ELECTRIC/Gas fired are used as heating source options. Temperature is automatically controlled as per requirement of different products, which will be preset.
- Raw material is fed into baskets. (a basket is 1/3 or 1/4 of drum)
- Open hatch of cooking chamber followed by inserting the set baskets on the platform (in cooking chamber; door is closed. Then the system will operate automatically.
- The baskets are placed above the heated frying oil with no contact with the oil. Once the vacuum reaches about 720 – 760 mm Hg and preset temperature, the baskets get dipped in the heated cooking oil.
- Baskets will be removed from the heated cooking oil when the pre-set timer is reached .The vacuum is automatically released and then hatch will be opened.
- Operator will take the baskets and transfer them to a centrifuge to remove the excess oil.
- After the de-oiling in the centrifuge, the product will be transferred to the flavouring and packing room.



SALIENT FEATURES:

- We have incorporated two years of R&D in to our vacuum frying machines
- We have improved and modified our design working in conjunction with our customers/end users taking into consideration the operational challenges they face. By getting practical inputs we have developed our vacuum frying machines which are best suited for efficient commercial operations and ease of handling with best quality product output.
- Our vacuum frying machines can be customized as per customer requirements for capacity and usability.
- Our vacuum frying machines are manufactured with high quality standard, with all sheet metal is SS304, very robust and reliable vacuum pump, and advanced logical PLC based control panel



50 MT RCN PROCESSING PROJECT



Raw cashew grading section



50 MT RCN PROCESSING PROJECT



Raw Cashew Cooking Section



RCN Shelling and Separating Section



50 MT RCN PROCESSING PROJECT



Cashew Peeling Section



50 MT RCN PROCESSING PROJECT



Cashew Kernel grading section



Cashew Kernel finished packing section





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