



LOCUS[®]

Innovation, Technology & Manufacturing

Cashew Processing Technology | Vacuum Frying Technology
Food Processing Technology

www.locus.co.in | www.locusexim.com

LOCUS GROUP OF COMPANIES

Since 2011, **LOCUS** has established itself as a trusted and specialized provider of mechanized solutions for the raw cashew processing industry, with over 15 years of project execution expertise. We specialize in designing advanced processing systems with high automation standards, supported by continuous technological innovation and process optimization.

Driven by customer requirements, **LOCUS** delivers customized solutions through dedicated teams for design, research, development, and project execution. Our focus is on enhancing operational efficiency, product quality, and cost-effectiveness while ensuring timely project delivery and reliable performance.

More than 90% of our projects are executed on a turnkey basis (excluding civil infrastructure), offering single-point coordination for seamless project management. Our services include project consultation, plant layout design, floor planning, installation, commissioning, technical support, operator training, and comprehensive after-sales service.

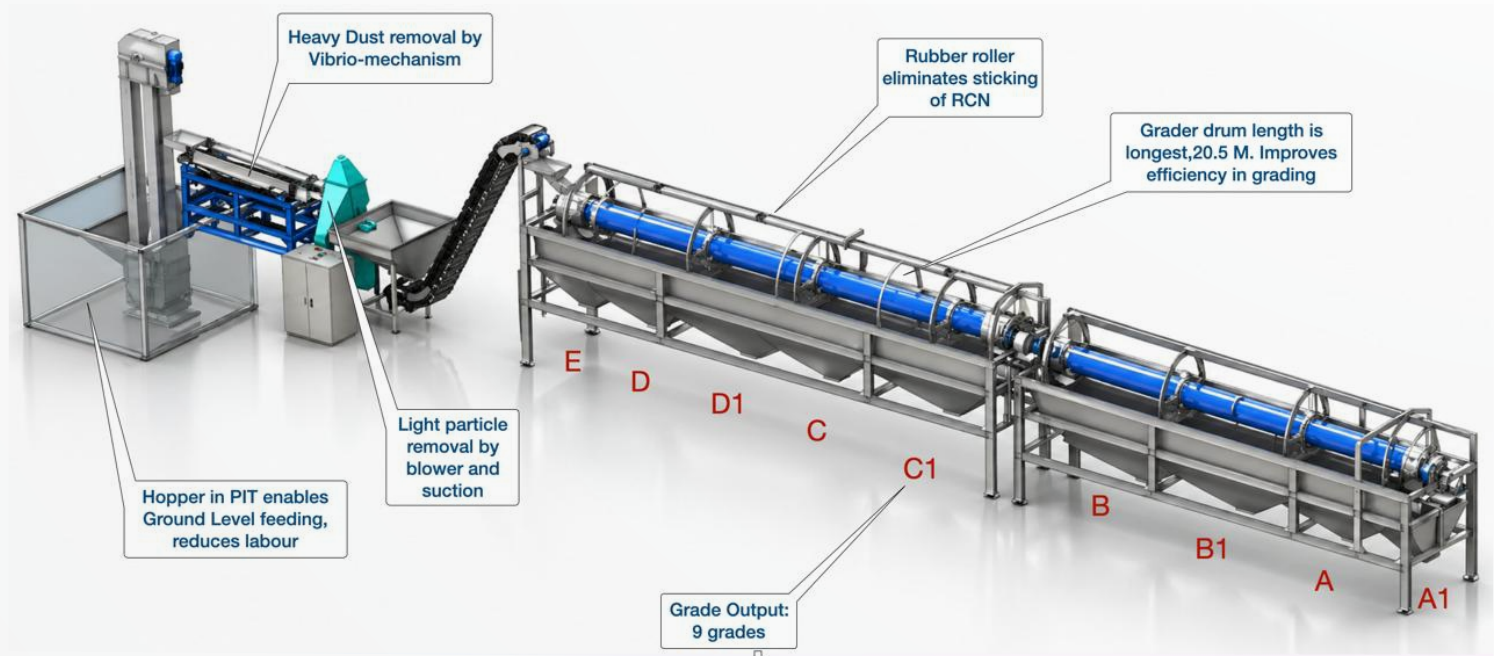
LOCUS has successfully delivered over 60 projects across India and Africa, with processing capacities ranging from 5 MT to 50 MT per shift. Our organization is supported by specialized functional departments dedicated to maintaining the highest standards of product quality, production efficiency, cost control, and raw material management. Backed by a team of highly qualified professionals trained in BRCGS, HACCP, Organic Standards, Food Safety, and ISO systems, we ensure every project is designed and executed to meet global quality, safety and operational standards.

About Us

LOCUS PRODUCTS

- RAW CASHEW SIZE SORTING SYSTEM
- RAW CASHEW COOKING SYSTEM
- RAW CASHEW CURING SYSTEM
- RAW CASHEW SHELLING & SAPERATING SYSTEM
- CASHEW KERNEL DRYING SYSTEM
- CASHEW KERNEL HUMIDIFICATION SYSTEM
- CASHEW KERNEL PEELING SYSTEM
- CASHEW GRADING SYSTEM
- CASHEW KERNEL PACKING SYSTEM

RAW CASHEW SIZE SORTING SYSTEM



RAW CASHEW GRADING MACHINE

SPECIFICATION:

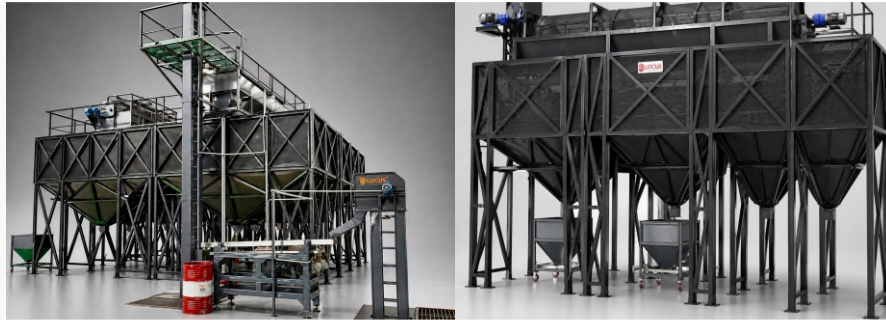
- **Capacity:** As per customer requirement. Example capacities: 500 / 1,000 / 1,500/ 2,000 kg/hr
- **Separation Capacity:**
- 5 grades of raw cashew with different sizes (A+, A, B, C, D) for capacities below 800 kg/hr
- 9 grades of raw cashew with different sizes (A+, A, A1, B, B1, C, C1, D, D1) for capacities above 800 kg/hr
- **Feeding System:** Hopper in pit, vertical elevator, and vibro-mechanism with SS sheets and MS frame for dirt cleaning
- **Power Requirement:** 1–5 HP, 3 Phase, 415 Volts

PROCESS:

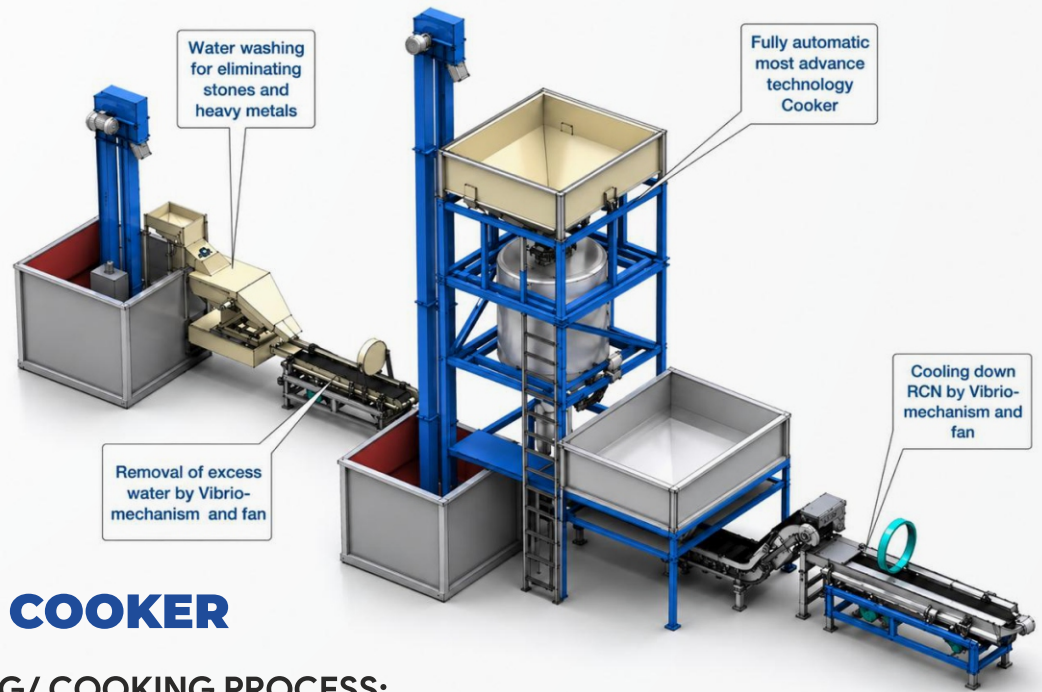
The system separates different sizes of raw cashew nuts using an electric calibrator.

- The calibrator is designed with different hole dimensions ranging from 18 mm to 24 mm to achieve nine-grade separation.
- Dirt, soil, small stones, and debris are removed through the vibro mechanism screening process.
- Grading helps evaluate raw material quality in advance, enabling better production planning based on market requirements for finished products.
- Accurate grading directly improves shelling performance and reduces broken, uncut, and un-scooped ratios.
- During shelling and separation, cutting machine blades are adjusted according to raw cashew size for enhanced cutting efficiency.
- With optimized cooking/roasting and grading processes, we have achieved less than 3% broken kernels and less than 10% uncut (Un-scooped + Half Cut) ratio in the first cutting/feeding attempt, which is among the best in the industry.
- For high-capacity projects above 20 MT raw cashew processing, multiple grading systems are interconnected through conveyors to create an integrated processing system.

TYPES OF RAW CASHEW SORTING MACHINES



RAW CASHEW COOKING 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 after water washing; otherwise, the kernel quality may be affected.
- Cashew steaming / roasting helps to cut, break, and separate the shell and kernel easily by making the outer shell hard and brittle.
- After steaming, the nuts are air-cured by spreading them on the floor in shade, gunny bags, curing trolleys, or curing vertical bins. Vertical
- System capacities can vary from 4 MT RCN to 50 MT RCN depending on project requirements. curing bins can be customized based on project requirements.

RAW CASHEW COOKER

FULLY AUTOMATIC LOCUS COOKER OPERATIONS CONSIST OF THE FOLLOWING FEATURES:

- This fully automated RCN cooking system is entirely controlled by a Programmable Logic Controller (PLC) panel. It features automatic cut-off weighing, automatic start and stop steam flow, and all doors are pneumatically operated.
- The RCN, originating from a Vibro-mechanism output, is directly fed into a hopper and a vertical conveyor that transfers RCN to an overhead hooper situated above the cooker. The overhead hooper is equipped with a load cell that monitors the RCN load. Upon reaching the desired capacity, the PLC panel initiates the stopping of the entire backward feeding line, comprising the vertical conveyor, Vibromechanism, and the autoloading destoner washing system. This action effectively eliminates any contact between RCN and water.
- In the RCN cooking process, steam input is automatically controlled by a timer input provided in the PLC panel.
- All three doors, the overhead hooper output, the cooker input, and the cooker output are pneumatically controlled, eliminating the need for manual intervention.
- Upon the completion of the cooking cycle, the cooked RCN is transferred to a hopper, which is subsequently conveyed on a vibratory mechanism comprising perforated sheets to remove excess moisture and a cooling fan to reduce the temperature of the cooked RCN.
- Subsequently, the cooked RCN is fed into the hopper and a vertical conveyor through which transports it into curing bins where it undergoes curing for the remainder of the day. Pneumatically operated conveyor outlet doors to select desired section of partition
- LOCUS cooker design achieves more than 95% efficiency for uniform cooking throughout the batch, improving the quality and performance of downstream machinery stages.





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 in 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 provided below curing bin.

High Capacity curing Bins can be manufactured as per requirements. Kindly note that Locus will supply pre-fabricated parts which are further assembled on factory site.

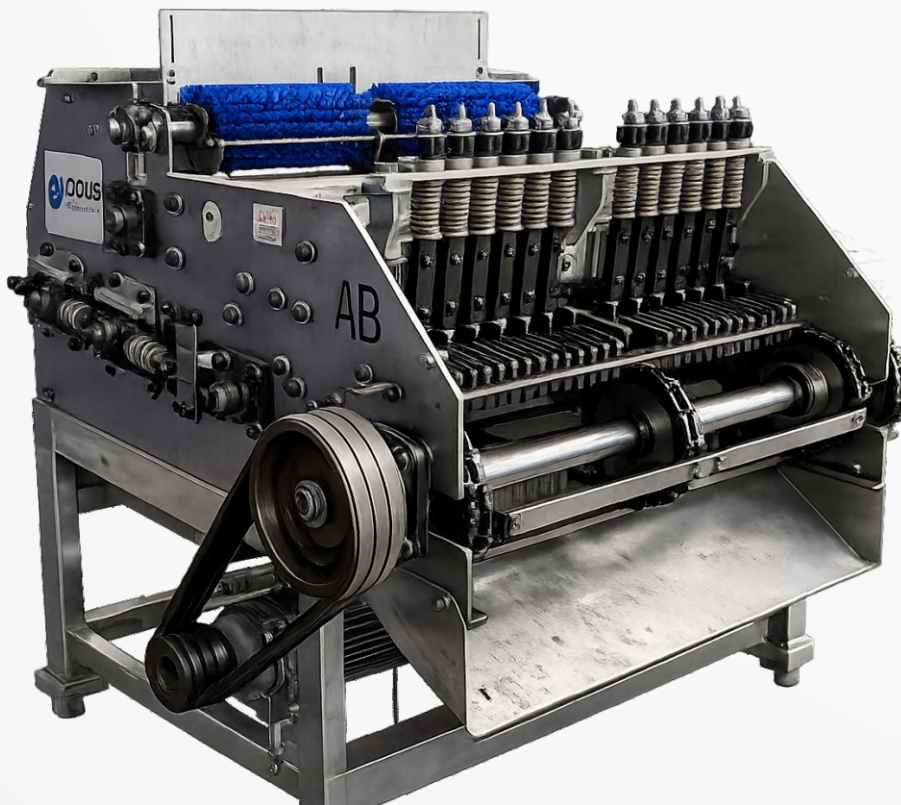
RAW CASHEW SHELLING MACHINE

SHELLING MACHINE MODELS

- 6 Horizontal Cutting Blades: Capacity 100–160 kg/hr
- 8 Horizontal Cutting Blades: Capacity 200–260 kg/hr
- 10 Horizontal Cutting Blades: Capacity 280–340 kg/hr
- 12 Horizontal Cutting Blades: Capacity 350–500 kg/hr
- Broken Ratio: < 4%
- One-Go Shelling Efficiency: 85–95%
- Each shelling machine is configured for two size groups, either A/B or C/D.

SHELLING MACHINE FEATURES:

- Robust design with higher shelling capacity
- High-speed steel and carbide blades enable longer operation without frequent sharpening
- Horizontal guides eliminate cross-cutting of raw cashew nuts





RAW CASHEW SHELLING AND SEPARATING SYSTEM

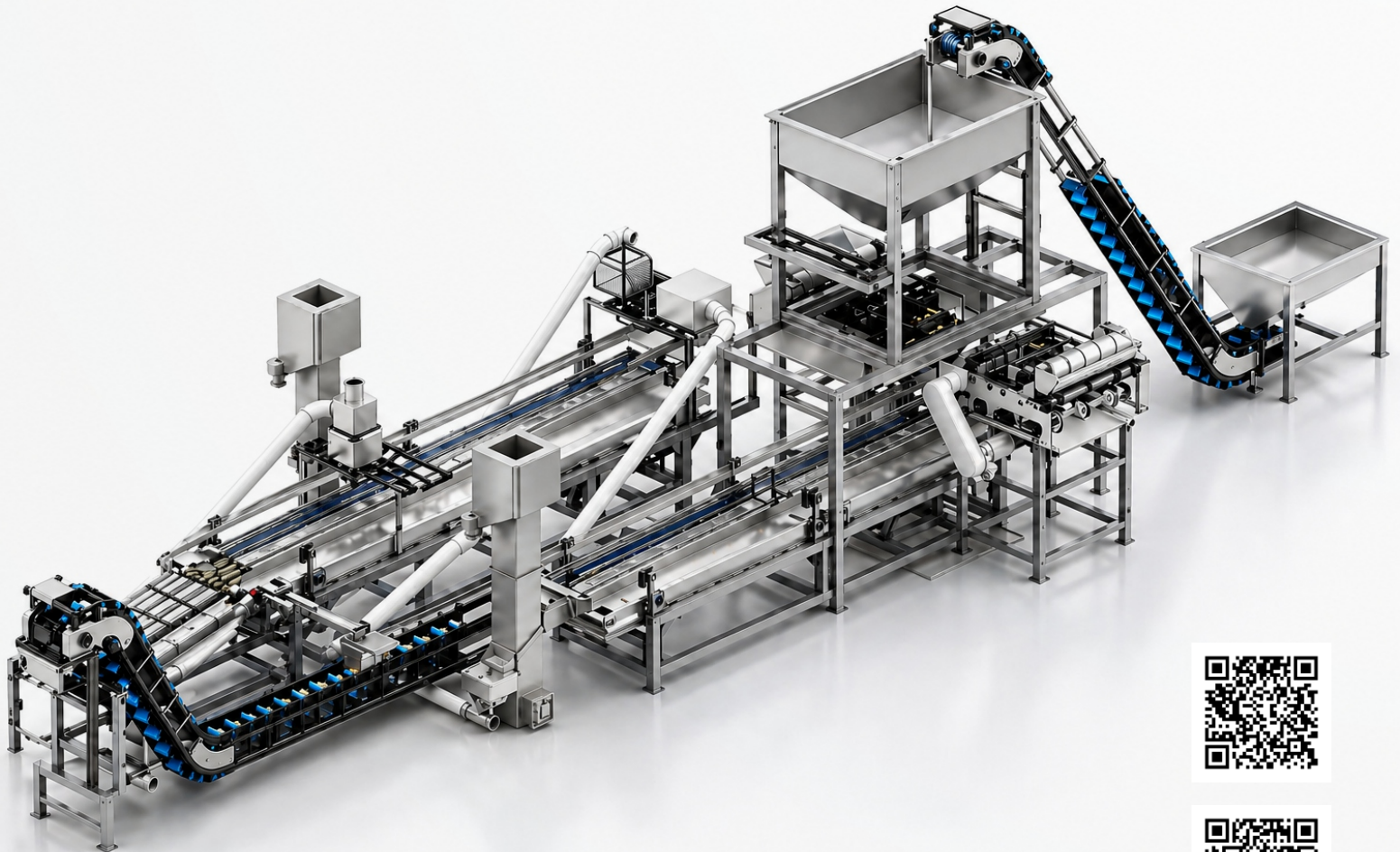
INCLUDES THE FOLLOWING MACHINES:

- Feeding Hopper
- Conveyor and Overhead Sharing hopper
- Primary Vibratory- Separator
- Kernel Separator
- Blower-2 Hp, 2 no's
- Blowing Grader for Shells & Un-scooped
- Inspection Table
- Scooping Machine-1
- Secondary Vibratory- Separator
- Scooping Machine-2
- Roller Grader
- Inspection Table
- Blower-2 Hp
- Uncut & Un-scooped Separator
- Kernel Carrying Conveyor
- Input Hopper
- Inspection Conveyor
- Sharing Piping
- 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

CASHEW KERNEL DRYER

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

BATCH PROCESS & FEATURES:

- Temperature: 70–75°C, depending on cashew quality and origin
- Batch Duration: 7–9 hours
- Batch Capacity: 300 kg, 500 kg, 1,000 kg, 1,500 kg & 2,000 kg of kernels per batch
- Fuel Options:
- Electric heating through heating coils
- Steam from boiler through fin tubes connected to Non-IBR piping, valves, and fittings
- Most efficient heat exchangers (fin tubes) which has most surface area within given space to release the heat inside the dryer.
- There are total 8 no's of circulatory fans in opposite directions as well diagonally arranged, which covers and circulates heated air with more than 96 % uniformity. There is no temperature variation more than 2 deg centigrade. All metal body inside helps further for heat distribution.
- After carefully observations and research, we have kept our tray sizes small and less thickness (No of trays in each dryer are 500 for 2 tonnes capacity) hence , each tray consists of 4 kg kernels only, this enable increase in over all surface area resulting in uniform and fast drying. Due to combination of these technics and factors the drying duration is less and very efficient.



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.

FEATURES

- 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 PEELING SYSTEM.



PROCESS:

- Capacity: 50 / 100 / 200 / 250 / 300 / 400 kg of kernel/hr
 - Percentage of Clean Kernel: 85% – 95% (From input of NW Kernels)
 - Percentage of Broken Kernels: 9% – 16% (Including 4–6% inlet broken from shelling)
 - Required Moisture of Inlet Raw Material: 3.5% – 4%
 - Required Electric Power Supply for One Unit of Peeling Machine: 1 HP
 - Requires compressor air supply from screw-type compressor along with refrigerated air dryer, oil filter, air filter, and receiver tank
-
- This process is used for removing the brown-colored husk (testa) present on the kernel.
 - The peeling of husk is done in batch process in a cylindrical chamber with multiple air nozzles arranged around the circular wall of chamber. The time duration of each batch is controlled through PLC panel provided with the machine. Each machine is having 4 such chamber with works continuously by loading, peeling and unloading and repeating the cycle. All four cylinder chamber outlet is collected in common hopper which further transfer's the material to rotating circular separator ,which separates powder, broken and whole cashew at the end. The husk collected separately in box chamber
 - All material contact parts are made of SS 304 with PLC integration.
 - After peeling, the kernels pass through a piece separator that separates whole cashew kernels and broken kernels into four different grades.

TECHNOLOGY ADVANTAGE:

Our advanced peeling technology eliminates direct mechanical rubbing on the cashew kernel surface, ensuring a more natural finish and superior kernel quality. The system is designed for low maintenance, reduced wear and tear, and consistent operational performance.

COMPARED TO CONVENTIONAL TECHNOLOGY:

Traditional peeling systems use rotating metal brushes that physically rub against the cashew kernels to loosen the skin. This abrasive process can adversely affect the natural surface finish and overall kernel quality. Since the brushes are subject to continuous mechanical wear, inadequate maintenance or delayed replacement can further increase abrasion over time. Additionally, there is a potential risk of metal particles from worn brushes contaminating subsequent batches.

For high-capacity projects above 20 MT raw cashew processing, multiple peeling systems are interconnected through conveyors to create a combined processing system.

TYPES OF PEELING MACHINES



CASHEW KERNEL PACKING SYSTEM

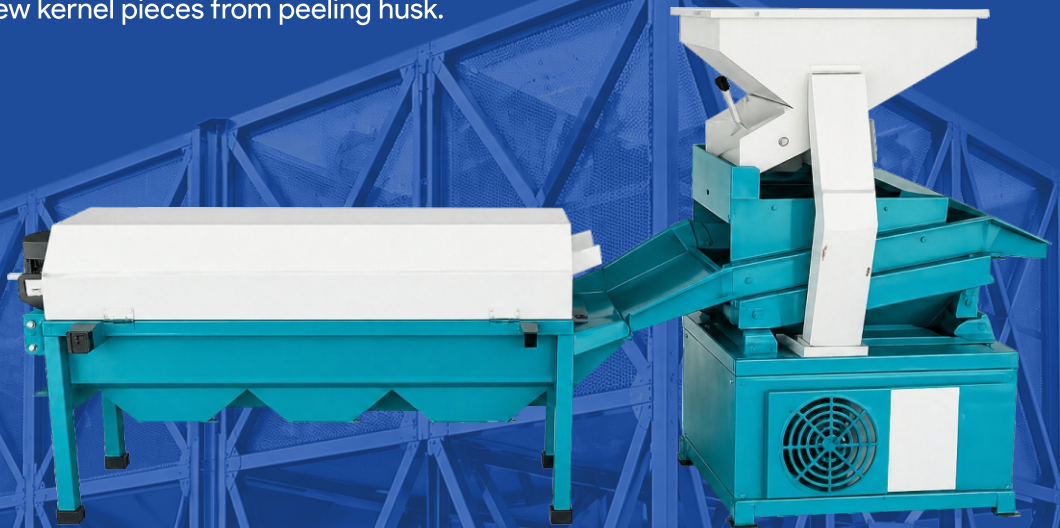
SPLIT GRADING MACHINE:

- 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).



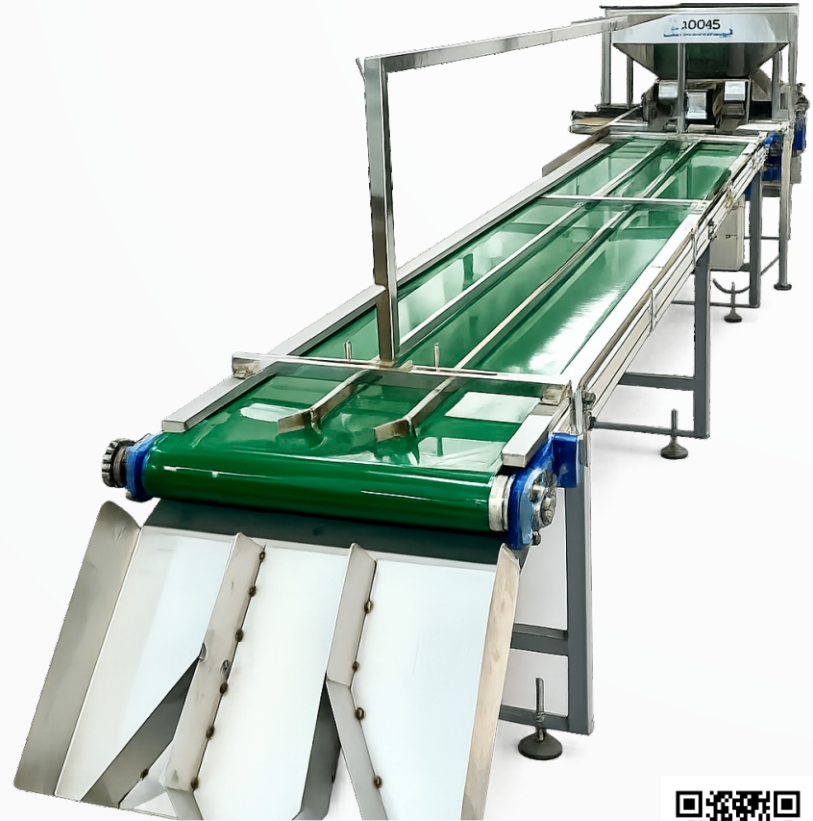
HUSK CLEANING MACHINE:

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



INSPECTION CONVEYOR

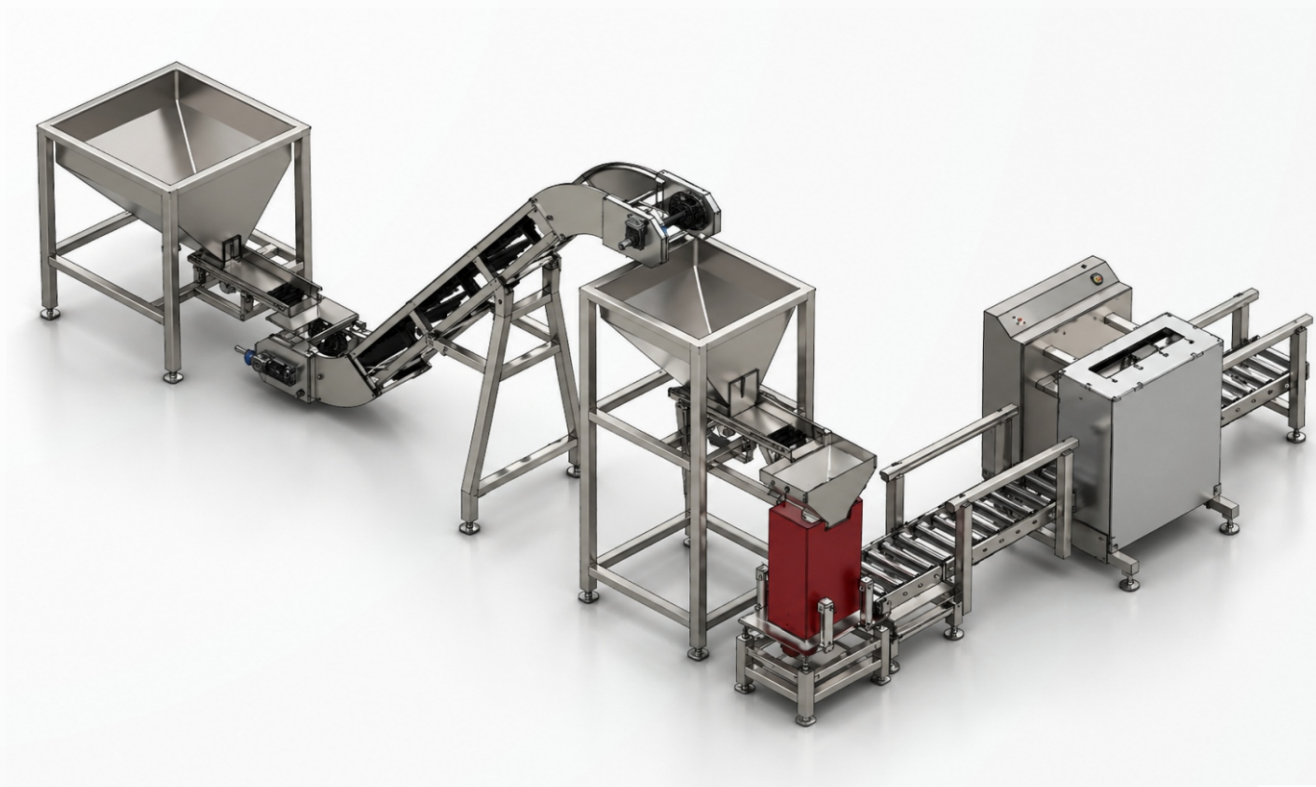
- Variable speed drive,
- Food grade belt drive.
- Aluminium extrusion frame.
- Divider and touching surface sheet is SS 304.
- Auto-magnetic vibrator feeder for control flow.
- Increases speed of manual inspection with half the Labour require.



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

VACCUM PACKING MACHINE FOR EXPORT MARKET



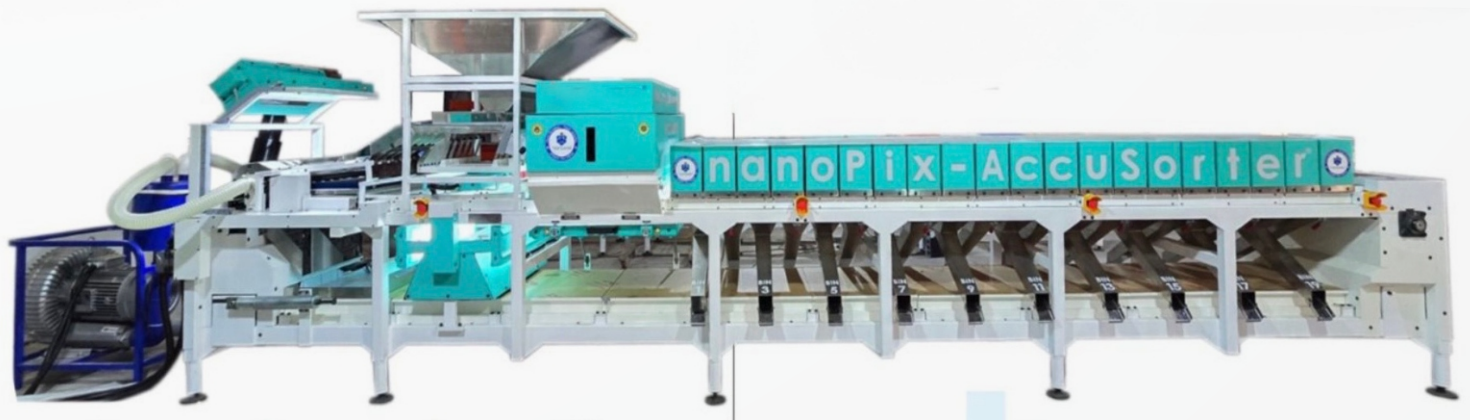
TIN FILLING MACHINE



CASHEW GRADING SYSTEM

- These are various types of color sorters and size sorters which are customized as per project requirements for best suitable results and atomization levels.





50 MT RCN PROCESSING PROJECT

Machines Require BRGCS Compliance Suitable For The Export Market

X Ray



Nitrogen Generator



IR+ UV



50 MT RCN PROCESSING PROJECT

RCN GRADING



50 MT RCN PROCESSING PROJECT

DE-STONER LINE



50 MT RCN PROCESSING PROJECT

RCN COOKING LINE



50 MT RCN PROCESSING PROJECT

RCN SHELLING LINE



50 MT RCN PROCESSING PROJECT

RCN SHELLING LINE



50 MT RCN PROCESSING PROJECT

CASHEW PEELING LINE



50 MT RCN PROCESSING PROJECT

CASHEW INSPECTION LINE



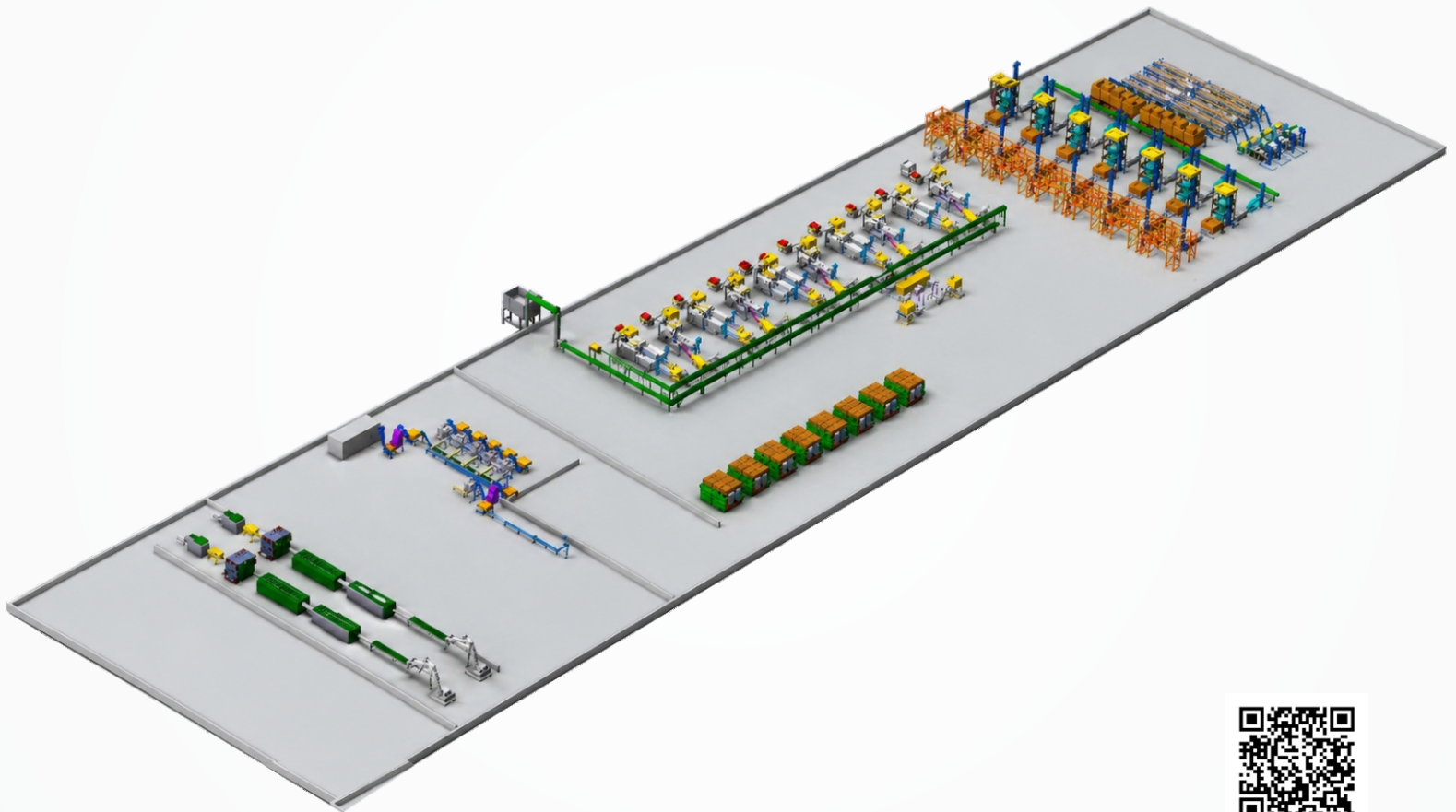
50 MT RCN PROCESSING PROJECT

CASHEW PACKING LINE



50 MT RCN PROCESSING PROJECT

3D LAYOUT OF FACTORY





TRANSFORMING FOOD PROCESSING THROUGH INNOVATION

From advanced cashew processing solutions
to cutting-edge vacuum frying systems,
we deliver technology that enhances efficiency, quality,
and profitability for food manufacturers.

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📍 **Locus Technologies, Pune Location**

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