CASHEW PROCESS PLANT

On Turnkey basis

Sesha Sai, Best Engineering

Manufacturer & Exporter of

- **Herbal Extraction Plants**

- **Essential Oil Plants**

- **Food Processing Plants**

- **Renewable Energy Systems**

On Turnkey Basis from 2005

VALUE CHAIN & GAINS!

www.bestengineeringtechnologies.com

WORK SHOP

VALUE CHAIN & GAINS!

Exclusive work Shop for Cashew Machines

VALUE CHAIN & GAINS!

Cashew Nut Process Plant On Turnkey Basis
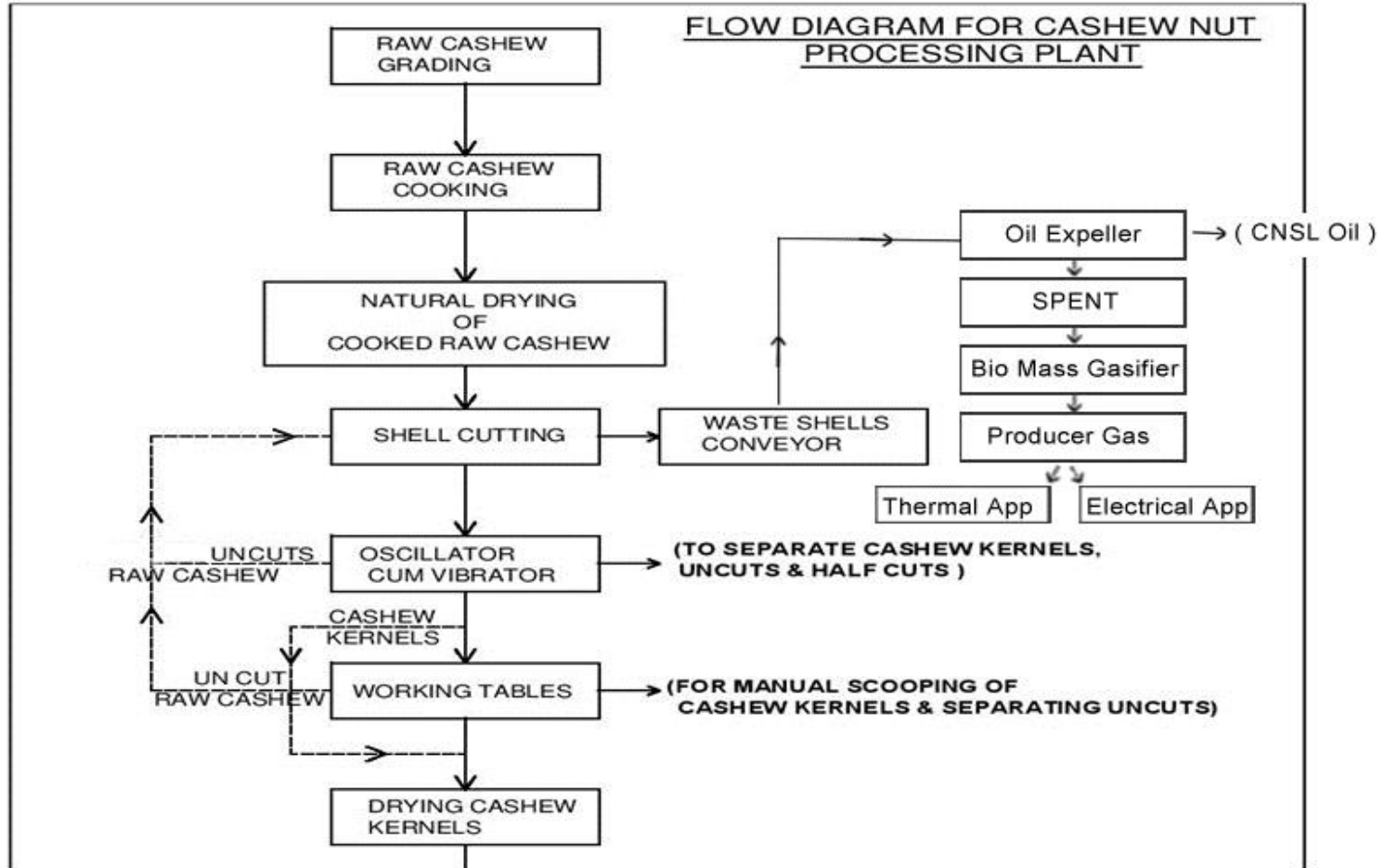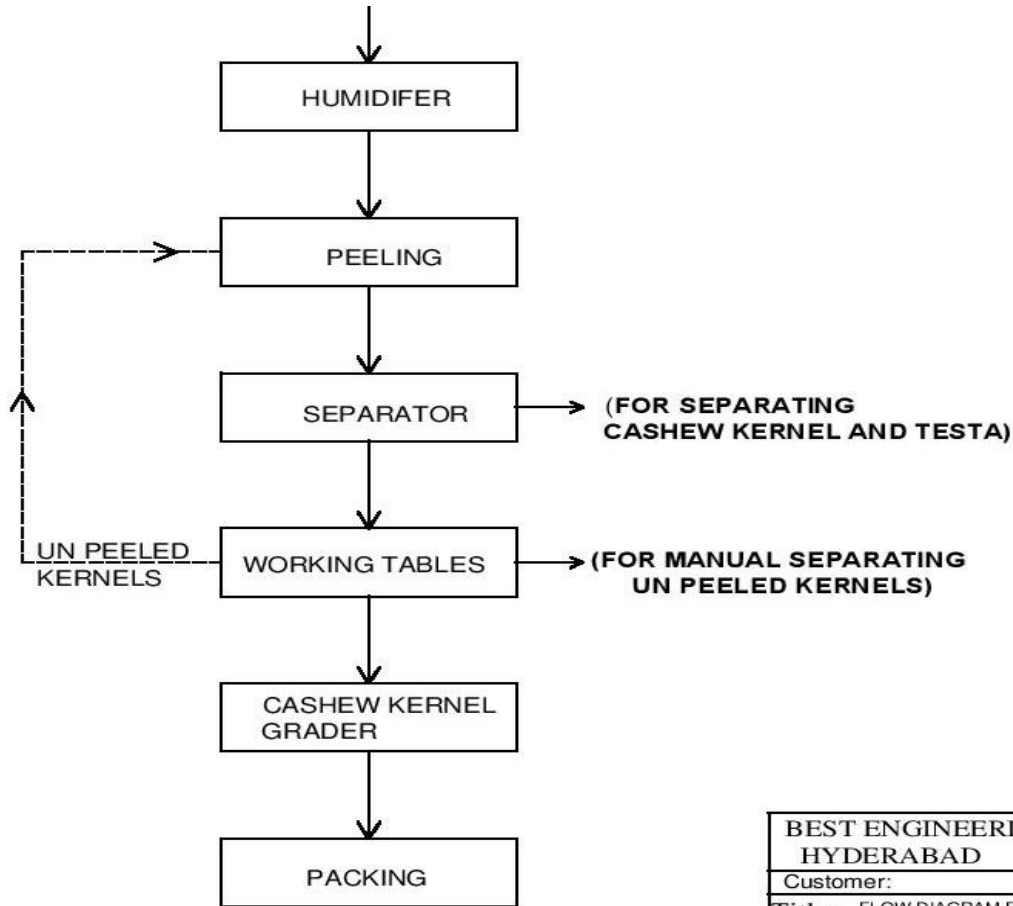
Cashew Nut Processing System

1) Cashew Cooking System

2) Cashew Shelling System

3) Cashew Drying System

4) Cashew Peeling System

5) Cashew Grading System

6) Cashew Packing system

VALUE CHAIN & GAINS!

FLOW DIAGRAM FOR CASHEW NUT PROCESSING PLANT

FLOW DIAGRAM FOR CASHEW NUT PROCESSING PLANT

RAW CASHEW GRADING → RAW CASHEW COOKING → NATURAL DRYING OF COOKED RAW CASHEW → SHELL CUTTING → OSCILLATOR CUM VIBRATOR (TO SEPARATE CASHEW KERNELS, UNCUTS & HALF CUTS) → WORKING TABLES (FOR MANUAL SCOOPING OF CASHEW KERNELS & SEPARATING UNCUTS) → DRYING CASHEW KERNELS

UNCUTS RAW CASHEW • CASHEW KERNELS • UN CUT RAW CASHEW

SHELL CUTTING → WASTE SHELLS CONVEYOR → Oil Expeller → (CNSL Oil)

Oil Expeller → SPENT → Bio Mass Gasifier → Producer Gas → Thermal App / Electrical App

www.bestengineeringtechnologies.com

BEST ENGINEERING TECHNOLOGIES		
HYDERABAD +919440344335		
Customer:		
Title: FLOW DIAGRAM FOR CASHEW NUT PROCESSING PLANT		
Date: 24-08-2011		Rev No. 01
⊕▷	SCALE	Drawn by: K.N.SRINIVAS
	NTS	Checked by:

VALUE CHAIN & GAINS!

www.bestengineeringtechnologies.com

Cashew process plant - Schematic layout

SCHEMATIC LAY OUT DRAWING FOR CASHEW PROCESSING PLANT
CAPACITY:5000KGS(INPUT-RAW CASHEW)
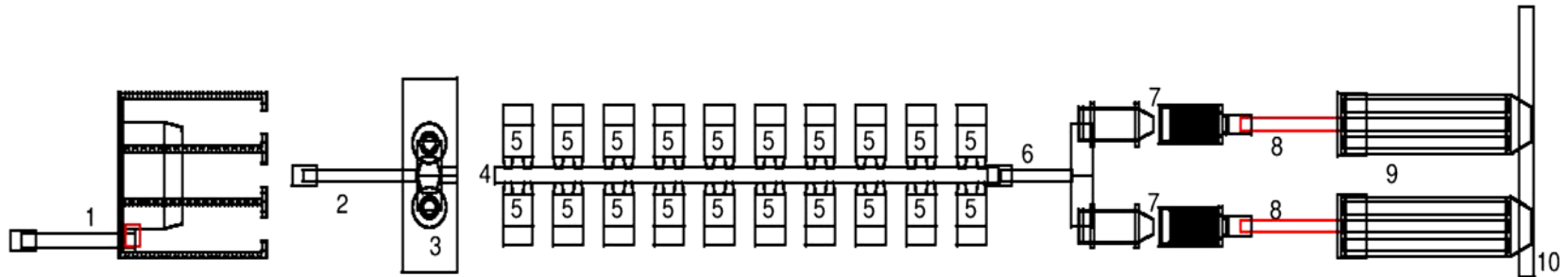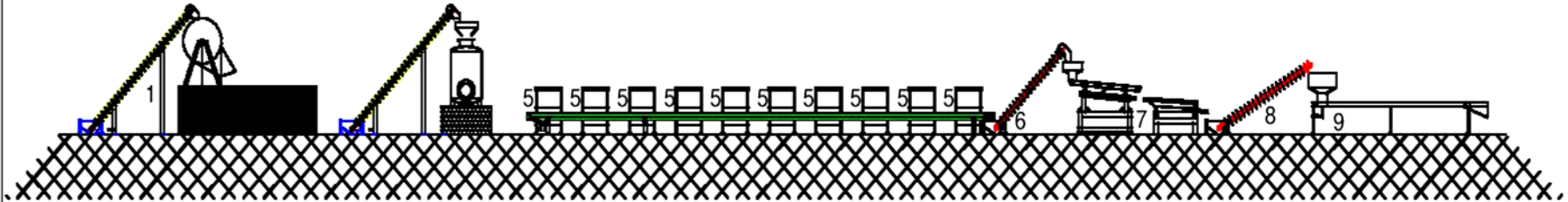
|			
1.FEEDING CONVEYOR WITH GRADER	1NO	2.FEEDING CONVEYOR	1SET
3.COOKER	2NOS	4.HORIZONTAL CONVEYOR	1NO
5.AUTOMATIC SHELL CUTTING MACHINE	20NOS	6.SLANTING CONVEYOR	1NO
7.OSCILATOR CUM VIBRATOR	2SETS	8.SLANTING CONVEYOR	1NO
9.CONVEYOR TABLES	2NOS	10.WASTE SHELLS CONVEYOR	

BEST ENGINEERING TECHNOLOGIES
HYDERABAD   +919440344335

Customer:

Title: SCHEMATIC LAY OUT DRAWING FOR CASHEW PROCESSING PLANT
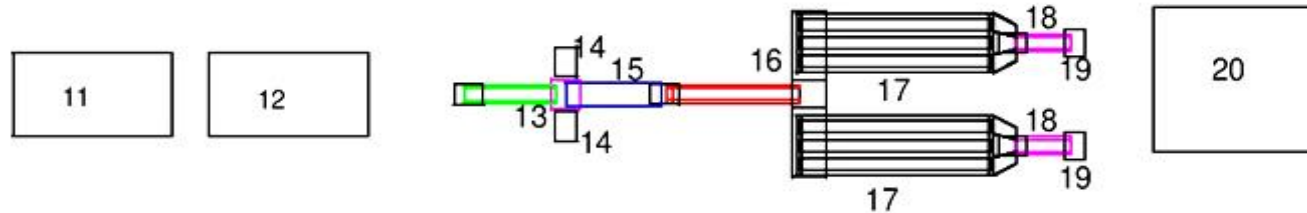CAPACITY:5000KGS(INPUT-RAW CASHEW)
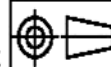
Date: 24-10-2012		Rev No. 01	
	SCALE	Drawn by: K.N.SRINIVAS	
	NTS	Checked by:	

Page : 1/2

VALUE CHAIN & GAINS!

www.bestengineeringtechnologies.com

SCHEMATIC LAY OUT DRAWING FOR CASHEW PROCESSING PLANT
CAPACITY:5000KGS(INPUT-RAW CASHEW)

11.ELECTRICAL OVEN	1NO	12. HUMIDIFIER	1NO
13. SLANTING CONVEYOR	1NO	14.PEELING MACHINES	3NOS
15.SEPERATOR	2NOS	16.SLANTING CONVEYOR	1NO
17.CONVEYOR TABLES	2NOS	18.SLANTING CONVEYOR	1NO
19.GREADER	2NOS	20.PACKING MACHINE	1SET

BEST ENGINEERING TECHNOLOGIES
HYDERABAD   +919440344335

Customer :

Title : SCHEMATIC LAY OUT DRAWING FOR CASHEW PROCESSING PLANT
CAPACITY:5000KGS(INPUT-RAW CASHEW)

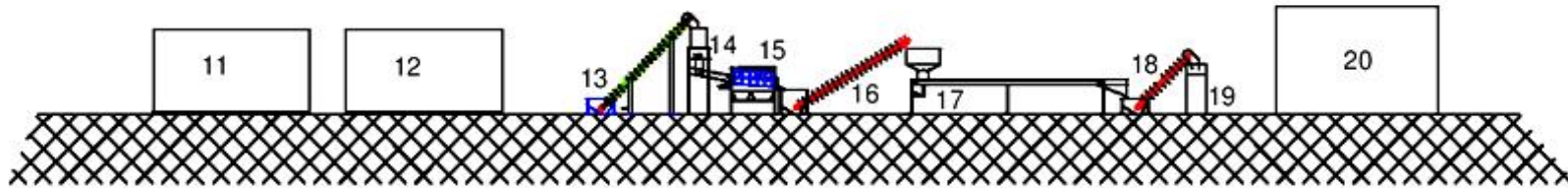| Date: 24-10-2012		Rev No. 01	
	SCALE	Drawn by: K.N.SRINIVAS	
	NTS	Checked by:	

Page :2/2

VALUE CHAIN & GAINS!

www.bestengineeringtechnologies.com

❖ **Raw Cashew nuts are feeded in to Grader by Bucket elevator.**

❖ **To Grade Big , Average and small raw cashew nuts.**

Boiler

❖ **Raw Cashew nuts are feeded in to Cooker by Bucket elevator.**

❖ **To Cook the raw cashew nuts.**

Cooker

❖ **To Cut the Cooked raw cashew nuts.**

❖ **Shelled raw cashew nuts are carried on the horizontal conveyor.**

www.bestengineeringtechnologies.com

❖ **Slant Conveyor is used to feed shelled raw cashew nuts on to the working table.**

❖ **Working table is used to scoop the cashew kernels from the shelled raw cashew nuts manually.**

VALUE CHAIN & GAINS!

www.bestengineeringtechnologies.com
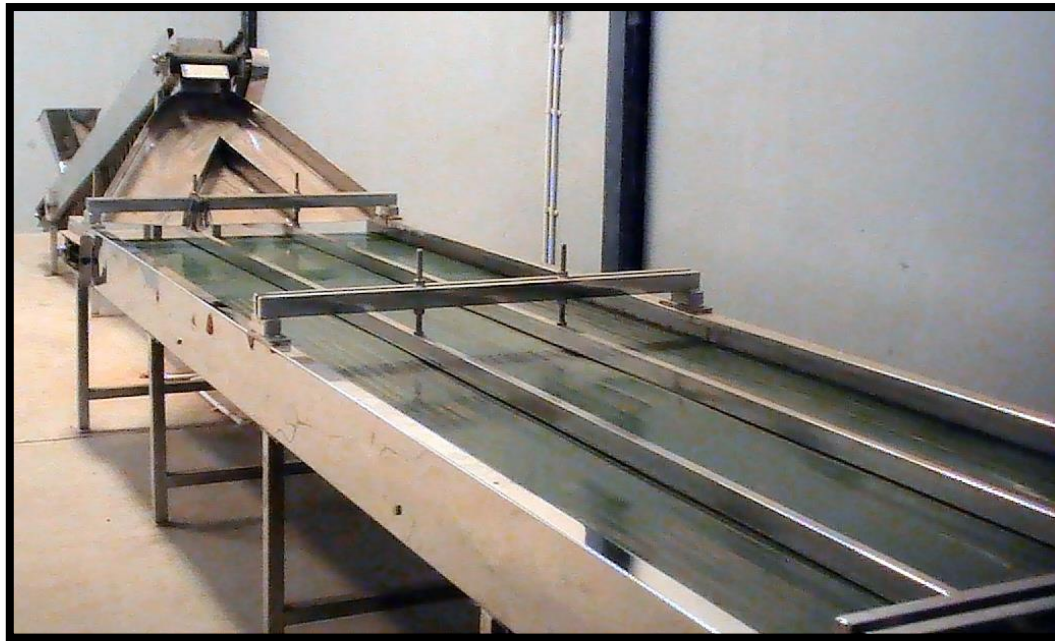
❖ **To Dry the Kernels**

Dryer

Trays

VALUE CHAIN & GAINS!

❖ **To Maintain Sufficient moisture level of unpeeled cashew kernels to reduce the broken percentage during peeling**

Humidifier Room

Humidifier

www.bestengineeringtechnologies.com

❖ **Unpeeled raw cashew kernels are feeded in to the peeling machine by slant conveyor**

❖ **To peel the unpeeled Cashew kernels**

COMPRESSOR

PEELING MACHINE

VALUE CHAIN & GAINS!

www.bestengineeringtechnologies.com
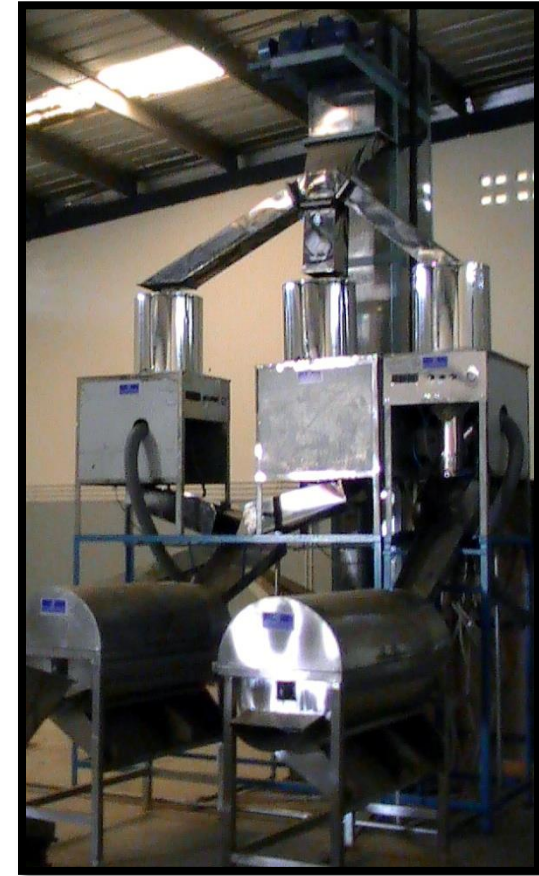
❖ Peeled cashew kernels are feeded in to Separator Directly.

❖ It separates – Testa, Pieces and whole kernels.

Separator

Separator with Peeling machine

VALUE CHAIN & GAINS!

www.bestengineeringtechnologies.com

❖ **Slant Conveyor is used to feed Peeled Kernels on to the working table.**

❖ **Working table is used to separate peeled & Un peeled kernels manually.**

❖ **Slant Conveyor for feeding peeled kernels in to the Grading machine**

❖ **In Grading Machine will have Six Grades**

1) W - 180
2) W - 210
3) W - 240
4) W – 320
5) 2 pieces
6) Splits.

VALUE CHAIN & GAINS!

www.bestengineeringtechnologies.com

Vacuum Packing Machine
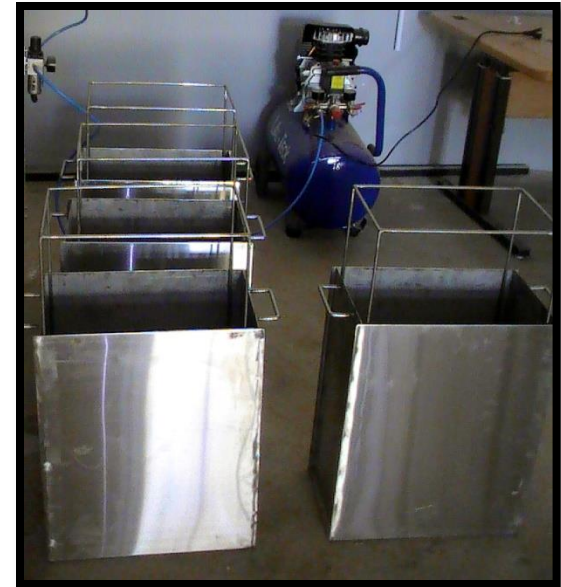
❖ **Used for Vacuum Packing of the Cashew Kernels with inert gas (CO_2 & N_2) Purging Facility**

❖ **50 Lbs & 25 Lbs**

Packing Machine

Packing Chambers

VALUE CHAIN & GAINS!

www.bestengineeringtechnologies.com

❖ **Used for Peeling of Hard Skinned cashew Kernels manually**

❖ **Grading of cashew Kernels Manually.**

Working Table

www.bestengineeringtechnologies.com

CASHEW NUT PROCESSING PLANT

SL.	PRODUCT	SPECIFICATIONS	PURPOSE
1.	Raw Cashew Grader	MOC: MS Capacity: 500 Kg/Hr, Drive: 3 + 2 H With Feeding conveyor Power required 5 HP	This machine is used to grade the raw cashew nuts based on its size (3 Sizes – Big Average & Small) Raw Cashew nuts are feed in to the grader using conveyor.
2	Conveyor and Hopper	MOC: MS, Drive: 2 HP For Feeding to Cookers. Power required 2 HP	This conveyor is for feeding the raw cashew to the cookers.
3.	a. STEAM COOKER b. STEAM BOILER :	To Cook the shells of 1000 Kg per batch in One Hour in two cookers of each 500kg. Capacity: 200 Kg/Hr Pressure: 4 Kg/cm2 With Diesel Fired Burner, Diesel Storage Tank, expansion tank & Control panel , Feed pump Power required 1.5 HP	This equipment is for cooking the raw cashew shells.
4.	Conveyor	To carry the material after shell cutting. Length: 40 Feet Drive: 2 Hp Power required 2 HP	In our quotation we have quoted 18 machines. These 18 machines are arranged in two parallel lines of each 9 machines, in between this two lines we will arrange this conveyor to carry the shelled raw cashews (please refer the attached layout diagram)
5.	AUTOMATIC SHELL CUTTING MACHINES	Capacity:35 to 40 kg/hr Motor Power - 1.0 HP (Each machine) Number of cutters - 4Nos (Each Machine) All Parts in MS	This equipment is for cutting/shelling the raw cashew nuts.
6.	Slant Conveyor	Conveyor length:6feet With Cleats, Cleats made of SS 304, Mounted on MS legs, Drive 0.5 HP.	Shelled raw cashews from the conveyor (Sl.no 4) will be transferred to Vibrator cum oscillator through this conveyor.

VALUE
CHAIN &
GAINS!

www.bestengineeringtechnologies.com

7.	VIBRATOR CUM OSCILLATOR:	Capacity:300-500kg/hr Power:1HP Oscillator :1HP Vibrator	This system is used after the cashew cutting / shelling The cooked raw cashew after shelling is separated into empty shells, cashew kernels, uncut and half cut. Oscillator separates the removed cashew kernels easily. Vibrator separates the Uncut, half cut and empty Shells With this system lot of manual lab our can be eliminated for sorting and makes the process easy and time efficient.
8.	Slant Conveyor	Length: 6 Feet Drive: 0.5 Hp MOC: MS Power required 0.5 HP	The output from the Vibrator Cum Oscillator will be transferred to the working table through this conveyor.
9.	Working Table with Conveyor	With Conveyor Length: 16 Feet Drive: 1 Hp MOC: SS 304 Power required 1HP	This Working table is used for sorting and scooping the cashew kernels. i) Sorting: Sorting of free cashew kernels, waste/empty shells, half cuts and uncuts will not be 100% efficient in the Vibrator Cum Oscillator, so the unsorted items will be sorted manually on this working table, while the unsorted items are passing through the conveyor on the working table. ii) Scooping of cashew Kernels All the shelled raw cashew nuts will be conveyed to this table. Generally after shelling most of the times kernels will not be free from the shell, so on this table with conveyor , shelled cashew nuts will be passing through conveyor. 12 people will be seating on this table , 6 each on either side of the table will scoop the kernels manually.
10.	Waste Shell carry Conveyor	To carry Waste Shells Length: 24 Feet Drive: 1 Hp MOC: MS Power required 1 HP	After separating the cashew kernels and the shells. Shells will be carried out using this conveyor

VALUE CHAIN & GAINS!

www.bestengineeringtechnologies.com

11.	ELECTRICAL OVEN	To dry the Kernels of 1000 Kgs at 55-60◦C in 5 to 6 Hours. So, to dry 1000 kg in two batches, it takes 10-12 Hrs. Over all Body in MS. Trays will be in GI Plain / Perforated. No. of Trays : 192 Each Tray Size: 32 x16 x 1½ Inches. Motor: 1.0 HP - 2 Nos. Heater Power : 32 KW Note: With Extra Set of trolleys and trays Power required 52 HP	This equipments is for drying the cashew kernels.
12	Humidifier	Swiveling type humidifier to make the kernels up to 4.0 to 5.0% moisture condition for better peeling of skin. Power required 5 HP	Before peeling we have to ensure that moisture content is maintained between 5-6. If it is less than that, during peeling percentage of the broken cashew kernels will be more. So this equipment will help to create sufficient moisture content in the kernels and later on this kernels can be peeled with very less broken percentage.
13.	Elevator Cum Silo	To feed the kernels to 3 No's of peeling machines. MOC: SS 304 For contact marts and mounting frame in MS Power required 1 HP	Cashew Kernels are feed in to the peeling machines through this elevator cum silo.
14.	a.CASHEW SKIN PEELING MACHINE	Capacity: 80 Kg/Hr. Motor Power – 4KW Material – Contact parts by Stainless steel Air Compressor – 20 HP (Screw Type) Air Pressure – 7.5 to 8 Kg/Cm2 Power required 20 HP	This equipment is useful for peeling the skin over the cashew kernel.
15.	Seperator	Voltage Rating - 415 V (Three Phase) Motor Power - 0.25 HP All Parts in SS To separate wholes, Half's Splits and Testa Power required 0.5 HP	This equipment is used for separating the testa (peeled skin), whole kernels & half kernels.

16.	SLANT CONVEYOR WITH SILO & HOPPER:	Conveyor length:9feet With Cleats, Cleats made of SS 304, Mounted on MS legs, Drive 0.5 HP.	To transfer the peeled cashew kernels to the working table.
17.	Working Table	Length: 4 x 16 Feet Moc: SS 304	The peeling machine efficiency is (90 -95) % efficiency only. So on this table we will sort out the unpeeled kernels manually when the kernels are passing through the conveyor on this table.
18.	SLANT CONVEYOR WITH SILO:	Conveyor length:6feet With Cleats, Cleats made of SS 304, Mounted on MS legs, Drive 0.5 HP.	This conveyor is used for feeding the peeled kernels in to the grading machine.
19.	GRADING MACHINE	Gradation capacity :100 kg per hour Power consumption :Single phase A/C 102 Watts Number of Grading :SIX (6) Power required 2 HP	This equipment is used to grade the cashew kernels based on their sizes.
20.	Vaccum Packing	T Shaped vertical vacuum packing Chamber Size: 650 mm x 8 mm bi- active Pump capacity: 65cu.m/hr; 2 HP; 3ph Power required 3 HP	For vacuum packing of the cashew kernels.
21.	Oil Expeller	We have not quoted this equipment to you. Based on your required capacity we can give the specifications for the same.	This equipment is used for extracting the oil (CSNL) from the waste shell. Generally the input: output ratio will be 4: 1 (i.e if you process 100 Kg you will get 25 kg output). In your case your processing 3000 MTNS/year, i.e 12 ton/day. So if you process 12 ton per day, you will get 3 tons of cashew kernel and 9 tons of shell. Generally the oil content in the shell will be 25- 35%. So from 9 tons you will getting 2250 liters to 3150 liters of CSNL oil. This oil will be bought by varnishing industries.
22.	Hand Cutting machine :	Material: M.S, Cutting table: S.S Note: We have not quoted this items.	This for manual cutting of raw cashew. This is not preferred for plant of your capacity.

VALUE CHAIN & GAINS!

www.bestengineeringtechnologies.com

❖ **From Cashew Waste Shells we can Provide producer Gas for**

Thermal Application
&
Power Application

Our International Presence

www.bestengineeringtechnologies.com

VALUE
CHAIN &
GAINS!

www.bestengineeringtechnologies.com