TECHNO-COMMERCIAL PROPOSAL

FOR

**VEGETABLE PROCESSING EQUIPMENT**

**Capacity –15 TON/ HR. (INFEED)**

 **6.5 TON / HR. (FINISH)**

PROPOSED BY

**PROCESS ENGINEERS,**

**AMBALA CITY , HARYANA**

**INDIA**

 FOR

**M/S VVR NATURALS PVT. LTD;**

**VILL. THANT JUT, P.O RAJA KA TAJPUR**

**DISTT. BIJNOR, UP - 246735**

REF NO. – PE/24-25 DATE: 21/12/2024

To

M/s VVR Naturals Pvt. Ltd;

Vill. Thant Jut, P.O Raja Ka Tajpur

Distt. Bijnor, UP - 246735

**Subject : Quotation For vegetable-processing equipments**

**Cap:- 15 ton/hr.(Infeed)**

 **6.5 ton/hr.(Outfeed)**

Dear sir,

 We thank you for the valuable enquiry. We have great pleasure in proposing

 our best & most competitive offer, as enumerated below for your kind perusal. For your easy evaluation we have segregated the proposal as below:

 ***Proposal with Basis of Design & Technical specifications***

 ***Bill of quantity & price schedule***

 ***Commercial Terms & Conditions [ MOU ]***

 ***Exclusions***

 ***Warrantee - Scope & Terms***

In case of any clarifications, please feel free to get in touch with us.

We trust our offer is in line with your requirement and look forward for your valued order.

Thanking and assuring you of our best attention and service at all times.

Yours Faithfully

**FOR PROCESS ENGINEERS**

SANJEEV KUMAR (9896553394)

Dear Sir

Our proposal document includes:

1. SALIENT FEATURES OF OUR VEGETABLE PROCESSING PLANT
2. DESIGN DETAILS
3. EQUIPMENT LIST
4. GENERAL SPECIFICATIONS
5. EXCLUSIONS
6. PERFORMANCE GUARENTEE
7. COMMERCIAL OFFER

We trust you will find our offer in line with your requirements and look forward to the pleasure of receiving your valuable order at the earliest.

**SALIENT FEATURES OF OUR PLANT:**

1. Technology with latest equipments and robust build up.
2. Plant suitable for extraction of various herbs.
3. All necessary safety parameters considered.
4. Bought out equipments from standard suppliers
5. Best product output without heat damage to the active ingredients.
6. User friendly and easy to operate

**B.DESIGN PHILOSOPHY:**

* 1. **PLANT CAPACITY** : 15000 kg as input per hour.
	2. **BASIS OF OPERATION** : 300 Days / 24 Hrs per Day
	3. **RAW MATERIAL : Various Vegetables**.
	4. PROCESS BUILDING REQUIREMENT:

Covered Area required : 50000 sq.ft.( approx)

Space requirement for Raw material godown will depend on storage requirement.

* 1. **Utilities consumption - tentative**

 Steam : 2000kg./hr.

 Power : 1200kva

* 1. **Utilities Requirement at Battery limits**

 1. Steam:

 Pressure : 7 kg/cm2 (g), Dry saturated

 Quantity : 800 kg./hr.

2. Cooling Water ( Cooling Tower) ---- n/a

 Supply pressure :

 Temperature :

 Capacity :

 3. Chilled Water

 Supply Pressure : n/a

 Temperature : 2-5 degree C

 Capacity : 25000ltr./hr.

 4. Power

 Supply Voltage : 415 V AC, 3 phase, 50 Hz

 Connected load : 1200 kva

**D. EQUIPMENT LIST:**

1. **PROCESS LINE**

|  |  |  |
| --- | --- | --- |
| **S.NO** | **EQUIPMENT DESCRIPTION** | **QTY** |
| 1. | FEEDING ELEVATORSCap.- 3000 kgs. Of pods/hr.eachSize – 550mm width x 4 mtr. Height Power – 5.0 h.p Suitable for feeding pea to the depodder. The equipment consists of :- A) Modular Belt type conveyor with height of clit 100 mm, placed at a distance of 300 mm.B) S.S. 304 side guides & center guides for partition.C) S.S. feed hopper & discharge chute.D) Fixed speed drive with geared motor& sprocketsE) S.S. framework with S.S. supporting. | 05 |
| 2. | PEA DEPODDER Cap.- 3000 kgs. Of pods/hr./depodderPower – 60 h.pSuitable for depodding of peas. The equipment consists of :-A) Wooden beaters mounted on S.S. beater drum with adjustment arrangement for flow of product.B) Riddle drum fabricated from S.S. 304 sq. pipes with S.S.wire mesh of size 14 mm X 14mmX 2.5 mm thk.C) S.S. feed hopper & discharge chute.D) Apron conveyor (imported) with S.S. framework, M.S drive & driven roller & arrangement for adjustment of apron conveyor.E) S.S framework for mounting of beater drums & riddle drum.F) Fixed speed drive with geared motor & sprockets.  | 05 |
| 3. | **WASTE COLLECTION CONVEYOR**Cap.-10,000 kgs. Of waste/hr.Size – 800 mm x 13.5 mtr. LengthPower – 2 h.pSuitable for collecting & carrying waste discharged from depodders. The equipment consists of :-A) PVC coated food grade endless belt (imported).B) Side guide, rollers, framework will be from S.S.304.C) Fixed speed drive with geared motor with S.S. base Plate & motor cover. | 01 |
| 4. | **BUCKET ELEVATOR** Cap.- 10000 kgs. Of waste/hr.Size – 600 mm x 3 mtr. LengthPower.- 1.0 h.pSuitable for carrying the product to recovery drum. The equipment consists of :-A) S.S. 304 framework with supporting.B) Perforated buckets with side gaurds at both sides.C) Sprockets with S.S. shaft & bearings for driving buckets.D) Fixed speed drive with geared motor. | 01 |
| 5. | **RECOVERY DRUM WITH GRAIN CONVEYOR**Cap.- 10,000 kgs. Of waste/hr.Size – 1.5 mtr. Dia. X 6.3 mtr. LengthPower.- 20 h.pSuitable for separating of pea grains waste. The equipment consists of :-A) S.S. perforated drum of perforation size 15 mm. Dia.B) Apron conveyor with S.S. framework & rollers for Separating grains from skin pods. suitable blower with Ducting for cleaning of holes regularly.C) S.S. framework with supporting.D) S.S. feed hopper & discharge chute.E) Fixed speed drive with geared motor. | 02 |
| 6. | **WASTE DISCHARGE CONVEYOR/ELEVATOR**Cap.- 10000 kgs. Of waste/hr.Size – 700 mm x 5 mtr + longPower – 1 h.pSuitable for carrying waste from recovery drum to loading vehicle. The equipment consists of 1. PVC conveyor
2. S.S. 304 side guides & center guides for partition

C) S.S. feed hopper & discharge chute.D) Fixed speed drive with geared motor & sprockets.E) S.S. framework with S.S. supporting. | 01 |
| **7.** | **CROSS COLLECTION CONVEYOR**Cap.- 6500 kgs./hr.Size – 800 mm x 4.0 mtr. Length Power – 4.0 h.pSuitable for collecting peas from depodders & carrying them to grain conveyor. The equipment consists of :- A) PVC coated food grade endless belt (imported).B) Side guides, rollers, framework will be from S.S.C) Fixed speed drive with geared motor with S.S. base Plate & motor cover. | 03 |
| **8.** | **GRAIN CONVEYOR**Cap.- 6500 kgs./hr.(one no.)Size – 800 mm x 13.5 mtr. Length Power – 2.0 h.p Suitable for collecting peas from pod sorter & carrying them to elevator. The equipment consists of :- A) PVC coated food grade endless belt (imported).B) Side guides, rollers, framework will be from S.S.C) Fixed speed drive with geared motor with S.S. base Plate & motor cover. | 01 |
| **8.** | **POD SORTER**Size- 1.25 mtr x 600 mm(top)Hole size- 14 mm. roundPower – 1 h.pSuitable for collecting pea from cross collection & separating the pods from depoded peas , transferring the same to the bucket elevator. | 03 |
| **9.** | BUCKET ELEVATORCap.- 6500 kgs. Of grains/hr.Size – 700 mm x 3 mtr lengthPower – 1.0 h.pSuitable for carrying the product to winower. The equipment consists of :-A) S.S. framework with S.S. supportings.B) Modular belt of 100 mm.clit height with perforated buckets & side guards at both sides.C) Sprockets with S.S. shaft & bearings for driving the buckets.D) Fixed speed drive with geared motor & sprockets. | 01 |
| **10.** | VIBRATORY WINOWER WITH POD STICK ELIMINATOR VIBRATORCap.- 6500 kgs./hr.Size – 800mm x 3.0 mtr. Length Power – 1.5 H.pSuitable for removing skin, floaters & warms from the product. The equipment consists of :- 1. S.S. Perforated tray placed above SS slotted tray in first section .in second section the perforated tray is above counter conveyor .A blower of suitable capacity is placed above the perforated tray to remove pod skins.

B) S.S. supporting with S.S framework , SS stairs with SS platform.C) Blower of suitable capacity.D) S.S. discharge chute with perforated base.E) Double Stage Conveyor System & suitable blower to ensure the removal of pod skins & conveyor system with suitable hopper for discharge of podsF) Fixed speed drive for shaker & blower with electric motor. | 01 |
| 11**.** | BUCKET ELEVATORCap.- 6500 kgs. Of grains/hr.Size – 700 mm x 3 mtr lengthPower – 1.0 h.pSuitable for carrying the product to even feed hopper. The equipment consists of :-A) S.S. framework with S.S. supportings.B) Modular belt of 100 mm clit height with perforated buckets & side guards at both sides.C) Sprockets with S.S. shaft & bearings for driving the buckets.D) Fixed speed drive with geared motor & sprockets. | 01 |
| 12. | EVEN FEED HOPPERSize – 1200 mm. x 1200 mm. x 1200 mm. Storage Cap. – 1000 kg. Power – 0.5 hp.Suitable for even feeding of product to the line ahead. So as to avoid temp. deviation. | 01 |
| 13. | CONVEYORCap.- 6500 kgs. Of grains/hr.Size – 700 mm x 4 mtr length ( Variable according to the position at site)Power – 1.0 h.pSuitable for collecting peas from even feed hopper & carrying them to washer. The equipment consists of :- A) PVC coated food grade endless belt (imported).B) Side guides, rollers, framework will be from S.S.C) Fixed speed drive with geared motor with S.S. base Plate& motor cover. | 01 |
| 14. | **S.S BELT TYPE WASHER** Cap.- 6500 kgs./hr.Size – 1mtr. width x 5 m long Power – 2.0 h.p Suitable for washing OF leafy & root vegetables, & removing of foreign particles from the product. The equipment consists of :- A) S.S. balance tank with S.S. centrifugal pump & turbine blower.B) S.S. flume suitable for washing of product & removal of stone & other solid particles.C) Arrangement for washing of product by fresh water& removing foreign material.D) Fixed speed drive with geared motor.  | 01 set |
| 15. | **S.S. BELT TYPE BLANCHER**CAP.- 6500 kgs/hr.SIZE – 1.2 mtr. X 10 mtr. LENGTH (STRAIGHT)POWER – 2.5 H.PSuitable for blanching of product. The equipment consists of :-A) S.S. outer shell with hinged top covers.B) PP Perforated belt (modular) to withstand 180◦c temp.C) S.S. feed & discharge chute.D) VFD drive with geared motor.E) S.S pump with duplex filter system to spread water on the product.F) PLC Controlled Pneumatically operated solenoid valve assembly with temperature controller.G) Steam Spray Nozzle Assembly Placed Under & above the Belt.Water spray assembly placed over the belt & two water level controllers.H) PLC with touch screen to control Speed of belt & temperature. I) Suitable to adjust blanching temp. between 70 - 94°C &time between 90 –600 seconds.J) Blancher belt is food grade modular belt & mounted as such to enable cleaning without removing belt.K) Blancher is suitable for steam blanching, Hot water spray blanching & water dip blanching.  | 01 |
| 16. | **BELT TYPE AFTER COOLER – THREE STAGE**CAP.- 6500 kgs./hr.SIZE – 1200 mm Dia. X 7 m LENGTH POWER – 5 H.P Suitable for cooling of product upto 15 c provided feeded by water of temp. 7c. The equipment consists of :- A) Modular belt frame mounted on SS frame.B) S.S. centrifugal pump one nos. with two nos. S.S. balance tanks with filters.C) S.S. pipe line up to tanks.D) SS Flume for pre cooling of product will be installed between blancher & cooler.  | 1 Set |
| 17. | **DEWATERING SHAKER**Cap.- 6500 Kgs./Hr.Size – 800 Mm X 3.0 Mtr. Power – 1.0 H.PSuitable for removing of water from the surface of product. The equipment consists of :-A) S.S. slotted tray with S.S. guides & rosta mountings B) S.S. hooper for collecting waste & drain water.C) Suitable 2 no. Vibratory motors of repute make. | 01 |
| 18. | **INSPECTION CONVEYOR** Cap.- 6500 kgs./hr.Size – 1 mtr. width x 5 mtr lengthPower.- 1.0 h.pSuitable for manual inspection of product. The equipment consists of :-A) PVC coated food grade endless belt (imported).B) Side guides, rollers, framework will be from S.S. C) Plateforms on both sides with railing & stairs for comfortable workingD) Variable speed drive with VFD & geared motor with S.S. plate. | 01 |
| 19. | **PRECOOLER** Cap.- 6500 kgs./hr.Power – 19.5 hp.The product is taken over from the Inspection Conveyor. The belt is moving through a cabinet where outside air is taken in by means of fans and blown through the product and discharged again. The achieves a relatively easy temperature drop from 5-10°C depending upon incoming product temperature. The belt of the ambient cooling tunnel is designed in such a way that the product is directly dropped over to the IQF Feed Elevator. The retention time in the ambient air-cooling tunnel is approximately 4 minutes. | 01 |
| 20. | **BUCKET ELEVATOR FOR IQF**Cap.- 6500 kgs. Of grains/hr.Size – 800 mm x 3 mtr. LengthPower.- 1.0 h.PSuitable for carrying the product of blancher. The equipment consists of :-A) S.S. 304 framework with supporting.B) Perforated buckets with 100 mm. clit height & side guards at both sides.C) Sprockets with S.S. shaft & bearings for driving buckets.D) Fixed speed drive with geared motor. | 01 |
| 21. | **ELECTRICAL PANEL WITH CABLE & CABLE TRAY, INTERNAL PIPELINING OF MACHINES, ERECTION & COMMISSIONING** | 01 LOT |
|  |  |  |
| **\*\* Total power required ------- 131.5 H.P****\*\* COST: Rs. 4,00,00,000 /-****\*\*IGST@18% :- Rs. 72,00,000/-****\*\*TOTAL COST: Rs. 4,72,00,000/-****B) IQF****BASIS OF DESIGN:** |  |  |
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| --- | --- |
| ROOM SIZE  | 12500mm x 5975mm x 4500mm |
| PRODUCT TO BE STORED | GREEN PEAS |
| PRODUCT INCOMING TEMPERATURE | 18-20 DEG C |
| ROOM TEMPERATURE | MINUS 35 DEG C |
| FREEZER ROOM COOLING LOAD | 202 TR |
| CAPACITY | 6500 KG/HR |
| POWER LOAD | 115 KW |
| FINAL PRODUCT TEMP | MINUS 20 DEG C |

**FLUIDISED IQF FREEZING TUNNEL**

Theﬂuidisedfreezingtunnel(IQF)isthemostpopularquick-freezingdevice. Using the ﬂuidisation Technology, the processed product behaves like a boiling liquid: air driven by fans, ﬂows through the evaporator, and then through the perforated belt, causing the product to move, preventing it from sticking to each other.

**MODULAR BELT:**

Modular, perforated Poly Actel Belt, dedicated to IQF tunnel with Opening of 21 to 23% for excellent air circulation and drainage. The Smooth surface is easy to clean and Suitable for the temperature application.

**CONVEYOR TRACK SYSTEMS:**

The IQF Tunnel Freezer Conveyor track are with two independent tracks and two separate pressure chambers for stable fluidising. The conveyor tracks are fabricated with Stainless steel 304 structures.

**IRS (ICE REMOVAL SYSTEM):**

A device for removing Soft Ice frost from the Cooling Coil with the use of blasts of compressed air. Which Help in Extends the working time of the IQF tunnel between frosts up to 22 hours.

**AMMONIA COOLING COIL:**

The Cooling Coil supplied is made of Stainless Steel Tube and Aluminium Fin with Stainless Steel Body Construction Suitable for the IQF Tunnel.

**AIR CIRCULATION FANS:**

The Air Flow for Maximise the Fluidising is been done by the energy efficient Backward curve plug fans duly epoxy painted for the circulation.

**PLC CONTROL PANEL:**

PLC Control panel of the IQF Tunnel allows you Control the operation of all tunnel components without the need to enter its interior. The system is operated via a colour touch panel a communication interface, a remote maintenance connection .The menu navigation for fault handling as well as for maintenance and service work .All drives are designed in the energy efficiency class IE3 and are controlled by frequency inverters.

**HYGIENIC DESIGN:**

The insulating floor and the insulating walls are Prefabricated Puff Panels with

SS304 0.5mm thick Sheet Laminated Either Side. The floor sheet area is designed with slope and extra-large drains. The system is fully accessible for cleaning. The "hygienic design" and the tool-free disassembling of the frequently cleaned system components allow for effective cleaning.

**QUICK INSTALLATION:**

The system is completely pre-assembled for transport, it is unloaded into individual modules and then finally assembled on site on a foundation in a few days. After short commissioning and training, the system is ready for production immediately.

**LONG OPERATION**

The IQF Tunnel has air coolers made of stainless steel tubes with aluminium fins and large fin spacing. The ice removal system makes it possible to continuously blow off the fins with air out of the system. With an externally extended infeed, it is possible to wash and dry the belt while the system is still cold, for a virtually continuous operation.

**INFEED SHAKER:**

The iqf tunnel has provided with the infeed equal sperader with de watering system which is Fabricated with Stainless Structure 304 With Vibrating Motors and Welded Wedge Screen for hassle free operation.

**Scope Item Supply with Make and Specifications:**

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| **S.No** | **Description** | **Make** |
| 1 | IQF BELT Size 1000mm Width x 30000mm Total Length x 50mm Pitch. Material POM Colour Blue. | MODUTECH/FORBO/SCANBELT |
| 2 | FAN : Backward Cure Plug Fan Impeller Dia 800mm-39000CMH MS Epoxy Painted With Motor 18.5 Kw 4 Pole - 6 Set | TCF & ABB |
| 3 | Air Cooling Coil 5000mm Length x 1800mm Width x 900mm Height - 2 Set  | ALFA LUVE |
| 4 | Gear Drive Motor for Conveyor 1 & 2 and Plustuvator 0.55 Kw , ADF -0.25 Kw | NORD |
| 5 | Electrical Control Panel : Enclose SS304 , PLC- Siemens, HMI-Wenintek : 7" Wide Touch Screen , VFD 1.1 Kw - 4 Nos for Conveyor, ADF& Pulsuvator, All Switch Gears L&T | PLC - SIEMNES , HMI- WENITEK , VFD DANFOSS/ALLEN BRADLEY, SWITCH GEARS : L&T/SCHNIDER |
| 6 | Electrical InterConnecting Cables from Control Panel to Motors | LAPP MINUS 40 DEG CV |
| 7 | Puff Panel: 150mm Thick With 0.5mm Thick SS 304 Lamination Sheet on Either Side | ISOLLOYOD/KINGSSPAN JINDAL METEC. |
| 8 | IQF Access Door : 600mm Width x 1350mm Height - 2 Nos & 600mm Width x 1000mm Length - 1 No | METAFLEX |
| 9 | Ice Removal System & Pulsuvator  | PROCESS |
| 10 | Infeed Shaker With SS 304 Structure and SS Welded wedge Screen Removal Type 2400mm Length x 800mm Width With Vibrio Motor -1.35 Kw - 2nos Make SINEX | PROCESS |
| 11 | Air Screw Compressor 250 CFM @ 10 Kg/Cm2 with Heat Less Drier, Receiver 2000 Ltr -2Nos, Along with Pre Filter & Carbon Filter And Auto Purge valves | Colt  |
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**\*\* COST: Rs. 4,50,00,000 /-**

**\*\*IGST@18% :- Rs. 81,00,000/-**

**\*\*TOTAL COST: Rs. 5,31,00,000/-**

1. **BOILER**

**Cap.- 2000 kg./hr.(Multifuel Fired)**

# TECHNICAL DATA SHEET

### GENERAL:

MODEL : MULTI-PURPOSE 2000 KG/HR

TYPE OF BOILER : MULTI-TUBULAR PACKAGE WATER CUM SMOKE TUBE, THREE PASS BOILER

##### NO. OF BOILER TO BE SUPPLIED **: ONE**

**MAKE** : Steam Tech

**2. PARAMETERS OF THE BOILER:**

**STEAM CAPACITY** : 2000 KG/HR. (AT F & A 1000C)

**STEAM PRESSURE (KG/CM2)** : 10.54 KG/CM2

**STEAM** : SATURATED

**FUEL TO BE USED** : Multifuel

**TOTAL HEATING SURFACE AREA** : 80 M2

# SCOPE OF WORK & SCOPE OF SUPPLY

##### SCOPE OF WORK:

DESIGN, FABRICATION AND SUPPLY OF COMPLETE BOILER FOR 2000 KG/HR (AT F & A 1000C) BOILER CAPABLE OF GENERATING STEAM AS PER TECHNICAL SPECIFICATIONS ENCLOSED.

##### **SCOPE OF SUPPLY**

* 1. **STEAM BOILER**
	2. **PRESSURE PART**
		+ BOILER SHELL IBR
		+ WATER WALL MEMBRANE
		+ INCLUDING SMOKE CHAMBER
		+ MOUNTING AND FITTING

### NON-PRESSURE PARTS

* + - Boiler Front and Rear Smoke Box
		- Air Preheater with smoke box and hopper
		- Unicyclone with slide action damper

### MCC CONTROL PANEL (AUTOMATIC)

* Electricals
* Relays
* Controls
* Switch gears
* Contactors
* Thermocouple

##  Accessories & Others (MANUFACTURER SCOPE)

* + - Unicyclone with slide action damper
		- Air Preheater with smoke box and hopper
		- Boiler Feed Pump - 2 nos.
		- ID Fan with Motor 10 HP
		- FD Fan with Motor 5 HP
		- Plenum Chamber
		- SS Airjet Nozzles
		- Fire Door 2 nos.

# TECHNICAL DETAILS

## Steam Boiler

Pressure Parts consisting of the following:

###  Steam Drum

The boiler shall be provided with shell and is of fusion welding construction. The shell is provided with end plates, fitted with tubes, Manhole, Hand Hole doors.

The thickness of the shell will be designed based requirement as specification under **INDIAN boiler regulation 1950** with latest amendments.

Material of Shell : ASTM A 516/IS 2002 GR 2-1992 (RA 2007)

Material of Tubes : BS 3059:1987 PTI ERW 320

 Boiler Shell : 1600 MM X 2000 MM X 12 MM

Boiler Tube sheet : 1576 MM X 1576 MM X 16 MM

Tube Size : 63.50 MM OD X 3.66 MM

 ERW Water Wall Panel : 63.50 MM OD X 3.66 MM

ERW Water Wall Top Headers : 168.3 MM OD

SEAMLESS SCH.40 Bottom Headers : 141.3 MM OD

 SEAMLESS SCH.40

### Mounting & Fittings

* + - Main Steam Stop Valve : 1 No.
		- Safety Valves : 2 Nos.
		- Blow down valve : 1 No.
		- Air vent Valve : 1 No.
		- Gauge glass cock with drain valves : 2 Sets
		- Gauge glass header : 1 Nos.
		- Feed check valve on water line : 1 No.
		- NRV for feed-water pump : 3 No.
		- Pressure gauge with siphon & coke : 2 No.
		- Mowbery Control System (Water Auto Cut) : 1 No.
		- Isolation valves for Mowbray : 2 No.
		- Drainage Valve for Mowbray & Gauge Glass Header : 1 No. Each
		- Valve for Pressure Switches : 1 Nos.
		- Pressure Switch : 1 Nos.
		- Pressure switch header : 1 Nos.
		- SS-316 Dial pressure gauge 10” : 1 No.

### INSTRUMENT CONTROL AND SAFETY

* Automatic water level controller for Pump on/off at the set level switch.
* Alarm at low water level.
* Boiler shut off at extra low water level & Alarm.
* Fusible Plug to the same boiler in case of extra extra low water level.
* Pressure switch for Fan cut-off & in at desired/set pressure.
* Safety Interlock
	+ FD Fan cannot be on unless ID Fan not running.
	+ A boiler cannot be operated unless the pressure is less than the set pressure in the pressure switch.
* Pressure gauge for steam and water pressure.
* Manually controlled damper for fans.

## BATTERY LIMITS

* Steam - At the outlet of Main Steam Stop Valve/ Safety & Airvent Valve
* Soft water - Inlet to Feed Water Pump
* Fuel - Inlet to Feeder
* Electricity - Inlet to Motor terminals and control panel
* Blow Down - Outlet flange of blowdown valves
* Flue Gases - Outlet below flange of ID Fan

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| **SHELL & TUBE BOILER MATERIAL FOR CONSTRUCTION** |
| SHELL MATERIAL | SA-516 GR 70. |
| TUBE SHEET MATERIAL | SA-516 GR 70. |
| TUBES | BS-3059 PART 1 320 ERW |
| PIPE (NOZZLES) | SA 516 GR B (AS PER IBR CODES) |
| FLANGES | SA 105/ SA-515/516 GR 70 (AS PER IBR CODES) |

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| **FEEDWATER PUMPS** |
| TYPE | VERTICAL |
| NOS. | 2 |
| CAPCITY | 2 M3 / HOUR EACH |
| HEAD | 180 MTR |
| RPM | 2900 RPM |
| MOTOR RATING | 2 HP |
| MANIFOLD | INLET AND OUTLET |

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| **AIR PREHEATER** |
| ALIGNMENT | HORIZONTALLY ALIGNED |
| TYPE | MUTLITUBULAR TYPE |
| ARRANGEMENT | STAGGERED TYPE ARRANGEMENT |
| FLOW MEDIUM INSIDE TUBE | FLUE GAS |
| FLOW MEDIUM OUTSIDE TUBE | AIR |

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| **DUST COLLECTOR** |
| PRESSURE DROP ACROSS CYCLONE | 100 MMWG |
| DUST OUTLET | <350 MG/NM3 |
| FLUE GASS VELOCITY THRU | <10 M/S |

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| **FORCED DRAFT FAN** |
| TYPE | CENTRIFUGAL |
| DESIGN | BACKWARD INCLINED |
| CAPACITY | 3000 CMH |
| PRESSURE | 300 MMWG |
| MOTOR RATING | 7.5 HP |
| COUPLING TYPE | DIRECT-COUPLED |

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| **INDUCED DRAFT FAN** |
| TYPE | CENTRIFUGAL |
| DESIGN | BACKWARD INCLINED |
| CAPACITY | 7500 CMH |
| PRESSURE | 250 MMWG |
| MOTOR RATING | 10 HP |
| COUPLING TYPE | SHAFT DRIVEN WITH PULLEY AND BELT |

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| **ELECTRICALS** |
| MAKE | STEAMTECH |
| RATED VOLTAGE | 415 V |
| SWITCH GEAR | LT/ SCHNIEDER |

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| **ITEMS MAKE OR BRAND** |
| **S. NO.** | **ITEM** | **MAKE OR BRAND** |
| 1. | STEEL | SAIL |
| 2. | TUBES | TATA/JINDAL/EQUI. |
| 3. | FANS | STEAMTECH |
| 4. | FEED PUMP | ALGO/LEO/ EQUI. |
| 5. | GEARED MOTORS | ABB/EQUI. |
| 6. | WATER LEVEL GAUGES | MAHAVIR |
| 7. | PAINTS | BERGER |
| 8. | CYCLONE | STEAMTECH |

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| **VALVES** |
| 1. | IBR VALVES | MAHAVIR |
| 2. | SAFETY VALVES | SAFECON/EQUI. |
| 3. | BLOWDOWN VALVES | MAHAVIR |

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| **CASTING** |
| 1. | MANHOLE DOORS | STEAMTECH |
| 2. | FIRE DOORS | STEAMTECH |
| 3. | OTHER CASTED MATERIAL | STEAMTECH |

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| **ELECTRICALS** |
| 1. | LT MOTORS | ABB/ EQUI. |
| 2. | MCC PANEL | STEAMTECH |
| 3. | SWITCH GEAR | L&T/ SCHNIEDER/ EQUI. |

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| **INSTRUMENTS** |
| 1. | PRESSURE GAUGES | H. GURU/WAREE |
| 2. | PRESSURE SWITCH/ TEMPERATURE SWITCH | TRAFAQ SWITZERLAND |
| 3. | THERMOCOUPLE/GAUGE | WAREE |

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| **WATER QUALITY REQUIREMENT** |
| **S. NO.** | **CHARACTERISTICS (FEEDWATER)** | **FOR 10-17.5 KG/CM2** |
| 1. | TOTAL HARDNESS (CaCO3) mg/ltr MAX | 5.0 |
| 2. | Ph value | 8.5 to 9.0 |
| 3. | DISSLOVED OXYGEN mg/ltr MAX | 0.02 |
| 4. | SILICA (SiO2) mg/ltr MAX | 0.05 |
| **S. NO.** | **CHARACTERISTICS (BOILER WATER)** | **FOR 10-17.5 KG/CM2** |
| 1. | TOTAL HARDNESS (CaCO3) mg/ltr MAX | 5.0 |
| 2. | TOTAL ALKALINITY (CaCO3) mg/ltr MAX | 500 |
| 3. | CAUSTIC ALKALINITY (CaCO3) mg/ltr MAX | 200 |
| 4. | Ph VALUE | 10.5 TO 11.0 |
| 5. | RESIDUAL SODIUM SULPHITE (Na2SO3) mg/ltr MAX | 20 TO 30 |
| 6. | RESIDUAL HYDRAZINE (N2H4) mg/ltr MAX | 0.1 TO 0.5 |
| 7. | PHOSPHATES (PO4) mg/ltr (IF ADDED) | 15 TO 30 |
| 8. | TOTAL DISSOLVED SOLIDS mg/ltr MAX | 2000 |
| 9. | SILICA (SiO2) mg/ltr | 0.02 |

Total alkalinity should preferably be about 20% of total dissolved salts.

# SCOPE OF SUPPLY

|  |  |  |
| --- | --- | --- |
| S.NO | DESCRIPTION | QUANTITY |
| 1. | BOILER SHELL WITH SMOKEBOX FRONT AND REAR | 1 |
| 2. | WATERWALL MEMBRANE WITH SCREEN TUBES HAVING RISERS AND DOWNCOMERS | 1 |
| 3. | AIR PREHEATER WITH SMOKEBOX AND HOPPER | 1 |
| 4. | UNICYCLONE WITH SLIDE ACTION DAMPER | 1 |
| 5. | ID FAN WITH MOTOR 10 HP | 1 |
| 6. | FD FAN WITH MOTOR 5 HP | 1 |
| 7. | PINHOLE GRATE | 20 |
| 8. | BOILER FEED PUMP 2 HP | 2 |
| 9. | BOILER MOUNTINGS | 23 |
| 10. | BOILER SAFETY VALVES | 2 |
| 11. | BOILER FIRE DOOR | 2 |
| 12. | MCC ELECTRIC PANEL IS FULLY AUTOMATIC | 1 |
| 13. | PLATFORM RAILING AND LADDER | 2 |
| 14. | FLUE GAS DUCTING COMPLETE | 1 |
| 15. | BOILER CHIMNEY 16” OD X 60 FT | 1 |
| 16. | REFRACTORY MATERIAL | 1 |

**\*\* COST: Rs. 50,00,000 /-**

**\*\*IGST@18% :- Rs. 9,00,000/-**

**\*\*TOTAL COST: Rs. 59,00,000/-**

1. **REFERIGERATION FOR IQF & CHILLED WATER**

|  |  |  |
| --- | --- | --- |
| **Sr.****No.** | **Details of Item** | **Qty** |
|  | **IQF COMPRESSORS:** |  |
| 1. | **KIRLOSKAR make Two Stage refrigeration compressors model KCX-72 – For IQF*** Evaporative Temp.: (-) 40 Deg. C.
* Condensing Temp.: 40 Deg. C.
* Compressor RPM: 750
* Compressor Capacity: 120.10 KW (34.14 TR) each.
* Power required: 94.83 BHP
 | 5Nos. |
| 2. | **KIRLOSKAR make Two Stage refrigeration Compressors Model KCX-63 x2 For Cold Stores*** Evaporative Temp.: (-) 25 Deg. C.
* Condensing Temp.: 40 Deg. C.
* Compressor RPM: 750
* Compressor Capacity: 164.47 KW (46.76 TR) each.
* Power required: 89.59 BHP
 | 2 No. |
| 3. | **KIRLOSKAR make Single stage refrigeration compressor model KCX-6 For Chiller PHE**,* Evaporative Temp.: (-) 3 Deg. C.
* Condensing Temp.: 40 Deg. C.
* Compressor RPM: 750
* Compressor Capacity: 350 KW (100 TR)
* Power required: 100 BHP
 | 1 No. |
| 4. | **Compressor Accessories:**Each compressor will be supplied with following accessories-* Drive set consisting of fly wheel, motor pulley, V belts
* Compressor Base Frame
* Suction & Discharge Stop Valves
* Cut outs and Gauges
* Tubing and Ferrule
* Panel Plate
* Tool Kit.
 | 8 Sets |
| 5. | **Electric Motors for compressors: CG/ABB/BBL Equivalent make.*** For KCX-72 compressor :150 HP
* For KCX-63 compressor:180 HP
* For KCX-6 compressor: 120 HP
* All motors TEFC, Sq. cage, 4 pole, 1440 rpm, 3 Ph,415 Volts, 50 Hz, Induction type
 | 5Nos2 Nos1 No. |
| 6. | **ATMOSHPHERIC CONDENSER:**(ATMOSHPHERE TYPE Condensers: 750 TR:Design duty:Total Heat Rejection Capacity 700 TR, but we arerecommended with 10 % extra margin | 60 No Of STANDS |
| 7. | **AIR COOLING UNITS:****DESIGN DUTY: 35 KW X2 ACU EACH ROOM**:Type Fan: Axial fanAir Volume: 7.0 M3/S,Coil data: 2.5 FPI, SS Tubes with Aluminum fins and 5/8 inches OD, 0.8 mm, thickness, 304 L Tubes.Fans: 3 x 610 mm axial fans, 1440 rpm, 0.50 KW motorDefrost: Coil – Water, Tray – Electric, Fan –Peripheral Heater. | 18 Nos. |
| 8. | **Falling Film Chiller**Cap.- 150 TRWater inlet temp. – 26 deg. CWater outlet temp. – 2 deg. C | 1 Nos. |
| 9. | **Ammonia High Pressure Receiver with skid:** * Size: 30’’ OD x 20 feet long
* Thickness: Shell 16 mm, dish ends 18 mm plate
* Accessories: Liquid level Glass with isolation valves, dual safety relief valve, purge valve, drain valve and pressure gauge.
 | 2 Nos. |
| 10. | **INTER COOLERS:*** Size: 36’’ DIA x 7 feet height
* Thickness: Shell 14 mm
* Coil: 1.25” coil of 180 feet length
 | 2 Nos. |
| 11. | **Ammonia Low Pressure Receiver:** * Size: 60’’ OD x 12 feet long,
* Thickness: 16 mm plate
* Accessories: Gauge Glass, Isolation valve with matching flanges, High and Low liquid level floats mounted on a stand pipe with isolation valves, Purge valve, Dual safety relief valve, Y type strainer, Oil pot gauge

glass and solenoid valve.* Ammonia Pumps: FLOWDYNE/HYDRODYNE make, Liquid flow – 22.0 M3/Hr., Delivery head – 60 Meters, Motor 7.50 kw (7.5 HP). Quantity 4 Nos. Two working and two as stand by.
 | 2 Nos. |
| 12. | **Ammonia & Water Pipeline** * **MS C class pipe TATA MAKE**
* **GI B class JINDAL MAKE**
 | Lot |
| 13. | **Valves and Fittings:*** **SUPERFREEZE/DANFOSS/SUPER MAINI make**
 | Lot |
| 14. | **MCC PANEL WITH APFC** * Cubical shape panel with bus bars, in coming ACB, indicating lamps, switches, fuses, volt meter, amp. Meter.
* Starters for compressor motors, condenser and ammonia pumps.
* MCC panel will be fabricated from 16- gauge CRCA sheet having in comer of required AMPs, MCCB, Al. bus bars and outgoing feeder
* All starters up to 9.3 KW shall be DOL type and above that will be FASD type.
 | 1 No. |
| 15. | **POWER CABLES: POLICAB MAKE-**MCC panel to compressor motors, water and ammonia pumps and cooling unit motors | Lot |
| 16. | **Suction Line Insulation:*** Insulation of Nitrite Rubber on liquid lines and LPR
 | Lot |
| 17. | **First Charge of Ammonia:**6000 Kg. Ammonia and 210 Liters Refrigerationcompressor oil drum. | Lot |
| 18. | **OIL SEPRATER SIZE 5’X18’’ INCHES & For Chiller** | 3 |
| 19. | **Accumulator size 72x36 Inches.** | 1 |
| 20. | **Angle and Chanel for supporting all lines** | One Lot |
| 21. | **Erection and commissioning:** | One Job |

**\*\* COST: Rs. 5,50,00,000 /-**

**\*\*IGST@18% :- Rs. 99,00,000/-**

**\*\*TOTAL COST: Rs. 6,49,00,000/-**

1. **DEEP FREEZER – 6000 MT**

|  |  |  |
| --- | --- | --- |
| **SR NO** | **ITEM** | **QTY** |
| 1. | **Partition Wall**Thickness – 120 mm.Top Skin- PPGI – 120 GsmBottom Skin- PPGI – 120 GsmSynergy make PUF Panels with PUF density 40 ± 2 kg / m3 with tongue and groove joining system. | 1170 sqm |
| 2. | **Outer Wall**Thickness - 150 mm.Top Skin- PPGI – 120 GsmBottom Skin- PPGI – 120 GsmSynergy make PUF Panels with PUF density 40 ± 2 kg / m3 with tongue and groove joining system. | 2050 sqm |
| 3. | **Ceiling Panels**Thickness - 150 mm.Top Skin- PPGI – 120 GsmBottom Skin- PPGI – 120 GsmSynergy make PUF Panels with PUF density 40 ± 2 kg / m3 with tongue and groove joining system. | 2270 sqm |
| 4. | **Floor Slab**Thickness – 60+60 mm.Top Skin- PaperBottom Skin- PaperSynergy make PUF slab with PUF density 40 ± 2 kg / m3 with tongue and groove joining system. | 4540sqm |
| 5. | **Anti-Room Walls**Thickness – 60 mm.Top Skin- PPGI – 120 GsmBottom Skin- PPGI – 120 GsmSynergy makes PUF Panels with PUF density 40 ± 2 kg / m3 with tongue and groove joining system. | 505sqm |
| 6. | **Anti-Room Ceiling**Thickness – 60 mm.Top Skin- PPGI – 120 GsmBottom Skin- PPGI – 120 GSMSynergy make PUF Panels with PUF density 40 ± 2 kg / m3 with tongue and groove joining system. | 515sqm |
| 7. | **Flashing**All Type in PPGIAll type for fixing of PUF Panels includes U Channel, External L, Internal L and Patta | 2500 kg. |
| 8. | **No. of Doors** | 9 |
| 9. | **Wooden Pallets for Cold Store** | 2500 |
| 9. | **ERECTION OF THE ABOVE SYSTEM** | lot |

**\*\* COST: Rs. 3,25,00,000 /-**

**\*\*IGST@18% :- Rs. 58,50,000/-**

**\*\*TOTAL COST: Rs. 3,83,50,000/-**

1. **Mezanine floor**

|  |  |  |
| --- | --- | --- |
| SR NO | ITEM | AMOUNT |
| **1.** | MEZANINE FOR COLD STORE**The mezzanine will be fabricated from 125 x 125 x 5 mm. thk. Sq tubes** | **2,30,00,000** |
| **Total – 2,30,00,000/-** |

**\*\* COST: Rs. 2,30,00,000 /-**

**\*\*IGST@18% :- Rs. 41,40,000/-**

**\*\*TOTAL COST: Rs. 2,71,40,000/-**

1. **ETP**

|  |  |  |
| --- | --- | --- |
| S.NO. |  Description |  Amount |
|  | ETP (effluent treatment plant)Cap. – 2,00,000 ltr/day1. Screen Chamber
2. Collection Cum Equalization tank
3. Coagulation & flocculation Tank
4. Blowers & Diffused Aeration System
5. Aeration Tank/Bioreactor
6. Primary Tube Settler
7. Filter Feed tank
8. Pressure Sand Filter
9. Activated Carbon Filter
10. Hypo Dosing System
11. Sludge Drying Beds
 | 40,00,000 |
| Total – 40,00,000/- |

**\*\* COST: Rs. 40,00,000 /-**

**\*\*IGST@18% :- Rs. 7,20,000/-**

**\*\*TOTAL COST: Rs. 47,20,000/-**

1. **BUILDING**

|  |  |
| --- | --- |
| **S.NO.** | **DESCRIPTION** |
|  | **TOTAL COVERED AREA**50,000 Sq. feet |
|  | Cost of civil work for 50,000 sq. feet |
|  | Cost of PEB for 50,000 sq. feet |
| **TOTAL – 4,00,00,000** |

**\*\* COST: Rs. 4,00,00,000 /-**

**\*\*IGST@18% :- Rs. 72,00,000/-**

**\*\*TOTAL COST: Rs. 4,72,00,000/-**

1. **TRANSFORMER, SERVO AND VCB**

|  |  |
| --- | --- |
| **S.NO.** | **DESCRIPTION** |
|  | TRANSFORMERCAP.- 1500 KVAConventional self-cooled, Oil immersed, Three Phase, ONAN(Cooling) 50 Hz, Copper, Double wound, Indoor type, A class Insulation, Design to ensure better cooling, Low noise Level, better impulse and short circuit withstand capability.**STANDARD** :- Transformer is designed as per IS:2026, BS-171, IEC-76 & IEC-726 (as applicable)**VECTOR GROUP**:- Unless otherwise specified, the Transformer will be connected as per vector group reference DY11 in accordance with international practice.**TERMINAL ARRANGEMENT**:- Following terminal arrangement are provided. (a). H.V. with M.S Box. (b). L.V. with M.S Box.Disconnecting Chambers can also be provided on both HV and LV cable boxes.**TEMPERATURE RISE** :- Designed for a maximum Temperature rise of 40/50 degree of oil/winding. And lower on request.**TAPPINGS:-** +/- 5% In Steps of 2.5%, others on request.**OIL**:- Oil is tested for Resistivity, Dielectric and acidic chareretesists conforming to IS-335 . Before topping up oil is filtered thoroughly and filled under vacuum. **Quality Control**:- All Transformers undergo rigorous quality Control testing in our fully equipped laboratory approved by UHBVN & DHBVN and others for. All routine test as per IS standards. Any specific test required by the customer can also be arranged .**CORE** :- Built from low-loss cold-rolled grain-oriented, annealed. Special Frame for clamping the core to reduce the magnetic noise as well as making the whole structure rigid. |
|  | AUTOMATIC SERVO VOLTAGE STABILISER & VCBCAP.- 1500 KVALINEAR TYPE,OIL IMMERESED300-460-400 VOLTSCOPPER WINDED WITH BYPASS C.O.SWe shall complete erection & commissioning with all civil work in this price. |

**\*\* COST: Rs. 35,00,000 /-**

**\*\*IGST@18% :- Rs. 6,30,000/-**

**\*\*TOTAL COST: Rs. 41,30,000/-**

1. **WOODEN PALLETS**

|  |  |  |
| --- | --- | --- |
| **S NO** | **ITEM** | **AMOUNT** |
| **1.** | **WOODEN PALLETS FOR COLD STORE**Size – 1000 x 800 x 150 mm. | 21,00,000 |

**\*\* COST: Rs. 21,00,000 /-**

**\*\*IGST@18% :- Rs. 3,78,000/-**

**\*\*TOTAL COST: Rs. 24,78,000/-**

1. **PACKING LINE FOR FROZEN VEGETABLES**

|  |  |  |
| --- | --- | --- |
| **S.NO** | **EQUIPMENT DESCRIPTION** | **QTY** |
|  | **S.S VIBRO FEEDER WITH HOPPER**CAP.- 2 MT/hr. For hopperPower – 1 h.p (with variable speed)Size - .8mtr.x . 8 mtr.Flow rate – 2000kg./hr. | 01 |
|  | **INSPECTION CONVEYOR**Size – 900mm.belt width x 5 mtr. longHeight – 900mm.M.o.c – s.s 304 - pvc beltPower – 1h.pThe equipment will be in two parts & consists of :-A) PVC coated food grade endless belt (imported).B) pvc Side guides, rollers, framework will be from S.S. C) variable speed drive with geared motors & vfd. D) 04 no. tube lights, electrical control | 01 |
|  | **BAND SEALER*** Size: 200-1000 gms.
* Cap.:- 400-600 Pouch/hour
* Power – 300 Watt single phase

Complete with variable speed drive, vertical height adjustment & digital control panel. | 02 |
|  | **WEIGHING SCALE**Two weighing scale 0-100 kg,Four weighing scale 0-5 kg.  | lot |
|  | **STICHING MACHINE** | 06 |

**\*\* COST: Rs. 22,00,000 /-**

**\*\*IGST@18% :- Rs. 3,96,000/-**

**\*\*TOTAL COST: Rs. 25,96,000/-**

1. **OVERHEAD WATER STORAGE SYSTEM**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Item Description** | **Qty** | **Amount** |
| 1. | **OVERHEAD WATER STORAGE TANK** | 01 lot | 20,00,000 |

**\*\* COST: Rs. 20,00,000 /-**

**\*\*IGST@18% :- Rs. 3,60,000/-**

**\*\*TOTAL COST: Rs. 23,60,000/-**

1. **DG SET**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Item Description** | **Qty** | **Amount** |
| 1. | **DG SET**1000 KVA DG Set | 01 | 60,00,000 |

**\*\* COST: Rs. 60,00,000 /-**

**\*\*IGST@18% :- Rs. 10,80,000/-**

**\*\*TOTAL COST: Rs. 70,80,000/-**

1. **AIR COMPRESSOR**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Item Description** | **Qty** | **Amount** |
| 1. | **AIR COMPRESSOR**Power – 60 hp.CFM – 300Air receiver - 1500 ltr. x 2Complete with electrical panel & pipe line. | 01 | 25,00,000 |

**\*\* COST: Rs. 25,00,000 /-**

**\*\*IGST@18% :- Rs. 4,50,000/-**

**\*\*TOTAL COST: Rs. 29,50,000/-**

1. **ELECTRICAL PANEL WITH APFC PANEL**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Item Description** | **Qty** | **Amount** |
| 1. | Panel body of 16 SWG sheet with powder coating I/C ACB 2000 Amp.-4P make L&T (Fixed type)AL inter connectionInsulator and hardwareComplete metering section i.e Voltmeter, Ammeter indicator, ASS, VSS, CTS etc.APFC Panel 1500 KVAR MS Powder coated body I/C ACB 2000A-3PH Make L and T - 01 AL. inter connections Insulator and hardwareComplete metering section i.e Voltmeter, Ammeter, Indicator, ASS, VSS, CTS etc – 01 setAPFC relay 14Step - 01 Capacitor cylindrical type - 800 KVARContactor 40 A - 01MCB TP 63A - 01Contactor 110A - 13MCCB 125A-3P - 13On indicators - 14A/M Selector switch - 14Control MCB SP - 16 | 01 | 58,00,000 |

**\*\* COST: Rs. 58,00,000 /-**

**\*\*IGST@18% :- Rs. 10,44,000/-**

**\*\*TOTAL COST: Rs. 68,44,000/-**

1. **BORE WELL SYSTEM**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Item Description** | **Qty** | **Amount** |
| 1. | **BORE WELL**With 15 hp. MotorProviding & drilling 150 dia. Bore well up to 400 ft. depth including driving PVC casing through out, slotted pipe filters, submersible cable wire from power source to pump.  | 01 | 12,00,000 |

**\*\* COST: Rs. 12,00,000 /-**

**\*\*IGST@18% :- Rs. 2,16,000/-**

**\*\*TOTAL COST: Rs. 14,16,000/-**

1. **WEIGHBRIDGE**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Item Description** | **Qty** | **Amount** |
| 1. | **WEIGH BRIDGE**Cap. – 120 MTMake – Leo | 01 | 10,00,000 |

**\*\* COST: Rs. 10,00,000 /-**

**\*\*IGST@18% :- Rs. 1,80,000/-**

**\*\*TOTAL COST: Rs. 11,80,000/-**

1. **METAL DETECTOR**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Item Description** | **Qty** | **Amount** |
| 1. | **METAL DETECTOR**Make - Any Repute makeMOC - SS 304Scope of supply - complete metal detector with conveyorMetal detection limit - 360 deg. detection field for both ferrous , Non - ferrous & stainless steel | 01 | 10,00,000 |

**\*\* COST: Rs. 10,00,000 /-**

**\*\*IGST@18% :- Rs. 1,80,000/-**

**\*\*TOTAL COST: Rs. 11,80,000/-**

1. **R.O SYSTEM -4000 LTR./HR.**

**The Basic Scheme of Reverse Osmosis Plants are as follows:**

1. Dual Media Filter. (MS)
2. Antiscalent dosing system
3. Micron filtration system
4. Reverse Osmosis System
5. Cleaning & Flushing System

 **Multigrade Sand Filter**

One MS pressure vessel with Top distribution and bottom collecting system for dual media filter

One Set of frontal pipe work with B Valve / MPV

One Initial charge of quards sand media / Carbon Media

**Antiscalent Dosing System**

One Electronic metering Pump complete with suction delivery valves and required flexible high pressure tubing

Capacity : 6 Ltrs / Hr.

 Back Pressure :4 Bars

 Make : E- dose / UKL / Rainbow

One HDPE 100 Ltrs Capacity Chemical Tank

**Micron Filtration**

One Micron filter housing length 20”, inlet / outlet connection 1.5” with air release valve

One 5 micron rating polypropelene cartridge size 20” long

**Technical Data:**

|  |  |
| --- | --- |
|  | Dual Media Filter |
| No. offered | One |
| Mode of flow | Down Flow |
| Working Pressure | 3.0 Kg / Cm2 |
| Flow Rate / Hrs | 4 M3/ Hr |
| Inlet / Outlet con. | 1.5” |
| Media Quantity | 150 Kg |
| Unit Dia | 325 mm |
| Unit Height | 1600 mm |

**Reverse Osmosis**

Specification

1. Compact MS skid
2. Front table for control instruments
3. Set of Glycerol filled pressure guages
4. Pressure switch for raw water.
5. High pressure pump mainly made of stainless steel make **(CNP / SHAKTI /PNC)**
6. Set of RO Pressure vessel made of glass fiber
7. Set of RO membrane  **(GE / DOW/ Torry)**
8. Set of ball valves – made of heavy duty UPVC/SS
9. Set of Rota meters **(ASTER / UKL/MAXFLO)**
10. Set of SS / UPVC fittings
11. Control Panel **(ASTER)**
12. Online TDS meter alongwith TDS sensor – (**ASTER / DIC)**

# TECHNICAL DATA RO 4000 LPH

|  |  |
| --- | --- |
| Permeate flow rate m3/hr | 4.0 |
| Operating pressure in bar | 15 |
| Recovery max in % | 60 |
| Raw water consumption in m3/HR | 5.6 |
| Raw Water pressure in bars | 3 |
| Rejection rate Approx in % | 98 |
| Current in V/Hz | 400/50 |
| Power installed in KW | 5 |
| No. of pressure vessels | 1 |
| Type of pressure vessel | 8040-4 |
| Type of membranes in inch | 8040 |
| No. of membranes | 4 |

**\*\* COST: Rs. 17,60,000 /-**

**\*\*IGST@18% :- Rs. 3,16,800/-**

**\*\*TOTAL COST: Rs. 20,76,800/-**

1. **LAB EQUIPMENTS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No.** | **Item Description** | **Qty** | **Amount** |
| 1. | **LAB EQUIPMENTS**Necessary chemicals & reagents required for various testing with beakers, flasks, burette, puppets, & other apparatus as required. | 01 | 7,40,000 |

**\*\* COST: Rs. 7,40,000 /-**

**\*\*IGST@18% :- Rs. 1,33,200/-**

**\*\*TOTAL COST: Rs.8,73,200/-**

**E. EXCLUSIONS:**

1. Building for the plant.

2. All Civil works and foundations.- We will provided all Foundation drawings for our

 equipments, where ever required

3. Bulk storage of raw material, finished products and by products.

4.Laboratory Equipments

5. Any other items not specified in the equipment list

**F.GENERAL REMARKS:**

1. SCOPE OF WORK

The scope of works includes the supply of process plant in accordance with the following:

1. Providing site layout drawings, process flow diagrams, P&I drawings and GA drawings of

 equipments to buyer.

1. Design, development, manufacture and supply of equipment as listed in equipment list. The

 transit insurance of the equipments fall into scope of buyer.

1. Information for foundation design. This will include above grade dimensions, static and

 dynamic loads and the anchor bolt type and locations.

1. Supervision of erection of machinery at buyer’s site\*: Food tech Engineers shall depute

 engineers and skilled manpower at buyer’s site to supervise the erection of the equipment.

1. Commissioning , Running, stabilizing and establishing technical performance

 through trial runs.

1. Operating instructions including description of process, start-up and shut down procedures,

 safety requirements and maintenance & lubricating instructions.

1. Electrical specifications and elementary wiring diagrams..
2. We will Depute one Engineer or Skilled free of cost for one month after completion of

 plant at your site to assist you and train your personnel .

**\* Buyer shall provide One time to & fro fare, Local boarding and lodging of acceptable standard, local conveyance and facilities to communicate with office at Ambala free of charge for the person/s deputed by Seller to buyer's site for supervision erection and commissioning**

 **Approved make for all Bought Out Items: (Wherever Applicable)**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Item** | **Make / Brand Name** |
|  | Motors | Crompton, Kriloskar, Bonvario/ Equqivalent |
|  | Contactors | Schneider , Siemens, L & T / Equivalent |
|  | Relays | Schneider , Siemens, L & T / Equivalent |
|  | Fuse units and links | Schneider , Siemens, L & T / Equivalent |
|  | On/Off Rotary switch | Schneider , Siemens, L & T / Equivalent |
|  | Forward/Reverse switch | Schneider , Siemens, L & T / Equivalent |
|  | Indicator lamps | Schneider , Siemens, L & T / Equivalent |
|  | Push Button Stations | Schneider , Siemens, L & T / Equivalent |
|  | Cable Socket | Jainex, McDowell |
|  | Limit switches  | Schneider , Siemens, L & T / Equivalent |
|  | Gaskets | Champion , L& T  |
|  | Cables | Omega, Finolex, CCI / Equivalent |
|  | HMI | Siemens |
|  | High tensile fasteners | TVS / GKW or Equivalent hardened material |
|  | Bearings | SKF / FAG / NBC |
|  | Taper Bush Pulley | Fenner |
|  | V.Belts | Fenner, Dunlop equivalent |
|  | Instruments(PG,TG,SV,) | Waaree/ Mika/Toshniwal/ Standard Make  |
|  | Valves |  Shenco/ Flowserve/ Flowcon  |
|  21. 22 22.  | Gear BoxMechanical SealVacuum PumpAny other items( Not mentioned above)**NOTE:** Due to our quality policy , In General we buy the best available and standard materials available in the market. *However* due to reasons like obsolete, non-availability; longer delivery period, system non-suitability etc we may choose a different but equivalent buyer than mentioned above without affecting the overall performance and quality of our machines | Bonvario, Greaves, Elecon, Premium,TechnosealKirloskar / PPI/ EquivalentReputed and Standard Make  |
|  |  |  |
| **G. PERFORMANCE GUARENTEE:****A) Guarantee for Mechanical Defects*** All equipments supplied by us will be provided with a mechanical warranty for a period of eighteen months after delivery or twelve months after commissioning whichever is earlier, provided that they are operated/handled as per our instructions and is not due to normal wear and tear.
* Electrical components such as motors, contactors, etc. and instrument such as pressure gauges, Thermometers, pressure indicators, etc., are not covered under this warranty. Warranty of Bought out components like pumps, motors , vacuum pumps, VFD etc are guaranteed by us only to the extent of guarantees given to us by our suppliers.

However as we are supplying whole material we will ensure a minimum of 6 months Warranty on our behalf.* Within the warranty period as specified above, upon notification and confirmation of defective part(s) or equipment in respect of which complaint is made, we will provide a free repair or replacement on one for one exchange basis.

**B) Guarantees of Performance**All the figures herewith apply simultaneously with +/- 5 % tolerance provided that the plant is operated with the same feed material continuously for at least 24 hours under normal operating condition with continuous supply of required Utilities.**H. COMMERCIAL OFFER**

|  |  |  |
| --- | --- | --- |
| **S.NO.** | **DESCRIPTION** | **AMOUNT** |
|  | PROCESS LINE  | 4,00,00,000 |
|  | IQF  | 4,50,00,000 |
|  | BOILER | 50,00,000 |
|  | REFRIGERATION SYSTEM | 5,50,00,000 |
|  | DEEP FREEZER- 6000 MT | 3,25,00,000 |
|  | MEZZANINE | 2,30,00,000 |
|  | ETP | 40,00,000 |
|  | BUILDING | 4,00,00,000 |
|  | TRANSFORMER, SERVO & VCB – 1500 KVA | 35,00,000 |
|  | WOODEN PALLETS | 21,00,000 |
|  | PACKING LINE FOR FROZEN VEGETABLES | 22,00,000 |
|  | OVERHEAD WATER STORAGE SYSTEM | 20,00,000 |
|  | DG SET | 60,00,000 |
|  | AIR COMPRESSOR | 25,00,000 |
|  | ELECTRICAL PANEL WITH APFC PANEL | 58,00,000 |
|  | BORE WELL SYSTEM | 12,00,000 |
|  | WEIGH BRIDGE | 10,00,000 |
|  | METAL DETECTOR | 10,00,000 |
|  | R.O. SYSTEM | 17,60,000 |
|  | LAB EQUIPMENTS | 7,40,000 |
| **TOTAL** | **27,43,00,000** |
| **GST@18%** | **4,93,74,000** |
| **TOTAL** | **32,36,74,000** |

TERMS & CONDITIONS:-Price basis: - EX-OUR WORKS AMBALA .Sales Tax: - Included. Freight: - Your Scope.Delivery: - within 4-5 month after getting confirmed order.MODE OF PAYMENT:1. 40 % advance along with cleared order.
2. Balance against Performa invoices on prorata basis.

**BANK DETAIL:-** AXIS BANK, GARNALA, Ambala CityA/C NO.- 9230 3001 5040 997IFSC CODE – UTIB0001757**FOR PROCESS ENGINEERS**SANJEEV KUMAR |  |  |
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