

LIST OF MACHINERIES AND EQUIPMENTS

1. Concentrated feed manufacturing unit
 - a. Feed grinder and mixer
 - b. Feed block formation machine
 - c. Feed delivery and Mixer (TMR) wagon

2. Fodder chaffing unit machinery and equipments
 - a. Paddy Straw Baler (Round)
 - b. Powered chaffcutter
 - c. **Paddy Straw Chopper**

3. Fodder cultivation, transportation and distribution of feeds
 - a. Disc plough (2 bottom/sub soiler)
 - b. Disc harrow (offset or double action)
 - c. Leveller
 - d. Fodder seed drill
 - e. Rotavator
 - f. Fodder harvester (Standing crop)
 - g. Power tiller (Rotary type tiller)
 - h. Reaper
 - i. Sprinkler Irrigation System

II. LABORATORY EQUIPMENTS

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5. Refrigerator
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7. Hot Air Oven
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9. PCs and Power back up

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9. Calf Box
10. Calf feeding bucket
11. Calf feeding bottles with nipples
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16. Hose pipe washing
- 17. Animal lifter**
18. Foot bath tub
19. Bucket milking system
20. Electronic weighing balance
- 21. Animal identification and Activity Monitoring System**
22. Herd management Software with Remote farm connection
23. Automatic Midline 2×6/6 Milking Parlour with Accessories
24. Bulk Milk Cooler (storage tank for receiving the milk after milking operation)
25. Filling and packing machine
26. Refrigerator (Chiller)
27. Automatic Milk Analyser
28. Milk cans etc
29. Bucket Milking Machine
30. Consumables
 - Detergent Basix and Novacid
 - Vacuum pump oil
 - CMT Kit
 - Teat dip solution Lactifier and Dipal
31. Furniture (Racks, Almirahs, Tables, Chair etc)

DETAILED SPECIFICATIONS

FARM IMPLEMENTS

1. For Concentrated Feed Manufacturing Unit.

a. Feed grinder and mixer

Capacity: 1MT or 0.5 MT/hr

Specification of Grinding Section

Bucket Elevator – I

Dimension & Specs:

Height : 14' Bucket Size 6", heavy duty top and bottom, fitted with UCP & UCF bearings, Servicing platform & staircase steps , Rpm reduction attachment, motor pulley & motor rails.

Power Req: 2 HP (140 Rpm) with Electric Motor and V-belts

Popular Hammer Mill (Grinder)

Model: KHM-1000 **Cap:** 1 mt/hr

Specification: Single screen, Heavy duty Steel body, fitted with balanced Rotor, 20 Nos. tempered Beaters(Hammers), Motor rails, motor pulley, foundation bolts & V-belt guard.

Power: 05 HP (1440 Rpm) with E/ Motor and V-Belts, along with **Magnetic Plate &Batch Bin Over Hammer Mill**

Specification of Mixing Section

Bucket Elevator – II

Specification: Height : 18', Bucket Size 6", , heavy duty top and bottom ,fitted with UCP & UCF bearings, Servicing platform & staircase steps , Rpm reduction attachment, motor pulley & motor rails

Power: 2 HP (1440 Rpm) with Electric Motor and V-Belts

Horizontal Feed Mixer:

Model: KH-Junior Specification: (Heavy Duty Mixer) 20cft i.e. 250-300kgs/batch fitted with oil immersed reduction Gear Box & molasses dosage Tank. Main body and stand of heavy duty angles &MS Sheet, arms & blades of heavy duty with motor pulley Motor rails, V-belts and V-belt guard

Power: 05 HP (1440 Rpm) with Electric Motor and V-Belts

Batch Bin above the Mixer :

Cap: 250 -300kgs, with Electric Motor and V-Belts Floor Space provided to accommodate the entire plant will be Length – 25' x Width – 15' x Height 20'.

Make of Electric Motor: Crompton/Siemens

Make of Grinder & Mixer Plant: KEC

- b. Feed and Fodder Mixer:** Useful for proper mixing of roughages, concentrates, minerals, vitamins and other ingredients before making blocks. It facilitates making of blocks with uniformly distributed ingredients.

e. Feed Block Formation Machine

Useful for making animal feed blocks by mixing crop residues with essential nutritional elements.

Capacity: 250kg/hr

Power source: 25hp electric motor (3 phase)

f. Feed Delivery and Mixer(TMR) Wagon 5 m3 (1 No.)

One complete wagon of 5 m3 capable of mixing the ration consisting of various feed stuffs, fodder crops, hay, silage, feed concentrate etc.TMR Wagon should have capability of ration dispensing directly to the feed mangers in cattle sheds. It should have mechanism for PTO drivability and wheel structure for towing with the tractor.

The mixer wagon should be running with 560 rpm on the power take off (PTO) shaft throughout the loading sequence. The TMR mixer must contain the below parts

- Basic part
- Weighing system
- Scale Indicator system
- Outlet door and discharge via side door
- Tyres
- Round knives
- Bottom steel
- Support foot
- PTO-shaft
- Hook eye

- Draw Bar

Material should be made up of high strength steel material Type ST52-3 DIN, suitably corrosion protected with higher standards of workman ship. Gears and shafts/ other drives of the equipment are smooth in functioning and provisioned for lubrication.

There should be dispensing window on one side of the equipment. Gears and shafts/ other drives of the equipment should be smooth in functioning and provisioned for lubrication.

Safety – The equipment and functioning / operation should be safe for the operator, animals and with minimal wastage of feedstuffs.

Weighing – There should be inbuilt system for accurate measurement with suitable number of load cells for ingredients and display at the weighing scale.

Mixing Quality – Uniform, homogenous mixture should be the output of the equipment.

2. For Fodder Chaffing Unit Machinery and Equipments

a. Paddy Straw Baler (Round)

Model- SBM	- 150SWK
Hitching System	- Drawbar Hitch
Connections	- Single Remote Hydraulic
Overall Length(mm)	- 4780(with chute and field condition)
Overall Width(mm)	- 2490
Overall Height(mm)	- 1540
Transport tyres	- Right: 10/80-12(10PR)(2 Bar) Left: 11.5/80-15.3(12PR)(2 Bar)
Power requirement(HP)	- +35 and above
Tractor PTO Speed(rpm)	- 540
Working width(mm)	- 1500
Pick-up Height Adjustment	- Mechanical and Hydraulic
Feeder	- Inner: 3 tines Outer : 2 tines
Piston(rpm)	- 93
Bale Chamber	- Width(mm): 460 Height(mm):360
Bale Length(mm)	- 400 to 1100
Steel wire knotter	- 1
Wire Box Capacity(Speed)	- 2
Wire recommended type	- Wire Back armeated and oil typing quire
Bale length control	- Mechanical
Bale density control	- Manual
Drives	- No of train drive: Two No of Gear drive: Four No of universal joints: Three
Hydraulic oil	- Same as tractor hydraulic system
Weight of the machine(kg)	- 1560 (Approx.)
Gear box oil	- same as tractor hydraulic system

Safety device - safety Guards, Over running Clutch, PTO Safety Bolt
Weight of the Machine(kg) - 1560(Approx.)

b. Powered chaff cutter

Chaff cutting Machine with sieves size 08/3/5 and 10 mm, powered by 3HP motor, Capacity of the machine should be between 300 to 500 kg/hr for grinding dry maze grains and 600 to 1000 kg/hr for green fodder. The machine should have separate mechanical unit in order to avoid leakage and mixing with fodder preparation of machine lubes etc. Electric Motor Make : Crompton/Siemens.

c. Paddy Straw Chopper

MODEL: Cutty cutter, size 12", Dia meter 39", Height 1170mm, Length 2400 mm, Width 1400 mm, Shaft Length 890 mm, Thickness 63 mm, No of blades 4, Type of feeding: Conveyor belt, Drive Main Shaft RPM 400 RPM.

3. For fodder Cultivation, Transportation and Distribution of Feeds

a. Disc plough (2 bottom/sub soiler)

Overall Length (mm)	- 1600 mm
Overall Width (mm)	- 1321 mm
Overall Height (mm)	- 1270 mm
Number of discs	- 3
Diameter of disc (mm)	- 660
Depth of cut (mm)	- 254
Total Weight (kg)	- 385
Compatible tractor	- >40 HP
Load ability	- 60

b. Disc harrow (offset or double action)

Number of Disc	- 12
Type of mounting	- 3 point linkage
Disc Dia (mm)	- 22" or 24"×4 mm Thick
Disc Type	- Front: Notched Rear: Plain
Overall Length×Width×Height(mm)	- 2100×1450×1260
Total weight (Approx.) Kgs	- 440
Disc Spacing	- 225
Maximum depth	- 100 to 150
Width of cut (mm)	- 1100
Suitable HP Range	- 35
Load ability	- 60

c. Leveller (6.5 Feet Land Leveller)

Working width (mm)	- 1800
Cutting Blade Thickness (mm)	- 10
Mounting	- 3 point linkage

Weights (Kgs)	- 187
Overall : Length×Width×Height (mm)	- 1875×1225×1000
Leveling direction	- Two Way
Linkage Pin	- 26mm
Suitable HP Range	- 35 & Above
Load ability	- 70

d. Fodder seed drill (Conventional Model)

Overall width (inch)	- 80
Seeding Width (row seeding)(inch)	- 60
Weight (Kg)	- 300
Hitch Type	- Category ii
Seed Capacity	- 65 kg
Fertilizer Capacity	- 70 kg
No. of Tynes	- 9
Type of Tynes	- Inverted 'T' Type
Row Spacing (inch)	- 7.5
Seed Metering Device	- Aluminium Type Fluted Roller
Fertilizer Metering Device	- Cell Type
Min. H.P required	- 3

e. Rotavator

Working width in (m)	- 1.25
Tractor HP required	-30-60
Tractor PTO (rpm)	-540
No of blades	-36
Type of blades	-L
Transmission	- Gear Drive
Gear Box	- Multi Speed : Speed Standard

f. Mobile Shredder/Fodder harvester

	<u>Without chute</u>			
M.C Name	Length(mm)	Width(mm)	Height (mm)	Weight (kg)
Mobile shredder	2540	1790	1260	600

	<u>Exhaust pipe/Chute specification</u>			
Small chute	465	590	500	16
Long chute	575	1240	2240	48
Extra long chute				
Mechanical	575	2835	2685	58
Hydraulic	470	3250	2685	64

g. Power tiller (Rotary type tiller)

Model	- VST Shakti 130 DI
Type	- Horizontal 4 stroke single cylinder
water cooled diesel engine /OHV	
Overall Length (mm)	-2720

Overall Width (mm)	- 865
Overall Height (mm)	- 1210
Weight (Engine & Transmission with Rotary)	-405 Kg
Combustion Chamber	- Direct Injection (DI)
Max. Torque	- 4.2 kg-m /1600 rpm
Max.HP as per IS 13539 1996	- 13.0HP@2400 rpm
SFC (Specific Fuel Cons)	- 190 g/hp/hr
Governor System	- Mechanical, Centrifugal type
Cooling System	- Condenser Type Thermo siphon
cooling system	
Starting System	- Hand Cranking
Lighting System	- 12 volts / 35 watts
Std. Pulley (DIA)	- 100 mm / optional 120 mm
Dry Weight	- 125 kgs
Tilling Width	- 600mm(Max)
No. of Tynes	- 18
Tilling Depth	- 150 mm (max)
Plough dept	- 220 mm (max)

h. Reaper

Model	VS-4PR(n)
Type	Walking type reaper
Working Efficiency(m ² /hr)	2400-2700
Dimensions (L×W×H) mm	2200×1600×1100
Weight (kg)	200
	Engine
Model	Z170F
Type	Single Cylinder Air Cooled Diesel
	Engine
Power (hp/rpm)	4.0/2600
Fuel Tank Capacity (l)	4
Air Cleaner	Dry Type
Starting	Hand Cranking
	Travelling System
Number of Steps of Speeds	2 Forward,1 Reverse
Working speed	2.6-3.6km/h
	Cutting
Cutting Type	Vertical
Cutting Width (mm)	1200
Min Cutting Height (mm)	>=50
Crop Placing	Right Side of Machine

i. Sprinkler Irrigation System

System : Over head sprinkler Area : 1.5 hectare
 (For crops like Maize, Bajra, Napier, and other fodder crops)

Sr.	Particulars	Quantity
1	63 mm HDPE QRC Pipe 6 metres	44 nos

2	63 mm Service saddle	06 nos
3	63 mm bend	02 nos
4	63 mm Tee	01 no
5	63 mm End Stop	02 nos
6	G.I. Riser pipe 1 mtr ×3/4"	06 nos
7	Nozzle 12 mtrs radius	06 nos
8	63 mm Pump connecting nipple	01 no
9	Diesel pump set 4hp Kiroskar complete set with suction pipe and other accessories	01 no

LABORATORY EQUIPMENTS

1. MultiScan ELISA Plate Reader

- a) Should be able to Scan 96 well ELISA plate quickly with minimum time requirement.
- b) Should also have a separate slot for cuvette reading ability.
- c) Capable of wavelength reading range approximately between 200 to 1000 nm.
- d) Absorbance read out range should be approximately 0 to 4, with a high resolution.
- e) Should come with, in built shaking mechanism.
- f) Should be cable of wide range of incubation temperature setting up to 45 C.
- g) Easy large color display screen interface for onboard stand-alone control.
- h) USB port for easy data transfer and connection to PC and Printer.
- i) Multiplate reader software for easy data acquisition and analysis for PC control.
- j) Should have low power consumption with mains input of approx. 100-240 V (50/60 Hz).
- k) The reader should have a compact design and use up less laboratory space.
- l) Should include installation and demonstration of the equipment.
- m) If possible, supply of PC having required systems and operating system requirements to run the Multiplate reader software (optional).
- n) Should include warranty and all necessary components like maintenance kit, operation manual, power cable, plug etc.

Applications:

The 96 well plate ELISA reader is required for estimation of any biomolecules concentration in a given biological samples, especially helpful if the number of samples to be evaluated is in large quantity.

Other biochemical quantification test for protein, Nucleic acids etc. having lesser sample numbers can be carried out using the Cuvette.

Note: Pipette, Multi-channel Pipette, trays required for ELISA not included, can be purchased separately.

2. pH Meter

- a) pH meter with LCD/LED/Touch Screen, 3digits display.
- b) With a pH range of 0 to 14 with an accuracy of ± 0.05 or more.
- c) Should come with non-corrosive glass pH electrodes/Probe.
- d) Minimum of Upto 3 calibration points with auto buffers.
- e) Should also come with temperature detection capability with range of 0 °C to 100 °C.
- f) The pH meter should come with a storage pocket for pH electrode and temperature probe.
- g) It should be water tight and impact resistant.
- h) It should have a power requirement of approx. 230 \pm 10 V, 50 Hz AC.
- i) It should come with warranty and all necessary components like calibration buffers, maintenance kit, operation manual, power cable, plug etc.
- j) Should include installation and demonstration of the equipment.

Applications:

pH meter is required mainly for adjusting the pH of buffers, reagent etc. need to perform during the ELISA and other biochemical experiments.

3. Refrigerated Centrifuge

- a) Should be capable of high centrifuge speed of upto 18,000 RPM approx.
- b) Should come with interchangeable rotor for different tubes size of 1.5 ml, 15 ml, and 50 ml.
- c) Capable of wide temperature setting range from -10 °C to +40 °C approx.
- d) Should be capable of time setting.
- e) With LCD display screen for easy use and control.
- f) With automatic rotor imbalance detection.
- g) Should come with accessories like rotor knob for quick rotor change.
- h) Should come with built-in condensation drain to eliminate water accumulation.
- i) The centrifuge should have compact design to save valuable laboratory space.
- j) Warranty should be included along with all other necessary components like operation manual, power cable, plug etc.
- k) Should include installation and demonstration of the equipment.

Applications:

High speed refrigerated centrifuge can be used for spinning blood samples to recover plasma and serum samples, which can then be used for quantification of biomolecules. Also the cooling ability in the centrifuge prevents the degradation of biomolecules of interest during spinning.

4. Deep freezer (-20 C)

- a) Capacity of 300 - 400 liters, vertical two door refrigerator.
- b) It should be able to maintain the temperature of -20 C.
- c) Body should be protected with standard double layer fabrication with enamel coating.
- d) Should come with defrosting system.
- e) Should be fitted with digital temperature display with indicator and control.
- f) Should come with minimum of 4 shelves.
- g) Body should be mounted on an iron frame attached to a wheel for easy movement.
- h) Input Voltage: 230 ± 10 V AC 50/60 Hz, Single phase with voltage stabilizer.
- i) Warranty should be included along with all other necessary components like operation manual, power cable, plug etc.
- j) Should include installation and demonstration of the Instrument.

Applications:

The Deep Freezer can be used to store any biological (except RNA) sample for longer duration without the risk of sample degradation. It can also be used to store chemicals, kits etc. which require storage at -20 °C.

5. Refrigerator

- a) Capacity of 450 -500 Liters, two door refrigerator.
- b) With a minimum of 3 star energy rating.
- c) Within built stabilizer and a power input of 230 ± 10 V.
- d) Should come with defrosting system.
- e) Warranty should be included along with all other necessary components like operation manual, power cable, plug etc.

Application:

The standard refrigerator can be used to store any biological (except RNA) sample for short duration (1-2 days). It can also be used to store chemicals, kits, buffers, and reagents etc. which require storage at +2 °C to +8 °C.

6. Fine Balance

- a) Weighing capacity from 1mg to 120g with readability down to 0.1 mg.
- b) Digital display screen with tare capability.
- c) With circular metal pan size of 90-100 mm in diameter.
- d) With chemically resistant glass housing.

- e) Should come with adjustable screw at the bottom for leveling of fine balance.
- f) Should come with overload protection.
- g) Should come with warranty and include all necessary components like operation manual, power cable, adapter etc.
- h) Warranty should be included along with all other necessary components like operation manual, power cable, plug etc.
- i) Should include installation and demonstration of the equipment.

Applications:

Fine balance can be used to weigh solid chemicals during preparation of buffers, reagents, etc. which will be required while performing many biochemical and molecular biology experiments.

7. Hot Air Oven

- a) Should have standard doubled layered fabricated stainless steel wall.
- b) Should include 2 or more shelves for storage.
- c) Display and control panel indicating temperature and time etc. should be included.
- d) Temperature range of up to 250 C approx.
- e) Should also include fan for air circulation.
- f) Power supply of 230 ± 10 V, 50/60 Hz.
- g) Warranty should be included along with all other necessary components like operation manual, power cable, plug etc.
- h) Should include installation and demonstration of the Instrument.

Applications:

Hot Air Oven can be used for drying glassware after washing and also as a dry sterilization.

8. Autoclave

- a) The internal tank capacity should be of between 70 - 90 liters.
- b) Should have a double/triple walled body with stainless steel construction.
- c) Should have a standard Pressure gauge for monitoring internal pressure.
- d) Working Pressure should be between 15 psi - 17 psi (2 kg/cm^2).
- e) Sterilization temperature should be between 121 C to 134 C, and sterilization time of 30 minutes.
- f) Should include on/off switch, pressure releasing valve, line and load indicator etc.
- g) Door should be foot lifted type with safety and interlock device.
- h) Manual water filling and removal.

- i) Should include safety features like radial locking, safety valve, low water detector and pressure interlock
- j) Should include a basket.
- k) Power supply of 220 - 400 Volt three phase supply.
- l) Warranty should be included along with all other necessary components to make the autoclave functional.
- m) Should include operating manual, installation and demonstration of the Instrument.

Applications:

Autoclave can be used for sterilization of consumables like plastic wares and glass wares under high pressure for maximum sterilization.

9. PCs and Power back up

OTHER DAIRY APPLIANCES

1. Electric dehorner

Specification
 Material Mild Steel
 Volt - 110/120 volt
 VAC - 60 hz
 Wattage - 239 watt

2. Tattooing machine

Suitable for tattooing on animal skin with natural dye

3. Ear tags with applicator

Ear Tag "ALLFLEX"
 COLOR – YELLOW
 SIZE – 4" HIGH, 3" WIDE
 PRINT(LASER) ON TOP
 PRINT ON BOTTOM

4. Automatic Cow Swinging Brush (4 Nos.)

The Swinging Cow Brush should be able to rotate at an animal friendly speed with 26 RPM at 230 V and swings freely in all directions, smoothly up, over and alongside the cow to provide the comfort all-round. The brush should be equipped with overload protection against overheating and IP65 protection and work on energy saving automatic ON/ OFF feature starting the brush rotating on demand and stops it within 10 seconds after use. The brush should be delivered pre-mounted which makes it easy to install on a post or wall in any loose housing barn. The brush should consist of one solid brush unit with 17 cm long bristles having dimensions of 100 x 50 x 132 cm with power not more than 0.16 KW to work with less power consumption. The supplier should supply all kinds of fixtures, safety switches etc. to make the brush working

5. Water Trough (4 No's)

The water Trough should be made of Stainless Steel with Automatic Valve and provide a large, calm drinking surface from which the animal can drink quickly and without stress. The units should be very easy to clean and maintain. The water level of the trough

should be kept very low, so tipping the tank will spill just a small amount of water. Instead of maintaining a deep water level. These tip tanks should have a high capacity float to give fast, high volume water supply having valve capacity of 83 litres per minute at 5 bar pressure. The water Trough length should not be more than 2.5 meters compatible to our shed design and floor mounted with legs made from GI and contains maximum 96 litres. The supplier must provide all the valves, plumbing connections from the water tank to Trough inside the shed.

6. Water Bowl (10 Nos.)

Water Bowl should be made of SS designed with flow rate of 10 litres per minute having ½” BSP connection with volumetric capacity of 4 litres and weight of 2.4 kg. The bracket is designed to prevent dirt getting stacked on top of the bowl and polluting the water.

7. Cow Resting Cubicle (60 Nos.)

Resting cubicles from B-class MS 50 mm Pipe having hot dip galvanized to be supplied with Front Rail, Top rail with Suitable clamps and bolted into the concrete with anchor bolts. The cubicle must be installed between two animals to accommodate individual place for Cows.

8. Dairy Fan (23 Nos)

The Dairy fan should be rectangular shape capable of ventilating an entire dairy cow housing facility.

This 100 cm fan with single phase power provides optimal ventilation by moving air at a rate of up to 29,000 m³/h. The fan provides the best air flow when it is installed at a minimum height of 2,7m and an angle of between 10° and 15°.The fan housing design directs the airflow accurately towards your cows and increases the distance at which air speed is high enough to keep your cows cool. It is easy to install, use and maintain and operates with little noise, helping your cows remain calm and comfortable

- Propeller Diameter: 1000 mm (6 blades)
- Voltage / Frequency: 1 x 230 V / 50 Hz
- Amperage: 2.0 Amp
- Power Consumption: 1.0 kW
- Motor Protection Class: IP 55
- Noise Level: 68 dB (A) 5m
- Fan Speed: 639 rpm
- Max Capacity at 0 Pa: 29000 m³/h
- Specific Efficiency: 38.7 m³/h/W
- Weight:

9. Calf Box (10 Nos.)

The calf box should be of 1000 x 1200 mm with galvanized steel frame and edge sealed plywood sheets and bottom floor to be made of slatted wooden frame. There should be two bucket rings in the front. The front of the box should be planned to be opened from the right or the left side.

10. Calf Feeding Bucket (10 nos)

The supplier must supply calf Feeding bucket specially designed for Calves. The Bucket should have place for Nipple (which can be changed) and Bucket feeding with minimum 8 Litre Capacity with easy to clean).

11. Calf Bottle (10 nos)

The supplier must supply 2 litre capacity Calf Milk Bottle with Nipple

12. Wheel barrows as per ISI standard (2Nos)

13. Belcha/Scraper: Required for collection and disposal of manure as per standard ISI specification

14. Hoof trimmer in Standard Set of various sizes

15. Jet Pump washing with hose pipe

Dairy High Pressure Cleaning Pump

Power - Single Phase

Discharge On Floor wash Nozzle: 40LPM

Discharge on Animal Wash Nozzle: 17 LPM

Water Jet Length - 70 Feet on Open Air

16. Foot Bath tub to be supplied along with the above items

17. Bucket Milking Machine (1 NOS)

Bucket machine should be supplied with directly coupled mounting vacuum pump system with Air Flow of 170 LPM meeting EC standards installed on wall mounting design basis with vacuum gauge and suitable vacuum regulation device. The machine should have hot dip galvanized tank of 15 litres with transparent lids and overflow protection and motor of 2 HP – single phase, 1400 rpm as per EC regulations with ON/OFF switch and thermal overload relay protection fitted on the machine. The milking bucket assembly should be supplied with 2 no's of Seamless milking bucket of 25 litres capacity made of AISI 304 with can carrying and lifting handles, lid etc.

The milking clusters should be minimum 2500 Gms suitable to milk cows with suitable flow controlled device with Dual Vacuum system i.e. when machine is applied it should commence at low vacuum(33kPa) and when the milk flow from the udder increases above 200ml/min the vacuum should automatically increase to the normal milking vacuum and stays that way until the milk flow falls below 200 ml/min towards the end of each milking to protect teats with over milking with food grade single piece liners and food grade and non-toxic transparent milk tube. The machine should be supplied with 6 no's of metallic durable long lasting easy to operate vacuum taps with complete vacuum line. The machine should be supplied with startup kit with suitable vacuum pump oil, detergents to clean the machine with eco friendly packaging with electrical fittings, safety switches etc. as required for.

18. Electronic Weighing Scale

Weighing Scale Digital

Cap – 100kg

Accuracy – 10gm, Pan Size – 600 x600mm

19. Platform Weighing balance

Model	Max	D	Platform Scale
CTG- 2TAW, CITIZEN	2 Ton	200 gram	1200x1200mm

- Single deck, half-dual doors at Entry-Exit directions.
- Double deck, half-dual doors at Entry-Exit directions.
- Standard Fence height : 1.0m
- Mild-Steel structure, powder-coated finish.
- Supply with all screws for each unit

20. Heat/Activity Monitoring System for 60 cows

The activity monitoring system should work with central activity receiver antenna via wireless data communication and receives the valid corrected message from the Activity Tags via radio signals every hour and send them further to controller. The supplier should supply 60 No's of Neck mounted Activity tags on belt with cow number and should senses the activity every minute and send it to central system database.

21. Herd Management Software with Remote farm connection (1 No.)

The system must be SQL server based enabling data exchange to 3rd party software consisting of Program CD/USB Storage device with suitable system controller for PC. The system must be equipped to connect and interlink the Software to all possible mechanized/electronically controlled activities, which should be specified by the tenderer. The software should also export any data for use of data exchange with other software. The system must be equipped with data backup which should also be specified by the tenderer. The System should be compatible with network and server based configuration. The system should be secured with password protection and possibility of multi-user facility. The software should have automatic report printing and saving facility in various formats. The herd management software should give automatic reports on various Key performance indicators in farm i.e. calving interval, herd distribution, conception rate for all the lactation separately. One latest configuration branded PCs with advanced features for herd management software with suitable UPS, laser printer and servo stabilizer for milking Parlour. The supplier should be able to provide platform which can connect the software remotely with secure access and support access. It should be able to instantly access, view and analyze diagnostics to get a complete overview of your system. The remote farm connection should allow secure remote access to your equipment and also enables you to securely upload information directly from your computer to other parties, thus saving time

1.MidiLine 2x6/6Basic & Visual milk measurement milking Parlour with Accessories

Milking Parlour: Stationary MidiLine Herringbone Milking Parlour System for 6 milking places and designed as per site, suitable for cows having 30 degree stalling with manual controlled entry and exit gates integrated with Visual Milk measurement, Milk Transfer system with Automatic cleaning system, containing Vacuum line, milk line, wash lines and suitable external hot water generation system.

a) Parlour Frame: The Parlour Frame should be provided for 2X6 animal standing places on both sides with animal friendly and sturdy hot dip Galvanized Pipe having Semi Staggered/Deported Rump Rail with Splash Guard and straight Breast Railing for perfect positioning of animals Complete with all fittings.

b) Vacuum Pump: Vacuum Pump should be supplied with 2 no's of 340 Litres pump having direct coupled to save energy and minimize belt losses. Each pump should have 1.5 KW drive motor with single /three phase power at 50 Hz and equipped with necessary vacuum regulator. The vacuum pump should have hot dip Galvanized vacuum tank with transparent Lids, overflow protection, Electric Motor as per CE regulations with ON/OFF Switch, thermal over load relay protection.

c) Milking Clusters: Six (6) Nos. of milking cluster suitable to cows made with SS Teat shell having min 150 cc claw piece. Four Sets of suitable rubber liners, milk tubes, stainless steel shells, twin pulsation tubes and other accessories should be provide for the fully functional cluster.

d) Pulsation system: Individual controlled 6 no's of Hydro- Pulsator with suitable double vacuum stimulation device based on milk flow of animals.

e) Milk Meters: 6 No's of ICAR- approved milk meters with visual measurement made of transparent glass type.

f) Dropper Arm: The System should have 6 No's of SS Dropper Arm for smooth transfer of milk from cluster to Milk Line.

g) Milk Lines: Stainless steel Milk pipe lines of suitable size and sufficient length to transport milk from receiver to the Bulk milk cooler and also from cooler to the milk delivery point should include all necessary fittings like SS union, valves and return line for CIP cleaning.

h) Milk Receiver: The supplier must supply transparent Glass Receiver of 50 L capacity equipped with overflow/safety trap and suitable sanitary type milk pump for conveying milk to Bulk Milk Cooler.

i) Teat Spray: Consisting of 3 numbers of teat Spray guns complete with all necessary pumps, guns lines and tubing and all basic units/ fittings.

j) Automatic Cleaning System: Milking Parlour should be provided with air injector based CIP cleaning system. There should be 6 no's of CIP jetter heads & minimum 100 L Plastic wash tank. The cleaning system should also be capacity of Cleaning in Place (CIP) of the pipeline.

10. Bulk Milk Cooler Open Type 1000 Liters long with accessories (1No)

The Bulk Cooler should be open Type and designed for 38 degrees ambient temperature conditions with rated capacity of 1000 Litres having gross capacity of 1038 Litres with vertical cylindrical shape with agitator with T spray nozzle and suitable sizer of compressor with **R668A** refrigerant and supplied with complete accessories along with bulk cooler for proper working and

delivery mechanism to the milk tanker with Milk pump and other pipelines and Fittings, Starters, Cables, Voltage stabilizer etc

11. FILLING AND PACKAGING MACHINE

Sl. No.	Description	Specifications
1.	Product to be packed	Milk/Buttermilk/Curd
2.	Type of Machine	Fully automatic Single head mechanical cam driven
3.	Speed/Output	200ml- 45 pkts/min/head 500ml- 45 pkts/min/head
4.	Feeding system	Gravity Flow
5.	Packing range	200/500 ml
6.	Accuracy in volume	±2ml/2 grams for 500 ml, may vary as per B density
7.	Accuracy in length	±1mm for all width
8.	Weight variation	Depends upon your batch bulk density
9.	Packing material	LLD/LLDPE 3 color printed
10.	Film thickness	40-50 microns of good quality 3/5/7/9 multilayer
11.	Film width	325 ±1mm
12.	Film roll weight	25 to 35 kgs
13.	Type of seal	Vertical overlap/horizontal round import
14.	Material of construction	All contract parts made with SS-304 and Aluminium with a Small Body
15.	Horizontal seal	Impulse
16.	Vertical seal	Impulse
17.	Movement/operation	Mechanical cam Driven with Pouch Gear Box Motor System
18.	Motor/Gear box	ISI marked Transtech Gears make for Better performance, perfect gear system, low consumption, Exact speed and Controlling.
19.	Cooling water requirement	8 to 10 degrees
20.	Photo Sensor	Peper fuchs make Photo mark sensor to capture the film in a Point ratio of variation and given a Exact Logo is visible on Each pouch, and Low

		film waste.
21.	Coding unit	Not in our Scope
22.	Pouch counter/Alarm	Shall be provided with M/C, film end sense and given a Exact Logo is visible on Each pouch, and Low film waste
23.	Film carrier assembly	s.s., aluminium or food graded
24.	Idler rollers- MOC	s.s, aluminium or food graded
25.	Balance tank	Should be SS 304 food graded and well polished with 01 No's
26.	Chute assembly	Shall be provided with SS 304 Grade
27.	Sealing cable	Shall be provided with Body insulators
28.	All electrical and fittings and panel	As per market regular standards only
29.	Pouch feeding System	Gear box motor system with Advance
30.	Operating System	VD-918 System
31.	Film loosing	Mechanical Dancing Bracket system
32.	UV Mode	Transparent UV lamps applied to Threshold the insects

Single Head Milk Pouch Packing Machine Mechanical

Range: 200 ml to 1000 ml Capacity: 2500 Pouches Per Hour

Including Photocell & Date Coding unit

Supply and erection of automatic from fill & seal machine to pack **Milk** in poly pouches with S.S cabinet. All liquid flowing parts made with S.S material and special food grade material

12. Refrigerator (Chiller)

Technical Specification

Description	Units	RCDD1390A
Gross Capacity	Ltrs	1300
Temperature Range	2°C to 8°C	
No. of Doors	Nos.	2
Shelves	Nos.	6
Internal Light	Nos	2 Led (9.16 watts)
Refrigerant	Type/Charges (grams)	R134a/300
Power Supply	V/Hz	220-240V/50Hz
Max. Input Power	W	524 Watts
Rated Current	A	4.5A
Defrost		Automatic

Thermostat Control		Digital
Overall Dimensions (W×D×H)	Mm	1400×820×2050
Net Weight	Kg	184

13. Automatic Milk Analyser

Name of the product-Milko Scanner Make "EVEREST",

Model- YAMA MIR350

FEATURES

1. Fast adulterant detection
2. Simple and lightweight design
3. Cost effective
4. No acids or other chemicals used
5. Data collection system
6. Embedded Real time clock
7. Automatic cleaning of the infrared module
8. RS 232 and/or USB Interface
9. USB port with Flash Drive and Numeric keyboard support

MEASURING PARAMETERS

- Milk Parameters (ultrasonic) Fat from 0.5% to 12% with accuracy $\pm 0.1\%$
- Solids non-fat (SNF) from 6% to 12% with accuracy $\pm 0.2\%$
- Protein from 2% to 6% with accuracy $\pm 0.2\%$

Adulterants (mid-infrared)

- Urea Ammonium compound
- Sucrose/Glucose/Maltodextrin
- Melamine
- Nitrate Sodium carbonate/bicarbonate
- Added water
- Synthetic milk

GENERAL Environmental Condition

- Ambient air temperature 5° - 45° C
- Milk temperature 5° - 35° C
- Relative humidity 30° - 80° C

Power Supply

- AC Power Supply Voltage 100 – 240 V AC + 10/-15%
- Power Consumption 50W Max

Mechanical Parameters

Dimensions (WxDxH) 380 x 310 x 285 mm

Weight < 4.5 Kg

TECHNICAL SPECIFICATIONS

Onboard Linux OS Single board Computer 1 GHZ processor

8 GB SD card

512 MB DDR3 memory

4.3 inch touchscreen
4 USB Ports
USB-Ethernet adapter for LAN and internet
Wi-Fi capability (with optional wi-fi adapter]

14. Milk Can

Stainless Steels grade 304(wt. 8.2kg), cap 40 lit

Note:

- All listed items are as per the requirement of the dairy farm
- All electrical connections, Plumbing solutions are separate and shall be incorporated at the time of processing the purchase.
- The above equipments may require Servo Stabilizer(20 to 25 KVa), Stabilizer, Desk top with required specifications, UPS, Printer and Proper Electrical connections with Rely/MCB/Starter etc. The same shall be incorporated in accordance with the equipment chosen and placed before purchase

15. CONSUMABLES

The supplier should supply 3 months of consumables viz. Alkaline and acidic cleaning reagent solutions, Vacuum Pump Oil & Filter soaks etc., for smooth running of equipment
CMT Kit – California Mastitis Test Kit to be supplied along with the above items.

NOTE:

The above equipments will require Servo Stabilizer(20 to 25 KVa), Stabilizer, Desk top with required specifications,

UPS, Printer and Proper Electrical connections with Rely/MCB/Starter etc. The same shall be incorporated in accordance with the equipment chosen and placed before purchase