



**BANASKANTHA DISTRICT CO-OP.  
MILK PRODUCERS' UNION LTD.**

BANAS DAIRY, PB NO 20, PALANPUR  
-385001, DIST: BANASKANTHA, GUJARAT,  
PHONE: 253881-85. FAX : 02742-252723

Invites Online Tender Bids from reputed eligible Bidders for the following works at our Banas Dairy Plant, Palanpur, Gujarat.

**TENDER NOTICE**

Date:14.03.2026

Open Tender RFQ Reference No: 9000038588/9000038586/9000038582/9000038580 Open Tender RFQ Document For Supply, Installation and Commissioning of Automatic TMR Plant 5 TPH & Automatic TMR Block Machine 5 TPH

Tenders are invited For Tender Document For Supply, Installation and Commissioning of Automatic TMR Plant 5 TPH & Automatic TMR Block Machine 5 TPH for Banas Dairy, Chilling Centre Dhanera (Gujarat) & Banas Dairy Chilling Centre Khimana (Gujarat). Eligibility criteria for this tender and procedure of the tender is available on our Banas Dairy Online Portal <https://evendor.banas-dairy.coop>. Banas Dairy Palanpur.

**Managing Director**



BANASKANTHA DISTRICT CO-OPERATIVE MILK PRODUCERS' UNION LIMITED

Palanpur 385001 India
Phone: 02742-253881 TO 85
REQUEST For Quotation - OC

Tendor Type : Open Tender RFQ

(ISO Doc No.)

Table with 9 columns: Sr. No., Material, HSN/S AC, Short Text, Qty, OUn, Delivery Date, Plant, Mat. Grp. Includes item details for Stationary TMR Mixer 16 M3, various conveyors, and a silo system.

## **Technical specifications:**

- **Fully Automatic TMR Plant: Capacity- 5 ton/hr: (20 hrs operation)**

### **Vertical Stationary TMR Mixer (16 M3): 1 set**

Vertical stationary TMR mixer should be capable of mixing the ration consisting of various animal feed stuffs, fodder crops, hay, silage, feed concentrate etc. available in Gujarat.

The auger is equipped with both Auger knives and Contra Knives rotates on its axis and tend to wind the ingredients in one direction.

The TMR should have suitable weighing system with load cells along with scale indicators which are connected with feed management software. The TMR must be equipped with both side Outlet door along with Conveyor Interface

TMR System should have the below features.

- Direct driven with gearbox
- Planetary gear box and mixing gear
- Adjustable knives
- Control box
- Adjustable legs
- Counter knife
- Conveyor interface
- Electro-cylinder
- protective cover on the feed dispenser

Volume (m3)	16
Net weight (kg)	6450
Min. loading capacity	5000
No. of augers	2
No. of knives	2 x 8

Auger's speed (rpm)	11.7
Motor (kW)	37
Fuse (A)	63
Door electro cylinder (kN)	25
Weighing system	
Side wall thickness (mm)	6
Bottom thickness (mm)	20
Spirals thickness (mm)	15
Loading	Automatic
Feed manager software	Yes
Ratio planetary gear box	Yes
Ratio mixing gear box	Yes

Interface at unloading door conveyor.

Possible to go with conveyor parallel with the mixer.

Fulfilling safety requirement and function.

Possible to install the conveyor straight out of the mixer

### **Safety Features**

Start alarm warning 30 s before start

Emergency switches around the mixer

EMC/ Any std. tested and approved cabinet

Rotation part covered

Every time the mixer stops the door will be closed.

Approved by External testing agency with proper details to be given.

**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 two 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 feed stuffs.

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

**Scale indicator** – The TMR should be computer connected with help of module and Scale indicator having digital display.

**Feed Software** – The TMR should have TMR feed software in the PC program through which the ration programming can be done to create recipes for each batch or group of cows/ Buffalos. the Software should help to adjust ration per group and per cow, monitor percent overfeed & Analyse dry matter intake. the software should be able to do below jobs :

- Ration Management
- Feed Bunk Management
- Operator Performance
- Inventory Control

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

### **Conveyors with Underground Hopper Mechanism:**

- Provision shall be made for two underground hoppers, each having plan dimensions of 10 ft × 5 ft, with adequate depth such that each hopper can accommodate a minimum of 1 ton of material.
- The dry fodder hopper shall be provided with a screw conveyor, and the silage hopper shall be provided with a belt conveyor, for conveying the respective materials to the buffer tables.

- The screw conveyor portion located below ground level shall be provided with 3 mm perforations over a length of 1.5 meters, to facilitate effective dust removal from dry fodder.
- The underground hoppers shall be installed inside the Godown or in close proximity to the Godown, at a suitable location, to enable easy unloading of material directly from loaders with minimal material movement and handling.
- Screw Conveyor specifications:
  - Screw conveyor- MOC: GI
  - 16 inch Diameter, inner dia 4-inch, motor with 4 NU helical gear box
  - Below Surface have hole of 3 mm to remove dust from input material-Dry Fodder
  - Capacity: 4 ton per hour.
  - All GI material with powder coated 3 mm thickness
  - Bottom Guard for dust/sand recovery.
- Belt Conveyor Specifications:
  - 1200 mm width
  - motor with 4 NU helical gear box
  - capacity: 12 ton per hour.
  - All GI material with powder coated 3 mm thickness

**Magnetic Separator Units:**

High-strength magnetic separators (minimum 10,000 Gauss, neodymium grade) shall be installed at both the input feed table and the TMR mixer discharge point to effectively remove ferrous and residual metallic contaminants before material transfer to downstream conveyors;

**Buffer Table System for Silage storage / transfer (9.5 Mtr Length): 1 No.**

Buffer table should be supplied for intermediate storage of feed before the mixer for fast intake for TMR mixer through loading conveyor. The buffer table must be equipped with suitable capacity motorised bottom mat and shredder that shreds loose silage while unloading to the feed wagon or mixer. This should help the feed easier to handle for the TMR mixer for optimum mixing.

The Buffer table should be installed at suitable angle which should be controlled by control box. Buffer table with suitable length sufficient to handle 15 m3 of Volume with minimum 30 Tons Silage.

Following details to be provided by bidder:

S. No	Following details to be provided by bidder:	Minimum Requirement
-------	---	---------------------

1	Capacity	30 Tons
2	Long Side Height	1.3 m
3	Rear Side Height	0.6 m
4	Length	8.5 Mtr
5	Width on the Side	2.2 Mtr
6	Width at Motor	2.4 Mtr
7	Max Gradient	0.17m/m
8	Maximum Loading	1000 kg/m
9	Weight	1700-2500 kg
10	Shredded Diameter	0.6 m
11	Height Shredder on the inside	1.1 m
12	Speed Shredder	30 rpm
13	Transmission	On left or Right Side
14	Maximum Speed bottom Mat	1.2 m/ min
15	Motors Capacity Bottom Mat	2 – Motors @ 2.2 kW

**Buffer Table System for Dry Fodder Storage/ Transfer (9.5 Mtr Length): 1 No.**

Buffer table should be supplied for intermediate storage of feed before the mixer for fast intake for TMR mixer through loading conveyor. The buffer table must be equipped with suitable capacity motorised bottom mat and shredder that shreds loose dry fodder while unloading to the feed wagon or mixer.

This should help the feed easier to handle for the TMR mixer for optimum mixing.

The Buffer table should be installed at suitable angle which should be controlled by control box. Buffer table with suitable length sufficient to handle up to 10 Tons of Dry Fodder / Day.

**Following details to be provided by bidder:**

Sr. No.	Following details to be provided by bidder:	Minimum Requirement
1	Capacity	30 ton
2	Long Side Height	1.3 m
3	Rear Side Height	0.6 m
4	Length	8.5 Mtr
5	Width on the Side	2.2 Mtr
6	Width at Motor	2.4 Mtr
7	Max Gradient	0.17m/m
8	Maximum Loading	1000 kg/m
9	Weight	1700-2500 kg
10	Shredded Diameter	0.6 m
11	Height Shredder on the inside	1.1 m
12	Speed Shredder	30 rpm
13	Transmission	On left or Right Side
14	Maximum Speed bottom Mat	1.2 m/ min
15	Motors Capacity Bottom Mat	2 motors @ 2.2 kW

**Inclined Loading Conveyor – 1 Set**

The Feed conveyor must have belt with carrier's and side walls with belt supports up to length of 6 Mtr fits to Vertical stationary mixer as per customized needs and can be used for loading the TMR mixer.

Heavy duty and efficient drive motor integrated in the roller of 60m/min with different speeds for optimal feed flow.

The loading conveyor should have lifting legs with additional sliders equipped for smooth unloading.

### **Horizontal Loading Conveyor – 1 Set**

The conveyor must have belt with carrier's and side walls with belt supports as per customized needs.

Heavy duty and efficient drive motor integrated in the roller of 40m/min with different speeds for optimal feed flow.

The loading conveyor should have lifting legs with additional sliders equipped for smooth unloading.

### **Unloading Conveyor – 1 Set**

The Feed conveyor must have belt with carrier's and sidewalls with belt supports up to length of 6 mtr. fits to both side gate of Vertical stationary mixer as per customised needs and can be used for unloading the TMR feed into intermediate buffer hoppers which is having storage capacity of 5 ton.

Heavy duty and efficient drive motor integrated in the roller of 60m /min with two different speeds for optimal feed flow.

The unloading conveyor should have lifting legs with additional sliders equipped for smooth unloading.

### **Liquid Dispenser (200 litre)- 1 set**

A liquid medicine dispenser with a storage capacity of 200 litres shall be provided. The dispenser shall be constructed from SS304 material and equipped with an automatic dosing mechanism synchronized with the TMR mixer. It shall include high-level sensing with alarm functionality, integrated and displayed on the SCADA system, to ensure proper monitoring and control. The system shall be designed to enhance mixing quality and extend the shelf life of the TMR feed.

### **Mineral Dispenser System - 1 set.**

The TMR mixer should be able to get essential minerals desired for ration mix from minimum 350 Kg capacity Mineral dispenser attached with TMR with transport auger and stir device which must be controlled by control box. System should be able to dispense Pellet or none pellet mineral. The mineral dispenser must be made of Aluminium /zinc plated Mild steel material.

**Silo System for Mesh Concentrated Cattle Feed with Bucket Elevator and chain conveyor– 02 set**

Silo shall be made of galvanized steel with 2 mm thickness. It will have 15-ton capacity for storage of mesh concentrated cattle feed with the provision of anti-choking mechanism. The silo is equipped with a chain conveyor with a geared motor and coupling system for transferring mesh-concentrated cattle feed to the TMR mixer, fed by a common bucket elevator and chain conveyor with the provision of pneumatic gates. The silo, bucket elevator, and chain conveyor shall be constructed of galvanized steel, while the hopper and the pipe shall be constructed of SS304 material. The silo shall be provided with an air vent. It should have low- & High-Level Sensing Alarm to be shown on HMI System. There shall be provision of pneumatic gates and cleaning mechanism at the bottom of silo. The silo sheet shall have a smooth, flat surface.

**Control Panel, PLC, HMI (10" size) and IPC:**

The proposed system shall be provided with a PLC-based control panel integrated with a 10-inch Ethernet HMI and an industrial PC for complete automation, monitoring, and control of the TMR plant. The PLC system shall be configured with TMR feed management software through which ration programming and recipe creation can be carried out.

The system shall facilitate ration adjustment, monitoring of percent overfeed, and analysis of dry matter intake.

The system shall support the following functions:

Ration Management	Yes
Feed Bunk Management	Yes
Operator Performance	Yes
Inventory Control	Yes

## **Scope of PLC–HMI Control System:**

The PLC–HMI system shall control, monitor, and interlock the entire TMR plant operation, including:

### **Raw Material Feeding:**

- Feeding of silage, dry fodder, and concentrate from:
  - Buffer tables
  - Silo system

### **Material Handling:**

- Controlled transfer of materials through:
  - Belt / chain / screw conveyors
  - Bucket elevator

### **TMR Mixing Operation:**

- Automatic loading of ingredients into the TMR mixer as per programmed recipe
- Operation of liquid medicine dispenser and mineral dispenser synchronized with the mixing cycle.
- Control of mixing time, auger speed, and mixing sequence
- Automatic opening and closing of TMR mixer discharge gates
- Discharge of mixed TMR feed to unloading conveyors and intermediate buffer hoppers.

### **Weighing, Recipe & Batch Control:**

The system shall include **integrated weighing control** using load cells and scale indicators connected to the PLC.

The **PC-based feed management software** shall enable:

- Recipe creation and modification
- Batch-wise ingredient weighing
- Automatic ingredient sequence control

- Monitoring of target versus actual weight
- Overfeed / underfeed analysis

### **Interlocking & Automation Logic:**

The PLC system shall include complete interlocking logic to ensure safe and reliable operation, including:

- **High-level sensor interlock at buffer hoppers:**
  - Automatic stoppage of upstream conveyors and TMR mixer upon high-level condition
- Conveyor trip or overload → automatic upstream shutdown
- Emergency stop → immediate and safe shutdown of the plant

All interlocks, alarms, and fault conditions shall be displayed on the Ethernet HMI.

The Ethernet-based 10-inch HMI shall provide:

- Real-time visualization of the entire TMR plant process
- Status indication of motors, conveyors, mixers, valves, and sensors
- Display of:
  - Weights
  - Levels
  - Alarms
  - Operating parameters

The PC connected to the PLC shall generate and store batch-wise and shift-wise reports, including:

- Batch number
- Date and time
- Recipe / ration name
- Ingredient-wise target versus actual weights
- Mixing time
- Quantity of TMR produced
- Plant running hours and stoppages
- Alarm and fault history

## **Piping, Supports and Structural Platform**

Product piping material (MOC: SS/ GI) required for system working along with suitable GI Platform with safety railing along with toe guard.

## **Electrical Installation Material:**

Power cables and control cables (PVC insulated)	Yes
Earthing, Earthing cables, Copper strips and GI Strips, Ethernet cables & Accessories	Yes
Cable Glands & Adaptors, cable lugs, cable ties	Yes
Isolator switches & mountings	Yes
Cable trays – rod type, GI	Yes
Supports for cable trays, GI	Yes
All accessories to complete installation work	Yes
Servo stabilizer, 150 KVA	Yes

## **Technical Commercial Price Format (To Be Filled by Vendor):**

Sr. No.	Equipment Name	Specification	Make/MOC	Qty	Price (Rs.)/Unit	Total Price (Rs.)
1	Stationary TMR Mixer	16 cub. Mtr,		1 set		
2	Buffer Table			2 set		
3	Horizontal Loading conveyor			1 no.		
4	Inclined Loading Conveyor			1 no.		
5	Unloading Conveyor			2 nos.		
6	Liquid Dispenser			1 set		

7	Mineral Dispenser			1 set		
8	Silo system with elevator and Conveyor			2 set		
9	Conveyors with UG Hopper Mechanism:			2 set		
<b>Total Price (Rs.)</b>						

**Technical Deviation Clause:**

The bidder shall strictly comply with the technical specifications mentioned in the tender document.

Any deviation from the specified technical requirements, design parameters, capacity, material of construction (MOC), performance criteria, or scope of supply shall be clearly indicated equipment-wise in the prescribed format.

Deviations not explicitly mentioned shall be treated as NIL, and the supplied equipment shall be deemed to be fully compliant with the tender specifications.

Banas Dairy reserves the right to accept or reject any deviation without assigning any reason.

## **Equipment's Make:**

PLC / HMI: Siemens/ Schneider / Allen Bradley / Omron

VFD: Danfoss / Delta / Mitsubishi

Bearing: SKF / NTN

Pneumatic Valve: Janatics / SMC / Festo

Hydraulic valves shall be of Hydrank / Yuken / Any std. make

Sensor: Omron / Baumer/ IFM/ Autonics/ Honeywell

Cable/ Flexible Cable: Adcab/ Polycab/ Havells/ KEI/ RR Kabel / LAPP

Motor (IE3): Crompton / Siemens / ABB / any std. make

Helical Gearbox: Elicon / PBL / Bonfiglioli / any std. make

MCB/Relay/Contactor: L&T/ Schneider / ABB / Siemens

## **Supplier Scope:**

- Plant layout, design, manufacturing, supply, testing, installation and commissioning of TMR Plant Unit.
- Ensure proper integration of the TMR plant unit with the TMR packing unit to achieve a consistent production capacity of 5 tons per hour.
- Consumable & common spare parts corresponding to the installed equipment (such as motors, bearings, sensors, gearboxes, VFDs, etc.) shall be supplied.
- One Spare Motor of all size should be in Scope of Supply apart from the installed one.
- Tool kits for Operation and Maintenance of the Plant should be in the Scope of Supply of the System Equipment.
- Free replacement/repair of any defective part(s) and services during the warranty period of one year from the date of commissioning.
- Provide 30 days of operational and maintenance training to Banas Dairy personnel.
- Supplier shall provide a performance trial run of 30 days after commissioning.
- Submit all relevant documentation, including Operation & Maintenance manuals, wiring diagrams, and test certificates.
- Ensure compliance with all safety standards during installation and operation.

- Supplier shall provide GA drawings, including equipment layout, drainage line routing, emergency exits, and fire-safety provisions, in compliance with applicable safety and statutory norms.
- The supplier shall submit equipment-wise connected load (kW), running load (kW) for the complete TMR plant and associated equipment.
- All motors shall be IE3 efficiency class minimum, suitable for continuous operation.
- The intermediate buffer hopper shall be supplied by the TMR Packaging (Block Making Machine) supplier. However, the high-level sensor, including its supply, installation, wiring, testing, commissioning, and PLC–HMI interlocking with the unloading conveyor and the TMR mixer, shall be entirely within the scope of the TMR Mixer Plant supplier.

### **Banas Dairy Scope:**

- Civil foundation works for the new machine and its supporting structures.
- Provision of single-point power supply.

### **Tools & Trainings:**

The successful running of the equipment should be provided by the supplying firm for minimum of 30 Days. Original catalogue and specification sheet should be submitted along with the tender application.

Operations and Training Manuals should be supplied with the supply equipments.

The Standard equipment along with accessories should be guaranteed for period of one year. A comprehensive after sales services should be provided by the supplier, during and after the guarantee/warrantee period of the equipment.