Baler

1. General Specification

- Tractor trailed baler and PTO driven
- Rectangular or square baler used for baling crop residues, stalks, hay, straw of barley, wheat and grass smoothly and efficiently.
- The baler must manufacture with inline international standards or European standard.
- All parts and accessories not specifically mentioned but which are necessary to provide a complete efficient & functional unit shall be furnished as part of baler.

1.1. Material and Design

- All parts of the baler shall be made of material which is suitable for the intended service.
- The material shall be free from objectionable characteristics or defects which would adversely affect the appearance or function of the finished product.
- The complete system must design with or have the appropriate overload protection system and safety guards.

2. Technical requirement

2.1. Pick up Width 1.7 - 2.0 meter.

2.2. Bale chamber measurement (LxWxH) (900-1400) mm x (400-480) mm x (300-380) mm

2.3. Bale length 0.35 - 1.32 meter

2.4. Feed opening 1820-1920 cm^2

2.5. Total number of teeth 100-160

2.6. Number of tooth bars minimum 4

2.7. Number of knotters minimum 2

2.8. Indicate the power requirement

2.9. Main drive

- Having protection - slip and over run clutches, or shear bolt Gear box type – Heavy duty drives enclosed double reduction.
- Plunger or ram stroke/minute (rpm)– should be a minimum of 90.
- Types of over load protection- Shear bolt, overrunning and slip clutch

2.10. Feeding system

- Feeding - Rotary type feeder
- Packers – fork or crank type tines.
- Hydraulic pickup lift operated from tractor seat is preferred (Raise and lower the pickup from the tractor seat)

2.11. Tying mechanism

- Type of tines –twine type
- Drive mechanism- Gear and Shaft
- Type of knot – double knot twine
- Number of twine ball minimum 6
- Twine type – made from polypropylene, synthetic or sisal
- Indicate type of protection (overload protection)

2.12. Control and monitoring system

- Mechanical type control system is preferable
- PTO – recommended PTO revolution per minute should be 540 and equipped with proper safety guards
- Equipped with PTO shielding features, hydraulic hose slots for convenience and protects hydraulic hose ends from collecting dirt and debris.

2.13. Frame

- The frame should be as manufacturer standard
- Axle - single axle type

2.14. Tyre

- Wheel should be integrated type, suitable for smoother ride less soil compaction

- Tyre size - should be specified

3. **Weight & Dimension**

- Weight in kg without Bale 1000-1500 kg
- Overall length without Bale chute 4000-5600 mm
- Over all height 1200-2000 mm
- Width 2000-3000 mm

4. **Spare parts and service kits**

Manufacturer's standard field kit and recommended spare parts for three years of the baler under consideration shall be provided. A line of field kits of part to be offered shall be include in the offer.

5. **Manual**

- Operating manual & parts catalogue should be supplied with the machine
- All literature shall be in English

6. **Manufacturer standard tools & accessories**

- List tools and accessories rendered freely- as per manufacturers standard.

Maize harvester

1. General Specification

- Tractor mounted/operated PTO driven corn harvester used for harvesting and husking of corncobs, conveying in to hopper, crashing and spreading of maize straw. It shall harvest without mechanical damage and with cleaning quality.
- The equipment should be compatible with the climatic and topographic condition of corn growing areas of Ethiopia.
- The machine must manufacture with inline international standards.
- All parts and accessories not specifically mentioned but which are necessary to provide a complete efficient & functional unit shall be furnished as part of machine.

2. Material and design

- All parts of the machine shall be made of material which is suitable for the intended service.
- The material shall be free from objectionable characteristics or defects which would adversely affect the appearance or function of the finished product.
- The complete system must design with or have the appropriate overload protection system and safety guards.

3. Technical requirement

3.1. Engine and Drive

- Engine Power required - 70- 110 hp
- Coupling ---------- Rear three-point hitch, front hitch and hydraulic coupling
- Drive ---------- PTO
- Hydraulic selective control valve ------- minimum 2

3.2. Header

- Working width: -----two rows adjustable row spacing 45 to 90 cm
- Support system ------ hydraulic
- Harvest height adjustment ------- adjustable via

3.3. Threshing and Cleaning System

- Required working RPM ----------540 rpm
- Threshing concave (sieve or screen) hole diameter ------- 20-25 mm
- Main Sieve cleaning area ---------- 1.0- 1.2 m2
- Vibrating sieve hole diameter ---------- 3/16 "
- Separating sieve hole diameter ---------- 18 mm
- Air flow ---------- Adjustable

3.4. Grain tank and dumping

- Capacity ---------- 1000 kg
- Maximum discharge/dumping height ------- 3.2 m
- Equipped with grain elevator
- Grain discharge operated through remote control valve

3.5. Corncob hopper

- Hopper capacity not less than 2.5 m^3
- Discharge operated through remote control valve

3.6. Tire

- Equipped with manufacturer standard tires

3.7. Dimension and weight

- Maximum working width including tractor ----- 8 m

- Discharge width ---------- maximum 3.7 m
- Length in transport position --------- 5- 6.5 m
- Transport width ---------- maximum 5.2 m
- Weight ----------2000 – 2400 kg

4. **Spare parts and service kits**

Manufacturer's standard field kit and recommended spare parts for three years of the baler under consideration shall be provided. A line of field kits of part to be offered shall be include in the offer.

5. **Manual**

- Operating manual & parts catalogue should be supplied with the machine
- All literature shall be in English

6. **Manufacturer standard tools & accessories**

- List tools and accessories rendered freely- as per manufacturers standard.

CULTIPACKER

1. General Specification

- Tractor mounted seeder with consolidator (cultipacker) to be used for seeding **Teff** and manufactured with international quality standards.
- All parts and accessories not specifically mentioned but which are necessary to provide a complete efficient & functional unit shall be furnished as part of the implement.

2. Material and design

- All parts of the machine shall be made of material which is suitable for the intended service.
- The material shall be free from objectionable characteristics or defects which would adversely affect the appearance or function of the finished product.
- The complete system must design with or have the appropriate overload protection system and safety guards.

3. Technical requirement

- Type of crop: ----------**Teff**
- Working Width ---------- **1.8 m to 2.0 m**
- Seed metering---------- **Positive Ground Driven Seed Metering mechanism from the pulverizer roller**
- Seed box capacity meter box and agitator box ---------- **30-35 litter**
- Indicate the size and material type of the front and rear Pulverizer Roller
- Equipped with Agitator Kit for Seed Box.
- Equipped with scraper Kit for Pulverizer Roller
- Equipped with greaseable pulverizer axle bearing
- Equipped with coil tine track remover
- Transport Width---------- **2 m to 2.2 m**

- Weight ---------- **400 kg – 500 kg**
- Indicate the Engine Power required
- Three-Point Hitch ----------**Cat. II and III**
- Dimension H x L in m ----------**(1 m – 1.2 m) x (0.7 m – 1 m)**

4. **Spare parts and service kits**

   Manufacturer's standard field kit and recommended spare parts for three years of the baler under consideration shall be provided. A line of field kits of part to be offered shall be include in the offer.

5. **Manual**

   - Operating manual & parts catalogue should be supplied with the machine
   - All literature shall be in English

6. **Manufacturer standard tools & accessories**

   - List tools and accessories rendered freely- as per manufacturers standard.