Technical Specifications of Implements for which expression of interest from manufacturers have been called

Self Propelled Paddy Transplanter

Self propelled paddy transplanter should be capable of transplanting mat type paddy nursery in the puddled rice fields with ease. The machine should have the following specifications:

Drive Type- Self Propelled 4 wheel drive with independent suspension for the wheels

Dry weight- 550 to 650 kg

Prome Mover/Engine - water/ air cooled petrol/ diesel engine with starter motor

Number of shifting positions: - Variable speeds for forward and reverse

Tyre- non puncture solid rubber front tyre, the rear wheel may be thick rim rubber lug

Planting section - Rotary, forced planting system with adjustment for seedling size

No. of planting rows: - 6

Distance between rows: - 30 cm

Hill space: - 12 cms - 21 cms

Seedling type- mat type

Seedling height- 8 cm to 25 cm

Number of leaves: - 2.0 to 4.5

The machine should be provided with standby seedling racks so that the seedlings can be replenished easily and efficiently. The machine should be warranted for two years for any manufacturing defects. The machine should be easily serviceable in India with good availability of spare parts.
Walk Behind Paddy Transplanter

Walk behind paddy transplanter is a self propelled machine for transplanting paddy the machine is provided with transporting, planting and reverse speed selection. The detailed specifications are as below:

Prime Mover/Engine - water/ air cooled petrol/ diesel engine with starter motor

Engine Mounting Frame : M.S Sheet Fabricated with slots for adjusting belt tension

Floating Mechanism:- Proper mechanism for floating, one on each side and one in the centre should be provided

Planting Mechanism: proper planting mechanism for seedling should be provided

Seedling Feeding Mechanism:

   Seeding Platform: - inclined, curved Sliding type
   Seedling tray bars should be provided to hold the nursery mat in position

Driving Wheels: two rubber coated wheel with central spokes, should be provided with lugs

Control: The machine should have the following controls on it

   Steering Handles with side clutch levers
   Throttle control lever on RHS steering handle
   Main Clutch lever on control panel
   Planting clutch on control panel
   Hydraulic machine up down lever
   No. of seedling per hill adjusting lever
   Transplanting depth adjusting lever
   Hill Spacing control lever
   Starting / cranking rope
   Row Markers on both sides
   For initial depth setting a depth selection lever should be provided

Safety Devices: Following safety devices must be provided on the machine

   Protecting cover for drive belts
   Protecting cover for engine
   Front mounting guard

   Should have two side floats directly hinged to either side of chassis to maintain level of chassis of the planter with respect land surface profile of the seedling bed.

   The machine should be warranted for two years for any manufacturing defects. The machine should be easily serviceable in India with good availability of spare parts.
Nursery trays
Made of virgin Poly propylene for handling of mat type nursery for transplanting with specifications that suit the self propelled paddy transplanters

Inner size of the tray
- Length = 58cm
- Width = 28cm
- Depth = 3cm
- Weight; 500 to 600gms.

Nursery Seeder (Nursery Seeding Machine)
Nursery seeder helps in faster preparations of paddy nursery trays. The machine consists of a system which slides nursery trays sideways while carrying out the operations of pouring soil in the tray, seeding the tray and putting covering soil on the tray. The machine also consists of watering section. The machine should have the following specifications:-

- Separate hoppers should be provided for pouring soil, seeding and covering soil
- Separate motor (AC 220 V) for belt conveyer and for watering section
- The machine should have a minimum working capacity of 300 trays per hour with a provision to adjust the operating efficiency to higher levels.
**Vertical Conveyor Reaper**

It is suitable for harvesting and windrowing of wheat and paddy crops. The detailed specifications are as follows:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Source</td>
<td>35 HP tractor or above</td>
</tr>
<tr>
<td>Power to machine is given from tractor PTO with help of intermediate shaft running beneath the body of the tractor and a coupling shaft</td>
<td></td>
</tr>
<tr>
<td>Cutter Bar Assembly width</td>
<td>2.2 m</td>
</tr>
<tr>
<td>Type of crop conveying mechanism</td>
<td>Two, lugged nylon canvas belt</td>
</tr>
<tr>
<td>Type of pick up mechanism</td>
<td>Star Wheel</td>
</tr>
<tr>
<td>Crop dividers</td>
<td>Fitted in front of the cutter bar assembly and stra wheels mounted on the crop dividers</td>
</tr>
<tr>
<td>Height Control</td>
<td>Through pulleys and steel ropes with help of tractor hydraulic</td>
</tr>
<tr>
<td>Field Capacity</td>
<td>0.4hec/hr.</td>
</tr>
<tr>
<td>Filed Efficiency, %</td>
<td>55-70</td>
</tr>
</tbody>
</table>

The machine should be warranted for two years for any manufacturing defects. The machine should be easily serviceable in India with good availability of spare parts.
Reversible M.B Plough

The one/two bottom reversible plough is a hydraulically/mechanically operated basic implement for preparation of land. The Mould Board (M.B) retains their mirror finish at all time contributing to well turned furrows. The plough should have special wear resistant steel bottoms with bar points for toughest ploughing jobs. Bar point bottom ensures longer life as it can be extended or reversed. The mould board bottom reversing mechanism should be operated by a lever provided on the distributor. When the implement is hitched, plough bottom should be free to rotate 180 degree along the axis of the hollow shaft. The detailed specifications are as below:

Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (mm)</td>
<td>320</td>
</tr>
<tr>
<td>Working Width (mm)</td>
<td>609/914</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>375/475</td>
</tr>
<tr>
<td>Plough bottom</td>
<td>two bottom (two on each side)/ three bottom (Three on each side)</td>
</tr>
<tr>
<td>Working Depth</td>
<td>203 mm - 355 mm</td>
</tr>
<tr>
<td>Under frame Clearance</td>
<td>700 mm</td>
</tr>
<tr>
<td>Inter body Clearance</td>
<td>850mm</td>
</tr>
<tr>
<td>Reversing mechanism</td>
<td>Hydraulically/ Mechanically operated</td>
</tr>
<tr>
<td>Speed of operation (km/h)</td>
<td>3 to 4</td>
</tr>
<tr>
<td>Area covered (ha / h)</td>
<td>0.20 to 0.25</td>
</tr>
<tr>
<td>Field efficiency (%)</td>
<td>90</td>
</tr>
<tr>
<td>Power requirement (hp)</td>
<td>55 &amp; Above</td>
</tr>
</tbody>
</table>

The workmanship should be of high quality. It should not have sharp projections. The machine should be painted with high quality paint after applying proper primer. The machine should be warranted for two years for any manufacturing defects. The machine should be easily serviceable in India with good availability of spare parts.
Cotton Seed Drill/Planter

The machine is used for planting cotton. It consists of frame, seed box, fertilizer box, seed metering mechanism, fertilizer metering mechanism, seed tubes, furrow openers, seed adjusting lever and transport cum power transmitting wheel. The frame is made from mild steel box section. The detailed technical specifications are as follows:

- **Power Source**: Tractor of 35 HP or above
- **Hitch Type**: Three point linkage, CAT-I/CAT-II
- **Seed hopper**: Separate Hoppers (trapezoidal shape) for Fertilizer and Seeds with mechanism for feed rate control. The hoppers should be sufficiently covered to prevent the entry of water. If the material of fertilizer and seed box is Mild Steel, the thickness of MS sheet should be more than 1.0 mm.
- **Furrow openers**: Inverted T-type
- **No of furrow opener**: 9 to 13
- **Metering Mechanism, For seeds**: Notched Inclined plate type suitable for metering paddy seeds
- **For fertilizer**: Gravity feed or corrugated roller type
- **Power to metering mechanism**: From Lugged ground wheel through chains & sprockets and gears
- **Seed and fertilizer tubes**: Seed and fertilizer tubes should be made of transparent plastic. The thickness of the plastic tubes shall be a minimum of 2.5 mm. Length of plastic tube should be of suitable length without any bends

- The drill shall be able to sow cotton seed and also shall be able to drill all types of granular fertilizers
- Seed and fertilizer rate shall be easily adjustable
- Provision should be provided for adjustment of angle of box containing inclined plate metering mechanism.
- Provision for closing seed and fertilizer discharge should be provided
- The drill should be provided with adjustable depth wheels
- Row spacing should be adjustable ranging from 150 to 225 mm preferably in steps of 25 mm
- The Transmission system should be provided with guard for safety
- Furrow openers should be provided with depth adjustment arrangements
- A permanent type metallic calibration plate indicating the metering position should be provided
- Proper lubrication arrangement for all moving components should be provided
- Marking indicating source of manufacturer, serial number, type and size should be provided
The workmanship should be of high quality. It should not have sharp projections. All the moving parts should be properly protected. The machine should be painted with high quality paint after applying proper primer. The machine should be warranted for two years for any manufacturing defects. The machine should be easily serviceable with good availability of spare parts.

**Sugarcane Ridger**

The ridger is used for the sugarcane crop. It consists of a rectangular frame made of mild steel angle or channel section, 3-point hitch assembly, shanks and ridger body. The ridger body should have mouldboard, share point and tie bars to vary the wingspan of the ridgers. The depth of operation is controlled by the hydraulic of the tractor. The detailed technical specifications are as follows:

- **Power Source:** Tractor of 45 HP and above
- **Hitch:** Rear 3 point linkage, CAT-I/CAT-II
- **Frame:** Should be good quality MS angle or channel section
- **No. of base:** 2 -5
- **Row Spacing (mm):** Adjustable 610 to 860
- **Wing Span Adjustment (mm):** 350-500
- **Share Point:** Should be made of medium carbon steel or low alloy steel, hardened and tempered to about 42 HRC. The share point should be replaceable.

The workmanship should be of high quality. It should not have sharp projections. The machine should be painted with high quality paint after applying proper primer. The machine should be warranted for two years for any manufacturing defects. The machine should be easily serviceable with good availability of spare parts.