SPECIFICATON For Rice/Paddy Transplanter:

5.1 General:

Name and address of manufacturer : 
Name and address of applicant : 
Name of the machine : 
Type : 
Make : 
Model : 
Size of transplanter, mm : 
Serial No. : 
Year of manufacture : 
Country of origin : 

5.2 Details of prime mover

Type : 
Make : 
Model : 
Serial No. : 
Country of origin : 
Max. power, kW/Ps : 
Rated speed, rpm : 
Maximum speed at no load, rpm : 
Low idle speed, rpm : 
Recommended engine speed for field operation, rpm :
5.2.1  Cylinder & cylinder head

Number of cylinder : 
Disposition : 
Bore / Stroke, mm : 
Capacity, cc : 
Compression ratio : 
Type of cylinder liner : 
Type of cylinder head : 
Arrangement of valves : 
Valve clearance in cold condition, mm 

Inlet : 
exhaust : 

5.2.2  Fuel supply system

Type of feed system : 
Type of feed pump : 
Min. free flow, cm³/min. : 
Rated voltage, v (apa) : 
Operating current, A (apa) : 
Mass, g (apa) : 
Sedimentation bowl : 

5.2.2.1  Fuel Tank

Capacity of fuel tank, l : 
Location of fuel tank : 
Material of fuel tank : 

5.2.2.2  Fuel Filter
5.2.2.3 Fuel Injection pump

<table>
<thead>
<tr>
<th>Make</th>
<th>:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>:</td>
</tr>
<tr>
<td>Type</td>
<td>:</td>
</tr>
<tr>
<td>Method of drive</td>
<td>:</td>
</tr>
</tbody>
</table>

5.2.2.4 Fuel injectors

<table>
<thead>
<tr>
<th>Make</th>
<th>:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>:</td>
</tr>
<tr>
<td>Type</td>
<td>:</td>
</tr>
<tr>
<td>Manufacturer's production pressure setting, MPa (kg/cm²)</td>
<td>:</td>
</tr>
<tr>
<td>Injection timing</td>
<td>:</td>
</tr>
<tr>
<td>Firing order</td>
<td>:</td>
</tr>
</tbody>
</table>

5.2.3 Governor

<table>
<thead>
<tr>
<th>Make</th>
<th>:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>:</td>
</tr>
<tr>
<td>Type</td>
<td>:</td>
</tr>
<tr>
<td>Governed range of engine speed, rpm</td>
<td>:</td>
</tr>
<tr>
<td>Rated engine speed, rpm</td>
<td>:</td>
</tr>
</tbody>
</table>

5.2.4 Air Intake System

5.2.4.1 Pre-cleaner

5.2.4.2 Air cleaner

Make :
Type of air cleaner: 
Number: 

Size of dry filter element, mm

- Inner dia: 
- Outer dia: 
- Length: 

Suction pressure of intake manifold, mm of Hg: 

Recommended service schedule, h (apa): 
Location: 

5.2.5 Exhaust
Type: 
Location: 
Exhaust gas pressure, mm of Hg: 

5.2.6 Lubrication System
Type: 
Number and type of oil filter: 
Type of lubricating oil pump: 
Engine sump capacity, l: 
Minimum permissible Lubricating oil pressure, kg/cm²: 
Relief valve pressure setting, kg/cm²: 
Max. oil temperature, °C: 
Provision of oil level checking :  
Recommended grade of lubricating oil, apa :  
Oil change period, h :  

5.2.7 Cooling System  
Type :  
Details of blower :  
Details of fan :  
Means of temperature control :  

5.2.7.1 Radiator  
Make :  
Bare radiator capacity, l :  
Total coolant capacity, l :  
Expansion tank capacity, l :  
Size of radiator, mm  
length :  
Width :  
Thickness :  
Number of tubes :  
Type of radiator cap :  
Method of mounting :  
Maximum permissible coolant temperature, °C :  

5.2.8 Electrical system  
5.2.8.1 Alternator
5.2.8.2 Battery

<table>
<thead>
<tr>
<th>Make</th>
<th>:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>:</td>
</tr>
<tr>
<td>Capacity and rating</td>
<td>:</td>
</tr>
<tr>
<td>Number</td>
<td>:</td>
</tr>
<tr>
<td>Location</td>
<td>:</td>
</tr>
</tbody>
</table>

5.2.8.3 Starting Motor

<table>
<thead>
<tr>
<th>Make</th>
<th>:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>:</td>
</tr>
<tr>
<td>Volt</td>
<td>:</td>
</tr>
<tr>
<td>Type</td>
<td>:</td>
</tr>
</tbody>
</table>

5.2.8.4 Lighting System

<table>
<thead>
<tr>
<th>Description</th>
<th>No. and capacity of bulbs</th>
<th>From the ground level (mm)</th>
<th>Size of beam</th>
<th>Distance from centre of beam to outside edge of machine (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head Lights</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear seedling lights</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turn indicators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.2.8.5 Horn

:   

5.2.8.6 Fuse Box
5.2.8.7 Engine mounting frame

Type:
Shape:
Size, mm:
Thickness of sheet, mm:
Size of slots, mm:

5.3 Transmission system (Refer Fig. I)

5.3.1 Hydrostatic transmission:
Input to swash plate shaft:
Power transmission from swash plate:
Power transmission from variable displacement pump:
Oil capacity of transmission system, l:
Type of transmission system:
Mode of operation:
Location:

5.4 Wheel clutch:
Make:
Type:
Size in mm:
Inner dia : 
Outer dia. :
Width of frictional material, mm :
Number of plate in each side :
Method of operation :

5.4.1 Planting Clutch

Make :
Type :
Mode of operation :
Location of lever :

5.4.2 Gear Box

Make :
Type :
5.4.2.1 Detail of gear box :
5.4.2.2 Drive details

Mode of operation :
Location of lever :
Recommended grade of lubricants, apa :
Oil capacity, l (apa) :
Oil change period :
Nominal Speed:
No. of speed, kmph.

<table>
<thead>
<tr>
<th>On field</th>
<th>On Road</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward</td>
<td></td>
</tr>
<tr>
<td>Reverse</td>
<td></td>
</tr>
</tbody>
</table>

5.5 Final drive

Make : 
Type : 

No. of teeth on 1st pinion gear : 
No. of teeth on 1st crown gear : 
No. of gears upto final drive : 
No. of teeth of final drive gears : 
Reduction ratio : 
Oil capacity, l (apa) : 
Recommended grade of oil, apa : 
Oil change period, h : 

No. and type of bearing :

At differential unit

At axle shaft

5.6 Front wheel drive

Type :

No. of teeth on input shaft gear

For traveling : 
For planting : 
No. of gears up to final drive: 
No. of teeth on final drive gear: 
Reduction ratio: 
Oil capacity, l: 
Recommended grade of oil: 
Oil change period, h: 
No. and type of bearing: 

5.7 Hydraulic system

Type of pump: 
Make: 
Number: 
Drive details: 
Location: 
Capacity of hydraulic tank, l: 
No. of hydraulic cylinder: 
Type of hydraulic tank: 
Provision of oil filling, oil level checking and breather: 
Distributor: 

5.8 Steering

Make: 
Type of steering: 
Type and details of pump: 
Type of steering system: 
Method of operation: 
Outer diameter of steering control wheel, mm

5.8.1 Wheel equipment (drive wheels)

Number : 
Location : 
Method of mounting : 
Wheel diameter, mm

Front :
Rear :

Type :
Number of moulded lugs on front wheel :
Size of lugs, mm

Height :
Thickness :
width :

Number of moulded lugs on rear wheel
Hexagonal :
Polygonal :

Size of lugs, mm

Polygonal

Length :
Width :
Thickness :

Hexagonal
5.9 **Planting system**

**Type** : 

**Number of rows** : 

**Spacing of rows, mm** : 

**Method of changing of row to row distance** : 

**Range of hill to hill spacing, mm** : 

**Arrangement for adjusting the number of hills to be planted (apa)** : 

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
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</tbody>
</table>

**No. of speeds available for planting arm** : 

**Method of drive** : 

**Method of changing number of seedling per hill or longitudinal feed rate of seedling mat** : 

**Length of each arm** : 

**Height** : 

**Track width, mm**

Front : 

Rear : 

**Wheel base, mm** : 

5.9.1 **Planting fingers**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of fingers</td>
<td>:</td>
</tr>
<tr>
<td>No. of speeds available for fingers</td>
<td>:</td>
</tr>
<tr>
<td>Size, mm</td>
<td>:</td>
</tr>
<tr>
<td>Length of beak, mm</td>
<td>:</td>
</tr>
</tbody>
</table>

5.10 **Feeding system**

**Seedling feeding stand**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>:</td>
</tr>
<tr>
<td>Material</td>
<td>:</td>
</tr>
<tr>
<td>Size, mm</td>
<td>:</td>
</tr>
<tr>
<td>Number of compartment</td>
<td>:</td>
</tr>
<tr>
<td>Size of each compartment, mm</td>
<td></td>
</tr>
</tbody>
</table>

**Inclination of tray**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seedling platform drive</td>
<td>:</td>
</tr>
</tbody>
</table>

5.11 **Longitudinal feeding system**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>:</td>
</tr>
<tr>
<td>Number of belts</td>
<td>:</td>
</tr>
<tr>
<td>Material</td>
<td>:</td>
</tr>
<tr>
<td>Size of belt</td>
<td>:</td>
</tr>
<tr>
<td>Seedling mat contact area, cm²</td>
<td>:</td>
</tr>
<tr>
<td>Method of belt drive</td>
<td>:</td>
</tr>
</tbody>
</table>
5.12 **Seedling stay- Bars**

<table>
<thead>
<tr>
<th>Number</th>
<th>:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>:</td>
</tr>
<tr>
<td>Size, mm</td>
<td>:</td>
</tr>
</tbody>
</table>

**Side Rods**

<table>
<thead>
<tr>
<th>Length</th>
<th>:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dia.</td>
<td>:</td>
</tr>
</tbody>
</table>

**Middle rods**

<table>
<thead>
<tr>
<th>Length</th>
<th>:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dia.</td>
<td>:</td>
</tr>
</tbody>
</table>

5.12.1 **Cross feeding system**

<table>
<thead>
<tr>
<th>Type</th>
<th>:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of shaft, mm</td>
<td>:</td>
</tr>
<tr>
<td>Length of stroke, mm</td>
<td>:</td>
</tr>
<tr>
<td>Method of drive</td>
<td>:</td>
</tr>
<tr>
<td>Maximum speed of seedling platform, m/sec.</td>
<td>:</td>
</tr>
</tbody>
</table>

5.12.2 **Planting Claw**

<table>
<thead>
<tr>
<th>Length of beak, mm</th>
<th>:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width of beak, mm</td>
<td>:</td>
</tr>
<tr>
<td>Total length of planting finger, mm</td>
<td>:</td>
</tr>
<tr>
<td>Gap between the mat &amp; planting finger from horizontal position of planting finger, mm</td>
<td>:</td>
</tr>
</tbody>
</table>

Maximum
5.13 Floating system

- Type :
- Number :
- Material :
- Method of fixing :
- Location :

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Length (mm)</th>
<th>Width (mm)</th>
<th>Mass (kg)</th>
<th>Ground contact area (cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center float</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Side floats</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Extreme ends floats</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

- Float adjustment for planting depth :
- Provision for automatic depth control :

5.13.1 Operator's seat

- Type :
- Method of suspension :
- Method of dampening :
- Adjustment :

5.14 Seedling carrier

- Type :
5.15 **Operator's foot rest**

Number : 

Material : 

Size, mm

   Length : 

   Width : 

Method of fixing : 

5.16 **Foot pedal for mounting on machine**

Material : 

Location : 

5.16 **Over all dimensions, mm**

Length : 

Width : 

Height : 

5.16.1 Mass, kg : 

5.16.2 Ground clearance, mm :
5.17 Safety devices for the guidance of operator -
   i) Buzzer – for loading seedling mats
   ii) Starting current circuit switch is engaged on pressing brake padel only.
   iii) Automatic raising of the seedling platform during reversing the machine.
   iv) Slip clutch to stop the planting claw rotation on hard surface.

5.18 Operator controls and lever

1. LHS of operator
   - Main shift lever.
   - Sub shift lever
   - Line marker
   - Side marker

2. RHS of operator
   - Brake pedal
   - Hill spacing adjusting lever
   - Planting engaging lever.
   - Line marker
   - Side marker

3. Front of operator
   - Steering control wheel
   - Soil hardness sensor
   - Each row switch – 4 nos.
- RPM display switch
- Engine fuel cut-off lever

4. Below operator’s seat

- Transport seedling platform lock lever.
- Seat adjustment lever.
- Differential lock pedal.

5. Backside of operator

- Plant taking quality lever
- Soil depth control lever
- Cross feed lever

6. Instrument panel details

- Starting switch having four positions as stop, operation, preheating and start.
- Combination switch – for head lights and indicators.
- Fuel level gauge
- Water temperature gauge – colour code type.
- Charge lamp.
- Engine oil pressure indicator lamp.
- Seedling detection monitor (Having 4 conditions of seedling platform).
- Planting clutch monitor, which indicates each row disengaging, PTO engaging or disengaging, seedling quantity indicator, seedling empty buzzer.
5.19 Nursery holding tray

Material : Plastic

Dimensions, mm

    Length :
    Width :
    Depth :

- Bottom surface of tray is provided with the hole of 3.8 mm dia at the distance of 19 mm.

5.20 Nursery placement scraper

Material : Plastic

Dimensions, mm

    Length : 615
    Width :
    Thickness :

6. FUEL AND LUBRICANTS

6.1 Fuel : The unleaded Gasoline having specific gravity of 0.745 at 15°C

6.2 Lubricants & coolant


<table>
<thead>
<tr>
<th>Particulars</th>
<th>As recommended by manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td></td>
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<td>----------------</td>
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</tr>
<tr>
<td>Engine sump</td>
<td></td>
</tr>
<tr>
<td>Transmission</td>
<td></td>
</tr>
<tr>
<td>Hydraulic system</td>
<td></td>
</tr>
<tr>
<td>Rear axle case</td>
<td></td>
</tr>
<tr>
<td>Coolant</td>
<td></td>
</tr>
</tbody>
</table>

7. **RUNNING IN**