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Government of India
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Ministry of Agriculture and Farmers Welfare
कृषि, सहकारिता एवं किसान कल्याण विभाग
Department of Agriculture, Cooperation and Farmers Welfare
उत्तर पूर्वी क्षेत्र कृषि यंत्र प्रशिक्षण एवं परीक्षण संस्थान,
FARM MACHINERY TRAINING & TESTING INSTITUTE (NER)
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1. SPECIFICATION:

1.1	**General**	:
	Manufacturer	
	Name of applicant	:
	Name of machine	:
	Trade Name	:
	Make	:
	Model	:
	Type	:
	Size of transplanter, mm	:
	Serial number	:
	Year of manufacture	:
	Country of origin	:
1.2	**Details of prime mover**	:
	Type	:
	Make	:
	Model	:
	Serial No.	:

Country of origin :

Max. power, kW/Ps :

-As specified :

-As observed :

Rated speed, rpm

-As specified :

-As observed :

Engine speed (Manufacturer's recommended setting) (rpm) :

-High idle :

-Rated engine speed :

-Low idle speed :

-Speed at max. torque :

1.2.1 Cylinder & cylinder head

Number of cylinder :

Disposition :

Bore/ Stroke, mm :

Capacity as specified by the applicant, cc :

Compression ratio :

Type of cylinder liner :

Type of cylinder head :

Arrangement of valves :

Valve clearance in cold condition, mm

Inlet valve :

Exhaust valve :

No .of compression ring :

No. of oil ring :

Type of combustion chamber :

1.2.2 Fuel supply system

Type of feed system

Type of feed pump

Type of ignition device

Provision for draining sediments/water

1.2.2.1 Fuel tank

Fuel tank capacity, l

Location of fuel tank

Material of fuel tank

1.2.2.2 Fuel Filter

Make

Type

1.2.2.3 Injector

Type

Make & model

Injection pressure Mpa (kgf/cm^2)

Injection timing (^{o})

1.2.3 Governor

Make

Type

Governed range of engine speed, rpm

Rated engine speed, rpm

1.2.4 Air Intake System

1.2.4.1 Pre-cleaner

1.2.4.2 Air cleaner

Make

Type of air cleaner

Size of filter element (mm)

Length

OD/ID

Recommended grade of oil, apa

Recommended service schedule, h(apa)

Location

Suction pressure kPa (mm of Hg)

1.2.5 Exhaust

Type

Range of exhaust gas pressure kPa
(mm of Hg)

Provision against entry of rainwater
Location

1.2.6 Lubrication System

Type
Type of lubricating oil pump
Engine sump capacity, l
Maximum & Minimum permissible
Lubricating oil pressure, kg/cm²
Maximum
Minimum
Max. oil temperature, °C
Provision of oil level checking
Recommended grade of lubricating oil, apa
Oil change period, h

1.2.7 Cooling System

Type
Details of blower
Material
Size (mm)
-Outer/inner dia.
-Width

Size of fin (mm)

Height
Width
Thickness
No. of fins

1.2.7.1 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

1.2.8 Electrical system

1.2.8.1 Starting System

Type

Device provided for easy starting

1.2.8.2 Engine Mounting frame

Constructional details

Size (mm)

Provision for adjusting belt tension

Size of slot

1.2.8.3 Lighting system Head light

Number

Capacity

Location

1.2.8.4 Horn

1.2.8.5 Engine mounting frame

Type

Shape

Size, mm

Thickness of sheet, mm

Size of slots, mm

Method of fixing

1.3 Transmission system

1.3.1 Clutch

Make

Type

Material

Dimension (mm)

Angle of cone (º)

Travel of cone in pulley (mm)

Size of lining (mm)

Location

Mode of operation

1.3.1.1 Brake

Type

Material

Size, mm

Location

1.3.2 Main (walking) Gear box

Make

Type

No. of speeds

-Forward

-Reverse

Mode of power transmission from engine to gear box

Recommended grade of lubricant

Oil capacity (l)

Oil Changing period

Location

Nominal speed

Wheels used

Rolling radius, mm

-Pneumatic wheel

-Steel wheel

Gear	Nominal speed (kmph)	
	Pneumatic wheel	**Steel wheel**
Forward:		
Planting speed:		
12 mm position		
14 mm position		
Fast run position (road)		

1.3.3 Final Reduction

Make

Type

No. of teeth on 1st pinion shaft

No. of teeth on 1st crown shaft

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 different unit

At axle shaft

1.3.4 Driving wheels

Number and type

1.3.4.1 Transporting wheel

Type

Make

Size (mm)

Recommended inflation pressure (kg/cm^2)

1.3.4.2 Steel (Paddy) wheel

Type

Material

Size, mm

Max. dia., mm

Effective dia., mm

Number of spokes

Number of lugs

Size of lugs, mm

-Height

-Width

1.3.4.2.1 Wheel mounting bush

Type

Outer dia./Length (mm)
Size of hole (mm)

1.3.5 Tail Wheel (only for transporting)

Numbers
Type
Dimensions, mm
-Outer dia.
-Dia. of rim
- Width of Rim

Method of fixing

1.3.6 Planting clutch

Make
Type
Constructional details
Mode of operation
Size of dog clutch (mm)
- Outer dia.
- Inner dia.

No. of slots on collars
Size of spline shaft, mm
Number and size of bearing
Method of operation

1.3.7 Planting (Working) Gear Box

Type
Mode of power transmission from main gear box to planting gear box
Speed reduction ratio
Number of shafts
Number and type of gears on transmission shaft
Number of teeth on bevel gear
Number of teeth on spur gear
Number and type of gear on Spiral shaft
Reduction ratio (transmission to spiral shaft)

Mode of power transmission
Location
Type of lubricant
Capacity (l)
Oil change period

1.3.8 Planting Arm Drive

Type
Mode of power transmission
Type of lubricant
Capacity (l)
Oil change period

1.4 Steering

Type of steering
Material
Size (mm)
Type and details of pump
Type of steering system
Method of operation
Outer diameter of steering control wheel, mm

1.5 Planting system

Type
Number of rows
Spacing of rows, mm
Method of changing of row to row distance, mm
Range of hill to hill spacing, mm
Method of changing hill spacing
Number of strokes of planting arm per minute
Number of hills per square meter to be planted
Arrangement for adjusting the number of seedling to be planted
Method of drive
Method of changing number of seedling per hill or longitudinal feed

rate of seedling mat

1.5.1 Seedling Pusher Road

Type
Numbers
Material
Size (mm)
Width of jaw (mm)
Stroke length (mm)

1.5.2 Seedling Separation Needles

Type
Constructional details
Number
Material
Size (mm)
Spacing between pointers (mm)

1.6 Seedling Feeding System

1.6.1 Seedling box (Tray) assembly

Type
Material
Size (mm)
Number of compartments
Size of each compartment (mm)
Inclination of tray

1.6.1.1 Seedling Mat holding Rod

Number
Material
Size (mm)
Constructional details

1.6.2 Longitudinal Feeding System

Type
Number of belts
Material
Size of belt (mm)

Contact area with seedling mat (cm^2)

1.6.3 Cross Feeding System

Type
Size of shaft (mm)
Length of stroke
Cross feeding speed (m/s)
Method of drive

1.7 Floating system

Type
Constructional details
Size (mm)
Angle of curvature
Ground contact area (cm^2)
Mass of float (kgs)

1.7.1 Supporting Tail Skid

Numbers
Material
Number & Size (mm)
-Longer skid
-Smaller skid

1.8 Earth Bank (Bund) Crosser

Type
Constructional details
Material
Length of cross shaft (mm)
Length of pedal rod (mm)
Size of pedal (mm)
Length of hanger chain (mm)
Method of operation

1.9 Operator's seat

Type
Material
Method of suspension

Method of dampening
Adjustment

1.9.1 Nursery Feeder's Seat

Type
Numbers
Material
Size (mm)
Location

1.9.2 Operator's foot rest

Number
Material
Size, mm
Length
Front width
Back width

1.10 Jack

Material
Size (mm)
Total height (mm)
Width
-At base
-At top

1.11 Over all dimensions, mm

Length
Width
Height

1.12 Mass, kg

1.13 Ground Clearance, mm

1.14 Colour of transplanter

2. FUEL AND LUBRICANTS

2.1 Fuel

2.2 Lubricants & coolant

Particulars	As recommended by the manufacturer	As used during the test
Engine sump		
Transmission		
Hydraulic system		
Rear axle case		
Coolant		
Planting arm		
Chain case assembly		

Place:

Date:

Signature:……

Name:……

Designation:……