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भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय,

Ministry of Agriculture and Farmers Welfare

(कृषि, सहकारिता एवं किसान कल्याण विभाग)

(Department of Agriculture, Cooperation and Farmers Welfare)

दक्षिणी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Southern Region Farm Machinery Training and Testing Institute

ट्रैक्टर नगर, गार्लदिन्ने – 515 731, जिला: अनंतपुर (आं. प्र.)

Tractor Nagar, Garladinne- 515 731, District: Anantapur (A.P.)

[ISO 9001:2008 COMPLIANT INSTITUTION]

SPECIFICATION SHEET OF SELF-PROPELLED ROTARY WEEDER

[To be submitted in Triplicate duly typed]

1. GENERAL:

1.1 Name and address of manufacturer :

1.2 Name & address of applicant :

1.3 Country of origin :

1.4 If imported C.I.F. value :

1.5 Selling price in the country of Origin : Rs

1.6 Selling price in India : Rs.

1.7 Selected by :

1.8 Method of selection :

1.9 List of indigenous components :

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- 1.10 Place of running-in :
- 1.11 Schedule & duration of running –in (h):
 - Engine :
 - Transmission :
- 1.12 Size of weeder (mm) :
- 1.13 Recommended for : Dry / Wet land or Both cultivations

2.0 TECHNICAL SPECIFICATIONS :

- 2.1 Make :
- 2.2 Model :
- 2.3 Type :
- 2.4 Size :
- 2.5 Serial number :
- 2.6 Serial number of 1st prototype :
- 2.7 Year of manufacture :
- 2.8 Engine :**
- 2.8.1 Make :
- 2.8.2 Model :
- 2.8.3 Type :
- 2.8.4 Serial number :
- 2.8.5 Engine speed(manufacturer’s recommended setting) :
- Maximum speed at no load (rpm) :
(High idle speed)
- Low idle speed (rpm) :
- Speed at maximum torque(rpm) :
- Rated engine speed (rpm) :
- Rated engine speed for field :
(if any)

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2.8.6 Cylinder & cylinder head :

- Number :
- Disposition :
- Bore/stroke (mm) :
- Capacity as specified by the Applicant (cu cm) :
- Compression ratio :
- Type of cylinder head :
- Type of cylinder liners :
- Type of combustion chamber :
- Arrangement of valves :
- **Valve clearance (cold/hot) :**
- Inlet valve :
- Exhaust valve :

2.8.7 Fuel system

- Type of fuel system :
- Type, make & model of feed pump :
- Type, make & model of fuel filters :

2.8.7.1 Injection pump :

- Make, model & Type :
- Serial No. :
- Method of drive :

- Diesel fuel injection pump setting:

Adjustment operations	Fuel injection pump shaft speed (rpm)	Discharge			Control rod travel in (mm)	Remarks	
		Fuel temp. (°C)	Qty. (cc)/100 strokes OR g/100 strokes	Metering tolerable difference			
				cc			g
At rated speed							
At idling speed							
At fuel cutoff							

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2.8.7.2 Fuel injectors:

Make, model & type :
 Manufacturer`s production :
 Pressure setting mPa (kgf/cm²) :
 Injection timing :
 Firing order :

2.8.7.3 Governor :

Make & Model :
 Type : Constant speed/Variable speed
 Class of governing :
 Governed range of engine speed (rpm) :
 Rated engine speed (rpm) :

2.8.7.4 Gasoline Engines (If fitted):

Type, make & model of magnets/
 Coil and distributor :

 Type, make & model of
 Carburetor :

 Size of fuel jets :

 Ignition timing :

 Make, model & type of spark
 Plugs :

 Spark plug gap setting (mm) :

2.8.8 Air Intake System :

2.8.7.3 Make, model & type of pre-Cleaner :

 2.8.7.4 Make, model & type of Air Cleaner :

 Oil capacity (Oil bath type) :

 Range of suction pressure (mm of Hg) :

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Recommended grade of oil :

Recommended service schedule :

2.8.9 Exhaust system :

Type of silencer :

Range of exhaust gas
Pressure (mm of Hg) :

Provision against entry of rain
Water :

2.8.10 Lubricating System :

Type :

Make & number of filters :

Type of lubricating oil pump :

Capacity of lubricating oil pump
At rated engine speed (l/min) :

Relief valve setting :

Oil capacity (l) :

Recommended grade of lubricating
oil :

Oil changing period :

Minimum and maximum
Permissible lubricating oil pressure :

Maximum permissible lubricating
Oil temperature (°C) :

Details of cooling arrangement if any
Provided :

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2.8.11 Cooling system :

Type :

Details of pump & fan :

Coolant pump/blower size and Capacity :

Coolant capacity (l) :

Means of temperature control :

Type & pressure of radiator cap :

Maximum permissible coolant Temperature (°C) :

2.8.12 Starting system :

Type :

Aid for cold starting :

Any other devise provided for easy Starting :

Electrical System :

Make, type & capacity of battery :

Make, model & type of starter :

Serial number & output rating of Generator :

Make, model & type of generator :

Light switch details :

Details about horn :

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2.8.13 Instrument panel details :

- (i)
- (ii)
- (iii)
- (iv)
- (v)
- (vi)
- (vii)
- (viii)

2.9 Transmission system :

2.9.1 Clutch :

- Make, type & size of clutch :
- Number of friction plate(s) :
- Make, type & method of operation of Wheel clutch :
- Make, type & method of operation of Rotor clutch :

2.9.2 Gear Box (Primary) :

- Make, model & type of gear box :
- Number of speeds :
- Forward :
- Reverse :
- Recommended grade of lubricant :
- Oil capacity :
- Oil changing period (h) :

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Normal speed :

Movement	Gear No.	No. of engine revolutions for one revolution of drive wheel	Nominal speed at rated engine speed, at rolling radius ofmm (kmph)
Forward	1.		
	2.		
	3.		
	4.		
Reverse	1.		
	2.		

2.9.3 Details of axle & Final Drive :

Type, make & reduction ratio :

Mode of power transmission from
Reduction unit to ground level :

2.9.4 Driving wheel :

Number & type :

- Size of tyres :

- Method of mounting :

2.10 Steering

- Make & type :

- Method of operation :

- Provision of individual steering
Lever for each wheel :

2.11 POWER TRAIN (Secondary gear box):

Method of transmission from
Primary gear box to rotor shaft :

Type of safety shield :

Type; of secondary reduction :

Reduction ratio :
Rotor speed corresponding to rated

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- Engine speed (rpm) :
- Method of changing rotor speeds :
- Speed of rotor recommended
For field operations (rpm) :
- 6 Speed for wet land cultivation(kmph):
- Speed for dry land cultivation(kmph):

2.12 OILS AND LUBRICANTS

- Grade of recommended oil :
- Primary reduction :
 - Rotor reduction :
- Capacity (l) :
- Primary reduction :
 - Rotor reduction :
- Method of checking oil level :
- Primary reduction :
 - Rotor reduction :
- No. of grease points and location :
- Lubricant change period (h) :

3.0 ROTOR:

- Size of rotor shaft (Dia. x Length) :
- No. & Size of flange :
- Rotor diameter with tines/blades:
- No. of blades on shaft:
- For dry land cultivation :
 - For wet land cultivation :
- Type of blade offered along with
Rotavator (Specify use) :
- Material of blades :
- Speed of rotary shaft corresponding
to rated engine speed specified for
field work (rpm) :

Torque available at the rotary shaft

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at rated engine speed (N-m) :
 Theoretical cutting width (mm) :
 Working width (mm) :
 Method of mounting blades on Shaft :
 Arrangement of blades :
 Weight of each blades (g) :

4.0 Hardness of blades (HRC/HB) :
5.0 chemical composition of blades :

6.0 OVERALL DIMENSIONS:

Length (mm) :
 Width (mm) :
 Height (mm) :
 Weight (kg) :

7.0 MISCELLANEOUS:

Min. recommended turning Radius (mm) :
 Min. transport clearance (mm) :
 Provisions for other attachments :

8.0 Any additional information :

Place:

Date:

Signature : _____

Name : _____

Designation: _____

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ADDITIONAL INFORMATION

1. **Engine Performance** :
 - i) Maximum Power kw (Ps) :
 - ii) Rated Power kw(Ps) :
 - iii) Specific fuel consumption corresponding to maximum power kg/kwh (g/hph) :
 - iv) Maximum equivalent crankshaft torque Nm (kgs-m) :
 - v) Back-up torque (%) :
 - vi) Maximum temperatures (°C) :
 - Engine oil :
 - Coolant (water)/liner wall :
 - vii) Lubricating oil consumption (g/kwh):
 - viii) Coolant consumption (% of total Coolant capacity) :
 - ix) Smoke level (Bosch No.) :

2. **Rotary Shaft Performance:-**
 - i) Maximum power, kW (Ps) :
 - ii) Power at rated engine speed, kW (Ps) :
 - iii) Specific fuel consumption corresponding to maximum power at rated engine speed (g/kWh)
 - iv) Maximum rotary shaft torque (Nm):

3. **Mechanical Vibration at steering/hands** :

4. **Air cleaner-oil pullover** :
 - Maximum oil pull over (%) :

5. **Noise level :**
 - Maximum ambient noise level dB(A) :
 - Maximum noise level at the Operator's ear level dB(A) :

5. **Field Operation:**
 - Recommended soil type & soil

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- moisture content for dry land operation :
- Range of recommended water level for wet land operation (cm) :
 - Range of recommended life of blades :
 - Recommended forward speed for Operation (kmph) :
 - Whether sealing of weeder's Sub-assembly are water proof? :

6. Initial Settings discard limits for :

Sl. No.	Critical components	Initial Setting	Discard Limit
1	Cylinder bore dia (mm)		
2	Piston dia (mm)		
3	Ring-end gap (mm):		
	-Top compression ring		
	-2 nd compression ring		
	-3 rd compression ring		
	- Oil ring		
4	Ring groove clearance (mm):		
	-Top compression ring		
	-2 nd compression ring		
	-3 rd compression ring		
	- Oil ring		
5	Clearance of big end bearings (mm)		
	- Diametrical		
	- Axial		
6	Crankshaft end float (mm)		
7	Backlash of timing gears		
8	Backlash of primary gear box gears		
9	Backlash of secondary gear box gears		
10	Overall thickness of clutch plate (mm)		

Place:

Date:

Signature_____

Name of the signatory_____

Designation_____

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