



भारत सरकार / **Government of India**
 कृषि एवं किसान कल्याण मंत्रालय / **Ministry of Agriculture and Farmers Welfare**
 कृषि एवं किसान कल्याण विभाग / **Department of Agriculture and Farmers welfare**
 दक्षिणी क्षेत्र कृषि यंत्र प्रशिक्षण एवं परीक्षण संस्थान / **Southern Region Farm Machinery Training & Testing Institute**
 ट्रैक्टर नगर, गार्लडिन्ने, जि. अनंतपुर (आं. प्र.) / **Tractor Nagar, Garladinne, Dist. Anantapur (A.P.)-515 731**

An I.S.O. 9001- 2015 Certified Institute

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SPECIFICATION OF PETROL POWER WEEDER

1.1 General

Manufacturer : :

Applicant : :

Make : :

Model : :

Name of machine : :

Type of machine : :

Size of machine, (mm) : :

Year of manufacture : :

Country of origin : :

Machine Serial No. : :

If imported C.I.F. value : :

Selling price in the country of : Rs : :

Origin :

Selling price in India : :

Selected by : :

Method of selection : :

List of indigenous components : :

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Place of running-in : :

Schedule & duration of running -in (h):

Engine : :

Transmission : :

Recommended for : :

1.2 Details of prime mover:

Manufacturer : :

Make : :

Model : :

Type : :

Year of manufacture : :

Country of origin : :

Engine serial No. : :

Engine speed (manufacturer's recommended setting), (rpm)

Recommended high idle speed, : :

(rpm)

Recommended low idle speed, : :

(rpm)

Recommended rated speed, (rpm) : :

Speed at maximum torque, (rpm) : :

Recommended rated engine speed :

for field, (rpm)

Governor range of speed, rpm

Max. power, kW (hp) @rpm : :

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1.3 Cylinder and cylinder head:

Number :
Disposition :
Bore/Stroke, (mm) :
Cubic Capacity, (cc) :
Compression ratio :
Type of cylinder head
Type of cylinder liner :
Type of combustion chamber :
Arrangement of valves :
Valve clearance, (mm):
Inlet :
Exhaust :

1.4 Fuel supply system:

Type of fuel system :
Make & model & Type of feed
pump
Make & model & Type of fuel :
filter
Material of fuel tank :
Capacity of fuel tank, (l) :
Location of fuel tank :
Provision for draining of :
sediments/water
Type of fuel filter :
Fuel ON/OFF provision :

1.5 Carburetor:

Make :
Model :
Type :
Brief description of carburetor :

1.6 Spark plug:

Make :
Model :

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Type :
Electrode gap, (mm) :

1.7 Governor:

Make & Model :
Type :
Governor range of speed, rpm

1.8 Air-intake system:

1.8.1 Pre-cleaner:

Make & Model :
Type :
Location :

1.8.2 Air-cleaner:

Make & Model :
Type :
Type of element :
Location of air-cleaner :
Capacity of air cleaner, (ml) :
Recommended grade of air cleaner :
oil
Recommended service schedule:
- Dusty condition :
- Normal condition :

1.9 Exhaust:

Make & model
Type :
Location :
Provision of cover on exhaust :
Direction Provision of exhaust :
emission away from operator

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1.10 Lubrication system:

Make & Model

Type :

Type/grade of lubricant :

recommended

Oil capacity, (l) :

Type of oil pump :

No. of oil filter :

Max. oil temperature, °C :

Minimum and maximum

Permissible lubricating oil pressure

Oil change period :

1.11 Cooling system:

Type :

1.11.1 Fly wheel and fins details:**Fins details:**

Material of fins :

No. of fins, (Ribs) :

Length x Width x thickness (mm) :

Dia. of fly wheel, (mm) :

Width of fly wheel along with ring :

gear & fins, (mm)

1.12 Starting system:

Make & Model

Type :

Ignition system :

Ignition timing

Spark plug gap setting (mm)

Aid for cold starting :

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1.13 Electrical system (If Provided):**1.13.1 Starter:**

Type :
Capacity & Rating :

1.13.2 Battery:

Make :
Type :
Capacity & Rating :
Model :
Serial no. :

1.14 Power transmission system:**1.14.1 Clutch:**

Make :
Model :
Type of clutch :
Dia. of clutch plate, (mm) :
No. of friction plates :
No. of pressure plates :
Thickness of the clutch plate, (mm) :
Material of lining :
Location of clutch :
Country of origin :

1.14.2 Primary (Main) gearbox (Crankshaft to intermediary shaft)

Make :
Model :
Type of drive : Gear
No. of speeds :
Grade of oil :
Oil capacity, (l) :
Oil changing period :
Provision for Rear PTO

Reduction ratio:

- Forward:

1st gear :

2nd gear :

Reverse gear :

Type & No. of bearings :

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Type of drive : V-belt

Size of pulley, (mm):

-Drive :

-Driven :

Reduction ratio :

1.14.3 Secondary reduction gear box for drive wheel :

Make :

Model :

Type of drive :

: Ist pair

IInd pair

No. of teeth on drive gear :

No. of teeth on driven gear :

Reduction ratio :

Overall reduction ratio from engine crankshaft to rotor shaft :

Forward

1st gear :

2nd gear :

Reverse Gear :

Type & No. of bearing :

1.14.4 Nominal speed

Movement	Gear	No. of engine revolutions for one revolution of drive wheel.	Nominal speed at rated engine speed of _____ rpm when fitted with _____, _____ PR tyres of _____ mm rolling radius, (kmph)
Forward	1		
	2		
Reverse	R		

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1.15 Rotary Unit:

Make : _____

1.15.1 Rotary cover :

Material of rotary cover : _____

Size, (mm) (L X W) : _____

Thickness of sheet, (mm) : _____

Method of fixing : _____

1.15.2 Rotary shaft:

Material of rotary shaft : _____

Type of rotor axle : _____

Length of shaft, (mm) : _____

No. of flanges : _____

Type of flanges : _____

Size of flanges, (mm) : _____

Dia. of flange, (mm) : _____

Thickness of flange, (mm) : _____

No. of blades on each flange : _____

Method of mounting of blades on flanges : _____

Distance between two consecutive flanges, (mm) : _____

Working width, (mm) : _____

Dia. of rotor with blades, (mm) : _____

Method of fixing : _____

1.15.3 Rotary blades:

Numbers : _____

Type : _____

Material : _____

Thickness, (mm) : _____

Width of beveled edge, (mm) : _____

No. & size holes on each blade for fixing it to the flanges, (mm) : _____

Arrangement of blades on the axle : _____

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1.15.4 Details of transport wheel:

Number & Type :
Make of tyre :
Size & Ply rating :
Max. loading cap., kgs :
Method of fixing :

1.15.5 Depth control mechanism:

Type :
Material :
No. of flats :
Size of flat, (mm):
- Length (curved) :
- Width :
- Thickness :

Provision for depth adjustment :

1.15.6 Steering handle bar:

Make & Model :
No. of steering handle bar :
Material :
Dia. of pipe (OD), (mm) :
No. of hand grips :
Material of grip :
Length of grip, (mm) :
Dia. of grip, (mm) :
Height of handle bar from ground :
level, (mm)
Provision for handle height /angle :
adjustment
Provision for handle rotation :

1.16 Controls

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1.17 Marking/Labeling:

A metallic labeling plate shall be riveted on the chassis with the following information

Name and address of the Applicant (registered trademark, if any)		
Make		Max. Engine Power, kW (HP)
Model		Engine Rated rpm
Name of Machine		Specific fuel consumption, (g/kWh)
Engine Model		Year of Manufacturer
Chassis Sr. number		Working width, (mm)
Engine Sr. number		Country of origin
Name and address of the Manufacturer (registered trademark, if any)		

1.18 Overall dimensions, (mm):

Length :

Width:

-With rotary axle :

-With transport wheel :

Maximum height :

1.19 Mass, (kg):

-With rotary axle :

-With transport wheels :

1.20 Color of machine:

Engine

Main drive cover.....

Transmission cover.....

Rotary cover

Fuel tank.....

Recoil & flywheel cover

Silencer.....

Air cleaner.....

Handle bar.....

Chassis

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2. SELECTED PERFORMANCE CHARACTERISTICS REQUIREMENTS

1. Engine Performance:

- a. Maximum Power, (kW) :
- b. Rated Power, (kW) :
- c. **Recommended engine speed Setting, (rpm):**

- Low idle speed :
- High idle speed :
- Rated speed :

- Speed at maximum power :
- Speed at maximum torque :

- d. Specific fuel consumption corresponding to maximum power, (kg/kwh) :
- e. Maximum equivalent crankshaft torque, (Nm) :
- f. Back-up torque, (%) :
- g. Maximum temperatures (°C):

- Engine oil :

- Coolant (water)/liner wall :

- h. Lubricating oil consumption, (g/kwh) :

- i. Coolant consumption, (% of total Coolant capacity) :

- j. Smoke level (Bosch No.) :

2. Mechanical Vibration at steering/hands

3. Air cleaner-oil pullover

- Air cleaner-oil pullover :

4. Noise level:

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

dB(A)

5. Field Operation:

- a. - Recommended soil type & soil moisture content :
for dry land operation

- b. -Range of recommended water level for wet land :
operation (cm)

- c. -Range of recommended life of blades :

- d. -Recommended forward speed for Operation :
(kmph)

- e. -Whether sealing of weeders Sub-assembly are :
water proof?

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6. Initial Settings and discard limits for Engine Critical Components:

S.N.	Critical components	Initial Setting	Discard Limit
a.	Cylinder bore dia. (mm)		
b.	Piston Dia., (mm)		
c.	Clearance between Piston liner at Skirt, (mm)		
d.	Ring-end gap (mm):		
	-Top compression ring		
	-2 nd compression ring		
	-3 rd compression ring		
	- Oil ring		
e.	Ring groove clearance (mm):		
	-Top compression ring		
	-2 nd compression ring		
	-3 rd compression ring		
	- Oil ring		
f.	Clearance of big end bearings (mm)		
	- Diametrical		
	- Axial		
g.	Main bearing Clearance		
	LHS		
	RHS		
h.	Crankshaft end float (mm)		
i.	Backlash of timing gears		
j.	Backlash of primary gear box gears		
k.	Backlash of secondary gear box gears		
l.	Overall thickness of clutch plate, (mm)		

Date:

Signature of applicant:

Place:

Name of the applicant:

Designation:

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