

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
ट्रेक्टर नगर, गार्लदिन्ने, 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 :

| | I st pair | II nd 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:

Place:

Signature of applicant:

Name of the applicant:

Designation:

| | | |
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