**TECHNICAL SPECIFICATIONS FOR SELF PROPELLED ENGINE OPERATED/ELECTRIC AGRICULTURAL TOOL BAR**

|  |  |  |  |
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| **1.1** | **General:** | | |
| Type of machine | **:** |  |
| Make | **:** |  |
| Model | **:** |  |
| Serial No. | **:** |  |
| Name and address of manufacture | **:** |  |
| Name and address of applicant/importer | **:** |  |
| Year of manufacture | **:** |  |
| Country of origin | **:** |  |
| **1.2** | **Details of prime mover** | | |
| Name and address of manufacturer | **:** |  |
| Type | **:** |  |
| Make | **:** |  |
| Model | **:** |  |
| Sr. No. | **:** |  |
| Country of origin | **:** |  |
| Year of manufacture | **:** |  |
| **Engine speed (recommended setting), rpm:** | | |
| -High idle speed | **:** |  |
| -Low idle speed | **:** |  |
| Rated speed, rpm | **:** |  |
| No load engine speed for field operation, rpm | **:** |  |
| Speed at maximum torque, rpm | **:** |  |
| **Electric motor speed (recommended setting), rpm (if applicable):** | | |
| -High idle speed | **:** |  |
| -Low idle speed | **:** |  |
| Rated speed, rpm | **:** |  |
| No load motor speed for field operation, rpm | **:** |  |
|  | Speed at maximum torque, rpm | **:** |  |
| Whether the prime mover (engine/electric motor & battery) has already been tested by authorized testing centre (Yes/No) | **:** |  |
| If yes, then specify the valid test report No. and upload the copy of test report | **:** |  |
| If yes test report Number | **:** |  |
| **1.3** | **Battery (if applicable):** |  |  |
| Name and address of manufacturer | **:** |  |
| Type | **:** |  |
| Make | **:** |  |
| Model | **:** |  |
| Sr. No. | **:** |  |
| Capacity and rating | **:** |  |
| Country of origin | **:** |  |
| Year of manufacture | **:** |  |
| **1.3.1** | **Battery charger from AC supply:** |  |  |
| Make | **:** |  |
| Model | **:** |  |
| Input voltage | **:** |  |
| Output voltage | **:** |  |
| Output current | **:** |  |
| Country of origin | **:** |  |
| **1.4** | **Cylinder & cylinder head** | | |
| Number | **:** |  |
| Disposition | **:** |  |
| Bore/Stroke, mm | **:** |  |
| Capacity, cc | **:** |  |
| Type of valve | **:** |  |
| **Valve clearance (mm):** |  |  |
| -Inlet | **:** |  |
| -Exhaust | **:** |  |
| Compression ratio | **:** |  |
| **1.5** | **Carburetor (if applicable):** | | |
| Make | **:** |  |
| Type | **:** |  |

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| **1.6** | | | **Spark Plug (if applicable):** | | |  | | |  |
| Make | | | **:** | | |  |
| Model | | | **:** | | |  |
| Spark plug gap, mm | | | **:** | | |  |
| **1.7** | | | **Fuel supply system:** | | | | | | |
| Type of fuel feed | | | **:** | | |  |
| **1.7.1** | **Fuel tank** | | | | | | | |
| Material | | | **:** | | |  | |
| Capacity of fuel tank, l | | | **:** | | |  | |
| Location of fuel tank | | | **:** | | |  | |
| Provision for draining of sediments/ water | | | **:** | | |  | |
| Fuel filter | | | **:** | | |  | |
| Provision of fuel on/off cock | | | **:** | | |  | |
| **1.7** | **Governor:** | | | | | | | |
| Make | | **:** | | |  | | |
| Model/Group combination number | | **:** | | |  | | |
| Type | | **:** | | |  | | |
| **1.8** | **Fuel injection pump (If applicable)** | |  | | |  | | |
| Type | | : | | |  | | |
| Make | | : | | |  | | |
| Model/Group combination number | | : | | |  | | |
| Sr. No. | | : | | |  | | |
| Method of drive | | : | | |  | | |
| **1.9** | **Fuel Injector (If applicable)** | |  | | |  | | |
| Type | | : | | |  | | |
| Make | | : | | |  | | |
| Model/Group combination number | | : | | |  | | |
| Sr. No. | | : | | |  | | |
| Injection pressure (MPa) | | : | | |  | | |
| Injection timing (degrees) | | : | | |  | | |
| **1.10** | **Air intake system:** | |  | | |  | | |
| **1.10.1** | **Pre-cleaner:** | |  | | |  | | |
| Type | | : | | |  | | |
| Make & Model | | : | | |  | | |
| **1.10.2** | **Air cleaner** | |  | | |  | | |
| Type | | **:** | | |  | | |
| Make and model | | **:** | | |  | | |
| Location | | **:** | | |  | | |
| Recommended service schedule, h | | **:** | | |  | | |

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| **1.11** | **Exhaust:** | | |
| Type of silencer | **:** |  |
| Location of silencer | **:** |  |
| Spark arresting device, if any | **:** |  |
| **1.12** | **Lubrication system:** | | |
| Type | **:** |  |
| Oil filter | **:** |  |
| Oil capacity, l | **:** |  |
| Recommended grade of lubricant oil | **:** |  |
| Oil change period (h) | **:** |  |
| Minimum permissible lubricating oil pressure, kg/cm2 | **:** |  |
| **1.13** | **Cooling system:** | | |
| Type | **:** |  |
| Dia. of blower, mm | **:** |  |
| No. of vanes | **:** |  |
| **1.14** | **Starting system:** | | |
| Type | **:** |  |
| Aid for cold starting | **:** |  |
| Any other provision for easy starting | **:** |  |
| **1.15** | **Electrical System:** | | |
| **1.15.1** | **Battery:** | | |
| Make & model | **:** |  |
| Type | **:** |  |
| Capacity and rating | **:** |  |
| Serial no. | **:** |  |
| Location | **:** |  |
| **1.15.2** | **Starter:** | | |
| Make | **:** |  |
| Model | **:** |  |
| Type | **:** |  |
| Power rating | **:** |  |
| Sr. no. | **:** |  |
| **1.15.3** | **Generator:** | | |
| Make | **:** |  |
| Type | **:** |  |
| Power rating | **:** |  |
| Method of drive | **:** |  |
| **1.15.4** | **Voltage regulator:** | | |
| Make | **:** |  |
| Model | **:** |  |
| Type | **:** |  |
| Cut off voltage & current | **:** |  |
| Location | **:** |  |
| **1.15.5** | **Main switch** | | |
| **1.15.6** | **Horn** | | |
| Make | **:** |  |
| Type | **:** |  |
| location | **:** |  |
| **1.16** | **Power Transmission system:** | | |
| Type | **:** |  |
| **1.16.1** | **Clutch** | | |
|  | Make | **:** |  |
|  | Type of clutch | **:** |  |
| Dia. of clutch plate, mm | **:** |  |
| Number of friction plate | **:** |  |
| Method of operation | **:** |  |
| Location of clutch | **:** |  |
| **1.16.2** | **Transmission system:** | | |
| Type | **:** |  |
| Make | **:** |  |
| No. of speed | **:** |  |
| Recommended grade of oil | **:** |  |
| Oil capacity, l | **:** |  |
| Oil change period | **:** |  |
| **Gear ratio engine to drive wheel** | | |
| -L1 | **:** |  |
| -L2 | **:** |  |
| -L3 | **:** |  |
| -H1 | **:** |  |
| -H2 | **:** |  |
| -H3 | **:** |  |
| -LR1 | **:** |  |
| -LR2 | **:** |  |
| -LR3 | **:** |  |
| **1.16.3** | **Rear differential unit:** | | |
| Type | **:** |  |
| Reduction through crown wheel & pinion | **:** |  |
| Oil capcity,1 | **:** |  |
| Grade of oil **(apa)** | **:** |  |
| Oil change period **(apa)** | **:** |  |
| **Differential lock:** | | |
| Type | **:** |  |
| Location | **:** |  |
| Method of operation | **:** |  |
| **1.16.4** | **Final drive:** | | |
| Make **(apa)** | **:** |  |
| Type | **:** |  |
| Reduction through final drive | **:** |  |
| Oil capacity of final drive, l | **:** |  |
| Oil change period | **:** |  |
| **1.16.5** | **Power take-off shaft:** | | |
| Type | **:** |  |
| Method of engaging | **:** |  |
| No. of shaft | **:** |  |
| PTO speed corresponding to rated engine speed, rpm | **:** |  |
| **1.16.6** | **Power lift ( Hydraulic system):** | | |
| Make | **:** |  |
| Type | **:** |  |
| No. and type of cylinder | **:** |  |
| Type of linkage lock for transport | **:** |  |
| **1.16.6.1** | **Hydraulic pump:** |  |  |
| Make | **:** |  |
| Type | **:** |  |
| Location | **:** |  |
| Method of drive | **:** |  |
| No. & type of filters | **:** |  |
| Hydraulic oil capacity, l | **:** |  |
| Oil change period | **:** |  |
| Details of control levers | **:** |  |
| Method of draft sensing | **:** |  |
| **1.17** | **Brakes:** |  |  |
| **1.17.1** | **Service brakes:** |  |  |
| Numbers | **:** |  |
| Make | **:** |  |
| Type | **:** |  |
| Location | **:** |  |
| No. of disc/shoes | **:** |  |
| Area of lining | **:** |  |
| Method of operation | **:** |  |
| Oil capacity, l | **:** |  |
| **1.17.2** | **Parking brake:** |  |  |
| Type | **:** |  |
| Location & method of operation | **:** |  |
| **1.18** | **Depth control mechanism:** |  |  |
| **1.18.1** | **Skid:** |  |  |
| Type & material | **:** |  |
| Size of flat, mm | **:** |  |
| Method of fixing | **:** |  |
| **1.16.2** | **Adjusting flat plate:** |  |  |
| Type | **:** |  |
| Depth adjustment, mm | **:** |  |
| Method of mounting | **:** |  |
| **1.17** | **Hitch pyramid** |  |  |
| Construction details | **:** |  |
| **1.18** | **Attachments:** |  |  |
| **1.18.1** | **Rotary tiller/rotavator:** |  |  |
| **1.18.1.1** | **Rotor cover:** |  |  |
| Material | **:** |  |
| Length, mm | **:** |  |
| Width, mm | **:** |  |
| Thickness, mm | **:** |  |
| Method of fixing | **:** |  |
| **1.18.1.2** | **Rotor shaft:** |  |  |
| Material | **:** |  |
| Type of rotor axle | **:** |  |
| Width across flat of rotor axle, mm | **:** |  |
| Length of shaft, mm | **:** |  |
| Length of extension shaft, mm | **:** |  |
| No. of flanges | **:** |  |
| Type of flanges | **:** |  |
| Size of flanges, mm | **:** |  |
| Thickness of flange, mm | **:** |  |
| Distance between two flanges, mm | **:** |  |
| No. of blades on each flange | **:** |  |
| Overall length of rotor, mm | **:** |  |
| Diameter of rotor with blades, mm | **:** |  |
| Method of fixing of blade | **:** |  |
| No. of disc | **:** |  |
| Diameter of disc, mm | **:** |  |
| **1.18.1.3** | **Rotor blades:** |  |  |
| Number | **:** |  |
| Type | **:** |  |
| Material | **:** |  |
| Thickness, mm | **:** |  |
| Width of beveled edge, mm | **:** |  |
| No. and size of hole on each blade for fixing it to the flanges, mm | **:** |  |
| Arrangement of blades on the axle | **:** |  |
| **1.18.1.4** | **Depth control mechanism:** |  |  |
| Type | **:** |  |
| No. of flat | **:** |  |
| Material | **:** |  |
| Size of flat, mm  Length  Width  Thickness | **:**  **:**  **:** |  |
| Provision for depth adjustment | **:** |  |
| **1.18.1.5** | **Overall dimensions of rotavator (mm):** | | |
| -Length | **:** |  |
| -Width | **:** |  |
| -Height | **:** |  |
| **1.18.1.6** | **Mass, kg** | **:** |  |
| **1.18.1.7** | **Color of rotavator** | **:** |  |
| **1.18.1.8** | **Labeling /Identification plate of rotavator:** | | |
|  |  | | |
| **1.18.2** | **Cultivator:** | | |
| **1.18.2.1** | **Main frame:** |  |  |
| Material & size, mm | **:** |  |
| Dimension of frame, mm | **:** |  |
| **1.18.2.2** | **Extension frame:** |  |  |
| Number | **:** |  |
| Size of square box, mm | **:** |  |
| Dimension of frame, mm | **:** |  |
| **1.18.2.3** | **Tine:** |  |  |
| Number | **:** |  |
| Type | **:** |  |
| Arrangement on main frame | **:** |  |
| Material | **:** |  |
| Dimensions, mm | **:** |  |
| No., type and size of bolts for tightening shovel to the tyne, mm | **:** |  |
| Method of fixing | **:** |  |
| Provision for adjusting the spacing between the tynes, mm | **:** |  |
| Provision for height adjustments | **:** |  |
| **1.18.2.4** | **Shovel:** |  |  |
| No. of shovels | **:** |  |
| Type | **:** |  |
| Material | **:** |  |
| Number and size of holes on each shovel for fixing the tyne, mm | **:** |  |
| Hole spacing, mm | **:** |  |
| Method of fixing | **:** |  |
| **1.18.2.5** | **Depth control mechanism:** |  |  |
| Type | **:** |  |
| No. of flat | **:** |  |
| Material | **:** |  |
| Size of flat, mm  Length  Width  Thickness | **:**  **:**  **:** |  |
|  | Provision for depth adjustment | **:** |  |
| **1.18.2.6** | **Overall dimensions of cultivator, mm:** | | |
| -Length | **:** |  |
| -Width | **:** |  |
| -Height | **:** |  |
| **1.18.2.7** | Mass, kg | **:** |  |
| **1.18.2.8** | **Color of cultivator** | **:** |  |
| **1.18.2.9** | **Labeling /Identification plate of cultivator:** | | |
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| **1.18.3** | **Details of additional attachment (s), if any:** | | |
| **1.19** | **Steering handle bar:** |  |  |
| Material | **:** |  |
| Dia. of pipe, mm | **:** |  |
| No. of hand grips | **:** |  |
| Length of grip, mm | **:** |  |
| Material of grip | **:** |  |
| Dia. of grip, mm | **:** |  |
| Provision for handle height adjustment | **:** |  |
| Height of handle bar from ground level, mm | **:** |  |
| Provision for angle adjustment | **:** |  |
| Stand | **:** |  |
| Transport wheel | **:** |  |
| Type | **:** |  |
| Make | **:** |  |
| Number  Size, mm | **:** |  |
| Recommended pressure at 150 kg load, kPa | **:** |  |
| **1.20** | **Wheel equipment:** | **:** |  |
| **1.20.1** | **Steering wheels:** |  |  |
| Type | **:** |  |
| Make | **:** |  |
| Number | **:** |  |
| Size, mm | **:** |  |
| Track width, mm | **:** |  |
| Recommended load at --------------kPa pressure, kg | **:** |  |
| **1.20.2** | **Drive wheels:** |  |  |
|  | Type | **:** |  |
|  | Make | **:** |  |
|  | Number | **:** |  |
|  | Size, mm | **:** |  |
|  | Track width, mm | **:** |  |
|  | Recommended load at --------------kPa pressure, kg | **:** |  |
|  | **Wheel base** | **:** |  |
| **1.21** | **Details of controls:** |  |  |
| **i)** |  |  |  |
| **ii)** |  |  |  |
| **iii)** |  |  |  |
| **iv)** |  |  |  |

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| **1.22** | **Details of safety provision:** |  |  |
| **i)** |  |  |  |
| **ii)** |  |  |  |
| **iii)** |  |  |  |
| **iv)** |  |  |  |
| **1.23** | **Overall dimensions of machine (mm):** |  |  |
| -Length | **:** |  |
| -Width | **:** |  |
| -Height | **:** |  |
| **1.24** | **Mass, kg** | **:** |  |
| **1.25** | **Color of machine:** |  |  |
| Engine | **::** |  |
| Main drive cover & transmission system |  |  |
| Rotary drive cover | **:** |  |
| Fuel tank | **:** |  |
| Handle bar |  |  |
| **1.26** | **Labeling /Identification plate of machine:** | | |
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| **ADDITIONAL INFORMATION (if applicable)** | | | |
| 1. **Engine Performance:** | | | |
|  | Maximum Power, kW (Ps) | : |  |
|  | Rated Power, kW (Ps) | : |  |
|  | Specific fuel consumption  corresponding to maximum power,  kg/kWh (g/hph) | : |  |
|  | Maximum equivalent crankshaft torque, Nm (kgf-m) | : |  |
|  | Back-up torque (%) | : |  |
|  | **Maximum temperatures (ºC):** |  |  |
| -Engine oil | : |  |
| -Coolant (water)/liner wall | : |  |
|  | Lubricating oil consumption (g/kWh) | : |  |
|  | Coolant consumption (% of total Coolant capacity) | : |  |
|  | Smoke level (Bosch No.) | : |  |
| **2.** | Mechanical Vibration at steering/  hands | : |  |
| **3.** | **Air cleaner-oil pullover:** | : |  |
| -Maximum oil pull-over (%) | : |  |
| **4.** | **Noise level:** | : |  |
| Maximum ambient noise level dB(A) | : |  |
| Maximum noise level at the Operator’s ear level dB(A) | : |  |

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| **Sl. No.** | **Critical engine components (if applicable)** | **Initial Setting** | **Discard Limit** |
| 1 | Cylinder bore dia. (mm) |  |  |
| 2 | Piston to cylinder clearance at skirt ,mm |  |  |
| 3 | Piston dia (mm) |  |  |
| 4 | **Ring-end gap (mm):** |  |  |
| -Top compression ring |  |  |
| -2nd compression ring |  |  |
| -3rd compression ring |  |  |
| - Oil ring |  |  |
| 5 | **Ring groove clearance (mm):** |  |  |
| -Top compression ring |  |  |
| -2nd compression ring |  |  |
| -3rd compression ring |  |  |
| - Oil ring |  |  |
| 6 | **Clearance of big end bearings (mm):** |  |  |
| - Diametrical |  |  |
| - Axial |  |  |
| 7 | Crankshaft end float (mm) |  |  |
| 8 | Backlash of timing gears |  |  |
| 9 | Backlash of primary gear box gears |  |  |
| 10 | Backlash of secondary gear box gears |  |  |
| 11 | Overall thickness of clutch plate (mm) |  |  |
| 12 | **Spring stiffness, N/mm (kgf/mm):** |  |  |
| -Inlet |  |  |
| -Exhaust |  |  |
| 13 | **Clearance between valve guide and valve Stem (mm):** |  |  |
| -Inlet valve |  |  |
| -Exhaust valve |  |  |

Place: Signature: ------------------------------------------

Date: Name of the applicant: ---------------------------

Designation: ---------------------------------------

Address: -------------------------------------------