**TECHNICAL SPECIFICATIONS FOR ROTAVATOR**

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| --- | --- | --- | --- |
| **1.1** | **General:** |  |  |
| Name and address of manufacturer | **:** |  |
| Name and address of applicant | **:** |  |
| Name of the machine | **:** |  |
| Type | **:** |  |
| Make | **:** |  |
| Model | **:** |  |
| Year of manufacture | **:** |  |
| Serial No. | **:** |  |
| Recommended tractor horse power, kW | **:** |  |
| Type of blade | **:** |  |
| Size (working width x Dia. of rotor), mm | **:** |  |
| **1.2** | **Details of prime mover used (as per labeling plate):** |
| Tractor Make & Model | **:** |  |
| Chassis No. & Engine Sr. No. | **:** |  |
| Max. PTO Power, kW | **:** |  |
| Month & Year of manufacture | **:** |  |
| Specific fuel consumption, g/kWh | **:** |  |
| **1.3** | **Main frame/Chassis:** | **:** |  |
| Type | **:** |  |
| Material & size, mm | **:** |  |
| Dimensions, mm | **:** |  |
| Size of supporting flat, mm | **:** |  |
| Type of mounting of box section | **:** |  |
| **1.3.1** | **Side Support:** | **:** |  |
| Type  | **:** |  |
| Material & size, mm | **:** |  |
| Method of fixing  | **:** |  |
| Size of bolt (mm) | **:** |  |
| **1.3.2** | **Shield (Cover):** |  |  |
| Type | **:** |  |
| Material & size, mm | **:** |  |
| Dimensions of shield (L × W × T), mm | **:** |  |
| Method of mounting | **:** |  |

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| **1.4** | **Trailing Board:** |
| Type  | **:** |  |
| Material & size, mm | **:** |  |
| Dimensions of board (L × W), mm | **:** |  |
| Locking system | **:** |  |
| Method of mounting plate sector | **:** |  |
| Type of hinge  | **:** |  |
| No. of hinges | **:** |  |
| No. of hinge rod | **:** |  |
| Size of hinge rod (L × Dia.) | **:** |  |
| No. of bush | **:** |  |
| Material of bush | **:** |  |
| Size of bush (OD/ID × L) | **:** |  |
| Method of fixing | **:** |  |
| **1.5** | **Rotor:** |  |  |
| **1.5.1** | **Rotor Shaft/axle:** |  |  |
| Material | **:** |  |
| Type of rotor axle | **:** |  |
| Size of shaft (L × W), mm | **:** |  |
| No. of flanges | **:** |  |
| Type of flange | **:** |  |
| Dia. of flange, mm | **:** |  |
| Thickness of flange, mm | **:** |  |
| No. of blades on each flange | **:** |  |
| Method of mounting blades on flanges | **:** |  |
| Distance between two flanges, mm | **:** |  |
| Total no. of blades | **:** |  |
| Dia of rotor with blades, mm | **:** |  |
| Method of fixing shaft/axle | **:** |  |
| **1.5.2** | **Rotor Blade:** |  |  |
| Number | **:** |  |
| Type | **:** |  |
| Material | **:** |  |
| Overall thickness, mm | **:** |  |
| Thickness at the beveled edge, mm | **:** |  |
| Width of the beveled edge, mm | **:** |  |
| Curved length of the beveled edge, mm | **:** |  |
| Speed of rotor shaft corresponding to 540/1000 rpm of PTO shaft, rpm | **:** |  |
| Peripheral speed of rotor blades, m/min | **:** |  |
| **1.6** | **Depth control mechanism:** |
| **1.6.1** | **Skid:** |  |  |
| Type & Material | **:** |  |
| Size (L × W × T), mm | **:** |  |
| No. of skids | **:** |  |
| Method of fixing | **:** |  |

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| **1.6.2** | **Adjusting Rack:** |
| Type | **:** |  |
| Size, mm | **:** |  |
| Range of depth adjustment, mm | **:** |  |
| Method of fixing | **:** |  |
| **1.7** | **Hitch pyramid:** |  |  |
| Constructional details | **:** |  |

**1.7.1 Dimensions of hitch of implement as per IS 17231:2019 (Table 4) (Ref. Fig. 4):**

|  |  |  |  |
| --- | --- | --- | --- |
| **Dimensions** | **Specifications** | **Dimensions in mm** | **Remarks** |
| **As per IS 17231:2019****(Cat-I/Cat-2)** | **As measured**  |
| **Upper hitch point** |
| D1 | Dia. of hitch pin  | 25.37 -25.50 |  |  |
| b1 | Width between inner faces of yoke | 52 (Min.) |  |  |
| **Lower hitch attachments** |
| D2 | Dia. of hitch pin | 27.8 - 28.0/27.8 - 28.0 |  |  |
| b3 | Linch pin hole distance  | 49 (Min.) |  |  |
| b5 | Clevis width hole | 65 - 67 |  |  |
| l | Lower hitch point span | 683±1.5/825 ± 1.5 |  |  |
| **Other Dimensions** |
| d | Diameter for linch pin hole |
| For Upper hitch pin | 12 (Min.) |  |  |
| For Lower hitch pin | 12 (Min.) |  |  |
| h | Mast height | 460±1.5/610 ± 1.5 |  |  |

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| --- | --- | --- | --- |
| **1.7.2** | **Mast:** |  |  |
| Type | **:** |  |
| Material & size, mm | **:** |  |
| Shape | **:** |  |
| **1.8** | **Power transmission system:**  |  |  |
|  | Method of transmission | **:** |  |
| **1.8.2** | **Primary reduction:** |
| Type | **:** |  |
| No. of teeth on pinion  | **:** |  |
| No. of teeth on bevel gear | **:** |  |
| Reduction ratio at gear box | **:** |  |
| Oil capacity, l | **:** |  |
| Oil change period, h | **:** |  |
| Recommended grade of oil | **:** |  |
| Length of power transmission shaft, mm from gear box to secondary reduction unit  | **:** |  |
| Dia. of shaft, mm | **:** |  |
| Provision of breather | **:** |  |
| Provision for checking oil level | **:** |  |
| No. & type of bearings | **:** |  |
| **1.8.3** | **Secondary reduction:** |
| Type | **:** |  |
| No. of teeth on drive gear sprocket | **:** |  |
| Details of idler gear/sprocket | **:** |  |
| No. of teeth on driven gear/sprocket | **:** |  |
| Length of chain (if applicable) | **:** |  |
| Reduction ratio (540/1000 PTO rpm) | **:** |  |
| Oil capacity, l | **:** |  |
| Recommended grade of oil | **:** |  |
| Oil change period, h  | **:** |  |
| Provision for filling & checking of oil level | **:** |  |
| Provision of breather | **:** |  |
| **1.8.4** | **Propeller shaft:** |  |  |
| Type | **:** |  |
| **Length of shaft, mm:** |  |  |
|  -Minimum | **:** |  |
|  -Maximum | **:** |  |
| Mass of shaft, kg. | **:** |  |
| Provision against overload | **:** |  |
| Provision of guard | **:** |  |
| Provision for locking | **:** |  |
| **1.8.5** | **Details of safety clutch/device** | **:** |  |
| **1.9** | **Details of rotavator Stand** | **:** |  |
| **1.10** | **Details of furrow wheel** | **:** |  |
| **1.11** | **Overall Dimensions, mm:** |
| -Length | **:** |  |
| -Width | **:** |  |
| -Height | **:** |  |
| **1.12** | **Mass, kg.** | **:** |  |
| **1.13** | **Colour** | **:** |  |
| **1.14** | **Details of Labeling plate:** |  |  |
|  |

**SELECTED PERFORMANCE AND OTHER CHARACTERISTICS AS PER IS 17045 - 2018**

**(TO BE DECLARED BY THE APPLICANT)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  **S. No** | **Characteristics** | **Category (Evaluative/Non evaluative)** | **Requirement**  | **Tolerance**  | **Declarati-on by applicant** | **Remarks** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| **1. Field performance:** |
|  | **i)** | Suitability for Wet landoperation | Evaluative | Should be suitable for Wet Land operation | Nil | (Yes/No) |  |
| **ii)** | Depth of cut in dry landoperation, (cm) | Evaluative | Minimum 10 cm. | Nil |  |  |
| **iii)** | Depth of puddle in wet landoperation, (cm) | Evaluative | Minimum 12 cm. | Nil |  |  |
| **iv)** | Field efficiency, (percent) | Evaluative | Minimum 75 percent | Nil |  |  |
| **v)** | Puddling index, (percent) | Evaluative | Minimum 65 percent | Nil |  |  |
| **2. Safety requirements:** |
|  | **i)** | Safety considerations | Evaluative | Should meet the requirementof IS 10740 and IS 10318 | Nil | (Yes/No) |  |
| **ii)** | Safety clutch/ device (Shearbolt) in PTO drive shaft | Evaluative | Should be provided  | - | (Yes/No) |  |
| **iii)** | Rotavator stand | Evaluative | Should be provided  | - | (Yes/No) |  |
| **iv)** | Rotavator shield to preventflying of mud & stone | Evaluative | Should be provided  | - | (Yes/No) |  |
| **v)** | Guard over propeller shaft | Evaluative | Should be provided  | - | (Yes/No) |  |
| **3. Effectiveness of sealing (presence of ingress of dust and water/mud in various sub assembles):** |
|  | **i)** | Primary reduction gear/box | Evaluative | No ingress of mud and water | Nil | (Yes/No) |  |
| **ii)** | Secondary reduction gear/box | Evaluative | No ingress of mud and water | Nil | (Yes/No) |  |
| **iii)** | Rotary axle bearing cap | Evaluative | No ingress of mud and water | Nil | (Yes/No) |  |
| **4. Material of construction:** |
|  | **i)** | Hardness of blade | Evaluative | High carbon steel, boronsteel | Nil |  |  |
| **ii)** | Chemical composition ofrotor blade | Evaluative | As per IS 6690 | Nil |  |  |
| **5. Dimensional requirements:** |
|  | **i)** | Dimensions of three pointlinkage | Non-Evaluative | Should meet IS 4468 (Part 1) | -- | (Yes/No) |  |
| **ii)** | Dimensions of powerinput connection (PIC) ofImplement | Non-Evaluative | Should meet IS 4931 | -- | (Yes/No) |  |
| **iii)** | Dimensions of power inputconnection (PIC) Yoke bore | Non-Evaluative | Should meet IS 4931 | -- | (Yes/No) |  |
| **6. Literature (Submission to Test Agency):** |
|  | **i)** | Operator cum service manualand parts catalogue— | Evaluative | Should be provided as perIS 8132 | -- | (Yes/No) |  |
| **7. Labeling of Rotavator (Provision of Labeling Plate) as Per Above and Should be Welded on Rotary Tiller (Rotavator):** |
|  | **i)** | Name and address ofmanufacturer | Evaluative | Should be provided on Rotary Tiller (Rotavator) | -- |  |  |
| **ii)** | Make | Evaluative | --do-- | -- |  |  |
| **iii)** | Model | Evaluative | --do-- | -- |  |  |
| **iv)** | Size (m) [Dia of rotor × width of cut] | Evaluative | --do-- | -- |  |  |
| **v)** | Country of origin | Evaluative | --do-- | -- |  |  |
| **vi)** | Year of manufacturer[DD/MM/YYYY] | Evaluative | --do-- | -- |  |  |
| **vii)** | Chassis Serial Number | Evaluative | --do-- | -- |  |  |
| **viii)** | Recommended PTO speedof prime-mover, (rpm) | Evaluative | --do-- | -- |  |  |
| **ix)** | Maximum PTO Powerrequired, kW | Evaluative | --do-- | -- |  |  |
| **8. Category of Breakdowns/Defects (see 15.1):** |
|  | **i)** | Critical breakdown  | Evaluative | No critical breakdown | -- | (Yes/No) |  |
|  | **ii)** | Major breakdowns  | Evaluative | Not more than one and neither of them shouldbe repetitive in nature | -- | (Yes/No) |  |
|  | **iii)** | Minor breakdowns  | Evaluative | Not more than three and frequency of each should not be more than two. | -- | (Yes/No) |  |
|  | **iv)** | Total breakdowns  | Evaluative | In no case, the total number of breakdownsshould exceed four, that is, (1 major + 3 minor) or 4 minor breakdowns | -- | (Yes/No) |  |

**Date: -------**

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

 Name of signatory:

Designation:

Name & address of firm: