



Farm Machinery Testing and Training Centre
Department of Farm Power and Machinery
College of Agricultural Engineering and Technology
DR. PANJABRAO DESHMUKH KRISHI VIDYAPEETH
AKOLA- 444 104 (MS)



E-mail: fmtt28@gmail.com

SPECIFICATION SHEET OF TRACTOR MOUNTED POWER SHREDDER

| | | | |
|------------|----------------------------------|---|--|
| 1 | General | | |
| | Name & address of manufacturer | : | |
| | Name & address of applicant | : | |
| | Type | : | |
| | Make | : | |
| | Model | : | |
| | Year of manufacture | : | |
| | Serial number | : | |
| | Tractor horse power required, hp | : | |
| | Size of shredder, mm | : | |
| 2 | Constructional Details | | |
| 2.1 | Main frame | | |
| | Type | : | |
| | Size of box section, mm | : | |
| | Size of front support, mm | | |
| | Square Tube | : | |
| | C - Section | : | |

| | | | |
|------------|--|---|--|
| | Type of mounting box section | : | |
| 2.2 | Side support | | |
| | Number | : | |
| | Material | : | |
| | Thickness of plate, mm | : | |
| | Size, mm | : | |
| | Method of fixing | : | |
| 3 | Rotor Shaft and Assembly | | |
| | Material | : | |
| | Type | : | |
| | Size of rotor shaft | : | |
| | Length of shaft, mm | : | |
| 3.1 | Rotor Blade | | |
| | Total no number of blades | : | |
| | Type of blade | : | |
| | Material | : | |
| | Overall thickness, mm | : | |
| | Thickness at beveled edge, mm | : | |
| | Length of the beveled edge, mm | : | |
| | Peripheral speed of rotor blades, m/sec | : | |
| | Speed of rotor shaft corresponding to 540 rpm of PTO shaft, rpm | : | |

| | | | | |
|----------------|---|---|--------------------|---------|
| 4 | Depth control mechanism | | | |
| 4.1 | Support wheel | | | |
| | Type | : | | |
| | Size, mm | : | | |
| | Method of mounting | : | | |
| 4.2 | Skid | | | |
| | Type | : | | |
| | Size, mm | : | | |
| | Number of skid | : | | |
| | Method of mounting | : | | |
| 5 | Implement hitch point as per IS | | | |
| | Type | : | | |
| | Construction details | : | | |
| | Dimintions of three point linkage As per Is: 4468-2001: (Refer Fig.1) | | | |
| Sr. No. | Notations | As per IS: 17231:2019 (1N, 1, /2N, 2), mm | As measured, mm | Remarks |
| I | Upper hitch point | | | |
| D ₁ | Diameter of hitch pin | 19 (0-0.08)/ 25.5 (0-0.13) | | |
| b ₁ | Width between inner faces of yoke | 52 (Min.) | | |
| II | Lower hitch points | | | |
| D ₂ | Diameter of hitch pin | 22 (0-0.2)/ 28 (0-0.2) | | |
| b ₃ | Linch pin hole distance | 49 (Min.) | | |
| b ₅ | Clevis width | 65+20 | | |
| l | Lower hitch point span | 400±1.5, 683±1.5, 683±1.5, 825±1.5 | | |
| III | Other dimensions | | | |

| | | | | |
|---|-----------------------------|--|--|--|
| d | Diameter for lynch pin hole | | | |
| | Upper hitch pin | 12 (min.) | | |
| | Lower hitch pin | 12 (min.) | | |
| h | Mast height | 360±1.5 460±1.5 610±1.5 610±1.5 | | |

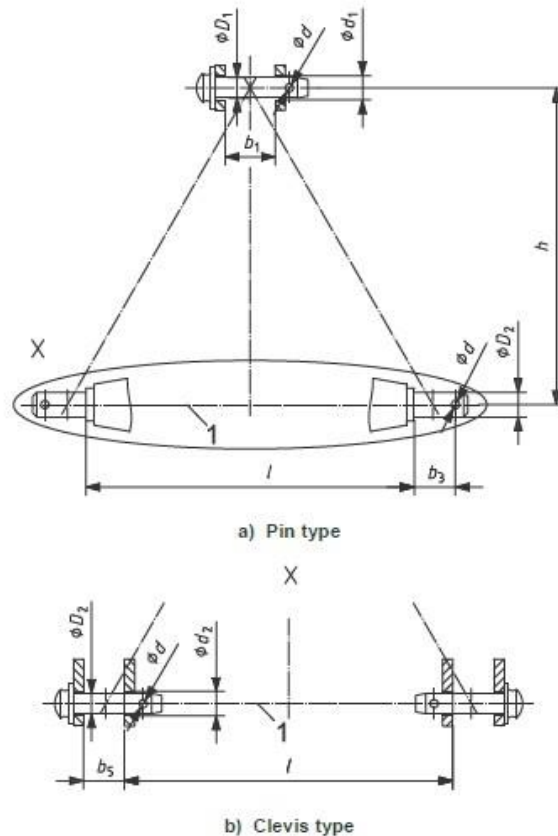


Fig 1 Dimensions related to implement hitch attachment

| | | | | |
|-----|--|----------------------|-------------|---------|
| 6 | Mast | | | |
| | Type | : | | |
| | Size of flat, mm | : | | |
| 7 | Power transmission system | | | |
| | Method of transmission | : | | |
| 7.1 | Dimensions of splined end of pinion shaft, mm (Refer Fig. 2) | | | |
| | Specification | As per IS: 4931-2004 | As observed | Remarks |
| | 1 | 2 | 3 | 4 |

| | | | |
|-------------------|------------|--|--|
| DΦ | 34.79±0.06 | | |
| dΦ | 28.91±0.05 | | |
| BΦ | 29.4±0.1 | | |
| S | 8.69 | | |
| R | 6.7±0.25 | | |
| α | 30° | | |
| G | 7 | | |
| H | 38 | | |
| A | 54 (Min.) | | |
| B | 76 (Min.) | | |
| I | 25±0.5 | | |
| J (optional hole) | 8.3 | | |

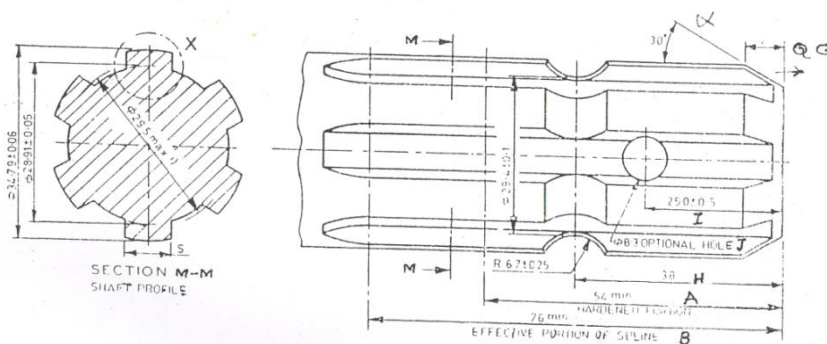
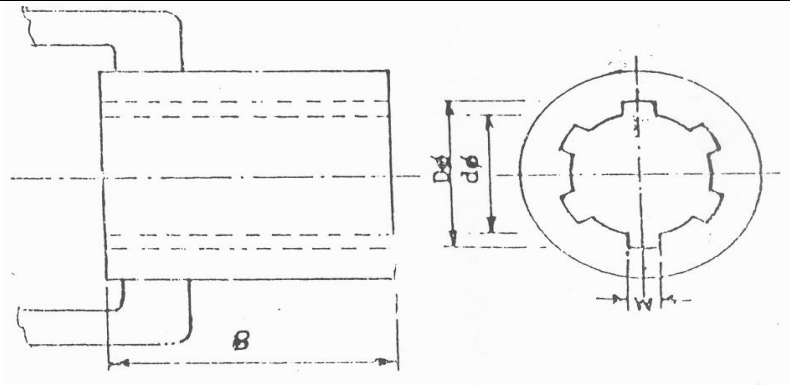


Fig. 2: Dimensions of Implement Power Input Shaft, mm

| | | | |
|------------|--|---|--|
| 7.2 | Gear box assembly (primary reduction) | | |
| | Type | : | |
| | Spur | : | |
| | No. of teeth on drive gear | : | |
| | No. of teeth on driven gear | : | |
| | Bevel and Pinion | : | |
| | Bevel | : | |

| | | | |
|------------|---|---|--|
| | Pinion | : | |
| | Optional gear (Spur gear set) | : | |
| | Reduction ratio at gear box | : | |
| | Oil capacity, lit | : | |
| | Oil change period, h | : | |
| | Length of power transmission shaft, mm (from gear box to secondary reduction unit) | : | |
| | Diameter of shaft, mm | : | |
| | Provision of breather | : | |
| | Provision for dipstick | : | |
| | Nos. of bearing | : | |
| 7.3 | Gear box (secondary reduction) | | |
| | Type | : | |
| | No. of Gears | : | |
| | Type of gears | : | |
| | No. of teeth on drive gear | : | |
| | No. of teeth on driven gear | : | |
| | No. of teeth on idle gear | : | |
| | Reduction ratio | : | |
| | Grease capacity, kg | : | |
| | Grease change period, h | : | |
| | Grease level checking bolt | : | |
| | No. of bearing | : | |
| 7.4 | Propeller shaft | | |
| | Type: - Telescopic (with two segments) having one universal joint on each segment with splined ends to insert the PTO of tractor and drive shaft of bevel box. | | |
| | Length of the shaft, mm: | | |
| | Minimum | : | |

| | Maximum | : | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|---|------------------|--|----------------|--|------------------|----------------------|-------------|---|----------|------------------|--|---|----------|----------------|--|---|---|------|--|---|---|----------|--|
| | Mass of shaft, kg | : | | | | | | | | | | | | | | | | | | | | | | |
| | Provision for locking | : | | | | | | | | | | | | | | | | | | | | | | |
| 7.4.1 | Propeller shaft | | | | | | | | | | | | | | | | | | | | | | | |
| | Propeller shaft insert dimension (Refer Fig.3): | | | | | | | | | | | | | | | | | | | | | | | |
| | Sr. No. | Notations | <table border="1"> <thead> <tr> <th colspan="2">Dimensions, mm</th> <th rowspan="2">Conformity to IS</th> </tr> <tr> <th>As per IS: 4931-2004</th> <th>As observed</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Dϕ</td> <td>34.93 \pm 0.03</td> <td></td> </tr> <tr> <td>2</td> <td>dϕ</td> <td>29.7 \pm 0.1</td> <td></td> </tr> <tr> <td>3</td> <td>W</td> <td>8.69</td> <td></td> </tr> <tr> <td>4</td> <td>B</td> <td>54 (min)</td> <td></td> </tr> </tbody> </table> | Dimensions, mm | | Conformity to IS | As per IS: 4931-2004 | As observed | 1 | D ϕ | 34.93 \pm 0.03 | | 2 | d ϕ | 29.7 \pm 0.1 | | 3 | W | 8.69 | | 4 | B | 54 (min) | |
| Dimensions, mm | | Conformity to IS | | | | | | | | | | | | | | | | | | | | | | |
| As per IS: 4931-2004 | As observed | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | D ϕ | 34.93 \pm 0.03 | | | | | | | | | | | | | | | | | | | | | | |
| 2 | d ϕ | 29.7 \pm 0.1 | | | | | | | | | | | | | | | | | | | | | | |
| 3 | W | 8.69 | | | | | | | | | | | | | | | | | | | | | | |
| 4 | B | 54 (min) | | | | | | | | | | | | | | | | | | | | | | |
| |  <p style="text-align: center;">Fig. 3: Propeller Shaft Insert Dimensions, mm</p> | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Overall dimensions, mm | | | | | | | | | | | | | | | | | | | | | | | |
| | Length, | : | | | | | | | | | | | | | | | | | | | | | | |
| | Width | : | | | | | | | | | | | | | | | | | | | | | | |
| | Height | : | | | | | | | | | | | | | | | | | | | | | | |
| | Mass of the Machine, kg | : | | | | | | | | | | | | | | | | | | | | | | |

Place:

Date:

Signature: _____

Name: _____

Designation: _____

