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Ministry of Agriculture and Farmers Welfare
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SPECIFICATION OF BALER

1. SPECIFICATION

1.1.1 General:

Name and addresss of the manufacturer	:
Name & Address of Applicant	:
Type	:
Make	:
Model	
Year of manufacture	:
Frame Serial no.	:
Country of origin	:
Recommended tractor power, hp	:
Type of baler	:
Recommended forward travelling speed of machine,kmph	:
Pto speed for operation, rpm	
Standard pto speed	:
Working width of machine, m	:
Bale size L×D,mm (observed)	:
Avg. weight of bale observed, kg	
Crop recommended for	:

1.1.2 Prime Mover used :

Type	:
Make and Model	:
Year of manufacture	:
Engine No.	:
Chassis No.	:
Max. pto power, kW (Ps)	:
Rated engine speed for field operation corresponding to 540 pto rpm of tractor recommended by applicant, rpm (apa)	:

1.2 Power Transmission :

1.2.1 Propeller Shaft (Cardan shaft)

Type :
No. of pieces :
No. of splines :
Length adjustable, mm :
Minimum :
Maximum :
Safety mechanism :

Table-1 : Propeller shaft hub dimensions (Refer Fig. 4):-

Notation	As per IS:4931-Oct. 2004, mm		As observed, mm		Remarks	
	At pto end of tractor	At gear box power unit shaft	At pto end of tractor	At gear box power unit shaft	At pto end of tractor	At gear box power unit shaft
DØ	34.93±0.03	34.67±0.2				
dØ	29.7±0.1	29.99(min)				
W	8.69 (min)	2.494				
B	54 (min)	64 (min)				

1.2.2 Gear box:

Make :
Type :
No. of teeth on gears
Drive :
Driven :
Reduction ratio power input shaft to crown gear power output shaft :

Table 2: Dimensions of power input shaft of a gear box Type II (Refer Figure-3)

Dimensions of21 splined end of power input shaft (Ref. Fig. 1):			
Notation	As per IS:4931-2004(mm)	As observed (mm)	Remarks
A	41.0(min)		
B	64.0(min)		
DØ	34.67±0.20		
dØ	29.99min)		
G	5.0		
H	25.5		
I	25.0±0.25		
J	Ø8.3		
R	6.75±0.25		
S	2.406 (max)		
a	30°		

Oil capacity, g :
Oil grade :
Oil change period :
Method of driving :

Method of mounting :
Bearing no & it's location :
Pinion shaft size, mm
Dia :
Length :
Spline No. :
Length :
Method of mounting :
Crown shaft size, mm

Dia :
Length :
Spline No. :
Length :
Method of mounting

1.3 Pick up mechanism :

1.3.1 Pick up unit

Type :
No. of tine bars :
Size of bars, mm :
Type of tine bars :
Size of pick up unit, mm
Dia :
Width :
Effective Width, mm :
Speed corresponding to the 540 rpm of pto, rpm :
Peripheral speed of the reel,m/s :
No. of tine on each bar :
Tine spacing, mm :
Max. vertical distance of the time from the ground level,mm :
Method for raising and lowering of reel assembly :
Arrangement for variation of angle of the time :
Arrangement for forward and backward movement of the reel :
Method of power transmission :
Drive from auger drive shaft to reel shaft :
No. of teeth on sprocket
Drive :
Driven :
Speed reduction ratio

Size of chain, mm

Length :

Pitch :

Tension control :

Safety device :

1.3.2 First pick up wind guard

Type :

Size of M.S plate, mm

Length :

Width :

Thickness

Size of guard rail, mm

Length :

Dia :

Number :

1.3.3 Supporting guard

Type :

No. of Pick up guard :

Size of guard plate, mm :

Length :

Width :

Thickness :

Method of fixing :

Clearance between feeder floor & between tyne tips, mm :

1.3.4 Plates (flush roller) :

Type :

Method of fixing :

No. of plates :

Size of plate, mm

Peripheral length :

Side rail height :

Width :

Thickness :

Clearance between wind guard tyne edge and feeder floor, mm :

1.3.5 Side Panel

Type :

Thickness of M.S sheet :

1.3.6 Pick up floatation spring

Type :
Range of adjustment in length, mm :
Spring length recommended for the operation, mm :

1.3.7 Pick up depth gauge wheel (Transportation)

Type :
Make :
Serial No. :
Size :
Recommended inflation pressure, bar :
Method of mounting :

1.4 Feeding mechanism:

1.4.1 Floor roller

Type :
Dia, mm :
Any, safety mechanism :

1.4.2 Crank Packer

Type :
Size of crank packer (L x B x H), mm :
Shaft Dia, mm :
Method of mounting :
Method of operation :
Any, safety mechanism :

1.4.3 Feeder Frame

Type :
Thickness, mm :

1.4.4 Feeding auger

Type :
Size, mm
Length :
Pitch :
Dia :
Method of mounting :

1.4.4.1 Feeder guide plate

Type :

No. :
Thickness, mm :

1.4.4.2 Feeder guard rail

Type :
Size of guard rail bar, mm
Peripheral length :
Dia :
No. :
Spacing between adjacent guard rail bar, mm :
Size of hollow pipe, mm
Length :
Dia :

1.5 Bale chamber

Type :
Size of bale roller, mm :
Length
Dia :
No. :
Method to control tension of bale roll chain :
Method of driver roller chain unit :
No. of teeth on a sprocket
Driver :
Driven :
Speed reduction ratio to main gear output shaft to roller shaft :
Provision for tension of chain :
Speed of bale roller chain drive & driven sprocket corresponding 540 rpm of pto, m/s :
Bale chamber size, mm
Length :
Dia :
Method of mounting of drive shaft of roller chain mechanism :
Safety device :
Method of lubrication :

1.5.1 Wedging Plate

Type :

Size, mm :
Length (Top) :
Length(Bottom) :
Height :
Surface area, m² :
Method of operation :

1.6 Density adjustment mechanism

Type
Range of adjustment, Kg(apa) :

1.6.1 Provision for indication of effective bale size indication of bale formation

Type :
Method of operation :

1.6.2 Bale alarm sensor

Type :
Make :
Serial No. :
Method of operation :

1.6.3 Bale counter unit:

Make :
Type :
Method of operation :
No. & location :

1.7 Wrapping mechanism:

1.7.1 Twine supporting stand

Type :
No. of twine :
Twine bundle size, mm
Length :
Dia :
Weight, kg :
Breaking strength, N :
Twine rope size,
Length, m/kg :
Dia, mm :

1.7.2 Pattern pulley:

Type :
Make :
Inside pulley size, mm :
Middle pulley size, mm :
Outside pulley size, mm :
Detail of gear drive :

No. of teeth on driver gear :
No. of teeth on driven gear :
Reduction ratio :
No. of wraps adjustments
Small pulley :
Inter mediate pulley :
Large pulley :
Method of drive :
Method of operation :

1.8 Bale discharge mechanism:
Type :
Method of operation :

1.8.1 Swings (Tailgate):
Type :
Size (LxW), mm :
Opening area, m² :
Tailgate lock out valve :

1.8.2 Bale roll out mechanism
Type :
Size of a bar, mm
Length :
Dia :

1.8.3 Hydraulic mechanism
Type :
No. of Hydraulic cylinder & their location :
Type of hydraulic cylinder :

1.9 Electronic control box
Type :
Make :
Model :
Sr. No. :
Capacity :
Location :
Controlling areas :

1.10 Transport wheels
Type :
Make :
No. and size :
Track width, mm :
Recommended tyre pressure, :

kg/cm²
Size of axle shaft, mm
Dia
Length :
Method of mounting :

1.11 Supporting stand for the machine

Type :
Size of stand, mm :
Inner hollow channel (LxBxH) :
Outer channel(LxBxH) :
Thickness, mm :
Method of operation :

1.12 PTO propeller shaft support

Type :
Dia, mm :

1.13 Type of hitch & its detail

Type :
Method of mounting :
Range of adjustment :

1.14 Safety device provided on the machine:

Sl. No.	Assembly	Type of safety mechanism	Location
1.			
2.			
3.			
4.			

1.15 Overall dimensions, mm (refer fig. 08)

Length :
Width :
Height :
Total Mass, kg :

1.16 Turning radius and turning space (with tractor and baler combination)

Minimum radius of turning circle:

LHS :
RHS :

Minimum radius of turning spaces:

LHS :

RHS :

1.17 Total number of lubricating points:

Greasing :
Oiling :
Grease cup/pipe :

1.18 Maintenance schedule of Baler:-

The details of greasing and oiling points are given in Table 4:-
Table 4: Greasing and oiling points:

S. No.	**Greasing point**	
A	**Daily point**	**Number**
1.	Gear box output shaft bearing	
2.	Bale roll drive shaft bearing	
3.	Bale roll drive shaft idler inside tailgate	
4.	Tailgate hinge	
5.	Bar chain support bearing	
B	**Weekly point**	
1.	Drive shaft	
2.	Bale density rod	
3.	Gearbox output shaft	
4.	Tailgate closing hook	
5.	Tailgate latching hook	
C	**Annually Point**	
1.	Jack	
	Total point	

Oiling points:-

Sl. No.	**Oiling point**	
A	**Daily point**	**Number**
1.	Chain drive	
2.	Bale roll chain automatic oil	
B	**Weekly point**	
1.	Pick up pivot plates	
2.	Conveyor chain stretch slot	
C	**Annually point**	
1.	Gear box	
	Total point	

Place:

Date:

Signature:……

Name:……
Designation:……