



**DEPARTMENT OF FARM MACHINERY AND POWER ENGINEERING
COLLEGE OF AGRICULTURAL ENGINEERING AND TECHNOLOGY
CCS HARYANA AGRICULTURAL UNIVERSITY
HISAR-125004, HARYANA**



Phone:01662-255447

e-mail: fpm@hau.ernet.in

<http://hau.ernet.in>

hau.machinerytesting@gmail.com

SPECIFICATION SHEET OF HAPPY SEEDER

1.0	General:		
	a)	Name	:
	b)	Address of manufacturer	:
	c)	Address of applicant	:
	d)	Type	:
	e)	Make	:
	f)	Serial Number	:
	g)	Model	:
	h)	Year of manufacture	:
	i)	Different seeds which the drill is designed to sow	:
	j)	Source of power	:
	k)	Recommended traveling speed of the drill	:
	l)	Recommended power of tractor, if tractor operated	:
	m)	Location of fertilizer outlet in relation to seed outlet.	:
2.0	Constructional Details		
2.1	Mainframe		
	a)	Material detail	:
	b)	Size	:
2.2	SIDE SUPPORT		
	a)	Type of frame	:
	b)	Thickness of plate, mm	:
	c)	Method of fixing to main frame	:
2.3	SHIELD (TOP COVER)		
	a)	Type	:
	b)	Size of shield, mm	:
	c)	Thickness of sheet, mm	:
	d)	Method of fixing to main frame	:
2.4	TRAILING BOARD		

2.5	ROTOR UNIT		
	ROTOR SHAFT		
	a)	Type	:
	b)	Length of shaft, mm • Ground wheel side • Opposite to ground wheel side • Dia. of shaft	:
	c)	Size of rotor pipe, mm	:
	d)	Method of mounting blades on shaft	:
	e)	No. of blades on shaft	:
	f)	Dia of rotor with blades, mm	:
	g)	Tractor PTO rpm corresponding to 1700 rpm of engine (on load)	:
	h)	Rotation of rotor shaft corresponding to 540 rpm of PTO shaft, rpm	:
2.6	ROTOR BLADE		
	a)	Number	:
	b)	Type	:
	c)	Overall thickness, mm	:
	d)	Thickness at tip, mm	:
	e)	Method of mounting blades on rotor pipe	:
	f)	Size of bolt, mm • Length • Diameter • Pitch	:
	g)	Size of spacer, mm • Length • Diameter (Inner/Outer)	:
	h)	Distance between two adjacent blades, mm	:
	i)	Peripheral speed of rotor blades (m/sec)	:
	j)	Speed index	:
	k)	Blade bracket size, mm	:
	l)	Method of arrangement of blade on rotor shaft	:
	m)	Clearance of blade from the tip of the blade to ground, mm	:
2.7	Depth control Mechanism		
	a)	Method of depth control adjustment	:
	b)	Range of depth adjustment, mm	:
2.8	Power Transmission System For Rotor Unit		
	Method of transmission		
2.9	Gear box (Primary Reduction Unit)		
	Type		:
	No. of teeth on pinion		:
	No. of teeth on bevel gear		:
	Gear ratio, power input to output shaft		:

	Oil capacity, litres	:	
	Oil change period, hours (apa)	:	
	Recommended grade of oil, apa	:	
	No. & type of bearings	:	
	Recommended PTO rpm of tractor	:	
2.9.1	Gear box (Secondary Reduction Unit)		
	Type	:	
	Diameter of drive pulley, mm	:	
	Diameter of driven pulley, mm	:	
	No. & size of belt	:	
	No. & type of bearings	:	
	Speed ratio	:	
	Overall speed ratio from primary input shaft to rotor shaft	:	
2.10	Propeller shaft		
	Type	:	
	Length of propeller shaft, mm	:	
	Mass of shaft	:	
	Provision for locking	:	
	Provision for safety Clutch /device	:	
	Power input shaft		Corresponding propeller shaft hub
	Notation	As observed, mm (10 splined)	Notation As observed, mm (10 splined)
	A		A
	B		B
	DΦ		DΦ
	dΦ		dΦ
	G		--
	H		--
	I		--
	J		--
	R		--
	S		--
	α		--
2.11	Furrow openers		
	a)		
	b)	No. of openers :	:
	c)	Arrangement of Openers	:
	d)	Range of selection of openers	:
	e)	Method of changing row space and range	:
	f)	Nominal width (cm)	:
	g)	Lifting and lowering of openers	:
	h)	Depth control	:
	i)	Fertilizer placement with respect to seeds.	:

2.12	Metering mechanism:																											
	a)	Seed metering device	:																									
		1) Type	:																									
		2) Size of feed shaft (mm)	:																									
		3) Size (dia) and number of fluted rollers (in case of plate type, the number of holes)	:	<table border="1"> <thead> <tr> <th>Feed Roller No.</th> <th>No. of cells</th> <th>Cell size (mm)</th> </tr> </thead> <tbody> <tr><td>1</td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td></tr> <tr><td>4</td><td></td><td></td></tr> <tr><td>5</td><td></td><td></td></tr> <tr><td>6</td><td></td><td></td></tr> <tr><td>7</td><td></td><td></td></tr> </tbody> </table>	Feed Roller No.	No. of cells	Cell size (mm)	1			2			3			4			5			6			7		
Feed Roller No.	No. of cells		Cell size (mm)																									
1																												
2																												
3																												
4																												
5																												
6																												
7																												
		4) Source of power (ground wheel or other)	:																									
		5) Transmission ratio of shaft of seed metering device to land wheel axle	:																									
		6) Type of agitator	:																									
		7) Method of feed rate control for different sizes of seeds	:																									
		8) Provision for closing seed discharge.	:																									
		9) Fertilizer distributor	:																									
2.13	Hopper :																											
	a)	Capacity (kg)	:																									
		1) Seed box	:																									
		2) Fertilizer box	:																									
	b)	Type of hoppers	:																									
2.14	Marker details:																											
	a)	Type	:																									
	b)	Details of range of adjustment	:																									
2.15	Seed covering arrangement:																											
	a)	Type	:																									
	b)	Size (mm)	:																									
2.16	Type of hitch and its details :																											
	a)	Type	:																									
	b)	Specifications of Hitch pyramid	:	As per IS:4468 Part-I, 2001 (Cl.5.1) & Part-II, 1998 (Cl.5.1) (All dimensions are in mm)																								

Sr.	Dimension	Description (Refer Fig.)	Dimension in mm
		Upper Hitch attachments	

1	d_1	Diameter of hitch pin hole	
2	$b\phi_1$	Width between inner faces of yoke	
3	$b\phi_2$	Width between outer faces of yoke	
Lower hitch points			
4	D_2	Dia of hitch pin	
5	$b\phi_3$	Linch pin hole distance	
6	l	Lower hitch point span	
Other dimensions			
	Diameter of linch pin hole		
7	d	For upper hitch pin	
8		For lower hitch pin	
9	h	Mast height	

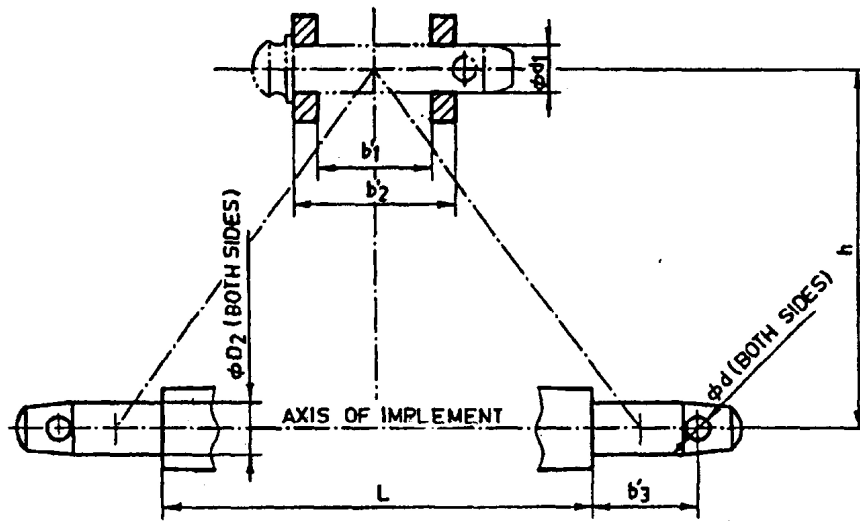


Fig. : Implement Hitch Attachment

2.17	Ground drive details :		
a)	No. of wheels	:	
b)	Type of wheel	:	
c)	Size (mm)	:	
d)	Circumference (mm)	:	
e)	Method of transmitting power to feed shafts	:	

2.18	Details of adjustments :		
Sr.	Adjustments	:	
1.	Feed rate	:	
2.	Spacing of furrow openers	:	
3.	Depth of sowing	:	
4.	Height of covering device	:	
5.	Drive wheel height	:	
6.	Reduction ratio of drive mechanism	:	
7.	Bund forming device	:	

2.19	Details of safety arrangement for rotating parts	:	
2.20	Overall dimensions (mm) :		
	a) Length	:	
	b) Width	:	
	c) Height	:	
	d) Weight with seeds and fertilizer (kg)	:	
	e) Ground clearance	:	
2.21	Number of greasing points:		
	a) Drive wheel bearing	:	
	b) Depth control wheel bearing	:	
	c) Chain & sprocket	:	
	d) Seed & fertilizer metering shaft	:	

2.22	Details of material of construction :			
	Sr.	Name of part	Material	Section of size in mm
	1	2	3	4
	1	Feed shafts		
	2	Seed and fertilizer box		
	3	Tyne		
	4	Boot		
	5	Seed/fertilizer tube		
	6	Covering device		

2.23	Material of construction:			
	Sr.	Component	Material	Used material
	1	2	3	4
	i)	Frame and toolbar	Mild Steel	
	ii)	Wheel	Mild Steel/ Cast Iron/ Pneumatic type	
	iii)	Axle and shaft	Mild steel	
	iv)	Seed and fertilizer boxes	Mild Steel/ Galvanized sheet/ Seasoned wood/ Plastic/ Fiber glass/ Reinforced plastic	
	v)	Tines	Mild Steel / Carbon steel	
	vi)	Boot	Mild Steel/ Cast Iron	
	vii)	Furrow opener	High Carbon Steel	
	viii)	Seed agitator	Mild Steel/ Cast Iron/ Aluminum/ PVC/ Rubber/ Canvas	
	ix)	Fertilizer agitator	Mild Steel/ Cast Iron/ Aluminum/ Canvas	
	x)	Seed and fertilizer tubes	Steel ribbon/ Plastic/ Rubber	
	xi)	Seed metering mechanism (fluted feed roller type)	Cast Iron/ Mild Steel/ Nylon	
	xii)	Fertilizer metering mechanism (fluted feed roller type)	Cast Iron/ Mild Steel/ Nylon	
	xiii)	Bushes	Brass/ Gun metal/ Nylon	
	xiv)	Covering device	Mild Steel/ Cast Iron/ Seasoned wood	

	xv)	Pulley, sprocket	Cast Iron/ Mild Steel	
	xvi)	Hitching mechanism	Mild Steel	
	xvii)	Feed adjusting mechanism	Mild Steel/ Cast Iron	
	xviii)	Depth adjusting mechanism	Mild Steel	
	xix)	Row marker	Mild Steel/ Cast Iron	

2.24	Accessories	
	The following accessories may be provided with each drill :	
	a)	Foot broad
	b)	Covering device
	c)	Row marker
	d)	Press wheel
e)	Area recorder.	

2.25	Marking and packing	
	Marking: Each drill shall be marked with the following particulars:	
	a)	Indication of the source of manufacture
	b)	Model, code and serial number
	c)	Type and size
	d)	Type of seeds (suitability)
	e)	Mass
f)	Permanent type metallic calibration plate indicating the metering position and quantity of seed and fertilizer	

Place:

Date:

Signature: _____

Name : _____

Designation: _____