

F. No. 9-1/2009-M&T(I&P)
Government of India
Ministry of Agriculture and Farmers Welfare
Department of Agriculture, Cooperation and Farmers Welfare
(Mechanization & Technology Division)

Krishi Bhawan, New Delhi
Dated the 17th January, 2019

The Comments from all the Stake Holders viz; Officers concerned of State Agricultural Departments, FMTTIs, Approved Test Centers of DAC&FW, manufacturers of Tractor, Power tiller, Agricultural Machinery Manufacturers, etc Users of Agricultural Machinery are invited on the "**Critical Technical Specification**", of the **Agricultural Machinery**, finalized after the discussion and comments from the various Stake holders like FMTTIS, Approved Test Centers at SAUs, ICAR institutes, State Agricultural Departments and the comments from the representatives of Agricultural machinery Manufacturers & their different associations like Associations of Tractor manufacturers (TMA), Small Tractors manufacturers (STMA), Combine manufacturers (AICMA) and Agricultural Machinery manufacturers (AMMA) and other Agricultural Machinery manufacturers to ensure the quality and durability of the of identified Agricultural machineries which are being supplied under subsidy Programmes/ Schemes of DAC&FW, Ministry Of Agriculture & Farmers Welfare through respective State Governments.

The comments may be sent on email ID cr.lohi@nic.in or Pradeep.chopra@nic.in on or before **18.02.2019**.

C.R. Lohi
Deputy Commissioner (M&T)

SUPER STRAW MANAGEMENT SYSTEM (SMS) TO BE ATTACHED WITH COMBINE HARVESTER

S.No.	Component	Final specifications	Comments
	Rotor		
1.	Rotor diameter, mm	165-170	
2.	No. of lugs on rotor in a row	6	
3.	No. of rows in periphery	4	
4.	Length of pivotal flail, mm	170-180	
5.	Width of flail, mm	50±1	
6.	Thickness of flail, mm	5.0 (Min.)	
7.	No. of flails in one set	2	
8.	Spacing between flails of one set, mm	35 Max.	
9.	Distance between adjacent flail units, mm	205	
10.	No. of rows/bars of serrated blades	1	
11.	No. of serrated blades in a row	24	
12.	Spacing between serrated blades, mm	50	
13.	Overlapping of pivotal blade on serrated blade, mm	60 (adjustable)	
	Spreader		
14.	Spreader curved width, mm	Not required	
15.	Total no. of flaps	6 + 2 (side)	
16.	Length of flap, cm	47	
17.	Distance between flaps (left to right)	adjustable	
18.	Spreader angle with horizontal, degree	(To be reviewed by PAU)	
19.	Spreader angle with line of travel, degree	15° (Adjustable 15°-25°)	
20.	Spreader sheet thickness,	2.5-3.0 mm	
21.	SMS Sheet thickness, mm	5.0	
22.	Rotor balancing	should be dynamically	

		<i>balanced</i>	
23.	<i>Marking/labeling of machine</i>	<i>Labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Year of manufacturer, Serial number, Type, Size, required size of prime mover (kW,), Weight of the machine(Kgs)</i>	
24.	<i>Weight of the machine</i>		
25.	<i>workmanship</i>		

HAPPY SEEDER

S.No.	Component	Final specifications	Comments
1.	No. of tynes	9/10/11/12/13	
2.	Row to row distance (mm)	225 ±2 (Adjustable)	
3.	Type of furrow openers	Inverted T-type	
4.	Minimum Rotor drum diameter	700 mm	
5.	Rotor shaft diameter	135-145 mm	
6.	Rotor RPM	1400-1600 rpm at 540 rpm of tractor PTO	
7.	Types of blades	Flail, reversible straight, gamma type	
8.	Blade material (as per manufacturer declaration)	Boron Steel with Standard to be defined.	
9.	Diameter of ground wheel	550mm (minimum)	
10.	Blade overlapping above furrow openers	50-60 mm	
11.	Seed and fertilizer hoppers	Separate Hoppers (trapezoidal shape) for Fertilizer and Seeds with mechanism for feed rate control. The hoppers should be sufficiently covered to prevent the entry of water. The thickness of sheet should be ≥ 1.0 mm for mild steel and ≥ 0.63 for GI sheet	
12.	Working width, mm	1700 (min.)	
13.	Seed and fertilizer tubes	Without any sharp bend and should be transparent, thickness (minimum 2.5 mm)	
14.	Seed and Fertilizer metering mechanism	Components of fluted roller or plate type mechanism	
15.	Rotavator shield to prevent flying of mud & stone	Should be provided	
16.	<i>Safty</i>	Safety cover should be provided on all moving	

		parts	
17.	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Year of manufacturer, Serial number, Type, Size, (Number of rows x Row spacing (cm), Name of crops sown Recommend, required size of prime mover (kW), weight of the Machine,(kg)	
18.	Guard over propeller shaft	Should be provided	
19.	Literature	Operator manual, Service manual and Parts catalogue should be provided	
20.	Weight of the implement	--	

PADDY STRAW CHOPPER

Sr.no	Item	Final specifications	<i>Comments</i>
1.	Machine type	Tractor PTO driven, Trailed type	
2.	Working width, cm	180 (min.)	
3.	Speed of flail rotary, rpm	900-1000	
4.	No. of row of flails	4	
5.	No. of flails on each rows	6	
6.	Shape of the flail	Flat Bar type	
7.	Cylinder dia. of chopping mechanism, cm	Large cylinder – 80/57 Small cylinder- 40/25	
8.	No. of rows of serrated blades on chopping cylinder	Large cylinder – 14/10 Small cylinder- 6/6	
9.	No. of rows of serrated blades on inside the concave	Large cylinder- 2-3 Small cylinder - 1	
10.	No. of blades on each rows	17-22	
11.	<i>Marking/labeling of machine</i>	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Year of manufacturer, Serial number, Type, Size, required size of prime mover (kW)	

SHRUB MASTER

S.No.	Specification	Final Specification	Comments
1.	Length x Width (mm)	1219 to 1724	
2.	Cutting Height (mm)	20 to 100	
3.	Weight (Kg)	200 (Min.)	
4.	Blade material (as per manufacturer)	Boron (28MnCrB5) / High Carbon Steel	
5.	<i>Marking/labeling of machine</i>	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Year of manufacturer, Serial number, Type, Size, required size of prime mover (kW), Weight of the machinery	

Hydraulically Reversible MB Plough

S.No.	Specification	Requirement	Comments
1.	Number of Bottoms	One Two/Three/Four	
2.	Working width (mm)	600 minimum for two bottom/ 900 minimum for 3 bottom 250(min)	
4.	Under frame Clearance (adjustable)	700 mm minimum Or as per specifications Category I &II for tractor mounting	
5.	Inter body Clearance	700 mm (Min.) subject to Test Report of the respective model.	
6.	Reversing mechanism	Hydraulically/ Mechanically operated	
7.	Angle of Inclination of MB along the direction of travel (degree)	20 to 23	
8.a.	Thickness of Mould Board (mm)	8.0 (mini.	
b.	Hardness (HRC)	To be determined by NRFMTTI & SRFMTTI,	
9.a.	Plough Share thickness(mm)	12 (min.)	
b.	Hardness(HRC)	? To be determined by NRFMTTI & SRFMTTI,	
10.	Vertical Suction, mm	6 to 19	
11.	Horizontal suction, mm	3 to 20	

12	Mould board material (as per manufacturer)	Boron (30MnCrB5) steel/ High carbon steel	
13.	<i>Marking/labeling of machine</i>	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Year of manufacturer, Serial number, Type, Size, required size of prime mover (kW), Weight (kg)	
14	<i>Thickness of cutting edge (mm)</i>	0.5 to 2.0 and should be uniform	
15	<i>Joint Mechanism for share , Mould board and share bar</i>	Welding should not be there. Appropriate Bolts shall be used.	

Mulcher

Sr.No.	Item	Final specification	Comments
1.	Machine type	Tractor PTO driven, Mounted type	
2.	Working width, cm	150 (min.)	
3.	Speed of flail rotary, rpm	2000 (Min.) at standard PTO speed.	
4.	No. of row of flails	2-4	
5.	No. of flails on each rows	14-20	
6.	Shape of the flail	Inverted Gamma type	
7.	Cylinder dia. of chopping mechanism, cm	50 (min.)	
8.	No. of rows of serrated blades on chopping cylinder	To be deleted	
9.	No. of rows of serrated blades on inside the concave	2-3	
10.	No. of blades on each rows	17-21	
11.	<i>Marking/labeling of machine</i>	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Year of manufacturer, Serial number, Type, Size, required size of prime mover (kW), weight(Kg)	
12.	<i>Weight (kg.)</i>		

ZERO TILL SEED CUM FERTILIZER DRILL

S.No.	Specification	Final specifications	Comments
1.	No. of tynes	<i>9/11/13</i>	
2.	Row to row distance	<i>150 to 225 mm (adjustable preferably in steps of 25 mm)</i>	
3.	Type of furrow openers	<i>Inverted T-type</i>	
4.	Minimum diameter of ground wheel	<i>300mm</i>	
5.	Seed and fertilizer hoppers	<i>Separate Hoppers (trapezoidal shape) for Fertilizer and Seeds with mechanism for feed rate control. The hoppers should be sufficiently covered to prevent the entry of water. The thickness of sheet should be ≥ 1.0 mm for mild steel and ≥ 0.63 for GI sheet</i>	
6.	Working width, mm	<i>1500 (min)</i>	
7.	Seed and fertilizer tubes	<i>Without any sharp bend and should be transparent, thickness (minimum 2.5 mm)</i>	
8.	Seed and Fertilizer metering mechanism	<i>Components of fluted roller or plate type mechanism</i>	
9.	Total weight of the machine (kg)	--	

10.	Marking/labeling of machine	<i>The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Year of manufacturer, Serial number, Type, Size, (Number of rows x Row spacing (cm), Name of crops sown Recommend, required size of prime mover (kW), Weight(kg)</i>	
11.	Literature	<i>Operator manual, Service manual and Parts catalogue should be provided</i>	

ROTAVATOR

S.No.	Specification	Final Requirement	Comments
1.	Working width (mm)	1200 (Min.)	
2.	Type of blade	C shape with 20±5 mm overlap of blades and for L/ J shape as per demand	
3.	Thickness of blade (mm)	7-8 (min.)	
4.	No. of Blades	Minimum of 30 (Depending on sizes)	
5.	Distance between consecutive flanges(mm)	To be deleted (depending upon type and shape of blade, No of flanges 7 overlapping of blade)	
6.	Total number of flanges	5 (Min.)depending on size	
7.	Number of blades per flange	6 (max.)	
8.	Diameter of rotor shaft (mm)	75 - 85 & 85-90	
9.	Rotor diameter (including flange and blade mounted on flange, mm)	425 (Min.)subject to Test Report.	
10.	Side Drive	Gear drive	
11.	Depth control mechanism	Arc shaped skid on both side of Rotavator	
12.	Material of blades (as per manufacturer declaration)	Boron (28MnCrB5) / High Carbon Steel	
13.	Safety clutch/device(Shear bolt) in PTO drive shaft	Should be provided	
14.	Rotavator stand	Should be provided	
15.	Guard over	Should be provided	

	propeller shaft		
16.	Total weight of the machine (kg)	--	
17.	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Year of manufacturer, Serial number, Type, Size, required size of prime mover (kW)	
18.	Literature	Operator manual, Service manual and Parts catalogue should be provided	
19.	Sheet metal	Reference IS for content of primary elements in different category of Sheet metal to be defined by CFMTTI, NRFMTTI & AMMA	
20.	Gear used in Transmission gear bosnad side gears	Reference IS for content of primary elements in different category of Sheet metal to be defined by CFMTTI, NRFMTTI & AMMA & TMA	

Cultivator

Sr.No.	Parameter	<i>Final Specification</i>	<i>Comments</i>
1.	Type	<i>Rigid or Spring loaded</i>	
2.	Power Source (HP)	<i>35 or above Tractor</i>	
3.	Hitch Type	<i>Three Point linkage, CAT-I/CAT-II</i>	
4.	Number of tine	<i>7,9,11 or 13</i>	
5.	Working width (meter)	<i>1.05 to 1.75 for 7 tine 1.35 to 2.25 for 9 tine 1.65 to 2.75 for 11 tine 1.95 to 3.25 for 13 tine</i>	
6.	Row to row spacing between tine, mm	<i>Adjustable /fixed 150 to 250, preferably 25</i>	
7.	Frame	<i>Shall be Rigid and strong</i>	
8.	Type of working tool	<i>Reversible shovel, Sweep and Triangular shovel</i>	
9. a.	Material of tyne	<i>High Carbon steel</i>	
b.	Material of shovel	<i>High carbon steel</i>	
10.	Hardness of shovel and sweep, HB	<i>350 to 450</i>	
11.	Working depth, mm	<i>80 minimum</i>	
12.	Center to center distance tool bar, mm	<i>Shall be 450 as per IS :6638(to be verified by CFMTTI, Budni)</i>	
13.	Diameter of spring, mm	<i>8 minimum if applicable</i>	
14.	Total length of spring, mm	<i>300 minimum if applicable</i>	
15.	Spring Index	<i>4 to 5 if applicable</i>	
16.	Number of coil	<i>27 or 28 if applicable</i>	
17.	Marking/labeling of machine	<i>The labelling plate should be riveted on the body of machine having Name and</i>	

		Address of manufacture, Country of origin, Make, Model, Year of manufacture, Serial number, Type, Size, required size of prime mover (kW)	
	Performance:		
1.	Area—covered (ha/h)	0.50 minimum	
2.	Average—field efficiency, %	Minimum 80	

Disc Harrow

Sr.no.	Parameter	<i>Final Specification</i>	<i>Comments</i>
1.	Number of disc in each gang	Minimum four	
2.	Power Source (HP)	35 or above Tractor	
3.	Hitch Type	Three Point linkage, CAT-I/CAT-II	
4.	Working Depth (mm)	80 minimum	
5.	Type of Disc	Plain or notched	
6.	Diameter of Disc, mm	455 to 660	
7.	Gang angle, (°)	Up to 24	
8.	Bevel angle, (°)	30 or 40	
9.	Length of spool, (mm)	175 or 225±2	
10.	Hardness of Disc, HRC	38 to 45	
11.	Thickness of beveled edge, (mm)	0.5 to1.5	
12.	Width of beveled edge, (mm)	22 (max)	
13.	Thickness of Disc, (mm)	4.0 minimum	
14.	Type of center hole	Square	
15.	Concavity	82.5±5	
16.	Scraper	Should be provided	
17.	Material of Disc	High Carbon steel/ Boron steel	
18.	Weight, (Kg)	-	
19.	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and Address of manufacture, Country of origin, Make, Model, Year of manufacture, Serial number, Type, Size, required size of prime mover (kW), Weight (Kg)	

	Performance:		
1.	Area covered (ha/h)	<i>To be deleted</i>	
2.	Average field efficiency, %	<i>To be deleted</i>	

MOULD BOARD PLOUGHS

Sr.No.	Parameter	<i>Final Specifications</i>	Comments
1.	Number of bottoms	<i>Two/Three/four/five(Subject to availability of Test Reports for 4 & 5 bottoms)</i>	
2.	Power Source (HP)	<i>35 or above Tractor</i>	
3.	Hitch Type	<i>Three Point linkage, CAT-I/CAT-II</i>	
4.	Working Width (mm)	<i>500 minimum for Two bottom /850 minimum for three bottom</i>	
5.	Working Depth (mm)	<i>To be deleted.</i>	
6.	Mould board material	<i>Boron(30MnCrB5)/ High Carbon Steel</i>	
	Hardness, HRC	<i>CFMTTI may indicate the hardness from the relevant test code</i>	
7.	Vertical suction (mm)	<i>6 to 19</i>	
8.	Horizontal suction (mm)	<i>3 to 20</i>	
9.	Thickness of Cutting edge, (mm)	<i>0.5 to 2 and should be uniform</i>	
10.	Length of Mould Board, (mm)	<i>To be deleted</i>	
11.	Width of Mould Board, (mm)	<i>300 (Min.)</i>	
12.	Thickness of Mould Board, (mm)	<i>8 (Min.)</i>	
13.	Weight, Kg	—	
13.	Marking/labeling of machine	<i>The labelling plate should be riveted on the body of machine having Name and Address of manufacture, Country of origin, Make, Model, Year of manufacture, Serial number, Type, Size, required size of prime mover (kW), weight (Kg)</i>	

DISC PLOUGHS

Sr.no.	Parameter	Specification	Comments
1.	Number of bottoms	Two/Three	
2.	Power Source (HP)	35 or above Tractor	
3.	Hitch Type	Three Point linkage, CAT-I/CAT-II	
4.	Working Width (mm)	600 minimum for Two bottom /850 minimum for three bottom	
5.	Working Depth (mm)	180 (Min.)	
6.	Type of Disc	Plain or notched	
7.	Diameter of Disc, mm	610 to 810	
8.	Disc angle,(°)	42±3	
9.	Tilt angle,(°)	15 to 25	
10.	Hardness of Disc, HRC	38 to 45	
11.	Thickness of beveled edge, (mm)	0.5 to1.5	
12.	Length of beveled edge, (mm)	22 (max)	
13.a.	Thickness of Disc, (mm)	5.0 (Min.)	
b.	Material of disc	To be determined by NRFMTTI/CFMTTI/AMMA/TMA	
14.	Type of center hole	Square	
15.	Concavity	100±6.5	
16.	Marking/labeling of machine	The labelling plate should be riveted on the body of machine having Name and Address of manufacture, Country of origin, Make, Model, Year of manufacture, Serial number, Type, Size, required size of prime mover (kW), Weight, (kg)	

Straw Reaper

Sr. No.	Component/Parameter	Specification	Comments
1.	Towing hook type	Clevis/Circular	
2.	Power input shaft connection to tractor PTO	Propeller shaft with universal joint	
3.	Cutting width	1500 to 2500 mm	
4.	Speed of chopping cylinder, rpm	800 to 1000	
5.	Chopping cylinder dia. mm	700 to 900	
6.	Power requirement	45 to 60 Hp tractor	
7.	PTO drive shaft - Safety against overload - Guard on shaft	Compliant with BIS code Should be provided Should be provided	
8.	Safety cover on all drive	Must be provided.	
9.	Chopping cylinder blade	Serrated	
	Material of blade	High carbon steel.	
10.	Provision for concave clearance adjustment	Must be provided	
11.	Provision for grain recovery	Should be provided	
12.	Reel type	Pick up tyne	
13.	Diameter of tyne bar	20 mm (Min)	
14.	Arrangement for forward & backward movement of reel	To be provided.	
15.	Labeling of lubricating points	To be provided.	
16.	Literature	Operator manual, service manual & parts catalogue should be provided	
17.	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having name & address of manufacturer, country of origin, make, model, year of manufacture, serial number, size, required size of	

		prime mover (kW/Hp)	
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SEED CUM FERTILIZER DRILL

Sr.No.	Parameter	Specification	Comments
1.	Size/Working width (mm)	No. of furrow openers × spacing between adjacent furrow openers	
2.	Type of furrow opener	Shovel (Single point/ reversible shovel/ spear point)/ shoe type/ disc type (flat/concave disc)	
3.	Number of furrow openers	3-21	
4.	Row spacing (mm)	Adjustable/Step/step less 150 to 300 mm in steps of 25 mm/	
5.	Type of seed metering mechanism	Fluted roller/Plate type	
6.	Type of fertilizer metering mechanism	Fluted roller/Plate type	
7.	Diameter of ground wheel	Min. 300 mm	
8.	Seed/fertilizer hopper sheet thickness	Min. 1.0 mm for MS & Min. 0.63 for GI	
9.	Thickness of seed/fertilizer tubes	Min. 2.5 mm (transparent plastic tubes)	
10.	Material of furrow opener	High Carbon Steel – C75 /Boron Steel /	
11.	Hardness of furrow openers	350 to 450 HB	
12.	Provision for adjusting the row spacing	Provided	
13.	Provision for adjusting depth of seed and fertilizer	Provided	
14.	Provision for adjusting the seed/fertilizer rate	Provided	

15.	Provision of transparent seed/fertilizer tubes	Provided	
16.	Provision of foot board	Provided	
17.	Provision of covering device / press wheel	Provided	
18.	Provision of row marker	<i>Should be provided</i>	
19.	Provision of metallic calibration plate	Provided	
20.	Provision of printed literature	Operator manual, Parts catalogue and Service/Workshop manual	
21.	The variation in dropping of seeds and fertilizers	Shall not be more than 7.0 and 12.5 percent for seed and fertilizer respectively from average value	
22.	The variation in dropping of quantity of seeds and fertilizers per hectare	Shall not be more than 7.0 and 12.5 percent for seed and fertilizer respectively from specified value	
23.	Seed and fertilizer rate adjustment	Max. 125 kg/ha and 1000 kg/ha for seed and fertilizer respectively	
24.	Visible damage to seed	Should not be more than 0.5%	
25.	The variation in dropping at various rated capacity	Should not be more than 10.0%	
26.	The variation in quantity of seed dropping due to change in speed	Should not be more than 15.0%	
27.	The variation in quantity of seed per meter of row length	Should not be more than 10.0%	
28.	Placement of seed and fertilizer	Seed upto 100 mm depth and fertilizer at 25 mm (min.) to the side of seed	
29.	Draft of animal drawn drill	125 kg (max.)	
30.	Weight of tractor drawn seed-cum-fertilizer drill	31 kg/kW of drawbar power of tractor (Max)	

31.	Wheel slip at specified speed	Should not be more than 15.0%	
32. Material of construction, (mm):			
33.	-MS angle iron (W X W X T)	To be recorded for assessment of quality of material used	
34.	-MS channel (U) (W X H x T)	To be recorded for assessment of quality of material used	
35.	-MS flat (W X T)	To be recorded for assessment of quality of material used	
36.	-MS sheet/GI sheet (T)	To be recorded for assessment of quality of material used	
37.	-MS pipe/GI pipe (OD/ID)	To be recorded for assessment of quality of material used	
38.	-MS sq. section hollow (W X H X T)	To be recorded for assessment of quality of material used	
39.	-Any other	To be recorded for assessment of quality of material used	
40.	Length		
41.	Width		
42.	Height		
43.	Mass, (kg)		
44.	Name and address of distributor/dealer/suppliers, (if other than manufacturer)		
45. Marking/labeling of machine (The labeling plate should be riveted on the body of machine):			
46. Name & Address of Manufacturer			
47.	Make		
48.	Model		
49.	Size/working width, (mm)		
50.	Country of origin		
51.	Year of manufacturer	<i>MM/YYYY</i>	
52.	Chassis Serial Number	<i>Engraved/emboss</i>	
53.	Recommended PTO speed of prime-		

	mover, (rpm)		
54.	Maximum PTO Power required, kW		

STRIP TILL DRILL (Tractor Operated)

Sr.no.	Parameter	Specification	Comments
1.	Type	Rotary	
2.	Size (mm)	Working width	
3.	No. of blades/shovels/discs/coulters, etc.	As per size and spacing	
4.	Type of drive	Gear/Chain drive	
5.	Seeding attachment (As per IS: 6813):		
6.	Size/Working width (mm)	No. of furrow openers × spacing between adjacent furrow openers	
7.	Type of furrow opener	Shovel (Single point/ reversible shovel/ spear point)/ shoe type/ disc type (flat/concave disc)	
8.	Number of furrow openers	3/5/7/9/11/13	
9.	Row spacing (mm)	Adjustable/Step/step less 150 to 300 mm	
10	Type of seed metering mechanism	Fluted roller/Plate type	
11	Type of fertilizer metering mechanism	Fluted roller/Plate type	
12	Diameter of ground wheel	Min. 300 mm	
13	Seed/fertilizer hopper sheet thickness	Min. 1.0 mm for MS & Min. 0.63 for GI	
14	Thickness of seed/fertilizer tubes	Min. 2.5 mm (transparent plastic tubes)	
15	Material of furrow opener	Boron/ High Carbon Steel	
16	Hardness of furrow openers	350 to 450 HB	
17	Provision of safety clutch/ device (shear bolt) in PTO drive shaft	Provided	
18	Provision of rotavator shield to prevent flying of mud & stone	Provided	
19	Guard over propeller shaft	Provided	
20	Provision for adjusting the row spacing	Provided	

21	Provision for adjusting depth of seed and fertilizer	Provided	
22	Provision for adjusting the seed/fertilizer rate	Provided	
23	Provision of transparent seed/fertilizer tubes	Provided	
24	Provision of foot board	Provided	
25	Provision of covering device / press wheel	Provided	
26	Provision of row marker	Provided	
27	Provision for area recorder	Provided	
28	Provision of metallic calibration plate	Provided	
29	Provision of printed literature	Operator manual, Parts catalogue and Service/Workshop manual	
30 Performance requirements(As per IS: 6813):			
31	Tilling depth (cm)	Min. 8.0 cm(As per draft test code/MPS)	
32	The variation in dropping of seeds and fertilizers	Shall not be more than 7.0 and 12.5 percent for seed and fertilizer respectively from average value	
33	The variation in dropping of quantity of seeds and fertilizers per hectare	Shall not be more than 7.0 and 12.5 percent for seed and fertilizer respectively from specified value	
34	Seed and fertilizer rate adjustment	Max. 125 kg/ha and 1000 kg/ha for seed and fertilizer respectively	
35	Visible damage to seed	Should not be more than 0.5%	
36	The variation in dropping at various rated capacity	Should not be more than 10.0%	
37	The variation in quantity of seed dropping due to change in speed	Should not be more than 15.0%	
38	The variation in quantity of seed per meter of row length	Should not be more than 10.0%	
39	Placement of seed and fertilizer	Seed upto 100 mm depth and fertilizer at 25 mm (min.) to the side of seed	

40	Wheel slip at specified speed	Should not be more than 15.0%	
41 Material of construction, (mm):			
42	-MS angle iron (W X W X T)	To be recorded for assessment of quality of material used	
43	-MS channel (U) (W X H x T)	To be recorded for assessment of quality of material used	
44	-MS flat (W X T)	To be recorded for assessment of quality of material used	
45	-MS sheet/GI sheet (T)	To be recorded for assessment of quality of material used	
46	-MS pipe/GI pipe (OD/ID)	To be recorded for assessment of quality of material used	
47	-MS sq. section hollow (W X H X T)	To be recorded for assessment of quality of material used	
48	-Any other	To be recorded for assessment of quality of material used	
49 Overall dimensions, (mm):			
50	Length		
51	Width		
52	Height		
53	Mass, (kg)		
54	Name and address of distributor/dealer/suppliers, (if other than manufacturer)		
55 Marking/labeling of machine (The labeling plate should be riveted on the body of machine):			
56 Name & Address of Manufacturer			
57	Make		
58	Model		
59	Size/working width, (mm)		
60	Country of origin		
61	Year of manufacturer	MM/YY	
62	Chassis Serial Number		

63	Recommended PTO speed of prime-mover, (rpm)		
64	Maximum PTO Power required, kW	kW/hp	

Laser land leveler

Sr. No.	Component/Parameter	Specification	comments
1.	Machine type	Tractor operated	
2.	Power requirement	45 to 60 Hp tractor	
3.	Working width	1.5 to 2.5 m	
4.	Material of blade	High carbon steel	
5.	Provision for adjusting tilt angle of blade	To be provided.	
6.	AC-DC charging adopter for battery	To be provided.	
7.	Accessories	Tripod, survey scale survey receiver, battery charger.	
8.	Beveling at cutting blade	Minimum 10 mm, thickness Max.2mm	
9.	Max. specified in-accuracy of transmitter as per printed literature	1.5 mm @ 30m.	
10.	Working range diameter of transmitter as per printed literature	Minimum 800 meter.	
11.	Workmanship	All component should be free from pits, burrs and other defects	
12.	Literature	Operator manual, service manual & parts catalogue should be provided	
13.	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having name & address of manufacturer, country of origin, make, model, year of manufacture, serial number, size, required size of prime mover kW/hp	

Subsoiler

S.N.	Parameter	Specification	Comments
1	Type	Tractor mounted	
2	Power source	Tractor of 35 HP and above	
3	Hitch type	Three point, CAT-I/CAT-II	
4	Hitch dimension	As per IS 4468: 1997, Part-I (Reaffirmed 2012)	
5	Material of main frame	Mild steel	
6	Bevelled length at cutting edge of share (mm)	10.0 Max.	
7	Thickness of cutting edge (mm)	0.5 to 2.0	
8	Reversibility of share	Should be provided	
9	Material of share	Carbon steel/High carbon steel or any higher grade as per Manufacturer's declaration	
10	Provision to change the angle of share	Should be provided	
11	Provision for parking stand	Should be provided	
12	Marking/labelling of machine	The labelling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin , Make, Model, Year of manufacturer, Serial number, Recommended tractor hp	
13	Literature	Operator manual, Service manual and Parts catalogue should be provided.	

Portable Engine Operated Sprayer

Sr. No.	Component/Parameter	Specification	Comments
1.	Tank capacity	--	
2.	Discharge (ml/min)	Should be min. 8000 ml/min at rated speed and rated pressure	
3.	Pressure regulator	Should be provided	
4.	Horizontal thrown up jet spray	Should be Min. 6 m.	
5.	Mass of spray gun	Should be less than 1.6 Kg.	
6.	Spray gun marking	Manufacturer name or recognized trade mark, & batch or code number As per BIS code	
7.	Marking of nozzle	Manufacture Name/Trade name, Batch or Code number, Nozzle designation must be provided. As per BIS code	
8.	Pressure gauge	Must be provided	
9.	Safety accessories	Mask, hand gloves and safety goggles, Apron must be provided	
10.	Literature	Operator manual, service manual & parts catalogue should be provided, One day training	
11.	Necessary tools & spares	Spanners, set of gasket, measuring jar should be provided	
12.	Marking/labeling of sprayer	Should be riveted on the body of sprayer having name & address of manufacturer, month & Year of manufacture, Rated speed, Rated pressure, discharge rate, power rating of engine, SFC of engine.	

POTATO PLANTER

Sr.no	parameter	Specification	Comments
1.	Type	Semi-automatic/Automatic	
2.	Specifications		
3.	Size/Working width (mm)	No. of furrow openers × spacing between adjacent furrow openers	
4.	Type of furrow opener	Ridger type with adjustable wings	
5.	Number of furrow openers	2/3/4/5	
6.	Type of seed metering mechanism	Horizontal revolving ring (Semi-automatic); Belt with cups/ Picker wheel type (Automatic)	
7.	Row spacing (mm)	Adjustable, 560 to 900 for semi-Automatic 550 to 650 for picker wheel type automatic and 610 to 710 for Belt with cups type automatic	
8.	No. of rows of cups per belt/ No. of picking spoons per picker wheel for automatic type	(Min)/belt	
9.	Diameter of ground wheel (mm)	Adjustable, 300 to 650(CIAE directory)	
10.	Seed hopper sheet thickness	Min. 1.0 mm for Mild Steel & Min. 0.63 for Galvanized steel (IS: 6813)	
11.	Material of furrow opener	High Carbon Steel – C75 (IS: 11893) or Higher	
12.	Type of power transmission	Sprocket and chain/belt and pulley/gear type with proper guards.	
13.	Provision for fertilizer placement	Provided	
14.	Provision for changing ridge spacing	Provided	
15.	Provision for adjusting	Provided	

	the row spacing		
16.	Provision for changing plant spacing	Provided	
17.	Provision for adjusting depth of seed	Provided	
18.	Provision for adjusting the seed rate	Provided	
19.	Provision of foot rest	Provided	
20.	Provision of covering device	Provided	
21.	Provision of row marker	Provided/ Optional	
22.	Provision for area recorder	Provided/optional	
23.	Provision of printed literature	Operator manual, Parts catalogue and Service/Workshop manual	
24.	Performance requirements (As per IS: 11893):		
25.	The variation in number of seed tubers per meter of row length	Shall not be more than 10%	
26.	Material of construction, (mm):		
27.	-MS angle iron (W X W X T)	To be recorded for assessment of quality of material used	
28.	-MS channel (U) (W X H x T)	To be recorded for assessment of quality of material used	
29.	-MS flat (W X T)	To be recorded for assessment of quality of material used	
30.	-MS sheet/GI sheet (T)	To be recorded for assessment of quality of material used	
31.	-MS pipe/GI pipe (OD/ID)	To be recorded for assessment of quality of material used	
32.	-MS sq. section hollow (W X H X T)	To be recorded for assessment of quality of material used	
33.	-Any other	To be recorded for assessment of quality of material used	
34.	Overall dimensions, (mm):		
35.	Length		
36.	Width		
37.	Height		
38.	Mass, (kg)		

39.	Name and address of distributor/dealer/suppliers, (if other than manufacturer)		
40.	Marking/labeling of machine (The labeling plate should be riveted on the body of machine):		
41.	Name & Address of Manufacturer		
42.	Make		
43.	Model		
44.	Size/working width, (mm)		
45.	Country of origin		
46.	Year of manufacturer	MM/YYYY	
47.	Chassis Serial Number		
48.	Maximum PTO Power required, kW		

Tractor operated Aero Blast sprayer

Sr. No.	Parameter	Specification	Comments
1.	Tank capacity	Should not be less than 100 Lit.	
2.	Pressure regulator	Must be provided	
3.	Pressure gauge with pressure dampener	Must be provided	
4.	Discharge rate	Min. 8000 ml/min at rated speed and rated pressure	
5.	Strainer at filling hole	Must be provided	
6.	Nozzle designation and marking	Designation, manufacturer's name or recognised trade mark & batch or code number should be marked	
7.	Safety wear	Mask, hand gloves and goggles, must be provided, Apron	
8.	Provision of drain plug in the tank	Should be provided	
9.	P.T.O. drive shaft - Safety against overload - Guard on shaft	Should be provided Should be provided	
10.	Guard on belt pulley drive	Should be provided	
11.	Labeling plate of sprayer	Metallic labeling plate should be riveted with following information Manufactures name, make, model serial number, month & year of manufacture, rated speed, rated pressure and recommended tractor horse power	
12.	Literature	Operator manual, service manual & parts catalogue should be provided	
	Training to the operator		

Manually Operated Knapsack Sprayer

Sr. No.	Parameter	Specification	Comments
1.	Tank capacity	10, 13 or 16 liters with tolerance of ± 0.5 liter.	
2.	Straps	Strep length 800 mm (min) & width 38 mm (min.)	
3.	Pump discharge	> 500 ml/minat 300 kPa pressure	
4.	Tank filling hole dia.	90 mm (min)	
5.	Tank material	Brass, plastic or stainless steel	
6.	Lid or cap material	Brass, plastic , stainless steel	
7.	Strainer at filling hole & at cut off device	Must be provided	
8.	Empty mass of sprayer	8 Kg. (Max.)	
9.	Delivery hose length	110 cm (Preferably)	
10.	Cushion on strap	Thickness 20 mm (min) and width 40 mm (min.)	
11.	Back rest cushion	Must be provided	
12.	Spray lance marking	Manufacturer name or recognized trade mark, nominal length & batch or code number	
13.	Safety accessories	Mask, hand gloves and safety goggles, must be provided Apron	
14.	Marking of nozzle	Manufacture Name/Trade name, Batch or Code number, Nozzle designation must be provided. As per BIS	
15.	Spray lance construction	Should be seamless	
16.	Literature	Operator manual, service manual & parts catalogue should be provided	
17.	Making/labeling of sprayer	The labeling plate should be provided on the body of sprayer having name & address of manufacturer, month & year of manufacture, rated pressure,	

		discharge rate, country of origin.	
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Tractor Operated Boom Sprayer

Sr. No.	Parameter	Specification	Comments
1.	Tank capacity	Should not be less than 100 Lit.	
2.	Provisin for folding of boom	Must be provided	
3.	Pressure regulator	Must be provided	
4.	Pressure gauge with pressure dampener	Must be provided	
5.	Discharge rate	Min 8000 ml/min. at rated speed and rated pressure	
6.	Strainer at filling hole	Must be provided	
7.	Spray gun designation and marking	Designation,manufacturers name or recognised trade mark & batch or code number should be marked	
8.	Length of spray gun	Shouldnot be less than 500 mm	
9.	Nozzle designation and marking	Designation,manufacturers name or recognised trade mark & batch or code number should be marked	
10.	Mass of spray gun	Should be less than 1.6 Kg	
11.	Provision of drain plug in the tank	Should be provided	
12.	P.T.O. drive shaft - Safety against overload - Guard on shaft	Should be provided Should be provided	
13.	Guard on belt pulley drive	Should be provided	
14.	Safety wear	Mask, hand gloves and goggles must be provided	
15.	Labeling plate of sprayer	Metallic labeling plate should be riveted with following information Manufactures name, make,model serial number, month & year of manufacture, rated speed, rated pressure and recommended tractor horse power	

16.	Literature	Operator manual, service manual & parts catalogue should be provided	
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Dal Mill

Sr.No.	Parameter	Specification	Comments
1.	Capacity	100 kg/hr minimum	
2.	Input	Pre conditioned whole raw pulses	
3.	Output	Dehusked pulses, split pulses, broken & husk	
4.	Grades	To separate whole dehusked pulses, split & broken.	
5.	Husk separation	Husk separation through aspirator assembly	
6.	Oil can	Oil can provided for oil treatment during dal processing.	
7.	Cautionary notice	Should be provided	
8.	Marking/labeling of machine	The labelling plate should be riveted on the body of machine having Name and Address of manufacture, Country of origin, Make, Model, Year of manufacture, Serial number, Type, required size of prime mover (kW)	

Rice Mill

Sr.no.	Parameter	Specification	Comments
1.	Capacity of mini rice mill, kg of paddy per hr	750 minimum	
2.	Sheet thickness used for construction of various part, mm	0.7 minimum	
3.	Roller Hardness of polisher, HRC	40 minimum	
4.	Hopper sheet thickness of polisher , mm	0.5 minimum	
5.	Cautionary notice	Should be provided	
6.	Marking/labeling of machine	The labelling plate should be riveted on the body of machine having Name and Address of manufacture, Country of origin, Make, Model, Year of manufacture, Serial number, Type, required size of prime mover (kW)	

Potato Digger

Sr.No.	Parameter	Specifications	Comments
1.	Size, (mm)	Working width of blade/plate	
2.	Type of digging blade	V type edge/Trapezoidal plate type	
3.	Thickness of blade/plate (mm)	Min. 8 mm (to be decided)	
4.	Number of gauge wheels	2	
5.	Length of elevator/conveyor chain (mm)	1500 to 2500	
6.	Material and diameter of rod for conveyor chain(mm)	MS and 13 (Min.)	
7.	Spacing between conveyor rods (mm)	25 (Min.)	
8.	Angle of inclination of elevator with horizontal (deg.)	18 to 20 (Adjustable)	
9.	Provision of safety clutch/ device (shear bolt) in PTO drive shaft	Provided	
10	Guard over propeller shaft	Provided	
11	Provision of guards over transmission for safety	Provided	
12	Provision for transportation	Provided	
13	Provision for varying depth of cut	Provided	
14	Provision of printed literature	Operator manual, Parts catalogue and Service/Workshop manual	
Material of construction			
15	-MS angle iron (W X W X T)	To be recorded for assessment of quality of material used	
16	-MS channel (U) (W X H x T)	To be recorded for assessment of quality of material used	

17	-MS flat (W X T)	To be recorded for assessment of quality of material used	
18	-MS sheet/GI sheet (T)	To be recorded for assessment of quality of material used	
19	-MS pipe/GI pipe (OD/ID)	To be recorded for assessment of quality of material used	
20	-MS sq. section hollow (W X H X T)	To be recorded for assessment of quality of material used	
21	-Any other	To be recorded for assessment of quality of material used	
Overall dimensions, (mm):			
22	Length		
23	Width		
24	Height		
25	Mass, (kg)		
26	Name and address of distributor/dealer/suppliers, (if other than manufacturer)		
Marking/labeling of machine (The labeling plate should be riveted on the body of machine):			
27	Make		
28	Model		
29	Size/working width, (mm)		
30	Country of origin		
31	Year of manufacturer	MM/YYYY	
32	Chassis Serial Number		
33	Recommended PTO speed of prime-mover, (rpm)		
34	Maximum PTO Power required, kW		

Hay Rake

Sr. No.	Parameter	Specification	<i>Comments</i>
1.	Type	Wheel rake/rotary rake/ <i>Side delivery rake</i>	
2.	Working width	1.0 m (min.)	
3	Power requirement	25 to 45 Hp tractor	
3.	Hitching system	Three point linkage/draw bar hook <i>Cat II</i>	
4.	Swathing mechanism	Rake wheels/tyne arm	
5.	Dia. of tines	6 mm (min.)	
6.	Literature	Operator manual, service manual & parts catalogue should be provided	
7.	Marking/labeling	The labeling plate should be riveted on the body of machine having name & address of manufacturer, country of origin, make, model, year of manufacture, serial number, size, required size of prime mover <i>kW/hp</i>	

Multicrop Thresher

Sr.no	Parameter	Specifications	Comments
1.	Type	Tractor/Power tiller/Engine/Electric motor operated	
2.	Type of crop feeding	Chute-fed,/ conveyor –fed/feed roller-fed/ hopper-fed	
3.	Type of threshing drum/cylinder	Hammer mill/ Rasp bar/ Spike tooth/ Syndicator	
4.	Suitability of crop	Cereals/Maize/Paddy/Soybean/ Ground nut, etc. / Multi-crop (Min 2 crops)	
5.	Size of threshing drum/cylinder (mm)	Width × diameter	
6.	Total length of feeding chute and covered portion (mm)	900 (min) and 450 (min) (IS: 9020)	
7.	Material and thickness of feeding chute/hopper (mm)	MS sheet and 1.6 (min) (IS: 9020)	
8.	Number of hammers/beaters/rasp bars/spikes/chopping knives	Depending on the size of drum	
9.	Number of sieves	Min. 2	
10.	Dimension of sieves/size of apertures or holes:	Thickness of sieve 1.0 mm (Min.)	
11.	Number of blower/aspirator	Min. 1	
12.	Concave clearance (mm) :	15 mm (Min.) and adjustable	
13.	Recommended threshing cylinder speed (rpm)	To be declared by the manufacturer	
14.	Recommended blower speed (rpm)	To be declared by the manufacturer	
15.	Provision of adjusting concave clearance	Provided/ Not provided	
16.	Provision of	Provided/ Not provided	

	changing cylinder/drum speed		
17.	Provision of changing blower speed	Provided	
18.	Provision of changing air-flow rate	Provided	
19.	Provision of changing shaker unit speed	Provided	
20.	Provision of changing sieve inclination	Provided	
21.	Provision of easy replacement of sieves	Provided	
22.	Guards against all moving parts/drives	Provided	
23.	Guard over propeller shaft (if applicable)	Provided	
24.	Protection against entry of dust in bearings	Provided	
25.	Provision of stand for storage/parking	Provided	
26.	Provision for transportation of thresher	Provided	
27.	Provision of label/plate containing cautionary notices in vernacular languages and their pictorial representation as per Indian Standard	Provided	
28.	Provision of printed literature	Operator manual, Parts catalogue and Service/Workshop manual	
Marking/labeling of machine (The labeling plate should be riveted on the body of machine):			
29.	Name & Address of Manufacturer		
30.	Make		
31.	Model		

32.	Size/working width, (mm)		
33.	Country of origin		
34.	Year of manufacturer	MM/YYYY	
35.	Chassis/ Serial Number		
36.	Recommended speed of threshing cylinder (rpm)		
37.	Direction of rotation of threshing cylinder	Clockwise/anti-clockwise	
38.	Recommended power of prime mover (kW)		

BRUSH CUTTER

S.N.	Parameter	Specification	Final remarks during the meeting
1	Type	Self-propelled, portable	
2	Type of cutting attachment	Circular disc/Straight blade/nylon rope	
3	Circular blade		
	Material of circular/straight blade	Alloy steel	
	No. of teeth on circular disc blade	50-100	
	Root diameter/ Overall diameter (mm)	200-270	
	Thickness of disc (mm)	1.5 Min.	
	Teeth thickness (mm)	2.0 Min.	
4	Straight blade		
	Diameter of straight blade (mm)	250-350	
	Width at ends/at centre (mm)	50/70, Min.	
	Width of bevelled (mm)	2.5 -5.0	
	Thickness of straight blade (mm)	1.5 Min.	
5	Nylon rope		
	Length of nylon rope (mm)	2000-4000	
	Diameter of nylon rope (mm)	2.5 to 4.0	
6	Type of engine	Compression ignition/Spark ignition	
7	Starting method	Manual/recoil/self starting	
8	Type of clutch	Cone/centrifugal	
9	Type of gear drive	Bevel pinion	
10	Capacity of fuel tank (l)	1.0 Min.	
11	On off provision in fuel supply system	Should be provided	
12	Provision for easy start of engine	Should be provided	
13	Provision for emergency stop of engine	Should be provided	
14	Provision for shield/cover to prevent	Should be provided	

	flying of mud & stone from rotor		
15	Provision for Grass deflector at the rear of the cutting mechanism	Should be provided	
16	Provision for Pad with shoulder belt to dampen the vibration	Should be provided	
17	Provision for cover on exhaust.	Should be provided	
18	Direction of exhaust emission away from operator	Should be provided	
19	Provision for safety kit (helmet, ear plug, mask, hand gloves, safety glass, Protective cloth, safety shoes)	Should be provided	
20	Marking/labelling of machine	The labelling plate should be riveted on the body of machine having Name and address of manufacturer & Applicant, Country of origin , Make, Model, Year of manufacturer, Serial number, Engine number, Engine HP, rated rpm & SFC.	
21	Literature	Operator manual, Service manual and Parts catalogue should be provided.	

POWER WEEDER

S.N.	Parameter	Specification	Comments
1	Type	Self-propelled, walk behind	
2	Working width (mm)	300 – 1500 (As per demand)	
3	Type of engine	Compression ignition/Spark ignition	
4	Starting method	Manual/recoil/self starting	
5	Type of clutch	Dry/Wet	
6	Type of primary gear box	Sliding/constant mesh or combination of both	
7	Type of secondary gear box	Gear/chain & sprocket	
8	Material for rotor shaft	Carbon steel/High carbon steel or As per manufacturer/Applicant declaration	
9	No. of flanges	04 - 10	
10	Type of flanges	Square/circular/rectangular	
11	Distance between consecutive flanges(mm)	80 to 150 (depending upon type & shape of blade)	
12	No. of blades in each flange	03-06	
13	No. of rotor blade	12 Min.(Depending upon the size)	
14	Thickness of rotor blade (mm)	05 Min.	
15	Shape of rotor blade	C /J shape or as per demand	
16	Provision for handle height adjustment	Should be provided	
17	Provision for handle rotation	Should be provided	
18	Provision for emergency stop of engine	Should be provided	
19	Provision for easy start of engine	Should be provided	
20	Provision for shield/cover to prevent flying of mud & stone from rotor	Should be provided	
21	Depth control mechanism	Should be provided	
22	Provision for transport wheels	Should be provided	

23	Provision for cover on exhaust.	Should be provided	
24	Direction of exhaust emission away from operator	Should be provided	
25	Marking/labelling of machine	The labelling plate should be riveted on the body of machine having Name and address of manufacturer & Applicant, Country of origin , Make, Model, Year of manufacturer, Serial number, Engine number, Engine HP, rated rpm & SFC.	
26	Literature	Operator manual, Service manual and Parts catalogue should be provided.	

PNEUMATIC PLANTER

Sr.No	Parameter	Specification	Comments
1.	Size/Working width (mm)	No. of furrow openers × spacing between adjacent furrow openers	
2.	Type of furrow opener	As per design	
3.	Number of furrow openers (for seed and fertilizer each)	2-6	
4.	Row spacing (mm)	300 mm(Min)	
5.	Type of seed metering mechanism	Vacuum seed metering mechanism	
6.	Seed/fertilizer hopper sheet thickness	Min. 1.0 mm for MS, Min. 0.63 for GI (IS: 6813) and Min. 2.5 mm for FRP (to be decided)/Plastic	
7.	Thickness of seed/fertilizer tubes	Min. 2.5 mm (transparent plastic tubes) (IS: 6813)	
8.	Material of furrow opener	High Carbon Steel – C75 GI (IS: 6813)/ Boron steel 27 MnCrB 5, Ni_hard	
9.	Hardness of furrow openers	350 to 450 HB for shovel & shoe type (IS:6813) & 353 to 421 HB for Disc type (IS: 4366-Part -1)	
10.	Guard over propeller shaft	Provided	
11.	Provision for adjusting the row spacing	Provided	
12.	Provision for adjusting depth of seed/fertilizer	Provided	
13.	Provision for adjusting the seed/fertilizer rate	Provided	
14.	Provision of transparent seed/fertilizer tubes	Provided/Not provided	
15.	Provision of covering device / press wheel	Provided	

16.	Provision of row marker	Provided	
17.	Provision for area recorder	Provided/Not provided	
18.	Provision of metallic calibration plate/ Calibration Chart	Provided	
19.	Provision of printed literature	Operator manual, Parts catalogue and Service/Workshop manual	
Material of construction, (mm):			
20.	-MS angle iron (W X W X T)	To be recorded for assessment of quality of material used	
21.	-MS channel (U) (W X H x T)	To be recorded for assessment of quality of material used	
22.	-MS flat (W X T)	To be recorded for assessment of quality of material used	
23.	-MS sheet/GI sheet/FRP (T)	To be recorded for assessment of quality of material used	
24.	-MS pipe/GI pipe (OD/ID)	To be recorded for assessment of quality of material used	
25.	-MS sq. section hollow (W X H X T)	To be recorded for assessment of quality of material used	
26.	-Any other	To be recorded for assessment of quality of material used	
Overall dimensions, (mm):			
27.	Length		
28.	Width		
29.	Height		
30.	Mass, (kg)		
31.	Name and address of distributor/dealer/suppliers, (if other than manufacturer)		
32.	Marking/labeling of machine (The labeling plate should be riveted on the body of machine):		
33.	Make		
34.	Model		
35.	Size/working width, (mm)		
36.	Country of origin		

37.	Year of manufacturer	MM/YYYY	
38.	Chassis Serial Number		
39.	Recommended PTO speed of prime-mover, (rpm)		
40.	Maximum PTO Prime Mover Power required, kW/ hp	35 (Min.)	

RICE TRANSPLANTER

Sr.No	Parameter	Specification	Comments
1.	Type of machine	Manually operated walk behind/ self propelled walk behind/ self propelled ride-on type	
2.	Size/Working width (mm)	No. of rows × spacing between adjacent rows	
3.	Type of planting mechanism	Finger type for mat type nursery/ cup type for seedling cups	
4.	Specifications (As per test reports):		
5.	Number of rows	2,4,6,8	
6.	Row spacing (cm)	22/30 (Adjustable/Non-adjustable)	
7.	Average hill spacing (cm) (Adjustable/Non-adjustable)	12 to 25 (Adjustable)	
8.	Average depth of planting (cm)	3 to 8 (Adjustable)	
9.	Average number of plants per hill	2 to 6 (Adjustable/)	
10.	Type and number of floats	Wooden plank/metallic sheet/PVC sheet/hollow plastic and 1/3/5	
11.	Angle of mat sliding board, (degrees)	45 to 70 (Adjustable)	
12.	Material of planting fork/fingers/tweezers	Metallic	
13.	Provision for adjusting the row spacing	Provided/ Not provided	
14.	Provision for adjusting depth of planting	Provided	
15.	Provision for adjusting hill	Provided	

	spacing		
16.	Provision for adjusting no of plants per hill	Provided	
17.	Provision for area recorder	Provided/ Not provided	
18.	Provision of printed literature	Operator manual, Parts catalogue and Service/Workshop manual	
19.	-MS angle iron (W X W X T)	To be recorded for assessment of quality of material used	
20.	-MS channel (U) (W X H x T)	To be recorded for assessment of quality of material used	
21.	-MS flat (W X T)	To be recorded for assessment of quality of material used	
22.	-MS sheet/GI sheet /FRP (Fiber reinforced plastic) (T)	To be recorded for assessment of quality of material used	
23.	-MS pipe/GI pipe (OD/ID)	To be recorded for assessment of quality of material used	
24.	-MS sq. section hollow (W X H X T)	To be recorded for assessment of quality of material used	
25.	-Any other	To be recorded for assessment of quality of material used	
Overall dimensions, (mm):			
26.	Length		
27.	Width		
28.	Height		
29.	Mass, (kg)		
30.	Name and address of distributor/dealer/ suppliers, (if other than manufacturer)		
Marking/labeling of machine (The labeling plate should be riveted on the body of machine):			
31.	Name & Address of Manufacturer		

32.	Make		
33.	Model		
34.	Size/working width, (mm)		
35.	Country of origin		
36.	Year of manufacturer	MM/YYYY	
37.	Chassis Serial Number		
38.	Recommended PTO speed of prime-mover, (rpm)		
39.	Maximum PTO Power required, kW		

FORAGE HARVESTER

S.N.	Parameter	Specification	Comments
1	Type	Tractor mounted, PTO Powered / Pull type	
2	Power source	Tractor of 45 HP and above	
	No. of rows	1 to 5	
3	Hitch type	Three point, CAT-I/CAT-II Drawbar	
4	Working width (mm)	600 – 2000 or as per demand 600 and above for single row.	
5	Hitch dimension	As per IS 4468: 1997, Part-I (Reaffirmed 2012)	
6	Dimension of power input connection (PIC) & its yoke	Should be as per IS 4931 : 1995	
7	Material of main frame	Mild steel	
8	Type of gear box	Gear/chain & sprocket	
9	Type of secondary gear box	Gear/chain & sprocket	
10	Provision of oil level checking, breather cap & drain plug in primary & secondary gear box	Should be provided	
11	Feeding system	Conveyor/feed roller	
12	Number & type of roller	Min. 02, Plain/Serrated	
13	Provision of safety & reversing in feeding system	Should be provided	
14	Chopping mechanism	Fly wheel with blade/ palate bars	
15	Speed of flywheel/blade@ 540 tractor pto (rpm)	Min. 1000	
16	Chopping knife/Disc	high carbon steel / boron steel	
17	Number of palate	Min. 5, depending upon size	
18	Spacing of palate	Min.100, depending upon	

	(mm)	size	
19	Thickness of blade (mm)	5 mm for single row with Boron Steel	
21	Blade sharpening Grinding wheel	provided	
22	Safety provision in propeller shaft	Should be provided	
23	Guard/cover on all moving parts	Should be provided	
24	Provision for adjustments of air flow rate & discharge outlet positions	Should be provided	
25	Provision for lubrication	Should be provided	
26	All related cautionary notices written in vernacular language and their pictorial representation.	Should be provided	
27	Marking/labelling of machine	The labelling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin , Make, Model, Year of	
28	Literature	Operator manual, Service manual and Parts catalogue should be provided.	

Chaff Cutter

Sr.no.	Parameter	Specification	Comments
1.	Type	Power operated	
2.	Basis of cutting mechanism Type	Flywheel or Cylinder	
3.	Basis of cut chaff dropping position Type	Let fall, throw away or blow	
	Material of blade	High carbon steel C75 / boron steel 27 MnCrB5	
4.	Hardness of Blade, HRC	48-52	
5.	Minimum length of conveyor, mm	1200 (if applicable)	
6.	Minimum length of chute, mm	900 (if applicable)	
7.	Thickness of chute sheet, mm	≥ 1.6	
8.	Covering of chute or conveyor, mm	450 minimum	
9.	Height of feeding unit, mm	750 to 1100	
10.	Cautionary notice	Should be provided	
11.	Marking/labeling of machine	The labelling plate should be riveted on the body of machine having Name and Address of manufacture, Country of origin, Make, Model, Year of manufacture, Serial number, Type, required size of prime mover (kW)	

TRACTOR OPERATED POWER WEEDER

S.N.	Parameter	Specification	Comments
1	Type	Tractor mounted, PTO Powered	
2	Power source	Tractor of 25 HP and above or as per demand	
3	Hitch type	Three point, CAT-I/CAT-II	
4	Working width (mm)	<i>1500 min.</i>	
5	Type of blades	Hatchet/Straight/Curved/L type	
	Material of Blade	Boron steel	
6	Type of primary gear box	Single/Multispeed gear box	
7	Type of secondary gear box	chain & sprocket	
8	Material for rotor shaft	Carbon steel/High carbon steel	
9	No. of flanges	2 Min/ row	
10	Type of flanges	Square/circular/rectangular	
12	No. of blades in each flange	04 Min.	
13	No. of rotor blade	8 Min	
14	Thickness of rotor blade (mm)	05 Min.	
	Material of blade	<i>Boron Steel</i>	
15	Provision for shield/cover to prevent flying of mud & stone from rotor	<i>Provided</i>	
16	Depth control mechanism	<i>Provided</i>	
17	Marking/labelling of machine	The labelling plate should be riveted on the body of machine having Name and address of manufacturer & Applicant, Country of origin , Make, Model, Year of manufacturer, Serial number, Engine number, Engine HP, rated rpm & SFC.	
18	Literature	Operator manual, Service manual and Parts catalogue should be provided.	

TRACTOR OPERATED REAPER-CUM-BINDER

Sr.no	Parameter	Specifications	Comments
Reaping Unit:			
1.	Effective width of cutter bar (mm)	As per design	
2.	Type & Number of crop dividers	Shoe & Two	
3.	Type of knife section	Serrated	
4.	Number of knife sections on cutter bar	As per design	
5.	Length of ledger plate (mm)	As per design	
6.	Type of crop conveyor	Chain type/belt type	
7.	Material of knife section	C=0.70 to 0.95% & Mn = 0.30 to 0.50% (IS:6025)	
8.	Material of knife back	C= Min. 0.35% (IS:10378)	
9.	Material of ledger plate	C=0.70 to 0.95% & Mn = 0.30 to 0.50% (IS: 6024 & IS:6025)	
10.	Hardness of knife section	48 to 58 HRC(IS:6025)	
11.	Hardness of ledger plate	48 to 60 (IS: 6024)	
Crop collecting Unit (as per test reports):			
12.	Type	Forks with fingers	
13.	No. of forks	6	
14.	No. of fingers on each fork:		
	-top fork	As per design	
	-middle fork	As per design	
	-bottom fork	As per design	
Crop binding mechanism(as per test reports):			
15.	Type	Knotting	
16.	Type of ropes	Nylon/Jute/ <i>PP Rope</i>	
17.	Provision of leveling the cutter bar	Provided/ Not provided	
18.	Provision of changing the crop bundle size	Provided/ Not provided	
19.	Guards against all moving parts/drives and hot parts	Provided/ Not provided	
20.	Slip clutch/safety pins at cutter bar drive	Provided	
21.	Slip clutch/safety pins at conveyor drive	Provided	
22.	Guard over propeller	Provided	

	shaft		
23.	Provision of safety clutch/ device (shear bolt) in PTO drive shaft	Provided	
24.	Provision of stand for storage/parking	Provided	
25.	Provision of printed literature	Operator manual, Parts catalogue and Service/Workshop manual	
Material of construction, (mm):			
26.	-MS angle iron (W X W X T)	To be recorded for assessment of quality of material used	
27.	-MS channel (U) (W X H x T)	To be recorded for assessment of quality of material used	
28.	-MS flat (W X T)	To be recorded for assessment of quality of material used	
29.	-MS sheet/GI sheet (T)	To be recorded for assessment of quality of material used	
30.	-MS pipe/GI pipe (OD/ID)	To be recorded for assessment of quality of material used	
31.	-MS sq. section hollow (W X H X T)	To be recorded for assessment of quality of material used	
32.	-Any other	To be recorded for assessment of quality of material used	
Overall dimensions, (mm):			
33.	Length		
34.	Width		
35.	Height		
36.	Mass, (kg)		
37.	Name and address of distributor/dealer/suppliers, (if other than manufacturer)		
Marking/labeling of machine (The labeling plate should be riveted on the body of machine):			
38.	Name & Address of Manufacturer		
39.	Make		
40.	Model		

41.	Size/working width, (mm)		
42.	Country of origin		
43.	Year of manufacturer	MM/YYYY	
44.	Chassis Serial Number		
45.	Recommended PTO speed of tractor (rpm)		
46.	Recommended PTO power of Tractor (kW)		

POWER HARROW

S.N.	Parameter	Specification	Comments
1	Type	Tractor mounted, PTO Powered	
2	Power source	Tractor of 45 HP and above	
3	Hitch type	Three point, CAT-I/CAT-II	
4	Hitch dimension	As per IS 4468: 1997, Part-I (Reaffirmed 2012)	
5	Working width (mm)	1200 Min.	
6	Main frame	Rectangular MS box	
7	Thickness of sheet of box (mm)	5 min	
8	Thickness of side support sheet (mm)	8.0 Min	
9	Provision for adjustment of height in trailing board	Should be provided	
10	Number & type of blade	10 Min aggressive and drag type	
11	Number of flanges	5 Min.	
12	Distance between consecutive flanges (mm)	10.0 Min (depending upon type & design of blades)	
13	Number of blade per flange	2 Min.	
14	Thickness of blade (mm)	7.0 Min.	
15	Revolution of rotor shaft (rpm) @ 540 pto rpm	325 max.	
16	Dimension of power input connection (PIC) & its yoke	Should be as per IS 4931 : 1995	
17	Primary reduction	Gear box	
18	Secondary reduction	Gear	
19	Provision of oil level checking, breather cap & drain plug in primary & secondary gear box	Should be provided	
20	Provision for stand	Should be provided	
21	Safety provision in propeller shaft	Should be provided	

22	Provision for depth control mechanism	Should be provided	
23	Marking/labelling of machine	The labelling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin , Make, Model, Year of manufacturer, Serial number, Type, size, required size of prime mover (kW)	
24	Literature	Operator manual, Service manual and Parts catalogue should be provided.	

SELF PROPELLED REAPER

Sr.no.	Parameter	Specification	Comments
1.	Type of machine	Walk-behind type	
Specifications (As per test report):			
2.	Effective width of cutter bar (mm)	1100 to 1200	
3.	Number of crop dividers	5	
4.	Type of knife section	Serrated	
5.	Number of knife sections on cutter bar	24	
6.	Type of crop conveyor	Chain/Belt	
7.	Numbers and type of wheel equipment	Two/Pneumatic/Iron	
8.	Type of prime mover	Diesel/Petro/Kerosene/Petrol start kerosene run IC engines	
9.	<i>Should be Minimum</i> power of prime mover (kW)	2.0 to 4.5	
10	Material of knife section	C=0.70 to 0.95% & Mn = 0.30 to 0.50% (IS:6025)	
11	Material of knife back	C= Min. 0.35% (IS:10378)	
12	Material of ledger plate	C=0.70 to 0.95% & Mn = 0.30 to 0.50% (IS: 6024 & IS:6025)	
13	Hardness of knife section	48 to 58 HRC(IS:6025)	
14	Hardness of ledger plate	48 to 60 (IS: 6024)	
15	Provision for adjusting the height of cutter bar	Provided	
16	Guards against all moving parts/drives and	Provided	

	hot parts		
17	Spark arrester in engine exhaust	Provided	
18	Location and direction of exhaust emission to be away from the operator and machine for satisfactory operation	Provided	
19	Slip clutch/safety pins at cutter bar drive	Provided	
20	Slip clutch/safety pins at conveyor drive	Provided	
21	Provision of row marker/ crop guide	Provided	
22	Provision of printed literature	Operator manual, Parts catalogue and Service/Workshop manual	
Performance requirements(As per draft test code/MPS):			
23	Suitability for the crops	Wheat and paddy (Essential)	
24	Stubble height, mm	50, <i>Max</i> (should be adjustable)	
25	Post-harvest loss, percent	0.5, <i>Max</i> .	
26	Conveyance loss, percent	1.0, <i>Max</i> .	
27	Total machine loss, percent	1.5, <i>Max</i> .	
Material of construction, (mm):			
28	-MS angle iron (W X W X T)	To be recorded for assessment of quality of material used	
29	-MS channel (U) (W X H x T)	To be recorded for assessment of quality of material used	
30	-MS flat (W X T)	To be recorded for assessment of quality of material used	
31	-MS sheet/GI sheet (T)	To be recorded for assessment of quality of material used	

32	-MS pipe/GI pipe (OD/ID)	To be recorded for assessment of quality of material used	
33	-MS sq. section hollow (W X H X T)	To be recorded for assessment of quality of material used	
34	-Any other	To be recorded for assessment of quality of material used	
Overall dimensions, (mm):			
35	Length		
36	Width		
37	Height		
38	Mass, (kg)		
39	Name and address of distributor/dealer/suppliers, (if other than manufacturer)		
Marking/labeling of machine (The labeling plate should be riveted on the body of machine):			
40	Name & Address of Manufacturer		
41	Make		
42	Model		
43	Size/working width, (mm)		
44	Country of origin		
45	Year of manufacturer	MM/YYYY	
46	Chassis Serial Number		
47	Recommended speed of prime-mover for harvesting (rpm)		
48	Maximum power of prime mover (kW)		

Tractor Operated HTP Sprayer

Sr. No.	Parameter	Finalized Specification	Comments
1.	Tank capacity	Should not be less than 100 Lit	
2.	Pressure regulator	Must be provided	
3.	Pressure gauge with pressure dampener	Full scale reading of pressure gauge should not be more than 2.5 times and not less than 1.5 times the rated pressure. As per IS 11313:2007	
4.	Discharge rate	Min. 8000 ml/min at rated speed and rated pressure. As per IS-11313:2007	
5.	Strainer at filling hole	Must be provided	
6	Hose length (m)	100 (Min.)	
7	Provision of hose reel	Must be Provided	
6.	Spray gun designation and marking	Designation,manufacturers name or recognised trade mark & batch or code number should be marked	
7.	Length of spray gun	Shouldnot be less than 500 mm	
8.	Nozzle designation and marking	Designation,manufacturers name or recognised trade mark & batch or code number should be marked	
Drop Let Analysis			
	Type of Nozzel and operating Pressure	<ul style="list-style-type: none"> ➤ Flood Jet: 10 -25 psi ➤ Hollow Cone: 40-100 psi ➤ Full Cone/Solid Cone: 15-40 psi 	
	Nozzle Material	Brass/nylon/hardened/Stainless Steel/tungsten Carbide, ceramic	
	Droplet size, Microns	<ul style="list-style-type: none"> ➤ Flying Insects 10-15 ➤ Crawling and Sucking Insects:30-50 ➤ Plant Surfaces 60-150(Fugicides) ➤ Herbicides: 250-500 	
	Drop Let size uniformity	Yet to be finalized	

	Index(Nozzel Index)		
9.	Mass of spray gun	Must be less than 1.6 Kg	
10.	Provision of drain plug in the tank	Must be Provided	
11.	P.T.O. drive shaft - Safety against overload - Guard on shaft	Must be provided	
12.	Guard on belt pulley drive	Must be Provided	
13.	Safety wear	Mask, hand gloves and goggles must be provided, Apron	
14	Labeling plate of sprayer	Metallic labeling plate should be riveted with following information Manufactures name, make, model serial number, month & year of manufacture, rated speed, rated pressure and recommended tractor horse power The SI No of the equipment must be engraved on the frame	
15	Literature	Operator manual, service manual & parts catalogue must be provided in English, Hindi, Local languages.	

Sr.No.	Parameter	Finalized Specification-+	Comments
1.	Type	Tractor/Power tiller/Engine/Electric motor operated	
2.	Type of crop feeding	Chute-fed,/ conveyor – fed/feed roller-fed/ hopper-fed	
3.	Angle of mounting of feeding chute:	10-15 degree As per IS	
4.	Size of shelling drum/cylinder (mm)	Peripheral Speed 6.2 to 7.6 m/sec	
5.	Total length of feeding chute and covered portion (mm)	900 (min) and 450 (min) (IS: 9020)	
6.	Material and thickness of feeding chute/hopper (mm)	MS sheet and 1.6 (min) (IS: 9020)	
7.	concave clearance,mm	20-35 mm	
8.	Feed Rate, kg/hr	400-800	
9.	Number of screens	Min. 2	
10.	Aspirator:	Min 1,	
11.	Recommended threshing/shelling cylinder speed (rpm)	6.2 to 7.6 m/sec	
12.	Provision of adjusting concave clearance	Provided	
13.	Provision of changing cylinder/drum speed	Provided	
14.	Provision of changing blower speed	Provided	
15.	Provision of changing air-flow rate	Provided	
16.	Provision of changing shaker unit speed	Provided	
17.	Provision of changing screen pitch/inclination	Provided	
18.	Provision of easy replacement of screens	Provided	
19.	Guards against all moving parts/drives	Provided	
20.	Guard over propeller	Provided	

	shaft (if applicable)		
21.	Protection against entry of dust in bearings	<i>Provided</i>	
22.	Provision of stand for storage/parking	<i>Provided</i>	
23.	Provision for transportation of thresher	<i>Provided</i>	
24.	Provision of label/plate containing cautionary notices in vernacular languages and their pictorial representation as per Indian Standard	<i>Provided</i>	
25.	Provision of printed literature	Operator manual, Parts catalogue and Service/Workshop manual in Hindi, English and Regional languages	
	Marking/labeling of machine (The labeling plate should be riveted on the body of machine):		
26.	Name & Address of Manufacturer	Mandatory and SI No must be engraved on main frame	
27.	Make		
28.	Model		
29.	Country of origin		
30.	Year of manufacturer		
31.	Chassis/ Serial Number		
32.	Recommended speed of threshing cylinder (rpm)		
33.	Direction of rotation of threshing cylinder		
34.	Recommended power of prime mover (kW)		
35.	Mass, Kg		

Tractor Operated Reaper

S. No.	Parameters	Finalized Specification	<i>Comments</i>
1	Type	Tractor Mounted, PTO powered	
2	Power source	As recommended by manufacturer	
3	Type of mounting	Front/Rear or side mounted	
4	Working width	1100 mm (Min.)	
5	Type of knife section	As recommended by manufacturer	
7	Type of crop conveyor	Chain/Belt(For front mounted)	
8	Dimensions of knife sections	As per IS 6025 : 1982	
9	Material of knife section	C=0.70% to 0.95%&Mn=0.30% to 0.50% (As per IS 6025 : 1982)	
10	Dimensions of knife back	As per IS 10378 : 1982	
11	Material of knife back	C=0.35% (Min.) (As per IS 10378 : 1982)	
12	Hardness of knife section	48 to 58 HRC (IS 6025 : 1982)	
13	Hardness of ledger plate or face of guard working as ledger plate	48 to 60 HRC (IS 6024 : 1983)	
14	Provision for quick fit attachment with tractor	Must be provided	
15	Provision to adjust cutter bar height	50mm (Min.)	
16	Provision for windrowing the harvested crop	Must be provided	
17	Guards against all moving parts/drives and hot parts	Must be provided	
18	Slip clutch/Safety pins at cutter bar	Must be provided	

	drive		
19	Provision for row marker/crop guide	Must be provided	
20	Printed literature	Operator manual, Service manual & parts catalogue Should be provided in Hindi, English & Regional language	
21	Labelling plate	The labelling plate should be riveted on the body of machine having Name & address of manufacturer & applicant, Country of origin , Make, Model, year of manufacturer, Serial number, Type, Size & required power of Prime mover. SI No must be engraved on the main frame.	

SUGARCANE CRUSHER

S.N.	Parameter	Final specifications	Comments
1	Type	Horizontal/Vertical, Animal driven/ Power operated	
2	Power source	5-6 HP or pair of bullock	
3	Material of feeding chute and thickness, mm	Mild steel sheet, 1.6 (Min.)	
4	Size of opening for feeding the canes, mm	60 (Max.)(Adjustable)	
5	Length of feed plate/chute cover at the front, mm	600 (Min.) (Adjustable)	
6	Number of Rollers	3	
7	Length of Roller, mm	216 to 356	
8	Diameter of Roller(mm)	150 to 264	
9	Lubrication for gear box	Oil bath	
10	Provision to change direction of rotation of feed roller	Provided	
11	Provision for feed plate(for vertical type crushers) and feed chute (for horizontal type	Provided	

	crushers)		
12	Provision of guards on all moving parts	Provided	
13	Provision of safety of operator and the animals for animal drawn crushers	Provided	
14	Cautionary notice	Should be provided	
15	Marking/labeling of machine	The labelling plate should be riveted on the body of machine having Name and Address of manufacture, Country of origin, Make, Model, Year of manufacture, Serial number, Type, required size of prime mover (kW), SI No must be engraved on the Frame.	
16	Literature	Operator manual, Service manual and Parts catalogue should be provided in Hindi, English and regional language	
17	Crushing capacity, kg/h	1800 to 2270	
*	Checking of material and hardness	As per IS-6997:1973	
*	Power consumption	As per IS-6997:1973	
*	Juice extraction capacity	As per IS-6997:1973	

Tractor operated Fertilizer Broadcaster

Sr. No.	Parameter	Finalized Specification	Comments
1.	Hopper capacity	Min. 200 Kg(180 L Min)	
2.	Fertilizer hopper sheet thickness	Min. 2 mmGalvanized/powder coated	
3.	Feed control mechanism	Proper graduations should be provided	
4.	Fertilizer agitator	Must be provided	
5.	Fertilizer spreading range	Min. 6 meter	
6.	Power input shaft dimensions	Should conform to the requirements of IS 4931-1995	
7.	Propeller shaft hub dimension	Should conform to the requirements of IS 4931-1995	
8.	Drive safety	Should be provided	
9.	Material of construction	Should conform the requirements of IS 12337-1988	
10.	Anti corrosive painting of fertilizer hopper	Should be provided	
11.	Labeling plate	Metallic labeling plate should be riveted with following information Manufactures name, make,model serial number, month & year of manufacture	
12.	Literature	Operator manual, service manual & parts catalogue should be provided	

Groundnut Digger cum-Shaker

S. No.	Parameters	Finalized Specification	<i>Comments</i>
1	Type	Tractor Mounted, PTO powered	
2	Power source	As recommended by manufacturer	
3	Hitch type	Cat I/Cat II as per IS 4468:1997	
4	Working width, mm	900 (Min.)	
5	Working tool bar/Digging blade	V shape /Trapezoidal plate type/ Buckhar type blade	
6	Material of blade	(High carbon steel)/boron Steel	
7	Thickness of blade material, mm	6.0 (Min.)	
8	Provision for blade angle adjustment	Must be provided	
9	Provision for varying depth of cut	Must be provided	
10	Provision to adjust angle of inclination of elevator with the horizontal	Must be provided (10 ⁰ to 20 ⁰)	
11	Number of gauge wheel	02 (Min.)	
12	Provision for Oil level checking, Breather cap & drain plug in gear box	Must be provided	
13	Provision for tension adjustment in power transmission(Belt pulley & chain sprocket drive)	Must be provided	
14	Material & thickness of rattler bars	MS, 8.0 <i>mm</i> (Min.)	
15	Spacing between two rattler bars (mm)	50 (Min.)	
16	No. of spikes on each rattler bar	5 (Min.)	
17	Adjustment for rattler bar agitation	Should be provided	
18	No. & size of windrowing rods	5 (Min.) & Ø10 mm (Min.)	
19	Dimensions of Power input connection(PIC) & its	Should be as per IS 4931: 1995	

	yoke		
20	Guards on power transmission system/ moving parts.	Should be provided	
21	Slip clutch/Safety provision in propeller shaft	Should be provided	
22	Printed literature	Operator manual, Service manual & parts catalogue Should be provided in Hindi, English and Regional Language	
23	Labelling plate	The labelling plate should be riveted on the body of machine having Name & address of manufacturer& applicant, Country of origin , Make, Model, year of manufacturer, Serial number, Type, Size & required power of Prime mover, SI No of the machined must be engraved on the frame	

Raised Bed Planter

Sr. No.	Parameter	Finalized Specifications	<i>Comments</i>
1.	Row spacing		
2.	Type of seed metering mechanism	<i>Fluted roller / Inclined plate feed roller / Cup feed / Cell feed</i>	
3.	Type of fertilizer metering mechanism	<i>Fluted roller / Inclined plate feed roller / Cup feed / Cell feed</i>	
	Bed height	150mm min(adjustable)	
4.	Seed/fertilizer hopper sheet thickness	Min. 1.0 mm for M.S. & min.0.63 mm for G.I.	
5.	Thickness of seed/fertilizer tubes	Min. 2.5 mm (transparent plastic tubes)	
6.	Material of furrow openers	High carbon steel	
7.	Hardness of furrow opener	350 to 450 HB	
8.	Provision of adjusting depth of seed & fertilizer	Must be provided	
9.	Provision of adjusting seed/fertilizer rate	Must be provided	
10.	Provision of transparent seed/fertilizer tube	Must be provided	
11.	Provision of seed covering device	Must be provided	
12.	Provision of metallic calibration plate	Must be provided	
13.	Labeling plate	Metallic labeling plate should be riveted with following information Manufactures name, make,model serial number, month & year of manufacture SI no Must be engraved on the Frame	
14	Literature	Operator manual, service manual & parts catalogue should be provided in Hindi, English and Regional Language	

MULTICROP PLANTER

S.N.	Parameter	Finalized Specifications	Comments
1.	Power Source (HP)	25 or above Tractor	
2.	Hitch Type	Three Point linkage, CAT-I/CAT-II	
3.	Number of furrow openers	2 (Min.)	
4.	Type of seed metering mechanism	Fluted roller / Inclined plate feed roller / Cup feed / Cell feed	
5.	Size/Working width (mm)	No. of furrow openers × maximum spacing between adjacent furrow openers	
6.	Diameter of ground wheel	300 mm(min)	
7.	Seed hopper sheet thickness	1.6 mm(min)	
8.	Material of furrow opener		
9.	Type of power transmission	Sprocket and chain/belt and pulley/gear type with proper guards.	
10.	Provision for fertilizer placement	Provided	
12.	Provision for adjusting the row to row spacing, mm	As per recommended for crop preferably in steps U-clamp for fixing furrow openers	
13.	Furrow openers shall not deviate	More than 5 mm from line of alignment horizontally and vertically	
14.	Thickness of seed/fertilizer tubes	Min. 2.5 mm (transparent plastic tubes)	
15.	Hardness of furrow openers	350 to 450 HB	
16.	Provision for changing plant spacing	Provided	
17.	Provision for adjusting depth	Provided	

	of seed		
18.	Provision for adjusting the seed rate	Provided	
19.	Provision of covering device	Provided	
20.	Provision of row marker	Provided	
22.	Provision of printed literature	Operator manual, Parts catalogue and Service/Workshop manual in Hindi, English & Regional language	
23	Labelling Plate	Metallic labeling plate should be riveted with following information model ,make ,Manufactures name year of & month ,al numberseri manufactureSI no Must be engraved on the Frame	

POST HOLE DIGGER

S.N.	Parameter	Finalized Specifications	
1	Type	Tractor mounted	
2	Power source	Tractor of 35 HP and above	
3	Hitch type	Three point, CAT-I/CAT-II	
4	Material of main frame	Mild steel	
7	Thickness of beveled edge (mm)	Upto 5	
8	Augur Diameter, mm	150 – 900mm	
9	Material of blade	Carbon steel/High carbon steel or any higher grade as per Manufacturer's declaration	
10	Provision for parking stand	Should be provided	
11	Marking/labelling of machine	The labelling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin , Make, Model, Year of manufacturer, Serial number, Recommended tractor horse power. SI No of must be engraved on the frame.	
12	Literature	Operator manual, Service manual and Parts catalogue should be provided in Hindi, English & Regional Language.	

ROUND BALER

Sr.No	Parameter	Finalized Specification	Comments
1.	Working width (mm)	700 to 1970	
2.	Recommended power source (hp)	35 to 65	
3.	Pick-up Unit:		
4.	No. of tine bars	4/5	
5.	No. of tines on each bar	12/14/16/20/22 or 28/30/32	
6.	Tine spacing (mm)	52 to 68	
7.	Reel speed corresponding to 540 PTO rpm (rpm)	84 (min.)	
8.	Bale Unit:		
9.	No. of bale rollers	9 (min.)	
10.	Dia. Of bale rollers (mm)		
11.	Speed of bale rollers corresponding to 540 PTO rpm (rpm)		
12.	Size of bale, LxD (cm)		
13.	Bale weight (kg)		
14.	Provision for bale density adjustment		
15.	Provision of safety clutch/ device (shear bolt) in PTO drive shaft and pick-up unit	Provided	
16.	Guard over propeller shaft	Provided	
17.	Provision of guards over transmission for safety	Provided	
18.	Provision for safety at feeder unit against overloading	Provided	
19.	Provision for transportation	Provided	
20.	-Any other	Shaft and Pin should be of min EN 9 or higher specification	
21.	<i>Name & Address of Manufacturer</i>	<i>Name & Address of Manufacturer</i>	
22.	<i>Make</i>	<i>Make</i>	

23.	<i>Model</i>	<i>Model</i>	
24.	<i>Size/working width, (mm)</i>	<i>Size/working width, (mm)</i>	
25.	<i>Country of origin</i>	<i>Country of origin</i>	
26.	<i>Year of manufacturer</i>	<i>Year of manufacturer</i>	
27.	<i>Chassis Serial Number</i>	<i>Chassis Serial Number</i>	
28.	<i>Recommended PTO speed of prime-mover, (rpm)</i>	<i>Recommended PTO speed of prime-mover, (rpm)</i>	
29.	<i>Maximum PTO Power required, kW</i>	<i>Maximum PTO Power required, kW , The SI No must be engraved on frame</i>	
30.	<i>Printed Literature</i>	<i>Operator & service manual, part catalog must be provided in Hindi, English a7 regional language</i>	

SQUARE BALER

Sr.N o.	Parameter	Finalized Specification	<i>Comments</i>
1.	Working width (mm)		
2.	Recommended power source (hp)		
3.	Pick-up Unit:		
4.	No. of tine bars	4/5	
5.	No. of tines on each bar	20/22/24	
6.	Tine spacing (mm)	55 to 135	
7.	Reel speed corresponding to 540 PTO rpm (rpm)	73 (min.)	
8.	Bale Unit:		
9.	Size of bale chamber, W×H (cm)		
10	Size of bale, (cm)	46X36X 30-140(adjustable)	
11	Bale weight (kg)		
12	Provision for bale density adjustment	Provided	
13	Provision of safety clutch/ device (shear bolt) in PTO drive shaft and pick-up unit	Provided	
14	Guard over propeller shaft	Provided	
15	Provision of guards over transmission for safety	Provided	
16	Provision for safety at feeder unit against overloading	Provided	
17	Provision for transportation	Provided	
18	Provision of printed literature	Operator manual, Parts catalogue and Service/Workshop manual in Hindi English and regional language	
19	<i>Name & Address of Manufacturer</i>	<i>Name & Address of Manufacturer</i>	
20	<i>Make</i>	<i>Make</i>	

21	<i>Model</i>	<i>Model</i>	
22	<i>Size/working width, (mm)</i>	<i>Size/working width, (mm)</i>	
23	<i>Country of origin</i>	<i>Country of origin</i>	
24	<i>Year of manufacturer</i>	<i>Year of manufacturer</i>	
25	<i>Chassis Serial Number</i>	<i>Chassis Serial Number</i>	
26	<i>Recommended PTO speed of prime-mover, (rpm)</i>	<i>Recommended PTO speed of prime-mover, (rpm)</i>	
27	<i>Maximum PTO Power required, kW</i>	<i>Maximum PTO Power required, kW</i>	
		<i>SI No must be engraved on Frame</i>	

Nursery Raising Machine for paddy

S. No.	Parameters	Finalized Specifications	Comments
1	Type	Tray type, Electric motor operated	
2	Power source	AC motor, 1 Φ (Power as per recommendation)	
3	Type of machine installation	Permanent/portable	
4	Provision of Energy meter, Voltage & ampere meter in control panel	provided	
5	Protection to protect from high voltage current	provided	
6	Provision of protection from electric shock	provided	
7	Provision for motor speed adjustment	provided	
8	Provision to regulate the Bed & Top soil	provided	
9	Provision to regulate the water for nursery tray	provided	
10	Provision to regulate the sprouted seeds that are delivered into nursery raising tray	provided	
11	Capacity of machine	PAU Ludhiana	
12	Provision for counting of output i.e no. of tray (optional)	provided	
13	Type of conveyor	provided	
14	Guards on power transmission system & all other moving parts.	provided	
15	Provision for emergency stop of transmission system	provided	
16	Printed literature	Operator manual, Service manual & parts catalogue Should be provided in Hindi, English and regional language	

17	Labelling plate	The labelling plate should be riveted on the body of machine having Name & address of manufacturer & applicant, Country of origin , Make, Model, year of manufacturer, Serial number, Type, Size & required power of Prime mover. Si No must be engraved on frame	
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