

TECHNICAL SPECIFICATION

Description of seed processing/ grading plant 5.0 TPH Capacity. (Based on Wheat) On Turn Key Basis.

Each speed Processing Plant (Unit) shall be consisting of the following machines and accessories:-

S.No.	Description of Machines	Cap. Based on wheat	Qty.
1.	V.B. Elevator (To feed Surge bin over Seed Pre Cleaner) With one way discharge Self Supporting – centrifugal discharge, self cleaning type with V bottom boot assembly, single leg vertical bucket elevator made of C.I. Sheets on CNC machines. The boot casing head casing and middle section should be made up of 3.0 mm 2.0mm and 1.6mm thick. G.I. Sheet respectively. Complete with 2 H.P. Electric motor coupled with PBL/Rotomotive/Bonfigioli reduction gear box three phase switch & DOL starter with board service platform with safety cage of 2.5 ft high and service ladder. Buckets shall be of die pressed seamless M.S. Sheet/HDPE. These shall be fastened on NH Belt (315/3) x 150mm wide with bolt and washers. One way discharge required discharge pipe & angle section of 5" dia made of 14g M.S Sheet. Dump hopper size of 1.25 M x 0.60 M made of 14g(2.0mm) thick M.S. Sheet with metal wire mesh cover pit cover and other standard features. This elevator shall be installed in the pit.	7.5 TPH 6.50 MDH (with one way discharge)	1 Nos.
2.	Surge Bin Over Pre Cleaner Capacity: 1.5 Ton (Based on Wheat) Floor supported metallic rectangular centrally discharge bin. The discharge opening to match with the feed hopper of the Pre Cleaner. The sides of the surge bin should be made of 16 g G.I. Sheet and the hoppers bottom of 14g G.I. Sheet. The supporting legs & leg bracings should be properly bolted & made of suitable M.S. Square pipe 10mm thick M.S. foundation plates with 19mm Dia. Holes should be welded under each leg. The transparent inspection windows should be provided to check the level of the seed in the bin at two levels. The discharge outlet should be provided with screw slide and chain pulley system to control seed discharge from floor level. It should be complete with all standard features.	1.5 Ton	1 no.
3.	Pre-Cleaner This machine shall be suitable for the efficient pre cleaning of all crop seeds, pulses seed, oil seeds, cereal seeds and forestry seeds etc i.e. Lentil, Pigeon Pea, Green Gram. Field pea, urd bean, what, grain, paddy etc. Two flat oscillating screens and double stage air aspiration. Screen cleaning with rubber ball system. Stepless Air Control Arrangement SPECIFICATIONS: Capacity : 7 TPH (Based on wheat) at 12% moisture content and 20% impurities. No. of Screens : 2 No. of Air Aspiration : 2 (Pre & Post) Fan Capacity : 7500 CFM at 75mmWGSP Fan Speed : 1400 RPM Electric Motor : Minimum 7.5 H.P for blower and 2.0 H.P. for Sieve cradle assembly Screen Cleaning system: Top Screen – Bouncing Rubber Balls Bottom Screen – Bouncing Rubber Balls Total Screen Area : Not less than 5.0 M²	7 TPH at 12% moisture content and 20% impurities.	1 No.

S. No.	Nomenclature of Equipment and Specification	Cap.	Qty.
	The machine should be complete with suitable electric motors. 3Ph Switch & DOL Starters with board required air trunk and air bend. One set of 2 Screens (factor fitted) for any particular crop seed (i.e. 1 No. – Top 1 No Bottom Screen). Cyclone dust collector suitable for outside installation & other standard features. The screens should be made of CNC perforated 1.0 mm thick CRCA M.S. Sheet duly mounted/fixed on steel/seasonal hard wooden frame. (Screen perforation sizes shall be specified at the time of placing the order) Additional Items i. Additional Screen: The quantity & screen Perforation sizes shall be intimated at the time of placing the order. The screens should be made of CNC perforated 1 mm thick CRCA M.S. sheet duly fixed on steel/seasoned heard wooden frame. Top Screen : Round/Oblong Hole Perforations Bottom Screen : Round/Oblong Hole Perforations ii. Addition Air Trunk: Each one meter long both ends flanged.	Each Each Each	As per requirement
4.	V.B. Elevator: (To Feed Surge bin over Seed Grader from-cleaner) With one way discharge Self supporting centrifugal discharge, self cleaning type with V-bottom boot assembly, single leg vertical bucket elevator made of G.I. Sheet on CBC machines. The boot casing head casing and middle section should be made up of 3.0 mm, 2.0 mm and 1.6 mm thick G.I. Sheet respectively. Complete with 2 H.P. Electric Motor coupled with PBL/Rotomotive/Bonfigioli reduction gear box, three phase switch & DOL starter with board service platform with safety cage of 2.5 ft height and service. Bucket shall be of die pressed seamless M.S. Sheet/HDPE. These shall be fastened on NN Belt (315/3) x 150mm wide with bolt and washers, one way discharge, required discharge pipe & angle section of 5" dia made of 14g M.S. Sheet. Standard fee hopper made of 14g (2.0 mm)thick M.S. Sheet with metal wire mesh cover and other standard features. This elevator will be installed on the floor level.	7.5 TPH 5.50 MDH (with one way disch arge)	1 Nos.
5.	Surge Bin Over Seed Grader Capacity: 1.5 Ton (Based on Wheat) Floor supported, metallic, rectangular, centrally discharge bin. The discharge opening to match with the feed hopper of the Seed Grader. The sides of the surge bin should made of 16 g G.I. Sheet and the hoppered bottom of 14g G.I. Sheet. The supporting legs & leg bracings should be properly bolted & made of suitable M.S. Square pipes 10 mm thick M.S. foundation plates with 19mm Dia. Holes should be welded under each leg. The Transparent inspection windows should be provided to check the level of the seed in the bin at two levels. The discharge outlet should be provided with screw slide and chain pulley system to control seed discharge from floor level. It should be complete with all standard features.	1.5 Ton	1 No.
6.	Seed Grader This machine shall be suitable for the efficient fine cleaning and grading of all crop seeds, pulses seeds, oil seeds, cereal seeds and forestry seeds etc i.e. Lentil, Pigeon Pea, Green Gram, Field pea Urd bean, wheat, gram, paddy etc. Three flat oscillating screens with double stage air aspiration. Grading Screens cleaning with nylon brush system. SPECIFICATION Capacity : 5 TPH (Based on wheat) at 12% moisture content and 10% impurities No. of Screens : 3 No. of Air Aspiration: 2	5 TPH	1 No.

S. No.	Nomenclature of Equipment and Specification	Cap.	Qty.
	Electric Motor : For Blower – 7.5 H.P. 440 V. 3 ph.. 50 c/s A.C. Supply For Cradle Assembly – 2.0 H.P. 440V 3Ph.. 50 c/s A.C. Fan Capacity : 7500 CFM at 75 mm WGSP Screen Cleaning system : Rubber Balls/Nylon Brush System Total Screen Area : Should not be less than 7M² The machine should be complete with suitable electric motors 3Ph. Switch & DOL starters with board required air trunks & Air bend. 1 No. Transition adopter. One set of 3 Screen (factor fitted) for any particular crop seed (i.e. 1 No. Top, 1 No Middle and 1 No. Bottom Screen). Cyclone dust collector suitable for outside installation & other standard features. The screens should be made of CNC perforated 1.0 mm thick CRCA M.S. Sheet duly mounted/fixd on steel/seasoned hard wooden frame. (Screen perforation sizes shall be specified at the time of placing the order) <u>Additional Item For Seed Grader</u> i. <u>Additional Screen:</u> The quantity & screen Perforation sizes shall be intimated at the time of placing the order. The screens should be made of CNC perforated 1mm thick CRCA M.S. Sheet duly fixed on steel/seasoned hard wooden frame. Top Screen : Round/Oblong Hole Perforations Middle Screen : Round/Oblong Holde Perforation Bottom Screen : Round/Oblong Hole Perforations ii. Additional Air Trunk: Each one meter long both ends flanged	Each Each Each Each	As per requirement
7.	<u>V.B. Elevator:</u> To Feed Sp. Gravity Separator of Indented Cylinder from Seed Grader) with two way valve. Self Supporting, centrifugal discharge, self cleaning type with V bottom boot assembly, single leg vertical bucket elevator made of G.I. Sheets on CNC machine. The boot casing head casing and middle section should be made up of 3.0 mm, 2.0 mm and 1.6 mm thick G.I sheet respectively. Complete with 2 H.P. Electric Motor coupled with PBL/Rotomotive/Bonfigioli reduction gear box, three phase switch & DOL starter with board, service platform with safety cage of 2.5 ft height and service ladder. Buckets shall be of die pressed seamless M.S. Sheet/HDPE. These shall be fastened on NN Belt (315/3) x 150mm wide with bolt and washers. Two way discharge valve, required discharge pipe & angel section of 5" dia made of 14g M.S. Sheet. Standard feed hopper made of 14g (2.0mm) thick M.S. Sheet with metal wire mesh over and other standard features. This elevator will be installed on the floor level.	7.5 TPH 5.50 MDH (with two way disch arge)	1 No.
8.	<u>Indented Cylinder Seed Grader</u> An independent double cylinder unit with adjustable cylinder speed, adjustable internal collecting trough angle, interchangeable indent segments and feed control. The cylinder segments should have Tear drop type indents made of 2mm thick. CTCA sheet. The feeding to the indented cylinder should be from the top of the cylinder unit. <u>SPECIFICATIONS:</u> Capacity : 5 Tons/Hr. (Based on wheat) No. of Cylinder : 2 Size of each cylinder : Not less than 6.35 m.m dia X 2150 m.m. length Motor : 3.0 H.P.. 3 Ph., 440V. 50c/s... tropicalised TEFC	5 TPH	1 No.

S. No.	Nomenclature of Equipment and Specification	Cap. Each Set	Qty.
	Speed of Cylinder : Variable Angle of receiving through : Adjustable The machine should be complete with suitable electric motor, 3 phase switch & DOL starter with board, indented cylinder for wheat (5.2 mm indent size, tear drop type) and other standard features Additional Item for Indented Cylinder Seed Grader 1. Additional Indented Segment. The quantity and name of the crop or size shall be specified at the time of placing the order. Cylinder Size: Set of two cylinders (Segments)		As per requirement
9.	V.B. Elevator (To Feed Sp. Gravity Separator from Indented Cylinder) Self Supporting centrifugal discharge, self cleaning type with V bottom boot assembly, single leg vertical bucket elevator made of G.I. Sheets on CNC machines. The boot casing, head casing and middle section should be made up of 3.0 mm. 2.0 mm and 1.6mm thick G.I. Sheet respectively. Complete with 2 H.P. Electric motor coupled with PBL/Rotomotive/Bonfigioli reduction gear box, three phase switch & DOL starter with board, service platform with safety cage of 2.5 ft height and service ladder. Buckets shall be of die pressed seamless M.S. Sheet/HDPE. These shall be fastened on NN Belt (315/3) x 150 mm wide with bolt and washers, one way discharge, required discharge pipe & angle section of 5" dia made of 14g M.S. Sheet. Standard feed hopper made of 14g (2.0mm) thick M.S. Sheet with metal wire mesh cover and other standard features. This elevator will be installed on the floor level.	7.5 TPH 6.50 MDH (With way disch arge)	1 No
10.	SPECIFIC GRAVITY SEPARATOR (7-FAN) Rectangular wooden deck 7-fan specific gravity separator with adjustable side and lengthwise inclinations, variable deck speed with VFD and individual air controls for fans with meters air filters on sides adjustable seed collection from deck, hydraulic system for deck opening & cleaning of deck. SPECIFICATIONS: Capacity : 5 Tons/Hr. (Based on wheat) Electric Motor : For Blower – 10.0 H.P.. 3Ph, 440V, 50 c/s A.C. Supply For Sieve Deck 3 H.P.. 2Ph, 440V, 50c/s A.C Supply Oscillation speed of Deck: Variable through VFD Deck Size : 3100x1150 m.m Rectangular Wooden The machine should be complete with suitable electric motors. VFD control panel, two deck assemblies one each for coarse seed and fine seed, side air filter panels, feeding bin (floor supported) of 300 kg capacity (Approx) with feed control & other standard features.	5 TPH	1 No.
11.	V.B. Elevator: To Recirculate the middling of the specific gravity separator for upgrading into the feeding bin of the specific gravity separator. Self supporting, centrifugal discharge, self cleaning type with V bottom boot assembly, single leg vertical bucket elevator made of G.I. Sheets on CNC machines. The boot casing, head casing and middle section should be made up of 3.0mm, 2.0mm and 1.6mm thick G.I. Sheet respectively. Complete with 1 H.P. Electric motor coupled with PBL/Rotomotive/Bonfigioli reduction gear box, three phase switch & DOL starter with board, service platform with safety cage of 2.5 ft. height and service ladder. Buckets shall be of die pressed seamless M.S. Sheet/HDPE. These shall be fastened on NN Belt (315/3) x	3.0 TPH MDH (with one way disch arge)	

S. No.	Nomenclature of Equipment and Specification	Cap.	Qty.
	125 wide with bolt and washers. One way discharge, required discharge pipe & angle sections of 5" dia made of 14g M.S. Sheet Standard feed hopper made of 14g (2.0mm) thick M.S. Sheet with metal wire mesh cover and other standard features. This elevator shall be installed on the floor level.		
12.	V.B. Elevator: (To Feed Holding Bin or Seed Treater from SP. Gravity Separator) with two way valve. Self supporting, centrifugal discharge, self cleaning type with V bottom boot assembly, single leg vertical bucket elevator made of G.L. Sheet on CNC machines. The boot casing, head casing and middle section should be made up of 3.0mm, 2.0mm and 1.6mm thick G.I. Sheet respectively. Complete with 2 H.P. Electric motor coupled with PBL/Rotomotive/Bonfigioli reduction gear box, three phase switch & DOL starter with board, service platform with safety cage of 2.5 ft height and service ladder. Buckets shall be of die pressed 150mm wide with bolt and washers. Two way discharge valve, required discharge pipe & angle sections of 5" dia made of 14 g M.S. Sheet standard feed hopper made of 14g (2.0 mm) thick M.S. Sheet with metal wire mesh cover and other standard features. This elevator shall be installed in the pit.	7.5 TPH 650 MDH (with two way disch arge)	1 No
13.	Holding Bin: To be installed over automatic weigher & bagger Capacity:- 1 Tons (Based on Wheat) Floor supported metallic, square, centrally discharge bin. The sides of the building bin should made of 14g G.I. Sheet and the hopped bottom of 12g G.I. Sheet. The supporting legs & leg bracings should be properly bolted & made of suitable M.S. Square pipes 10mm thick M.S. foundation plates with 19mm Dia. Holes should be welded under each leg. The Transparent inspection windows should be provided to check the level of the seed in the bin at two levels. The discharge outlet should be provided with screw slide and chain pulley system to control seed discharge from the floor level. It should also be provided with manual bagging arrangement for manual bagging of the seeds incase automatic weigher and bagger is not in use. It should be complete with all standard features.	Cap: 2 Tons	1 No
14.	Automatic Weigher and Bagger with air Compressor The machine shall be complete with electronic load cell, pneumatic operated bag holder, micro processor based weighing controller mounted in central control panel, operator control panel. Accurate Micro Processor Based load cell electronic weighing & bagging machine Hi Speed Controller. Suitable for open mouth bags of cloth/jute canvas. Digital/LED display for Automatic weigher & bagger SPECIFICATIONS: 1. Type : Electronic load cell based net weigher 2. Bag capacity : 10-50 Kg 3. Capacity : 200-250 Bag/hr 4. Accuracy : +10gm 20gm 5. Feeding arrangement: Gravity 6. Display : Digital The Air Compressor Electric Motor : 3 H.P. . 3 Phase, 440 v, 50 c/s T.E.F.C. No. of cylinders : 2 (Two) Double stage reciprocating type Cap of Air Trunk : Not less than 150 Ltrs	200- 250 Bags /Hr.	1 Nos

S. No.	Nomenclature of Equipment and Specification	Cap.	Qty.
	Free Air Delivery: 8.80 CFM Air Pressure : 10 Kg/cm ² Complete with auto start & stop and all standard features. Based frame with castors etc for poartabilty, PVC flexible pipe (8mm ID x 15 meter long) air pressure gun 2 Nos. T joint etc are also provided. This air compressor shall also be used for general cleanignof the machines etc.		
15.	<u>Heavy Duty Bag closer With Conveyor</u> Complete with electric motor of 1 HP.. 3 phase, 440 V. AC supply for sewing head. 1 HP.. 3 phase 440 V. Ac supply for conveyor and foot operated paddle switch. Sewing head height varies from 250 mm to 1000mm depending on bag size. The head is fitted on telescopic shaft and length of conveyor is 2 meter.	250-330 bags per hour	1 Nos
16.	<u>Seed Treater (Suitable for both wet and dry treatment)</u> Capacity: 5TPH The treater frame should be made of welded structure of heavy M.S. Pipe & M.S. angle iron structure. Chemical tank & all other parts coming in contact with chemical should be made of stainless steel, high speed rotating mist disc/dozing pump for dosing of slurry, feed hopper with regulated gate seed weighting mechanism and synchronized seed dump pan. Slurry tank capacity should not be less than 100 ltrs. Variable dosing arrangement to suit seed treatment for all kinds of seeds. Dosing of chemical shall be fully automatic. Mixing chamber should be fitted with rotating mixing auger. Supporting frame must bring the machine to the bagging height. Two ways bagger with bag holding clamps should be provided. It should be made portable with 4 rubber wheels also. Volumetric regulated Electro vibro feeder should be provided for powder (Dry) treatment of the seed. Complete with all other standard features.	Cap 5 TPB	1 Nos
17.	<u>Weighing Machine</u> Capacity : 300 Kg Platform size : 600 x 600 mm (Minimum) Display : LED Advanced microprocessor based indicator system. Indicates gross and net weights. Suitable for platform scales & other load cell based weighing kits. Stainless steep pan. Uses a single input. Mains operation. The unit is complete for operation.	300 kg	1 No
18.	<u>Heavy Duty Portable bags Machine</u> Self lubricating single thread, portable type, electrically operated. Light weight with robust construction. Threat does not get entangled with the looper because of oscillating type looper. Smooth and simple operation. Sewing head is driven by V-belt thus minimizing noise during operation and starts with the help of finger touch micro switch. Thread cutting blade is provided for easy cutting of the thread after completing of stitchine. <u>SPECIFICATION</u> Bag Stitching Capacity : 300-350 bags/hr Type of Sewing head : Universal Single thread Type of Seam : Chain Stitching Weight : 6 Kg (Approx) Electric Motor : 1/10 H.P.. 8000 R.P.M. 220 V. AC/DC The unit is complete for operation and with the following standard accessories. Needles 2 Nos.. Loopers 2 Nos.. Thread Stand 1 No.. Threat Cone 1 No.. Allen Keys 4 Nos. DE spanner 1 No.. Oil Cane 1 No.. Screw Drive 1 no. Suitable for Stitching of canvas/cloth/jute bags filled with crop seeds	300-350 bags per hour	2 BNo

S. No.	Nomenclature of Equipment and Specification	Cap.	Qty.
19.	<u>Moisture Meter</u> <u>Digital Meter:</u> Micro controller based universal type with rugged mechanical construction. Accurate moisture content is directly readable on 3- digit LED display. The moisture meters electronic circuit automatically compensates for the temperature variation. It is suitable for measuring the moisture percentage of various food grains, seeds, pulses, oilseeds etc. Easy operation press the button and take reading. <u>SPECIFICATIONS:</u> Range : 3.5% to 40% Accuracy : + 0.2% Working Voltage : A.C. mains cum battery operated O.A. Size : 29.5x17x19.5 cm (LxBxH) The unit is complete for operation with following standard accessories. Ratchet handle 1 No.. Volume Cups 3 Nos. Adaptor 1 No.. Wooden box 1 No.	Moisture Range 3.5 to 40%	1 Nos
20.	<u>Electric control panel:</u> The panel shall be equipped with MCCB, change over switch to allow the machines to be powered either from generator or main supply voltmeter, ammeter, phase indicators, MCB for each motors and fuses. 2 Nos 15 Amp sockets of 220V single phase are provided for ancillary equipment/light etc. Control panel shall be fabricated as per prescribed "CE" norms. All motors fitted with the machines shall be tropically rated totally enclosed fan cooled type and current protecting. Suitable for 415 V. 50 Hz. 3 Phases, AC Supply Laying of cables shall be as per prescribed "CE" norms		1 No.
21.	<u>HAND BAG CART</u> Suitable for carrying and handling empty and filled seed bags in the processing hall. A. <u>Four wheel type</u> Complete with loading platform, back rail and push handle, 4 rubber wheels and other standard features to make the unit complete. Front two wheels should be revolving type for easy maneuvering. All steel construction B. <u>Two wheel type</u> Complete with two rubber wheels, push handle& other standard features to make the unit complete. All steel construction	300 kg 100 Kg	1 Nos 2 Nos
22.	<u>Installation and Commissioning</u> <u>Scope of work</u> 1. Grouting of all the machines on the floor including all materials like foundation bolts, masonry material & labour. 2. Making of elevator pits in the floor (Wherever required) 3. Assembly and erection of all the machines on its respective foundations/Grouted bolts 4. Laying and termination of the cables from centralized electric control panel to various machines in PVC pipes under the floor or on the truss. 5. Suitable capacity copper conductor 3 core, PVC cable. ISI marked of any standard make shall be used for giving the connection to electric motors of each equipments from centralized electric control panel. 6. The trial run of the machine/Plant		1 set

S. No.	Nomenclature of Equipment and Specification	Cap.	Qty.
7.	The training to the operation staff at the site for the proper operation and maintenance of the plant during installation and trial run of the seed processing plant.		
8.	The seed/grain for the testing and trial run of the machine shall be provided by the purchaser.		
9.	All the labour required for handling the seed for the test and trial run of the plant shall be provided by the purchaser.		
10.	The electric power required for the installation, test and trial run of the plant shall be provided by the purchaser the site.		
11.	Proper building with suitable doors/gates shall be provided by the purchaser. The size of the gate through which the machine shall be taken inside the processing hall shall be minimum 2 Meter wide x 3.5 Meter High (Clear Space). The security for the equipment supplied shall also be provided by the buyer at the site of installation from the very first day.		
12.	Proper earthing and electric power as per state govt. rules to the centralized electric control panel shall be provided by the purchaser.		

Important Notes:

1. Electric motor shall be of Kirloskar/Crompton/ABB/Havells make. T.E.F.C type meeting ISI specification.
2. DOL starter shall be of Crompton/L&T 3 Ph. Switch of Standard/SKN make.
3. Bearings are of SKF/NTN/KOYO/NBC/FK. The make of the V-bells shall be Hilton/Fenner/Turboflex
4. Proposed machinery layout and seed flow process diagram should be enclosed.
5. All the offered machines should be compact in size. All pulleys are balanced pulleys. Blowers are dynamically balanced. All moving parts should be covered with safety guards.
6. The plant shall be supplied complete with the required accessories on turn key basis.
7. All the metal surface shall be finished & painted with two coats of red oxide primer followed by two coats of enamel paint. G.I/S.S. surfaces should not be painted.
8. The training to the operation Staff/Technicians of the purchaser at site shall be given during & after installation & trial run for proper operation & day to day maintenance.
9. ISO/CE certified products shall be given preference.
10. Firm should be registered under GST and relevant GSTIN should be provided.
11. The complete plant shall be supplied, installed and commissioned on turn key basis inclusive of freight transit insurance, GST loading and unloading charges etc.

Important eligibility conditions - Minimum Criteria

1. The minimum turnover of the firm for the last five financial years should not be less than 5 crore in each year. CA Certificate certifying the turn over for the last five financial year along with ITR's Balance Sheets profit & loss accounts for the last five financial year should be enclosed.
2. The firm must have supplied at least 30 seed processing plants of same or higher capacity to various govt. departments in last three financial year. Copy of purchase orders and performance report should be enclosed.
3. MSME/NSIC certificates registered under single point registration scheme must be attached.
4. Latest sales tax clearance certificate must be attached.
5. ISO 9001 2015.14001 2015 and CE certificates should be enclosed.