

FARM IMPLEMENTS THE BASIC NEED FOR AGRICULTURE DEVELOPMENT

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Land development is the costliest operation in farming. It involves jungle clearance, soil opening with deep tillage equipment, moving soil from high to low spots, making farm roads, field bunding and leveling .etc. These operations require use of self propelled and heavy equipment such as crawler tractors with heavy duty ploughs and dozers, high horsepower tractors with dozing and hoeing attachment's. Scrapers, ditchers, chisel Ploughs, subsoilers, terracers, levelers etc. The tillage operations, defined as mechanical manipulation of soil, are performed to achieve the desired Seedbed to provide optimum environment for seed germination and plant growth. Seedbed preparation for sowing / planting of different crops is done through primary and secondary tillage operations.

The farm implements are categorized as under;

- I. Implements' for loosening soil
- II. Implements' for seed bed preparation and smoothing of land
- III. Implements' for Seed and fertilizers application.
- IV. Tractor mounted Spray Machinery and Power Sprayers
- V. Machineries used in harvesting crops
- VI. Threshing implements'
- VII. Tractor trollies
- VIII. Land Leveling Machineries
- IX. Miscellaneous farm implements

I. PRIMARY TILLAGE IMPLEMENTS' FOR LOOSENING SOIL

For optimum practices in preparing land and loosening the following implements are used.

1. Chisel Plough
2. Disc Plough
3. Mould Board Plough
4. Subsoiler
5. Rotary tiller

1- Chiesel Plough

The Chisel Plough is primary tillage deep plough, working upto 20" to ensure development of crop root system at proper depth and environment. It is an ideal implement where top soil is fertile but subsoil is not productive. The Chisel Plough increases natural fertility of soil as deep tillage provides enough circulation of air, moisture, and sunlight into soil. For full penetration in the first pass, a 50 to 85 hp tractor would be required. A medium (50hp) tractor will plough 12" in the first pass and full 20" depth will be attained in the second pass.

Chisel Plough Features & Specifications

- a) Heavy steel box V-type frame without any nut and bolt.
- b) Three easily replaceable tines designed to penetrate upto 20" without much effort.
- c) Shovels easily replaceable.
- d) Working width 1.20 Meters.
- e) Tractor compatibility 50-85 hp



2. Disc Plough

Disc Plough used for deep ploughing in root-infested, sticky, stony, and hard soils. Mixes remains of crops and weeds throughout the depth of ploughing, hence it is ideal for rain-fed areas for checking soil erosion by water and wind. Spring loaded floating rear furrow wheel control the side draft to ensure straight work and ease of handling by smaller tractor. Other features include Re-greasable Taper Roller Bearing in disc hubs, Disc angle adjustable to vary the penetration with varying soil conditions, Cat I and II linkage and the Disc Scrapers are also adjustable to ensure that the Discs remain clean in all conditions.

Disc Plough Features & Specifications

- Frame Type Tubular Seamless Steel Pipe
- Number of furrow 3,3+1
- Furrow Width 254 mm
- Max working depth 300 mm
- Longitudinal clearance 522 mm
- Furrow Wheel dia 508 mm
- Plain discs 660 mm-inside or outside bevel
- Bearings Taper roller
- Weight 360 kg (3 Furrow)



3. Mould Board Plough

Mould Board Plough is the most important plough for primary tillage in canal irrigated or heavy rain areas where too much weeds grow. The objective for ploughing with a Mould Board is to completely invert and pulverize the soil, up-root all weeds, trash and crop residues and bury them under the soil. The shape of mould Board is designed to cut down the soil and invert it to right side, completely burying the undesired growth which is subsequently turned into manure after decomposition.

Mould Board Plough Features & Specifications:

- ✓ Model MT-02 (M)
- ✓ Max. Depth 22 cms
- ✓ Working width 85 cms
- ✓ Weight 225 kg
- ✓ Tractor Compatibility 35 to 55 HP
- ✓ Linkage Category I



4. Subsoiler

The Subsoilers are deep tillage implement specially designed for breaking up hard pan layers and loosening the subsoil allowing better drainage, root growth and mineral osmosis. (ii) The heavy duty chisel pointed share shatters the soil well below the surface, thus increasing the water holding capacity. (iii) It preserves moisture during high rainfall which is very important for the crop to withstand low rainfall or drought period. (iv) It is an inexpensive implement it provides a simple and economical way to obtain boosting crop yields and profits.

Features:

- a. It can plough up to 55 cm. deep in light weight models.
- b. It flights by increasing the ground storage capacity.
- c. It increases soil turnover and reaching deeper organic matter layers.
- d. Adjustable ploughing width.

Specifications:

	1 ARM	2 ARM	3 ARM
LENGTH (mm)	510	550	830
WIDTH (mm)	660	1220	1520
HEIGHT (mm)	1060- 1370	1060- 1370	1060- 1370
TYNE (mm)	150x25	150x25	150x25
WEIGHT(Kgs.)(approx.)	65	165	250
POWER REQUIRED(HP)	50-60	60-75	65-80

The weight and working data contained in the present leaflet are supplied for information only and are not binding.



1. Rotary Tiller (Single Speed)

Benefits:

- ❖ Suitable for use in dry as well as wet land cultivation.
- ❖ Suitable for light and medium soil conditions.
- ❖ Used for loosening and aerating soil up to a depth of Eight inches.
- ❖ Prepares seed beds quickly and economically.

Features:

- Single speed gear box with 3 point linkage, compatible with 540 PTO RPM.
- Easy depth adjustment.
- Available in both gear driven and chain driven.
- Type of blade- L type.

SPECIFICATIONS:

	FK 150	FK 175	FK 200
TRACTOR POWER	40-45	45-55	55-65
OVERALL WIDTH	180 cm	205 cm	230 cm
TILLAGE WIDTH	150 cm	175 cm	200 cm
GEARBOX	SINGLE BOLT	SINGLE BOLT	SINGLE BOLT
P.T.O. SPEED (r.p.m)	540	540	540
ROTOR SPEED	210	210	210
GEAR BOX OVERLOAD PROTECTION	SHEAR BOLT	SHEAR BOLT	SHEAR BOLT
MOUNTING HEIGHT	117 cm	117 cm	117 cm
No. OF FLANGES	6	7	8
No. OF BLADES	36	42	48
TOTAL Wt.	360 Kg. (Approx.)	395 Kg. (Approx.)	435 Kg. (Approx.)

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II. IMPLEMENTS' FOR SEED BED PREPARATION AND SMOOTHING OF LAND

The following implements are used to get desired granular soil structure for a seedbed and to allow rapid infiltration and good retention of moisture, to provide adequate air exchange capacity within the soil and to minimize resistance to root penetration and shoot growth.

1. Cultivator nine tines
2. Cultivator eleven tines
3. Cultivator spring tined
4. Disc harrow offset
5. Rigid type cultivator
6. Ridger
7. Rotavator
8. Bund former
9. Rigid type cultivator

1. Cultivator nine tines

Cultivators are machines in the agriculture industry that are used to break up soil. They are pulled behind tractors using either a three-point linkage or a tractor drawbar. Cultivators are generally used before plows to till the soil and prepare it for the dispersing of seeds and can be used before and after the crops are sowed. They can provide other functions, such as removing and destroying weeds, as well as fertilizing the soil and covering seeds with soil. Cultivators are determined by their ability to penetrate large depths in order to sufficiently break up the soil for seedbed preparation.

These machines are ideal for general cultivating, weeding, pasture renovating and preparing seedbeds. The tiller is available in 4 widths: 9, 11, 13 and 15 tines. The tiller is fully mounted on the tractor by means of category I or II three point hitch pins. The spring-loaded tines swing back under break-away pressure of 163Kg: pass over the obstruction and return to the working position without affecting the working depth of the implement. The continual flexing action of the tines shatters the soil breaking up the clods. The tiller is fitted with 51 mm reversible shovels which are designed for deep penetration. A working depth upto 229 mm is possible in most soils and is simply controlled while sitting on the tractor seat

Cultivators Features & Specifications

- i. Max. Depth 22 cms
- ii. Working width 85 cms
- iii. Weight 225 kg
- iv. Tractor Compatibility 35 to 55 HP
- v. Linkage Category I



2. Cultivator Eleven Tines



3. Cultivator spring tined

Benefits:

1. It is designed for the light and medium soils.
2. Used for loosening and aerating soil to a depth of nine inches.
3. Prepares seed beds quickly and economically.

Features:

When one Tyne strikes a hidden object, the others continue to work at the correct depth.

Specifications:

	9 TYNE	11 TYNE
FRAME	75x40 mm (Channel)	75x40 mm (Channel)
SPRING TYNES	9.5mm WD,50mm OD 27 Coils 50x19 mm (Forged)	9.5mm WD,50mm OD 27 Coils 50x19 mm (Forged)



4. Disc Harrow

The Offset Disc Harrow has a heavier weight per Disc and thus has the penetration ability to break down large clods normally left after disc ploughing or Chisel Ploughing in hard grounds. It is a robust construction, used as mounted or trailed and ideal for chopping and mixing of stubbles and crop residues in the soils. The disc Harrow prepares the seed-bed leaving the soil in granular form which is the most suitable structure for plant growth. It aerates the soil, helps to conserve moisture for longer periods and eradicates weeds. In sandy loam soils, this implement can also be used as primary tillage implement. the depth of ploughing is regulated simply by manipulating the offset angles of the gauges. By removing simply a pin, the mounted position can be converted into trailed position and vice versa.

Offset Disc Harrow Features & Specifications

- No. of Discs. 14 Discs
- Disc Size 61 cm (24")
- Weight. 590 Kgs.
- Working width 145 cm (57")
- Tractor Compatibility 55 HP



5. Rigid Type Cultivators

- It is designed to withstand toughest work conditions of hard black soils.
- The profile cut tines get their strength because of a peculiar design in which the stress prone points are shaped to resist any distorting strains.
- Main frame is made out of heavy angles duly reinforced with projection flats.



6. Rigid Clamp Type Cultivators

- It's designing is for tough work and operates as a Chisel Plough.
- The tiller has heavy duty shanks for positive penetration.
- It breaks up hard top soil, uproots stubbles and leaves the ground perfectly worked.
- It is particularly useful for paddy cultivation areas requiring shallow ploughing on hard clayey cracked up soil.
- In such places it prepares seed bed faster than ploughing.
- The main benefit of this Tiller is it's all the Shanks are adjustable.
- This Tiller is Successful for each and every type of Soil whether that can be for Light, Medium or Tough Soil.

7. Ridger

Ridger is used for making ridges for planting tobacco, potato and other vegetables. The ridger is fully adjustable for giving different accurate row widths. To obtain the correct ridge profile and retain soil flow, the high grade mould boards are adjustable. The ridger can also be used for earthing up the crops sown in rows.

Ridger Features & Specifications

- Max. Row Spacing 711 mm (Decreasing in increments of 25 mm)
- Overall width 1,778 mm
- Depth 1,050 mm
- Clearance (under frame) 550 mm
- Weight 145 Kg
- Tractor Compatibility 45- 85 HP



8. Rotavator

We offer rotavator that are available in the brand name of Preet to meet the requirement of our clients from the agricultural sector. These tractor rotavator, agricultural rotavators are designed for tractors from 30 to 70 H.P. (5 Ft. to 7 Ft.) at the PTO shaft. These tractor rotavator, agricultural rotavators are provided but Gear Box on the demand of our clients. These ensure maximum output and are offered at industry leading prices.

Following are the technical specification of the product.

Model	149 (5 Feet)	149 (6 Feet)	149 (7 Feet)
Tractor Power	30 to 45 H.P.	45 to 55 H.P.	55 to 70 H.P.
Overall Width	180 cm	205 cm	235 cm
Tillage Width	150 cm	175 cm	205 cm
Gear Box	Single Speed	Single Speed	Single Speed
Side Transmission	Gear / Chain	Gear / Chain	Gear / Chain
P.T.O. Speed (RPM)	540	540	540
Rotar Speed (RPM)	225/175	225/175	225/205
No. of Blades	36	42	48
Gear Box Overload Protection	Sheer Bolt	Sheer Bolt	Sheer Bolt
Weight (Approx.)	355 Kgs	380 Kgs	425 Kgs



9. Bund former

Features:

- Operates with tractor hydraulics and three point linkage.
- Easy and quick adjustment for various row spacing and the shape of bund.
- Optional leveler can be fitted to level the soil between the two bunds.

Utility:

- ❖ Used to molding the land for seed beds.
- ❖ Used to channel for water flow.
- ❖ Used to form single bund in Grooves



III. IMPLEMENTS' FOR SEED AND FERTILIZERS APPLICATION.

For equitable application of fertilizers and optimum use of seed the following machineries has provided promising results.

1. Fertilizer broadcaster
2. Kharif Drill
3. Kharif Planter
4. Permanent Raised Bed Planter
5. Potato Planter
6. Rice Planter
7. Rabi Drill

1. Fertilizers broadcaster

Description

- ✓ working width:15--30m
- ✓ capacity:600L
- ✓ travel speed:5—15
- ✓ total weight:80kg
- ✓ fitted power:30--40hp



2. **Kharif drill**

3. **Kharif Planter**



4. **Permanent raised bed planters**



5. Potato Planter



6. Rice Planter



7. Rabi Drill



IV. TRACTOR MOUNTED SPRAY MACHINERY AND POWER SPRAYERS

1. Power Sprayers
2. Tractor mounted sprayers

1. Power Sprayers



2. Tractor Mounted Sprayers

Spray tank Material Glass fiber reinforced plastic Volume(L) 1500-3000 Membrane pump
Rotating speed(r/ min) 540 Max pressure(Mpa) 2 Spraying swath(m) 20-24 Stirring ways High-
pressure return flow agitation Mating power(hp)



V. MACHINERIES USED IN HARVESTING CROPS

1. Ground Nut Digger
2. Wheat and rice reaper
3. Wheat harvester
4. Wheat combine
5. Potato harvester

1. Ground Nut Digger cum separator

2.



3. Wheat and rice reaper

Description:

1. The machine is mainly used in reaping wheat, rice and so on, it is suitable to the following conditions:
2. Height of crop is between 0.5m and 2.5m
3. Stem is straight and its prostrate degree is less than 60 degree.
4. The machine adopts erect platform. It is equipped with four supports and one separator,
5. Belt and star gear are mounted in the support, transmission device adopts chains and chain wheels.

style: 4GL-120/150

power: 4.05-6kw farmland management machine

reaping style: side lay

reaping width: 1.2m/1.5m

star gear of support diameter: 280mm

poking gear distance: 127mm

working speed: 3-4km/h

stubble height: 30-120mm



4. Wheat harvester



5. Wheat Combine



6. Potato Harvester



VI. THRESHING IMPLEMENTS

1. Rice thresher
2. Maize Sheller
3. Multi purpose threshers
4. Soybean thresher
5. Sunflower thresher
6. Wheat thresher

1. Rice thresher



2. Maize Sheller



3. Multipurpose Threshers



4. Soybean Thresher

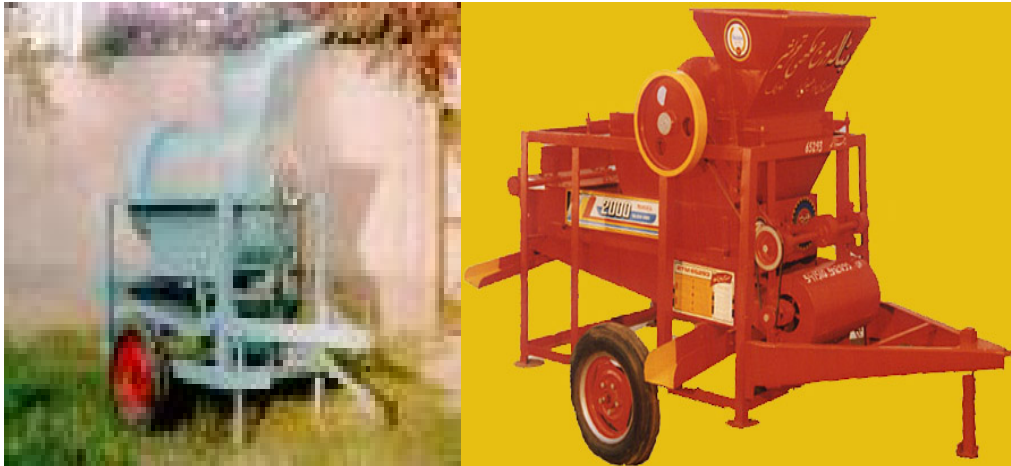


5. Sunflower Thresher

Sunflower Thresher

Weight	Length	Width	Height
820 kg	82"	68"	85"

It is used to separate sunflower seeds from the flower.



Sunflower thresher complete with PTO attachment, channel chassis, axle and rim output 1000 - 1500kgs of grain per hour

Weight 800 kgs approximately

6. Wheat thresher



VII. TRACTOR TROLLIES

1. Simple trolley
2. Hydraulic trolley.

1. Simple Trolley



2. Hydraulic Trolley



VIII. LAND LEVELLING MACHINERIES

1. Bulldozer
2. Front Blade
3. Hind Blade
4. Scraper
5. Land leveler
6. Laser Land Leveler
7. Reversible land leveler

1. Bulldozer



2. Front Blade



3. Hind Blade



4. Scraper



5. Land leveler

Benefits:

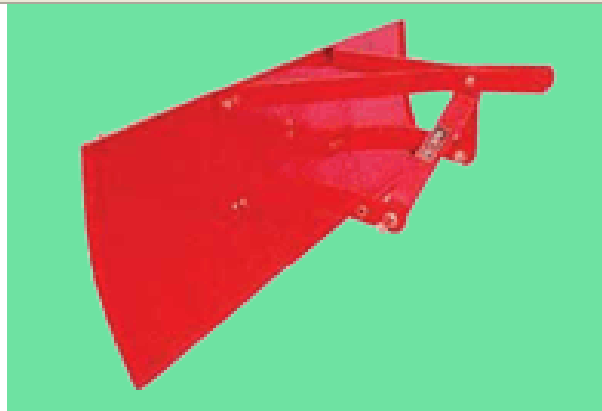
- (i) It is a simple and rugged Implement which is directly fitted to the tractor.
- (ii) The 10 mm single plate duly reinforced, makes our leveler trouble free in operation.
- (iii) It is a basic implement for leveling land.

Features:

- (i) Blade is made out of special steel which gives it trouble the life compared to other ordinary blades.
- (ii) (ii) The leveler is available with 6,7 and 8 ft width.

Specifications:

	6 FEET	7 FEET	8 FEET
FRAME	Draw Bar mounting with the help of MS Flat section 75x20 mm, 520 mm Long		
SIDE SUPPORT	Vertical : 25 x 10 mm MS Flat		
	Horizontal: Crescent shape, MS Flat, Max. width 100 mm, Min. width 35 mm		
THICKNESS OF PLATE	10 mm		
BLADE DIM.	70 x 10 mm (High Carbon steel)		
3 POINT LINKAGE	65x16 mm Flat		
CENTRAL SUPPORT	MS Angle 40x5 mm		
LINKAGE PIN	28 mm		
SPAN	1850 mm	2150 mm	2460 mm
WEIGHT	140 Kg. (approx.)	155 Kg. (approx.)	170 Kg. (approx.)



6. Laser Land Leveler



Reversible Land Leveler

REVERSIBLE 'LAND LEVELLER' is ideal for grading, leveling, filling, back fillings, farm yard clearing etc. Soil retaining wings can be optionally fitted on both ends of the blade for carrying the soil without spillage. It is suitable for non-sticky soils. The main benefit of this leveler is it can be operated from both the sides as there is a provision of three point linkage from both the sides.



IX. MISCELLANEOUS FARM IMPLEMENTS

1. Ditcher
2. Post hole digger
3. Rotary cutter
4. Rotary ditcher
5. Chaff cutter
6. Cane crusher
7. Puddler
8. Agriculture Loader

1. Ditcher



2. Post hole digger



3. Rotary cutter

Ag Equipment Medium Duty Cutter

SPECIFICATIONS - Lift Type 5', 6'			
Top Link	Floating	Wheels	Large
Type Hitch	CAT I	Hub	Reg e
Deck Thickness	11 GA Steel	Front Chain Guard	Optional Lift Type 5', 6'
Side Bands	HD 7" channel	Rear Chain Guard	Optional
PTO Drive Shaft	Series 4	Weight 5'	615 lbs.
Slip Clutch	Optional	Weight 6'	755 lbs.
Stump Jumper	3/4" Solid Stump Jumper	Pull Type	Optional
Gear Boxes	90 HP		



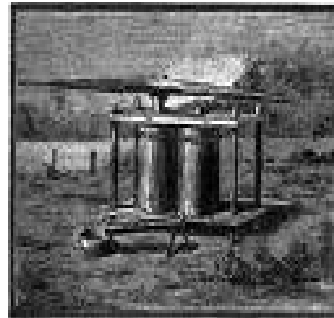
4. Rotary ditcher



5. Chaff Cutter



6. Cane Crusher



7. Puddler

We are a leading manufacturer of Puddler that is extensively used in the agricultural industry. These puddlers are manufactured using latest technology, ensuring maximum efficiency. Manufactured using quality material, these puddler are durable, resistant to rust and corrosion and have high tensile strength. Our array of puddler includes Puddy Puddler and Cage Wheel.



8. Agriculture Loader

A multipurpose rugged and powerful machine which can be quickly attached/detached to the front of Massey Ferguson Tractors for handling/loading stone/brick crush, garbage, sand, grains, wood logs etc. into a truck of trailer.

Agricultural Loader Features & Specifications

1. Tractor compatibility For MF-240/260
2. Bucket Type Closed earth Bucket with digging teeth
3. Bucket Volume 0.5 Cubic meter
4. Lifting time 3 – 6 seconds
5. Max. Lift capacity 750 Kg.
6. Operation Hydraulic
7. Lift Height at Pivot Point (9 ft – 6 Inch.) 2.9 m
8. Lift Ram
9. Bucket Ram

