

Guidelines for Manufacturing of Power Thresher



**Farm Machinery Adaptation & Dissemination
Practical Action Bangladesh**

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Published by

Infrastructure Services Program
Practical Action Bangladesh

Printed by

Precision Printers
263 Fakirapool, Dhaka-1000.

Publication

May, 07

Price :Tk. 50

Preface

Use of power thresher in our contemporary mechanized agriculture is notably increasing. There are many small and big workshops across the country have been manufacturing power threshers. Realizing the increasing demand of power thresher, we are publishing this training Guide on "Power Thresher manufacturing ". In this guide, readers would find some important easy methods of manufacturing power thresher with illustration. People working in power thresher manufacturing can use this booklet as a guide book. We believe this training guide would help people immensely in manufacturing power threshers.

Veena Khaleque

Country Director
Practical Action Bangladesh

Name of the Parts of Power Thresher Machine

1. Upper Concave	
2. Table for Crops	
3. Lower Concave/Sieve	
4. Thresher Cylinder	
5. Fan for throwing straw	
6. Outlet for Straw	
7. Peg	
8. Cylinder Shaft	
9. Louvre	
10. Main Frame	
11. Front Cover	
12. Crop inlet	
13. Fan	
14. Fan cover	
15. Engine Frame	
16. Dust Tray	
17. Comb	
18. Fork	
19. Handle	
20. Wheat Threshing Sieve/change system	
21. Crop Collector	
22. Tray	
23. Transport Wheel	

Introduction of Power Thresher

It is a high quality thresher machine. It is mainly used for threshing of paddy, wheat, lintel and other pulses.

It is more profitable than conventional threshing, pedal threshing, using power tiller and beating on a drum or tree logs.

Threshing of crops are labour intensive and time consuming. In conventional threshing some grains are thrown away. Some remain with the shell and even some times the grain are broken. As a result there was loss of grains. It is possible to minimise the loss using this machine. 800 kgs of paddy a 400 kgs. of wheat could easily be threshed with this machine. 12 HP engine is needed to operate the handle.

Power Thresher with Engine Cost

Sl No.	Description of Machine	Taka
1.	Power Thresher Machine Price	24,000/-
2.	Engine Price	16,000/-
	Total	40,000/-

- ★ It's working life is five years
- ★ It is possible to get back the capital within one year.

The benefits of the machine are

- ★ There persons are required to operate this machine
- ★ It is possible to earn extra income through rental of machine
- ★ Different type of pulses are threshed with this machine
- ★ Seed collected from the power thresher has better germination capacity

Maintenance & Repair

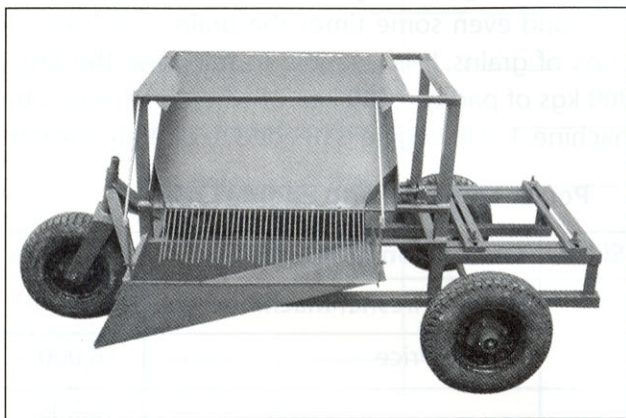
- ★ Lub oil to be checked after definite time interval of engine operation and if necessary to fill in
- ★ To fill the grease of machine bearing timely

- ☆ To check whether the nut bolt are properly secured befor machine operation
 - ☆ After operation, the machine & engine are thoroughly cleaned.
- Oil & grease are added and kept in a secure place

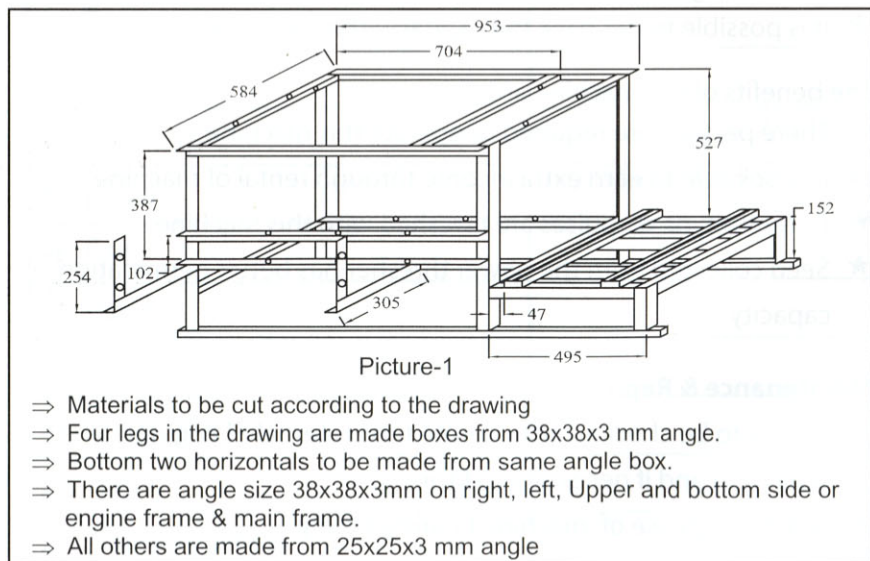
Precautions

- ☆ One should not wear loose dresses during machine operation
- ☆ It is advisable to use spectacles during machine operations

Materials for cutting & forming of different parts



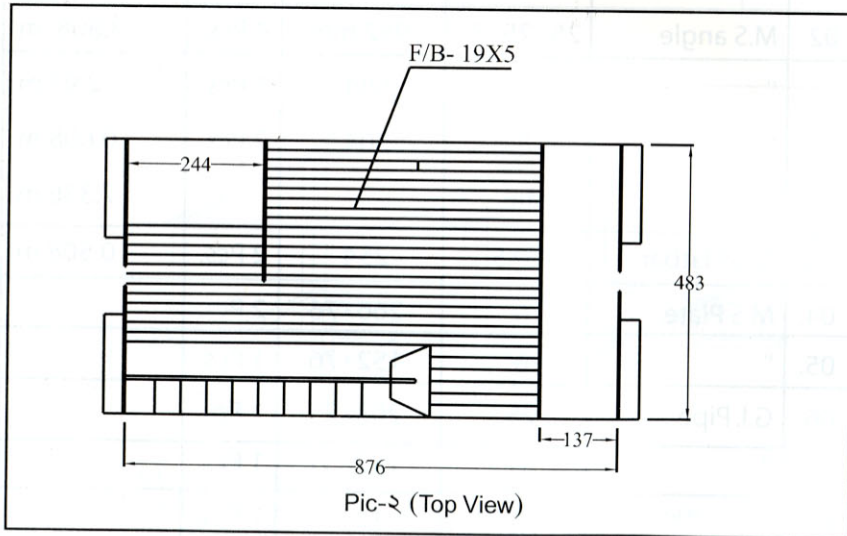
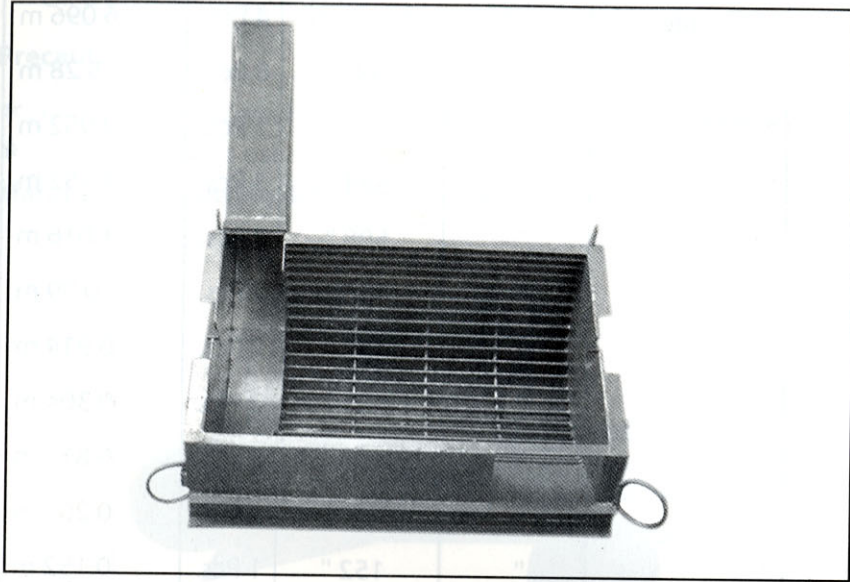
Base Frame



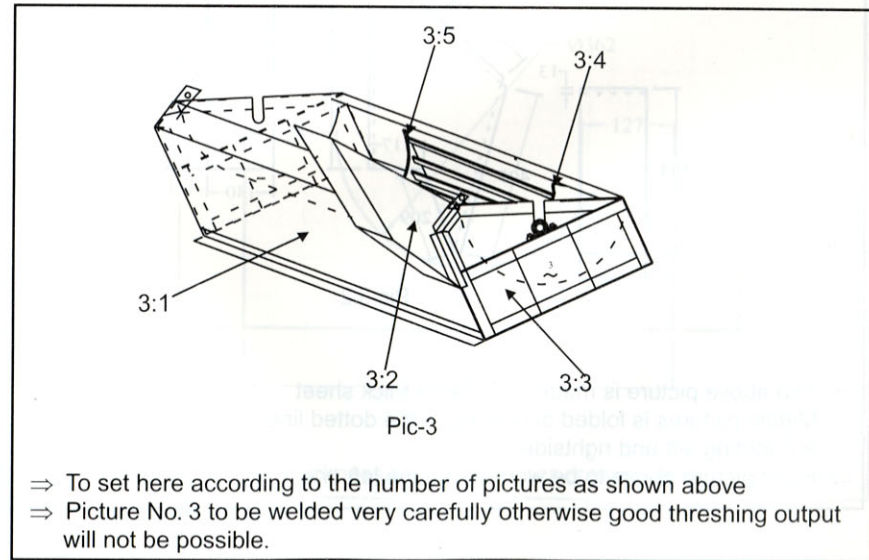
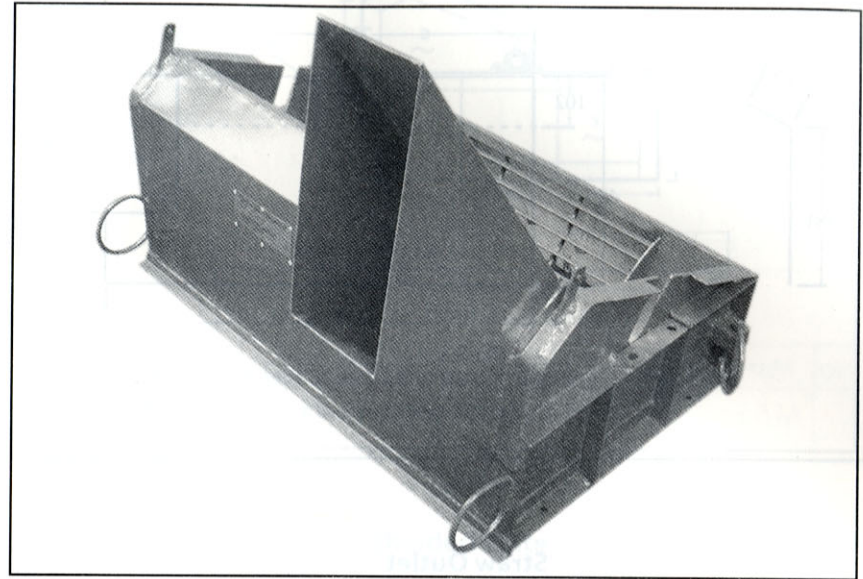
Base Frame Materials

Sl.No.	Materials	Size	Length	Qty.	Total length m.
01.	M.S angle	38×38×3	524 mm	4 Pcs.	6.096 m
	"	"	660 "	8 Pcs.	5.28 m
	"	"	952 "	1 Pcs.	0.952 m
	"	"	584 "	3 Pcs.	1.752 m
	"	"	508 "	2 Pcs.	1.016 m
	"	"	495 "	2 Pcs.	0.99 m
	"	"	457 "	2 Pcs.	0.914 m
	"	"	152 "	2 Pcs.	0.304 m
	"	"	406 "	2 Pcs.	0.812 m
	"	"	203 "	1 Pcs.	0.203 m
	"	"	152 "	1 Pcs.	0.152 m
	"	"	Total. :		18.471 m
02.	M.S angle	25×25×3	952 mm	4 Pcs.	3.808 m
	"	"	584 "	5 Pcs.	2.92 m
	"	"	304 "	2 Pcs.	0.608 m
	"	Total. :			7.336 m
03.	M.S Flatbar	25×5	254 "	2 Pcs.	0.508 m
04.	M.S Plate	6	266×76	2 Pcs.	
05.	"	6	152×76	1 Pcs.	
06.	G.I. Pipe	25	203×25	1 Pcs.	
07.	"	31	152×31	1 Pcs.	
08.	"	13	1219	1 Pcs.	
09.	Flatbar	38×5	140×38	1 Pcs.	

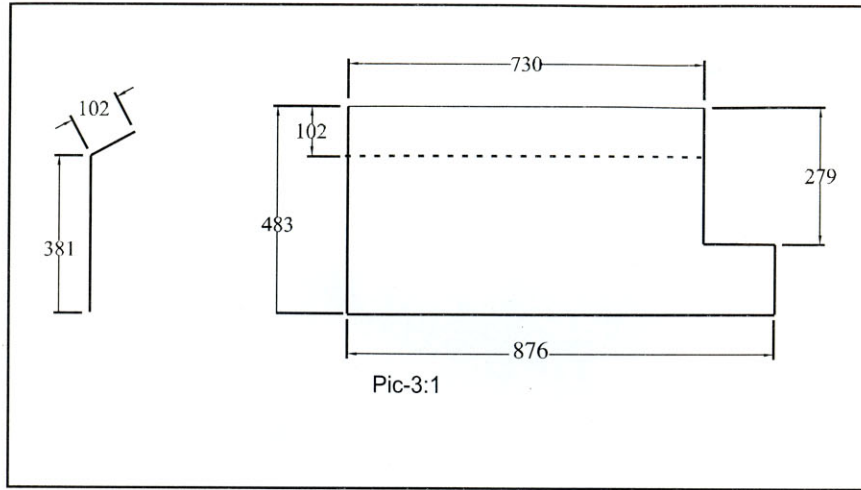
Lower Concave



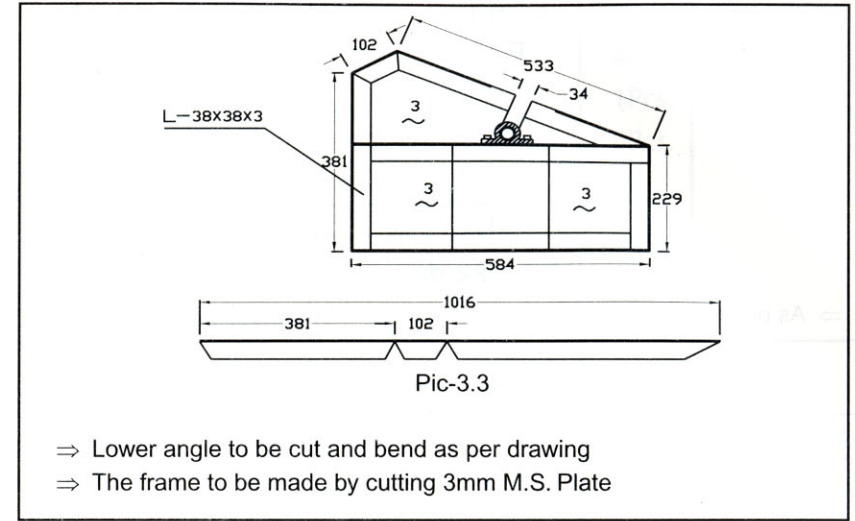
Lower Concave



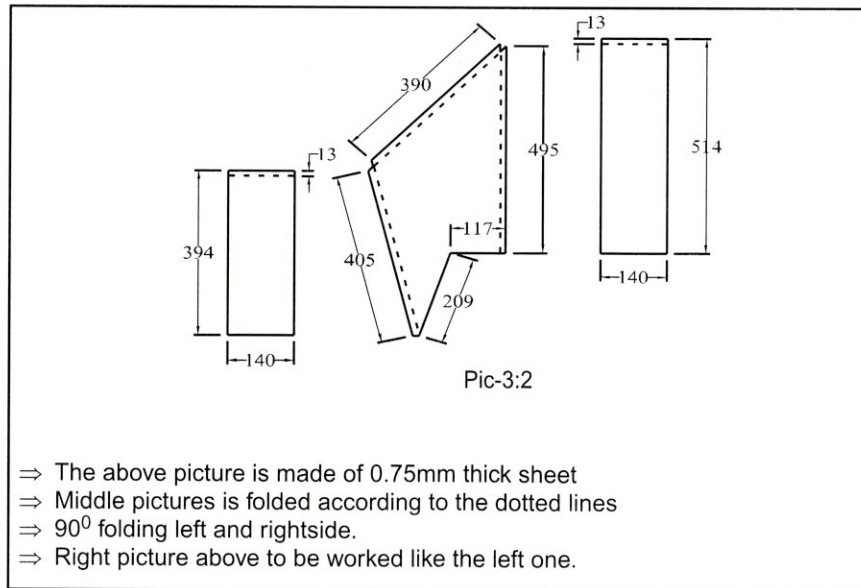
Front Cover



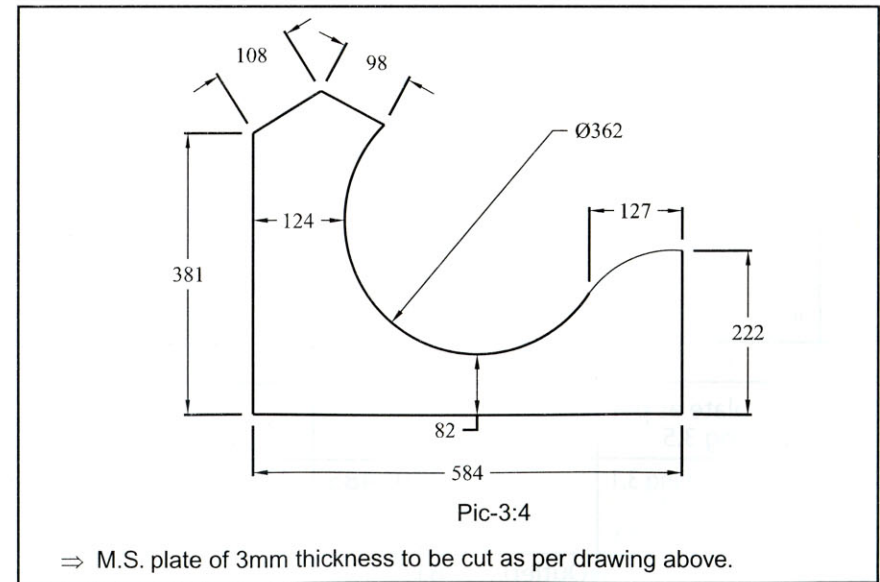
Side Cover



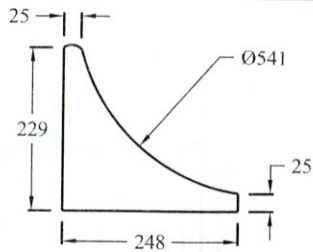
Straw Outlet



Divided Plate



Inlet Support Plate



Pic-3:4

⇒ As per drawing 3.5 to cut M.S. plate of 3mm thickness.

Materials for Lower Concave

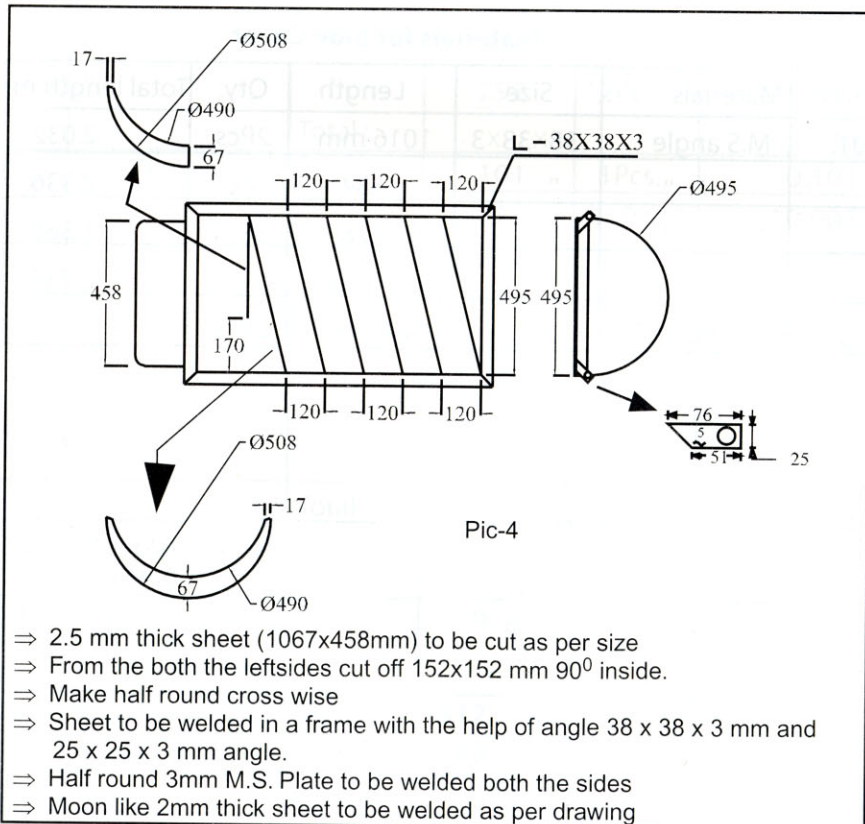
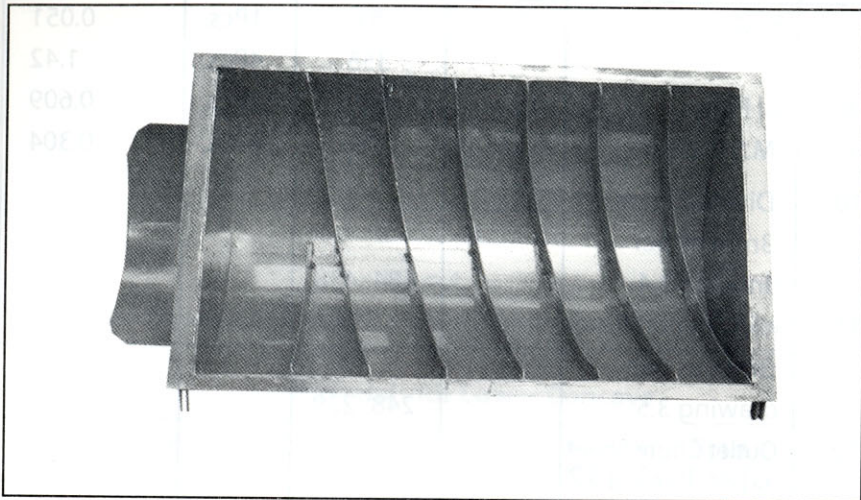
Sl.No.	Materials	Size	Length	Qty.	Total length m.
01.	M.S angle	25×25×3	952 mm	3Pcs.	2.856 m.
	"	"	869	1Pcs.	0.869
	"	"	727	1Pcs.	0.727
	"	"	292	2Pcs.	0.584
		Total :			5.036
02.	M.S Flatbar	19×5	101	1Pcs.	0.101
	"	"	727	15Pcs.	10.905
	"	"	247	6Pcs.	1.482
	"	"	473	9Pcs.	4.257
	"	"	51	8Pcs.	0.408
	"	"	63	2Pcs.	0.126
	"	"	127	1Pcs.	0.127
	"	"	38		0.038
		Total :			27.516
03.	M.S. plate as per drawing 3.5				
04.	As per drawing 3.1 M.S. plate of 0.75mm thickness.		879×485	1Pcs.	
05.	M.S. Sheet of 2mm (Outlet)		812×139	1Pcs.	
06.	M.S. Sheet of 2mm (Inlet)		152×247	1Pcs.	
07.	Rod	10 mm	952	2Pcs.	1.904

Sl.No.	Materials	Size	Length	Qty.	Total length m.
	Rod	"	51	1Pcs.	0.051
	"	"	355	4Pcs.	1.42
08.	GI Pipe	13	609	1Pcs.	0.609
09.	M.S Flatbar	25×5	76	4Pcs.	0.304
10.	Divided Plate				
	3mm as per drawing 3.4		584×438		
11.	Inlet Support Plate				
	3mm as per drawing 3.5		248×229		
12.	Outlet Chute Sheet as per drawing 3.2				

Materials for Side Cover

Sl.No.	Materials	Size	Length	Qty.	Total length m.
01.	M.S angle	38×38×3	1016 mm	2Pcs.	2.032
	"	"	584	4Pcs.	2.336
	"	"	228	6Pcs.	1.368
			Total.:		5.736
02.	M.S Plate	3	584×438	2Pcs.	

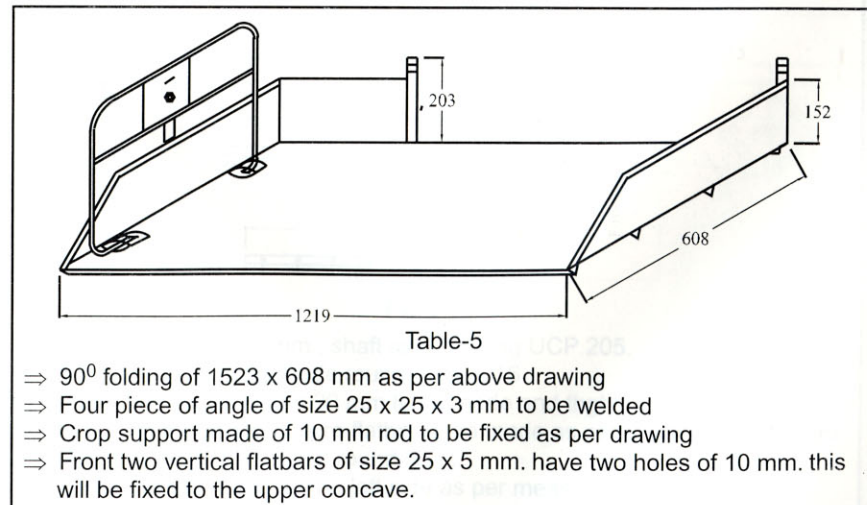
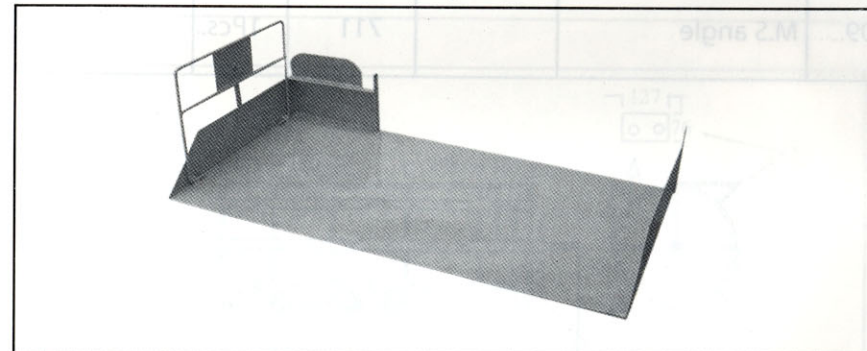
Upper Convey



Materials for Upper Concave

Sl.No	Materials	Size	Length	Qty.	Total length m.
01.	M.S angle	38×38×3	485	2Pcs.	0.97
02.	"	25×25×3	952	2Pcs.	1.904
03.	Flatbar (Draw-4:3)	25×5	76	6Pcs.	0.456
04.	M.S Sheet	2.5	762×1066	1Pcs.	
05.	M.S Plate (Half Round)	2mm	482×241	2Pcs.	
06.	Spiral Sheet as per Draw-4:1	2mm		6.5	

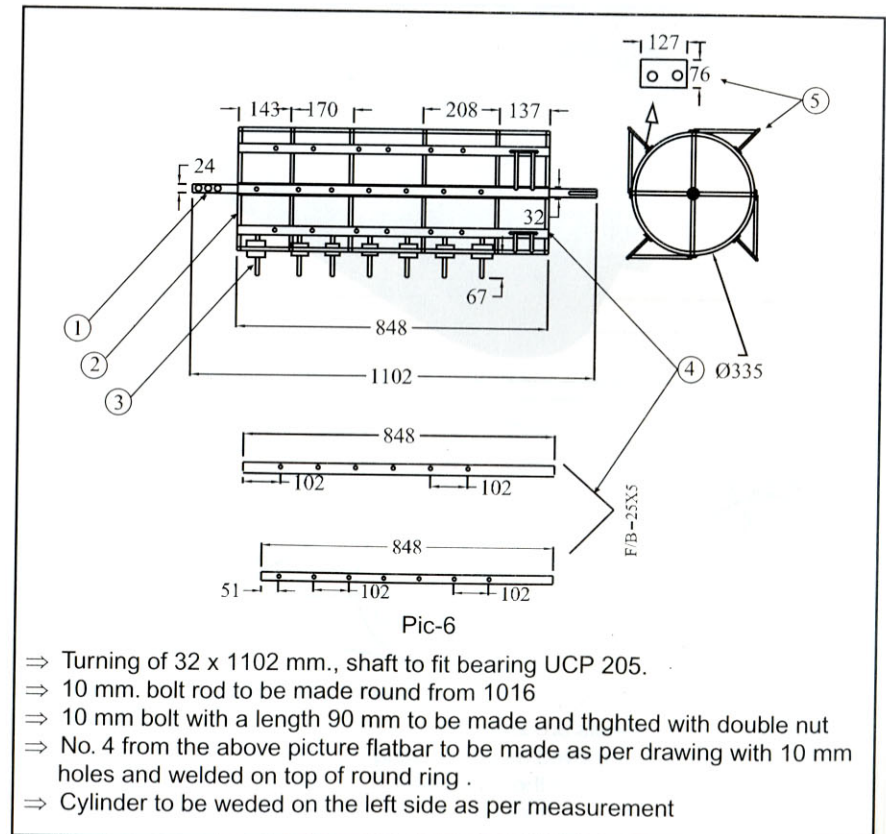
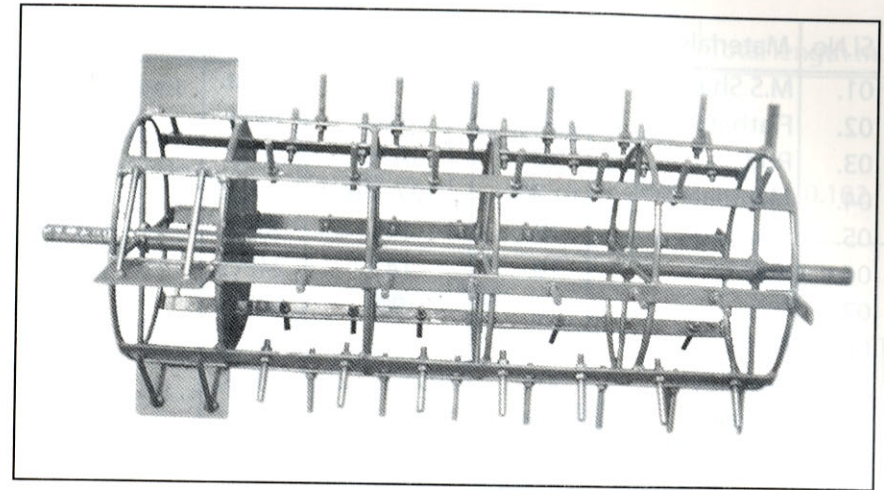
Table for Crops



Materials for Crops Table

Sl.No.	Materials	Size	Length	Qty.	Total length m.
01.	M.S angle	25×25×3	1219	4Pcs.	4.876
02.	"	25×25×3	304	1Pcs.	0.304
03.	Rod		1930		1.219
04.	Flatbar		203	2Pcs.	0.406
05.	"		76	1Pcs.	0.076
06.	Bush			2Pcs.	
07.	Sheet	1524×610		1Pcs.	
08.	Sheet	304×254			
09.	M.S angle		711	1Pcs.	

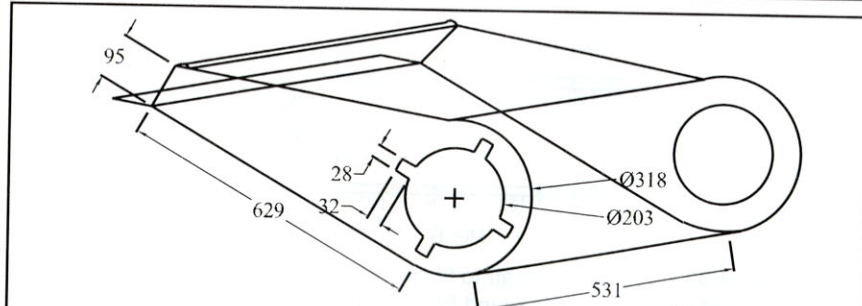
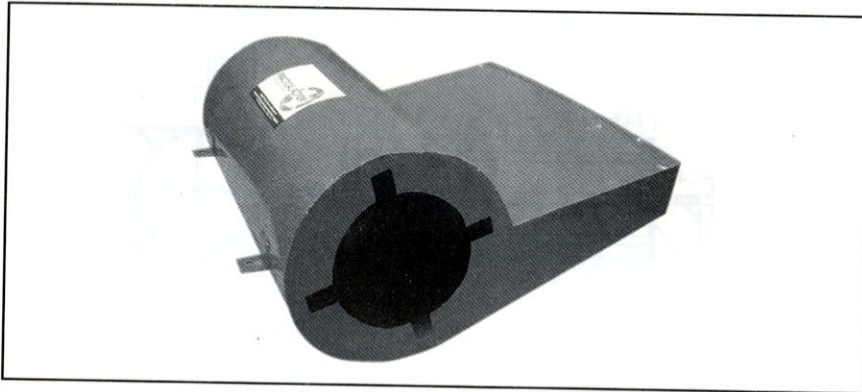
Thresher Cylinder



Materials for Thresher Cylinder

Sl.No.	Materials	Size	Length	Qty.	Total length m.
01.	M.S Shaft	32	1118	1Pcs.	1.118
02.	Flatbar	25×5	827	8Pcs.	6.616
03.	Rod	10	1016	6Pcs.	6.096
04.	M.S. Plate	6×76	127×76	4Pcs.	
05.	Rod	10	146	8Pcs.	1.168
06.	Rod	10	143	24Pcs.	3.432
07.	Peg	10	90	52Pcs.	
08.	Flatbar	25×5	63	4Pcs.	0.252
09.	V-pulley	305	305×25×25	1Pcs.	
10.	V-pulley	152	152×25×25	1Pcs.	

Blower Cover



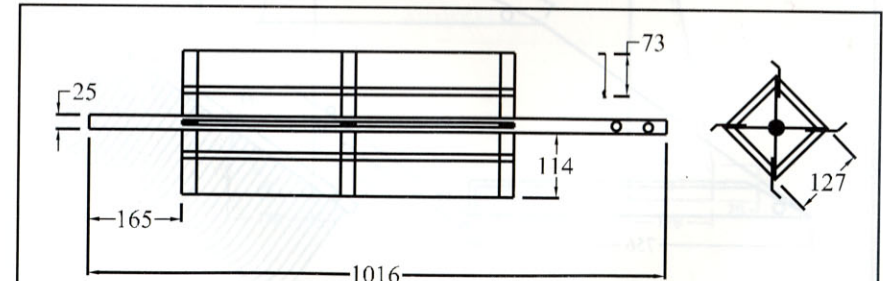
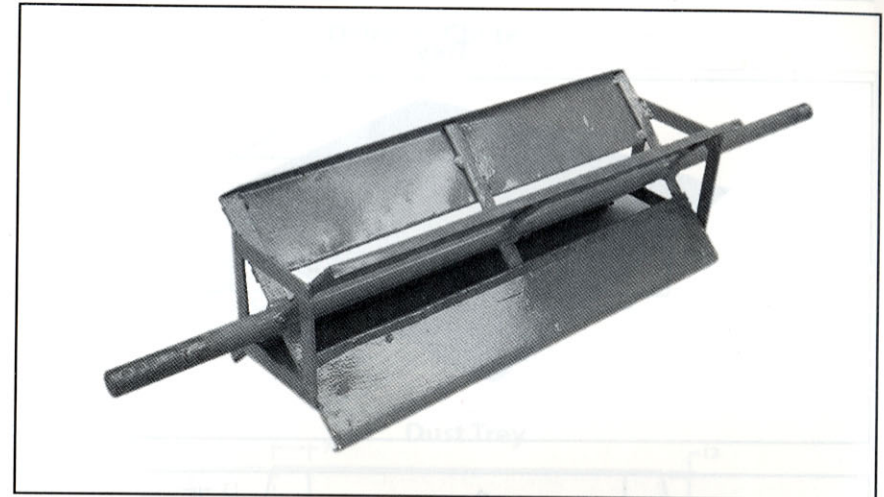
Pic-7

- ⇒ The right and left sheets are 2mm. thick
- ⇒ The left sheet to be grooved as per drawing
- ⇒ There will be round hole in the right sheet
- ⇒ The cover sheet is 0.75 mm. thick of size 1524 x 610 mm. to be welded after rolling.

Blower Cover Materials

Sl.No.	Materials	Size	Length	Qty.	Total length m.
01.	Sheet	0.75	610×1575	1Pcs.	
02.	Sheet	2	317×679	2Pcs.	
03.	M.S angle	38×38×3	51	2Pcs.	0.102

Blower Fan



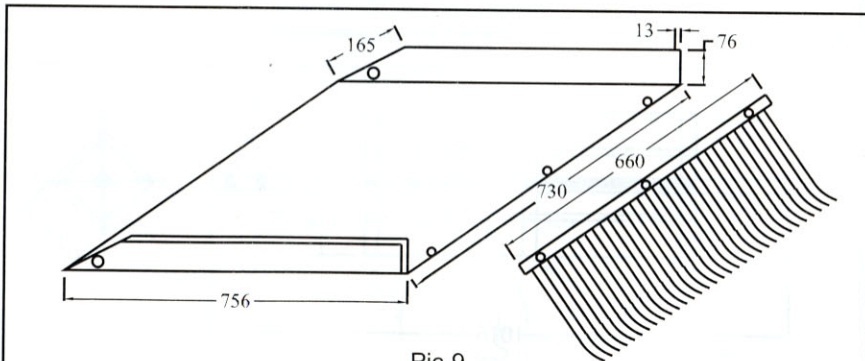
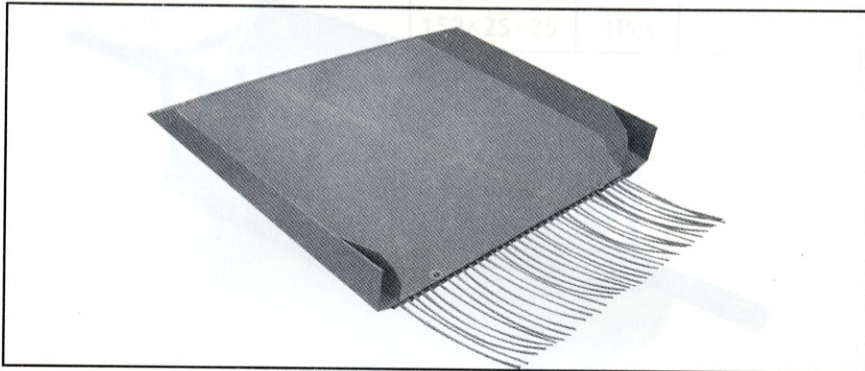
Pic-8

- ⇒ The middle section of the picture is a shaft of size 1016 x 125 mm
- ⇒ There are two 10 mm. shanks for two circular 76 mm pulleys.
- ⇒ The fan is 0.75 mm thick sheet
- ⇒ 90° folding on the sheet
- ⇒ folding under the sheet

Blower Fan Materials

Sl.No.	Materials	Size	Length	Qty.	Total length m.
01.	Shaft	25	1016	1Pcs.	
02.	Flatbar	19×5	114	12Pcs.	1.368
03.	Flatbar	19×3	127	4Pcs.	0.508
04.	Flatbar	19×3	89	4Pcs.	0.356
05.	Sheet	0.75	559×114	1Pc.	
06.	V-pulley	76	76×25×25	1Pc.	

Trey



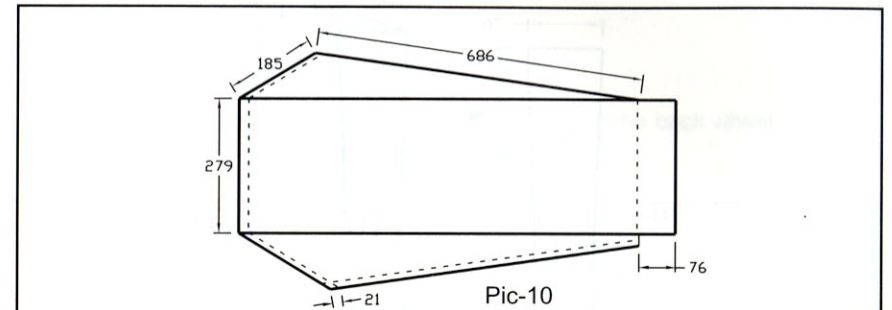
Pic-9

- ⇒ At first take a sheet of thickness 0.75 mm and size 756 x 882 mm
- ⇒ 13 mm folding in the upper side and 19 mm folding in the lower side are to be made
- ⇒ There will be 63 mm folding at 90° both right and left side
- ⇒ Flatbar of size 25 x 5 (600mm) to cut off
- ⇒ M.S. Wire (no. 8) 254 mm total 32 pieces to be welded.

Tray Materials

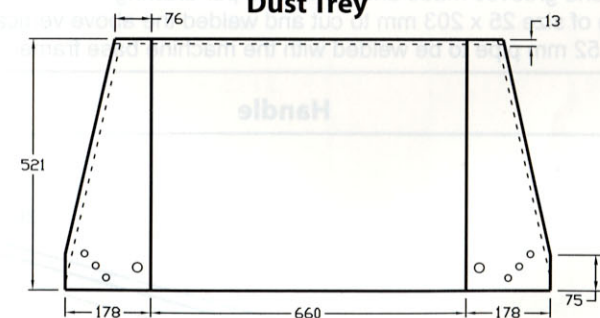
Sl.No.	Materials	Size	Length	Qty.	Total length m.
01.	Sheet	0.75	756×908	1Pc.	
02.	Flatbar	25×5	635	1Pc.	0.635
03.	M.S. Wire	8 SWG	254	32Pcs.	8.128
04.	Sheet	0.75	152×76	1Pc.	
05.	Sheet	0.75	127×76	1Pc.	

Delivery Chute



Pic-10

Dust Trey

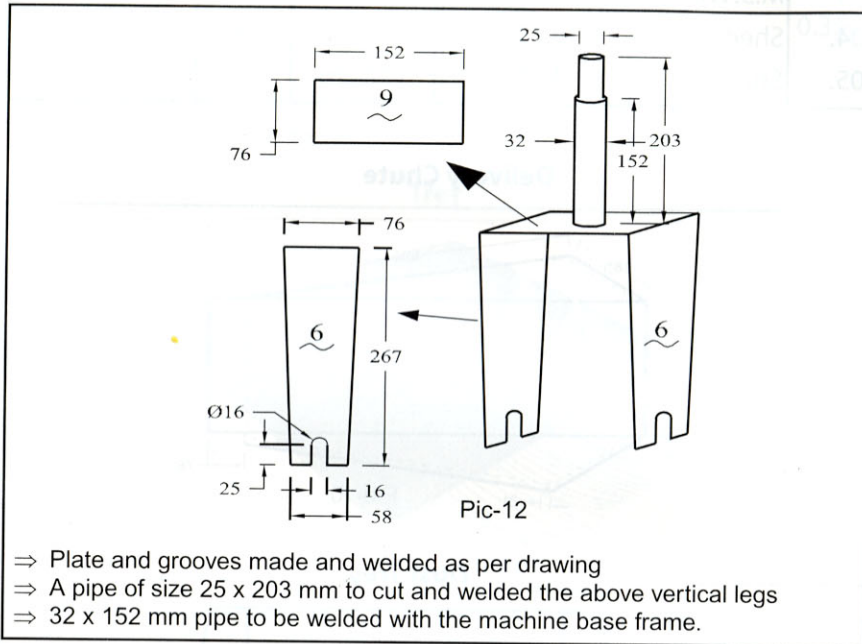


Pic-11

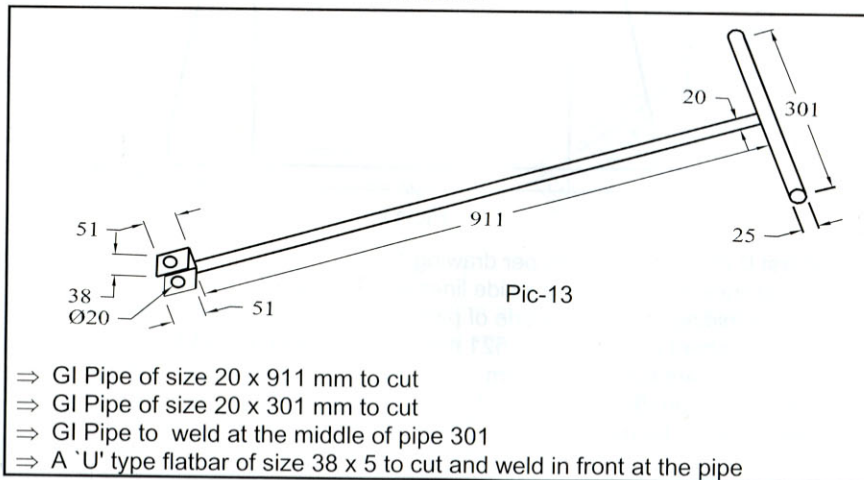
- ⇒ At first 0.75 sheet to cut as per drawing 10
- ⇒ Dotted lines are folded and inside lines are 90° folded
- ⇒ Vertical folding on the right side of picture
- ⇒ 0.75 mm sheet of size 1016 x 521 mm to cut as per Picture 11
- ⇒ dotted lines are folded at 13 mm
- ⇒ vertical lines are 90° folded.
- ⇒ 8 mm holes to be made.

Delivery Chute, Dust Tray Materials

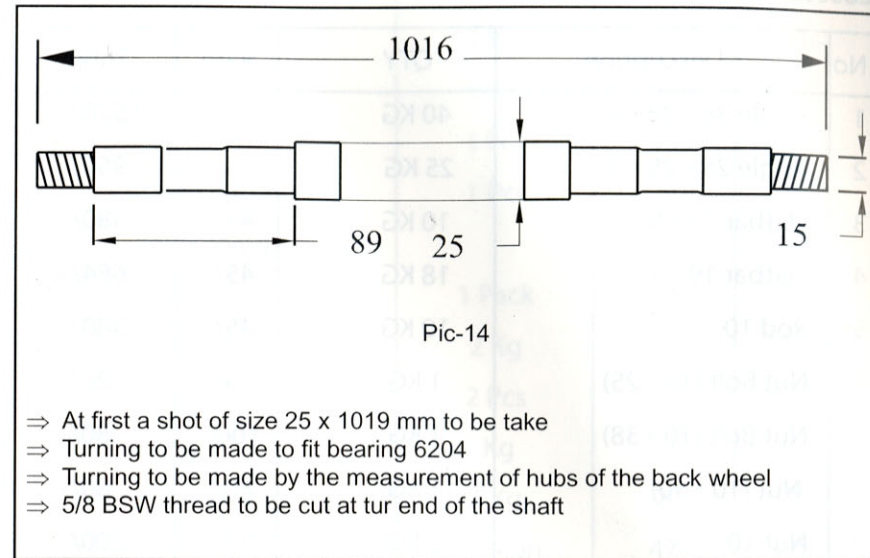
Sl.No.	Materials	Size	Length	Qty.	Total length m.
01.	Sheet	0.75	914×648	1Pc.	
02.	Sheet	0.75	1016×521	1Pc.	



Handle



Transport Wheel Shaft



Cost for Power Thresher Materials

No	Description	QTY	Rate	Total
1	Angle 38×38×3	40 KG	46/-	1840/-
2	Angle 25×25×3	25 KG	45/-	1125/-
3	Flatbar 25×5	10 KG	45/-	450/-
4	Flatbar 19×5	18 KG	45/-	810/-
5	Rod 10	10 KG	45/-	450/-
6	Nut Bolt (10×25)	1 KG	80/-	80/-
7	Nut Bolt (10×38)	1 KG	100/-	100/-
8	Nut (10×50)	1 KG	80/-	80/-
9	Nut 10	2 KG	100/-	200/-
10	Bolt (10×102)	4 KG	80/-	320/-
11	Nut 16	2 Pcs	5/-	10/-
12	Plate M.S. 3	18 KG	65/-	1170/-
13	Rim	3 Pcs	200/-	600/-
14	Tube	3 Pcs	100/-	300/-
15	Tyre	3 Pcs	200/-	600/-
16	Hubs	3 Pcs	100/-	300/-
17	Bearing 6204 zz	6 Pcs	60/-	360/-
18	Bearing UCP 205	4 Pcs	160/-	640/-
19	Shaft 32×1118	1 Pcs	105/-	105/-
20	Shaft 25×1016	2 Pcs	65/-	130/-
21	Spindle (Shaft 6204)	1 Pcs	50/-	50/-
22	Pipe 13×102	1 Pcs	25/-	25/-
23	Pipe 32×152	1 Pcs	80/-	80/-

24	Pipe 25×203	1 Pcs	60/-	60/-
25	Pulley 305	1 Pcs	500/-	500/-
26	Pulley 152	1 Pcs	210/-	210/-
27	Pulley 76	1 Pcs	150/-	150/-
28	Key way cutting	1 Pcs	30/-	30/-
29	Sheet Folding			40/-/-
30	Electrodes	1 Pack	415/-	415/-
31	Slide 7615	2 Kg	55/-	110/-
32	Emery Paper	2 Pcs	10/-	20/-
33	Zinc Oxide	Kg	50/-	50/-
34	Chalk Powder	1 Kg	20/-	20/-
35	Paint	1 Galon	470/-	470/-
36	Turpentine	1 Litre	80/-	80/-
37	Varnish	1 Kg	80/-	80/-
38	Kerosene	2 Litre	45/-	90/-
39	MS Wire 8 SWG	2 Kg	45/-	90/-
40	Tire Air	3 Pcs	15/-	45/-
41	Belt B 62"	1 Pcs		250/-
42	Belt A 72"	1 Pcs		216/-
43	Grainding Stone	2 Pcs		70/-
44	Painter Charge	1		100/-
45	Sheet 22 SWG	40 Kg	55/-	2200/-
46	Sheet 18 SWG	8 Kg	55/-	440/-
47	Sheet 16 SWG	25 Kg	55/-	1375/-
48	Making Charge			1500/-
	Total			18,436/-



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