Guidelines for Manufacturing of Power Thresher







Farm Machinery Adaptation & Dissemination Practical Action Bangladesh

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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 immensly 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 Thresing Sieve/change system	
21. Crop Collecter	
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 pfofitabel 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 shelf 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 cold easily be threshed with this machine. 12 HP engine is needed to operate the handle.

Power Thresher with Engine Cost

SI No.	Discription 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

- \star There persons are required to operate this machine
- \star 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 defute time internal of engine operation and if necessary to fill in
- \star To fill the grease of machine bearing timely

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- \star 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

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

Materaials for cutting & forming of different parts



Base Frame



- \Rightarrow Bottom two horizontals to be made from same angle box.
- ⇒ There are angle size 38x38x3mm on right, left, Upper and bottom side or engine frame & main frame.
- \Rightarrow All others are made from 25x25x3 mm angle

Base	Frame	Materials	
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SI.No.	Materials	Size	Length	Qty.	Total length m.
01.	M.S angle	38×38×3	524 mm	4 Pcs.	6.096 m
	н		660 ''	8 Pcs.	5.28 m
		п	952 ''	1 Pcs.	0.952 m
		u	584 "	3 Pcs.	1.752 m
			508 "	2 Pcs.	1.016 m
	<u>.</u>	u .	495 "	2 Pcs.	0.99 m
			457 "	2 Pcs.	0.914 m
	н	U	152 "	2 Pcs.	0.304 m
	u		406 "	2 Pcs.	0.812 m
	n		203 "	1 Pcs.	0.203 m
	ü		152 "	1 Pcs.	0.152 m
	п	n.	Total. :		18.471 m
02.	M.S angle	25×25×3	952 mm	4 Pcs.	3.808 m
	ii .	"	584 "	5 Pcs.	2.92 m
			304 "	2 Pcs.	0.608 m
	н	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.	Ω.	6	152×76	1 Pcs.	
06.	G.I. Pipe	25	203×25	1 Pcs.	
07.	п	31	152×31	1 Pcs.	
08.	Щ.	13	1219	1 Pcs.	
09.	Flatbar	38×5	140×38	1 Pcs.	
	1	1	1	1	1

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Lower Concave





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Front Cover



Straw Outlet



$\Rightarrow Lower angle to be cut and bend as per drawing$ $<math display="block">\Rightarrow The frame to be made by cutting 3mm M.S. Plate$

Side Cover

Divided Plate



Inlet Support Plate



Materials for Lower Concave

SI.No.	Materials	Size	Length	Qty.	Total length m.
01.	M.S angle	25×25×3	952 mm	3Pcs.	2.856 m.
	n	<u>n</u>	869	1Pcs.	0.869
	n	и.	727	1Pcs.	0.727
	н	d Plate	292	2Pcs.	0.584
		Total :	nythet		5.036
02.	M.S Flatbar	19×5	101	1Pcs.	0.101
	ш	и	727	15Pcs.	10.905
	п	л	247	6Pcs.	1.482
	0	п	473	9Pcs.	4.257
		л	51	8Pcs.	0.408
	н	н	63	2Pcs.	0.126
	п	30	127	1Pcs.	0.127
	ш	п	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

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

Materials for Side Cover

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

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- \Rightarrow Half round 3mm M.S. Plate to be welded both the sides
- \Rightarrow Moon like 2mm thick sheet to be welded as per drawing
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Materials for Upper Concave

SI.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.	03. 1000
05.	M.S Plate	2mm	482×241	2Pcs.	ALC: NO.
	(Half Round)				1.1.1.1
06.	Spiral Sheet				hala an
	as per Draw-4:1	2mm		6.5	

Table for Crops

Sheet



- \Rightarrow 90⁰ folding of 1523 x 608 mm as per above drawing
- \Rightarrow Four piece of angle of size 25 x 25 x 3 mm to be welded
- $\Rightarrow\,$ Crop support made of 10 mm rod to be fixed as per drawing
- \Rightarrow Front two vertical flatbars of size 25 x 5 mm. have two holes of 10 mm. this will be fixed to the upper concave.

Table-5

Materials for Crops Table

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

Thresher Sylinder





Materials for Thresher Sylinder

SI.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.	- DVC
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



Blower Cover Materials

SI.No.	Materials	Size	Length	Qty.	Total length m.
01.	Sheet	0.75	610×1575	1Pcs.	01, - Shaft
02.	Sheet	2	317×679	2Pcs.	O2600Flatbar
03.	M.S angle	38×38×3	51	2Pcs.	0.102

Blower Fan



- \Rightarrow 90⁰ folding on the sheet
- \Rightarrow folding under the sheet

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Blower Fan Materials

SI.No.	Materials	Size	Length	Qty.	Total length m.
01.	Shaft	25	1016	1Pcs.	Percent Inc.
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





- $\Rightarrow\,$ 13 mm folding in the upper sice and 19 mm folding in the lower side are to be made
- \Rightarrow There will be 63 mm folding at 90⁰ both right and left side
- \Rightarrow Flatbar of size 25 x 5 (600mm) to cut off
- $\Rightarrow\,$ M.S. Wire (no. 8) 254 mm total 32 pieces to be welded.

Tray Materials

SI.No.	Materials	Size	Length	Qty.	Total length m.
01.	Sheet	0.75	756×908	1Pc.	OL Sheet
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.	11111
05.	Sheet	0.75	127×76	1Pc.	1 2

Delivery Chute



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Delivery Chute, Dust Tray Materials

SI.No.	Materials	Size	Length	Qty.	Total length m.	
01.	Sheet	0.75	914×648	1Pc.	towned	
02.	Sheet	0.75	1016×521	1Pc.	10-0110	



 \Rightarrow A pipe of size 25 x 203 mm to cut and welded the above vertical legs

 \Rightarrow 32 x 152 mm pipe to be welded with the machine base frame.

Handle





Cost for Power Thresher Materials

No	Description	QTY	Rate	Total
1	Angle 38×38×3	40 KG	46/-	1840/-
2	Angle $25 \times 25 \times 3$	25 KG	45/-	1125/-
3	Flatbar 25 $ imes$ 5	10 KG	45/-	450/-
4	Flatbar 19×5	18 KG	45/-	810/-
5	Rod 10	10 KG	45/-	450/-
6	Nut Bolt (10 $ imes$ 25)	1 KG	80/-	80/-
7	Nut Bolt (10 $ imes$ 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/-

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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 76ĺ5	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 ⁴⁷	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/-	
					11)

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