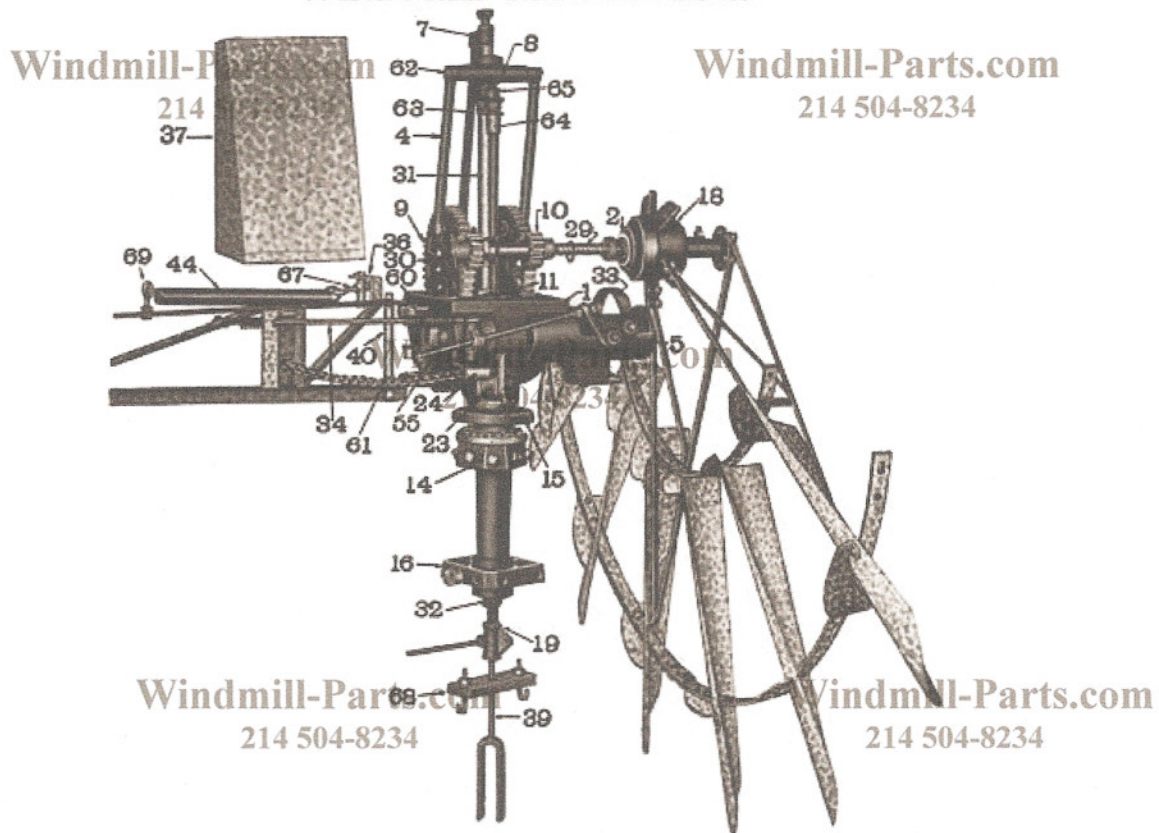




WINDMILL REPAIR LISTS



IMPORTANT INSTRUCTIONS TO FOLLOW IN ORDERING REPAIRS

TO AVOID mistakes, and delay, when ordering repairs for Flint & Walling Manufacturing Company's products, great care should be taken to give explicit information about the repair wanted, what kind of windmill, or pump, is to be repaired. We have made windmills and pumps in many models, and each model in several sizes, so that you can readily see that it is necessary to have this information.

All cast parts have a number, in most cases cast on when made in the foundry. If you can give this number we will know what you need, but sometimes the number is covered with dirt or grease until the number cannot be found, in which case try to give symbol numbers on some other part that works in conjunction with part wanted.

Star windmill castings are marked with symbols consisting of three or more numerals. For the Model 24 Star windmill the right hand numeral is 4 and stands for Model 24. The second numeral from the right denotes size of wheel, as 5 for 5 foot, 7 for 7 foot, 8 for 8 foot, 10 for 10 foot, 12 for 12 foot, and 6 for 15 foot windmill. Other numbers refer to casting part. Symbol Model 184 means main casting for 8 foot Model 24 Star windmill.

On the Zephyr Star Model 37 the two figures to right denote Model 37 windmill, the next figure stands for wheel size and remaining figures are casting numbers. Casting number 1737 denotes main casting (No. 1) for 7 foot Model 37 windmill. As some parts of Model 24 interchange these parts will fit on either mill, according to size.

In ordering windmill repairs always give date of purchase if possible and if back geared or direct stroke mill. We can furnish parts for any mill we have ever sold, if we have proper information as to parts wanted. If you have a small part which you want replaced but can find no number it would save delay and correspondence by mailing the old part in to us for duplication. Always attach your name and address to the part.

By observing these instructions we can give you a quicker and surer service.

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STAR ZEPHYR MODEL 37 WINDMILL REPAIRS

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Description	10'		12'		15'	
	Pattern No.	List Price	Pattern No.	List Price	Pattern No.	List Price
Main Casting	1037	\$17.00	1237	\$33.00	1637	\$60.00
Main Casting Side Plug	2 1/2"	.30	3"	.30	4"	.85
Main Casting Oil Drain Plug	1"	.10	1"	.10	1 1/2"	.15
Main Casting Oil Level Cup	1"	.25	1 1/2"	.25	1 1/2"	.25
Main Casting Pipe and Flange					3x4 1/2"	13.75
Drive Shaft Cap for Roller Bearing	2037	.50	2237	.95	2637	1.35
Drive Shaft Cap Shim		.10		.10		.10
Crank Shaft Case for Roller Bearing	3037	2.00	3237	3.30	364	4.40
Pitman	4037	1.10	4237	2.50	4637	6.60
Crank Shaft Case for Plain Bearing	5037	2.00				
Drive Shaft Cap for Plain Bearing	6037	.50				
Guide Rod Brace Casting	7037	.40	7237	.50	7637	.85
Crosshead	8037	1.55	8237	1.75	8637	5.50
Gears	9037	2.50	9237	4.40	964	7.70
Pinion	10037	1.00	1024	2.20	1064	4.40
Oil Shield	11037	.20	1124	.45	1164	.45
Rudder Hinge					1364	3.00
Bed Plate	1484	.80	235	1.05	255 1/2	4.25
Bed Plate Flange	1584	.80				
Truing Spider	16837	.80	16237	1.65	16637	2.50
Hard Oil Grease Cup	1 1/2"	.15	1 1/2"	.15	1 1/2"	.15
Steel Balls	5/8"	.60				
Wheel Hub	18037	5.30	18237	7.50	18637	22.00
Wheel Hub Key	3/8 x 1 1/2 x 5"	.25	3/8 x 1 1/2 x 7"	.40	3/8 x 1 1/2 x 3 1/2"	.55
Pullout Swivel Assembled	19037	1.40	1924	2.20	1964	4.40
Sheave	2382	.25	2322	.30	2362	.75
Sheave Guard	2484	.20	2424	.35	2464	.75
Oil Pump Plunger and Valve Seat	2504	.55	2524	.65	2564	.85
Oil Pump Plunger Cap	2584A	.15	2584A	.15	25837A	.15
Oil Pump Cylinder	2604	1.00	2624	1.10	2664	1.35
Oil Pump Cylinder Bushing	2784	.25	2784	.25		.25
Drive Shaft for Plain Bearing	28037	2.00				
Drive Shaft for Roller Bearing	29037	2.00	29237	3.30	29637	9.00
Drive Shaft Roller Bearing Cup	1 1/2"	.75	1 1/2"	1.15	1 1/2"	1.75
Drive Shaft Roller Bearing Cone	1 1/2"	1.40	1 1/2"	2.20	1 1/2"	3.20
Whitney Key Machined	No. 18	.15	No. 25	.15	No. 25	.15
Whitney Key Plain	No. 18	.10	No. 25	.10	No. 25	.10
Drive Shaft Oil Ring		.10		.10		.15
Drive Shaft Oil Dam						.85
Crank Shaft and Nut	30037	.65	30237	1.10	3064	1.05
Crank Shaft Roller Bearing Cup	63/64"	.75	1 1/8"	.75	2 1/2"	2.35
Crank Shaft Roller Bearing Cone	63/64"	1.40	1 1/8"	1.40	2 1/2"	3.70
Guide Rod	31037	1.80	31237	2.50	31637	3.85
Guide Rod Brass Nut	1"	.30	1"	.30	1 1/2"	.40
Bottom Cap	32837	.40	32237	1.10	32637	1.05
Brake Band Assembled	3304A	.50	3324A	.95	3364A	1.10
Bumper Rod and Nuts	34037	.25	34237	.55	34637	1.10
Governor Spring Bracket	36037	.85	36237	1.10	36637	1.40
Hood	37037	3.70	37237	5.00	37637	9.35
Pump Rod and Wood Rod Connector	39037	1.20	38237	1.65	39637	5.00
Rudder Hinge Pin	40037	.40	40237	.65	40637	1.35
Governor Spring	44037	1.10	44237	2.20	4464	9.10
Drive Shaft Cast Bearing	4603A	.95				
Crank Shaft Bahbit Bearing	4704A	.55				
Bed Plate Top Race			5224	1.10	5264	3.00
Bed Plate Bottom Race			5324	1.40	5364	3.00
Bed Plate Race Complete				3.00		1.05
Brake Rod Casting	5404A		5424A		5464A	
Brake Rod and Nuts	55037A	.50	55237A	.90	55637A	1.40
Bumper Rod Spring	60037	.15	60237	.20	60637	.20
Rudder Hinge Pin Bushing	61037	.35	61237	.40	61637	.40
Crosshead Pin	62037	.35	62237	.75	62637	1.10
Guide Rod Brace Support	63037	.35	63237	.45	63637	.85
Swivel Stud and Nut	64037	.85	64237	1.65	64637	2.50
Swivel Hexagon Nut for Pump Bar	1 1/2"	.10	5/8"	.15	3/4"	.15
Pullout Lever Assembled	66037	2.00	66237	2.00	66637	5.00
Governor Spring Adjusting Rod	67837	.30	67237	.35	67637	.45
Pump Rod Guide Block						
Pump Rod Hook Bolts and Washers	68837	.45	68237	.55	68637	.85
Governor Spring Eye Bolt	69837	.20	69237	.30	69637	.40
Drive Shaft Lock Ring	70037	.35	70237	.40	70637	1.40
Drive Shaft Long Spreader	71037	.35	71237	.50	71637	.90
Drive Shaft Short Spreader	72037	.20	72237	.25	72637	.45
Drive Shaft Lock Ring Latch	73737	.15	73737	.15	73637	.15
Bumper Round Head Bolt	74037	.30	74237	.35	74637	.50
Oil Shield Bracket	76037	.25				
Swivel Stud Bar					77037	1.05
Swivel Bronze Washer	78837	.15	78237	.20	78637	.35
Swivel Stud					3/4 x 1"	.35
Splice Irons, Per Pair					C29	1.10
Packing Box for Steel Tower	1 1/4 x 10 x 10"	.25	1 1/4 x 14 x 14"	.35		16.50
Rudder		4.40		7.25		17.50
Rudder Stem		6.00		10.00		21.00
Wheel Fan Brackets, Each		4.95		8.25		25
Wheel Fan with Brackets		.20		.20		.25
Wheel Sections, Each		.85		1.10		2.50
Wheel Section, Set Complete		5.00		6.50		12.00
Inside Rims, per set		26.00		38.50		76.00
Outside Rims, per set	6	4.65	7	2.20	8	4.40
Wheel Arms, per set	6	3.00	7	4.15	8	9.35
Set Wheel Bolts		7.70		12.00		24.50
		.85		1.10		2.75

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STAR ZEPHYR MODEL 37 WINDMILL REPAIRS

Description	5' Model 37		7' Model 37		8' Model 37	
	Pattern No.	List Price	Pattern No.	List Price	Pattern No.	List Price
Main Casting	1537	\$ 8.00	1737	\$10.00	1837	\$12.00
Main Casting Side Plug	2537	.20	2537	.20	2537	.20
Main Casting Drain Plug	3537	.10	1737	.10	1737	.10
Main Casting Oil Level Cup	4537	.25	4537	.25	4537	.25
Drive Shaft Cap for Roller Bearing	2537	.40	2537	.40	2537	.45
Drive Shaft Cap Shim		.10		.10		.10
Crank Shaft Case for Roller Bearing	3537	1.10	3737	1.10	3837	1.40
Pitman	4537	.85	4737	.90	4837	1.00
Crank Shaft Case for Plain Bearing	5537	1.20	5737	1.40	584A	1.55
Drive Shaft End Cap for Plain Bearing	6537	.40	6737	.40	6837	.45
Guide Rod Brace Casting	7537	.35	7737	.35	7837	.35
Crosshead	8537	1.10	8737	1.35	8837	1.40
Gears	9537	.95	9737	1.20	9837	1.80
Pinion	10537	.55	1074	.65	1084	.75
Oil Shield	11537	.15	11737	.15	11837	.15
Bed Plate	1484	.85	1484	.85	1484	.85
Bed Plate Top Flange	1584	.85	1584	.85	1584	.85
Truing Spider	16837	.85	16837	.85	16837	.85
Truing Spider Grease Cup	1/8"	.15	1/8"	.15	1/8"	.15
Steel Balls-Set	21 - 5/8"	.65	21 - 5/8"	.65	21 - 5/8"	.65
Wheel Hub	18537	2.20	18737	3.00	18837	3.65
Wheel Hub Key		.20		.20		.20
Pullout Swivel complete	19537	1.20	19837	1.40	19837	1.40
Sheave	2382	.25	2382	.25	2382	.25
Sheave Cover	2484	.20	2484	.20	2484	.20
Oil Pump Plunger and Valve Seat	2554	.50	2574	.50	2584	.50
Oil Pump Cap	2584A	.15	2584A	.15	2584A	.15
Oil Pump Cylinder	2654	.95	2674	.95	2684	1.10
Oil Pump Bushing	2784	.25	2784	.25	2784	.25
Drive Shaft for Plain Bearing	28537	1.20	28737	1.55	28837	1.80
Drive Shaft for Roller Bearing	29537	1.20	29737	1.55	29837	1.80
Drive Shaft Roller Bearing Cup	3/8"	.75	63/64"	.75	11/8"	.75
Drive Shaft Roller Bearing Cone	3/8"	1.40	63/64"	1.40	11/8"	1.40
Drive Shaft Whitney Key Machined	No. 8	.15	No. 16	.15	No. 16	.15
Drive Shaft Whitney Key Plain	No. 8	.10	No. 16	.10	No. 16	.10
Crank Shaft	30537	.45	30737	.50	30837	.55
Crank Shaft Roller Bearing Cup	5/8"	.75	5/8"	.75	5/8"	.75
Crank Shaft Roller Bearing Cone	5/8"	1.40	5/8"	1.40	5/8"	1.40
Guide Rod - 3/4 x 16 1/4	31537	1.35	31737	1.55	31837	1.65
Guide Rod Lock Nut		.10		.15		.15
Guide Rod Hex Brass Nut		.25		.25		.25
Bottom Cap	32537	.35	32837	.40	32837	.40
Brake Band, Clip, Rivet and Pin	3354A	.45	3374A	.45	3384A	.45
Bumper Eye Rod and Nuts	34537	.30	34737	.30	34837	.30
Governor Spring Bracket (Welded)	36537	.70	36737	.85	36837	.85
Hood	37537	2.50	37737	2.75	37837	3.00
Pump Rod-Welded	39537	.85	39737	1.10	39837	1.10
Rudder Hinge Pin	40537	.35	40737	.35	40837	.35
Governor Spring	44537	.85	44737	.85	44837	.85
Drive Shaft Cast Bearing	4654A	.85	4674A	.85	4684A	.85
Crank Shaft Babbitt Bearing	4754A	.40	4774A	.45	4784A	.45
Brake Rod Casting	5474	.20	5474	.20	5484	.20
Brake Rod	55537	.30	55737	.30	55837	.30
Bumper Rod Spring	60737	.15	60737	.15	60737	.15
Rudder Hinge Pin Bushing	61537	.20	61837	.30	61837	.30
Crosshead Pin	62537	.25	62737	.30	62837	.30
Guide Rod Brace	63537	.30	63737	.30	63837	.30
Swivel Stud and Washer	64537	.70	64737	.85	64737	.85
Swivel Nut	1/2"	.10	1/2"	.10	1/2"	.10
Pullout Lever Welded	66837	1.05	66837	1.05	66837	1.05
Governor Spring Adjusting Rod	67837	.30	67837	.30	67837	.30
Pump Rod Wood Guide Block and Bolts	68837	.45	68837	.45	68837	.45
Governor Spring Eye Bolt	69837	.20	69837	.20	69837	.20
Drive Shaft Lock Ring	70537	.25	70737	.30	70837	.30
Drive Shaft Bearing Spreader-Long	71537	.20	71737	.25	71837	.30
Drive Shaft Bearing Spreader-Short	72537	.15	72737	.20	72837	.20
Drive Shaft Lock Ring Latch	73537	.15	73737	.15	73737	.15
Bumper Round Head Bolt	74537	.25	74737	.25	74837	.25
Bronze Swivel Washer	78537	.15	78537	.15	78837	.15
Packing Box		3.30		3.55		4.00
Rudder		3.30		4.40		5.00
Rudder Stem		2.50		3.55		4.50
Fan Bracket Galvanized		.15		.20		.20
Fan with Inside Bracket Galvanized		.35		.55		.70
Inside Rims, per set	5	.85	1	1.10	5	1.35
Outside Rims, per set	5	1.10	1	1.05	5	2.20
Wheel Arms, per set		3.30		3.85		5.25
Wheel Sections, each		3.00		4.20		4.50
Wheel Sections, per set crated		12.50		15.00		20.00

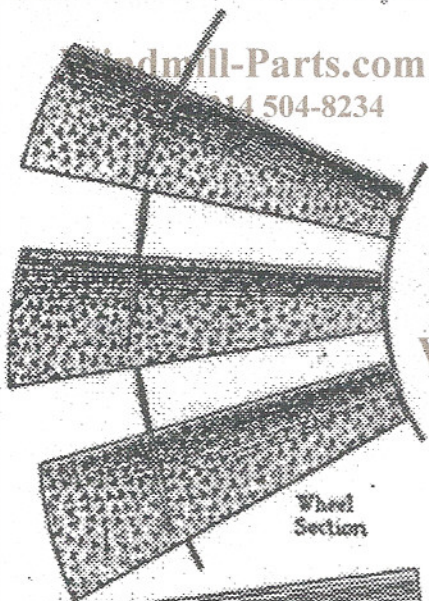
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ZEPHYR STAR MODEL 37 WINDMILL REPAIRS

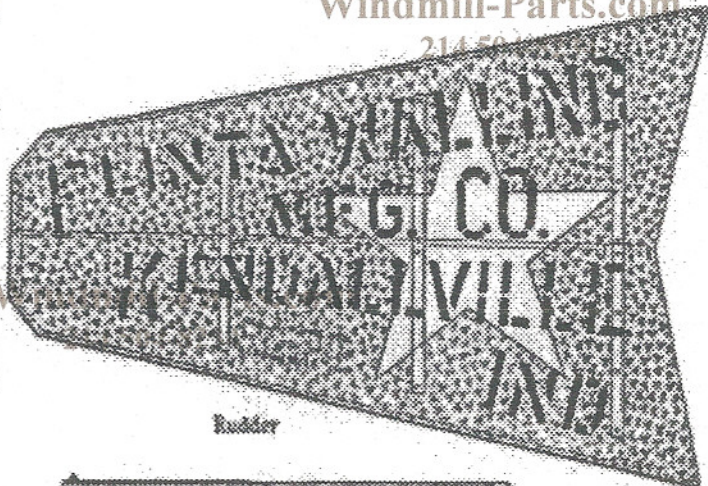
No.	Description	7-Foot Mill		8-Foot Mill		10-Foot Mill		12-Foot Mill	
		Symbol	Price	Symbol	Price	Symbol	Price	Symbol	Price
1	Main Frame	1737	\$9.40	1837	\$21.50	1937	\$15.50	1237	
37	Cover, Galvanized	37737	2.50	37837	2.75	37037	3.25	37237	
2	Drive Shaft Adj. Cap for Roller Bearing	274	.85	284	.40	204	.45	224	
6	Drive Shaft Adj. Cap for Plain Bearing	674	.35	684	.40	604	.45	624	
29	Drive Shaft for Roller Bearing	2974A	1.40	2984A	1.65	2904A	1.85	2924A	
28	Drive Shaft for Babbitt Bearing	2874A	1.40	2884A	1.65	2804A	1.85	2824A	
46	Cast Bearing for Drive Shaft	4674	.75	4684A	.75	4604A	.85	4624	
	Roller Bearing for Drive Shaft		2.00		2.00		2.00		
	Keys for Drive Shaft		.15		.15		.15		
	Oil Ring for Drive Shaft		.05		.05		.05		
18	Wheel Hub	18737	2.75	18837	3.30	18037	4.80	18237	
10	Pinion	10737	4.55	1084	.65	1004	.90	1024	
3	Crank Shaft Case for Roller Bearing	374	1.00	384	1.25	304	1.50	324	
5	Crank Shaft Case for Plain Bearing	574	1.25	584A	1.40	504A	1.80	524	
	Crank Shaft Roller Bearing	1 1/2	2.00	1 1/4	2.00	1 1/2	3.00	1 1/2	
47	Crank Shaft Babbitt Bearing	4774	.40	4784A	.40	4704A	.50	4724	
30	Crank Shaft and Castellated Nut	3074	.45	3084	.50	3004	.60	3024	
9	Gear	974	1.10	984	1.05	904	2.25	924	
4	Pitman	4737	.80	4837	.90	4037	1.00	4237	
8	Crosshead	8737	1.20	8837	1.25	8037	1.40	8237	
62	Crosshead Pin	62737	.25	62837	.25	62037	.30	62237	
31	Guide Rod and Nuts	31737	1.40	31837	1.50	31037	1.65	31237	
7	Guide Rod Brace Casting	7737	.30	7837	.30	7037	.35	7237	
63	Guide Rod Brace	63737	.25	63837	.25	63037	.30	63237	
39	Pump Rod Complete	39737	1.00	39837	1.00	39037	1.10	39237	
64	Swivel Stud	64737	.75	64837	.75	64037	.75	64237	
65	Castellated Brass Swivel Nut	65737	.25	65837	.25	65037	.25	65237	
25	Oil Pump Plunger, Ball and Cap	2574	.45	2584	.45	2504	.50	2524	
26	Oil Pump Cylinder, Ball and Bushing	2674	.85	2684	.85	2604	.90	2624	
11	Oil Shield	11737	.10	11837	.10	11037	.15	11237	
33	Brake Band and Stud	3374	.40	3384A	.40	3304A	.45	3324A	
54	Brake Lever Casting		.15	5484	.15	5404	.20	5424	
55	Brake Rod and Nuts	55737	.25	55837	.25	55037	.30	55237	
44	Governor Spring	44737	.75	44837	.75	44037	1.00	44237	
36	Governor Spring Bracket and Pin	36737	.75	36837	.75	36037	.75	36237	
67	Governor Spring Adj. Rod and Nut	67837	.25	67837	.25	67037	.25	67237	
69	Governor Spring Eye Bolt	69837	.15	69837	.15	69837	.15	69237	
34	Bumper Rod	34737	.25	34837	.25	34037	.30	34237	
60	Bumper Spring	60737	.10	60837	.10	60037	.10	60237	
40	Rudder Hinge Pin	40737	.30	40837	.30	40037	.35	40237	
61	Rudder Hinge Pin Bushing	61737	.25	61837	.30	61037	.30	61237	
23	Sheave	2382	.20	2382	.20	2382	.20	2382	
24	Sheave Guard	2484	.15	2484	.15	2484	.15	2424	
19	Pullout Pipe, Swivel, Bar and Chain	19737	1.25	19837	1.25	19037	1.25	19237	
14	Red Plate	1484	.75	1484	.75	1484	.75		
15	Bed Plate Top Flange	1584	.75	1584	.75	1584	.75		
16	Truing Spider	16837	.75	16837	.75	16837	.75	16237	
	Truing Spider Grease Cup		.10		.10		.10		
32	Bottom Cap	32837	.35	32837	.35	32837	.35	32237	
68	Pump Rod Guide and Bolts	68837	.40	68837	.40	68037	.40	68237	
	Wheel Arms, per set		4.00		5.25		7.00		
	Wheel Rims, Long, per set		1.20		1.50		1.80		
	Wheel Rims, Short, per set		.80		1.00		1.20		
	Wheel Fan, each		.50		1.00		.75		
	Wheel Fan Bracket		.10		.10		.10		
	Wheel Sections, each		3.50		3.75		4.00		
	Wheel Sections, per set		12.50		16.00		21.50		
	Rudder		4.00		4.50		5.50		
	Rudder Stem		4.00		4.50		6.00		
	Pull Out Lever		1.50		1.50		1.50		
	Oil Level Cup		.20		.20		.20		
	Wheel Bolts, per set		1.40		1.50		1.65		
	Engine Parts Assembled, Plain Bearing		27.00		33.00		48.00		
	Engine Parts Assembled, Roller Bearing		32.00		38.50		54.00		
	Engine Parts as shipped, Plain Bearing		34.50		40.00		57.00		
	Engine Parts as shipped, Roller Bearing		39.50		45.50		63.00		
	Sections, Arms, Reefing Gear, as shipped		18.50		22.35		33.00		

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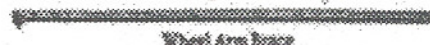
Wheel Section



Rudder



Wheel Arm



Wheel Arm Brace

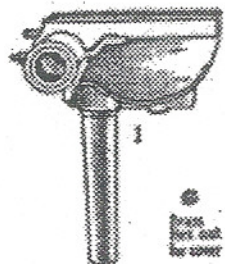


Rudder Arm

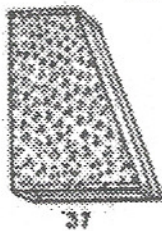


Outer Rim

Inner Rim



1



37



10



11



13



15



16



23



14



28



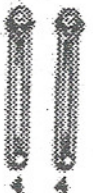
35



22



10



4



9



9



31



11



8



10



5



14



30



32



7



25



20



44



26



32



33



46



45



47



34

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19



24



36



38



39



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21



23



22