

DIRECTIONS

for erecting Challenge No. 34 and No. 36 4-Post Windmill Towers

No. 34 is used for 6-8-10 foot windmills

No. 36 is used for 12-14 foot windmills

All measurements identical for both towers, except top spread. No. 36 is of heavier material than the No. 34.

READ CAREFULLY BEFORE STARTING ERECTION

This Tower is made in 10 and 5-foot sections. Where a 5-foot section is used, as in the 25 and 35-foot Towers, it must be placed on the BOTTOM. There are girts every 5 feet.

IMPORTANT—The Lower Set of Braces on the 25 and 35-foot Towers extend from bottom set of girts to third set of girts above ground.

Building Up the Tower

This tower can be easily built up from the ground, one section at a time.

Anchor Posts for towers up to and including the 50' are 5' long. For 60' and higher towers they are 6' long.

A hole 2' in diameter and 4' 4" deep should be dug for each 5' anchor post and 5' 4" deep for each 6' anchor post. Center to center measurement of the holes should equal the base spread of the tower.

Bolt the anchor angles to the anchor posts as shown on opposite side. Place an anchor post in each hole and bolt the four bottom girts to the INSIDE of the posts. Then bolt the four bottom corner posts to the anchors and put in the center and top girts, also the lower set of braces. All braces go on OUTSIDE of the corner posts. Attach brace clamps where braces cross the center girts. See Fig. 2... The bottom section is now complete.

Use a level. See that girts are perfectly level and tower is centered directly over pump. Then fill in the anchor holes with concrete and earth. See diagram. Use concrete liberally for permanent anchorage. Put staging across the top girts and bolt the next section of posts in place above the top girts. See Fig. 1. Then add the girts and braces for this section. Proceed in this manner until the complete tower is erected. Leave the bolt heads on all connections fairly loose until the tower is erected. This will make it easier to complete all connections. Then go over entire tower and tighten securely.

No. P. Girts. See diagram other side. Only 2 No. P. girts are furnished. One is eliminated to permit the swivel arm on the pullout of Challenge Windmills to pass freely up and down when the windmill is pulled out of the wind, and the two braces on the tower platform take the place of the 2 No. P girts that are left out.

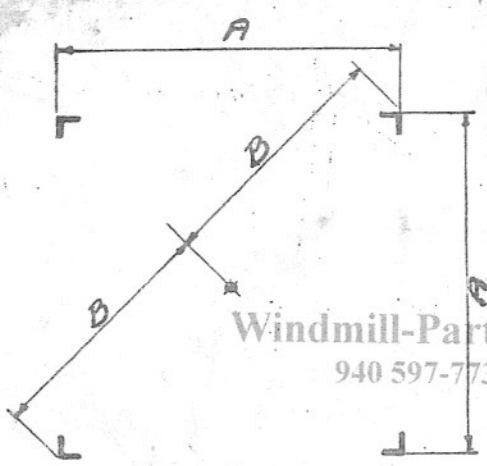
All girts are punched to received the ladder bolts, which will allow the ladder to be placed on any side of the tower. The ladder is made in sections 9' 8" long, except the top section, which is 4' 5" long.

Pump Rod Guides

Swinging pump rod guides are put in the No. 34 tower every ten feet. One end is inserted in the hole in girts, and the other end attached to pump rod by wagon box rivet and cotter at shown in Fig. 3. The stationary, triple pump rod guide, (not furnished with towers but with Challenge Windmills) is attached to the No. 4 1/2 girts on this tower. The No. 36 tower uses stationary rod guides with guide casting No. 4269.

For Wind Electric Plants: Challenge No.34 towers are popular supporting structures for wind electric installations. These towers are provided with two platform locations. Platform locations for use with Challenge Windmills is 4' 7 3/4" down from tower top. Platform location for use with wind electric plants is 6' 9 1/8" down from tower top. Windmill platforms painted red. Wind electric platforms are larger and painted green.

The spread of No. 34 and No. 36 Towers at top of anchor posts is as follows:



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	Spread at "A"	Spread at "B"
20-foot Tower	4' 3"	3' 0"
25-foot Tower	5' 3"	3' 9"
30-foot Tower	6' 2"	4' 4"
35-foot Tower	7' 1"	5' 0"
40-foot Tower	8' 0"	5' 8"
50-foot Tower	10' 0"	7' 1"
60-foot Tower	11' 10"	8' 5"
70-foot Tower	13' 8"	9' 8"
80-foot Tower	15' 7"	11' 0"
90-foot Tower	17' 5"	12' 4"
100-foot Tower	19' 4"	13' 8"

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Special Wide Spread Towers No. 34W and No. 36W

	Spread at "A"	Spread at "B"
20-foot Tower	6' 2"	4' 4"
25-foot Tower	7' 10"	5' 6"
30-foot Tower	9' 5"	6' 8"
35-foot Tower	11' 1"	7' 10"
40-foot Tower	12' 0"	8' 8"
50-foot Tower	14' 0"	10' 4"

"A" is the distance between the back of the corner posts.
 "B" is the distance from the center of the tower to the back of the corner posts.

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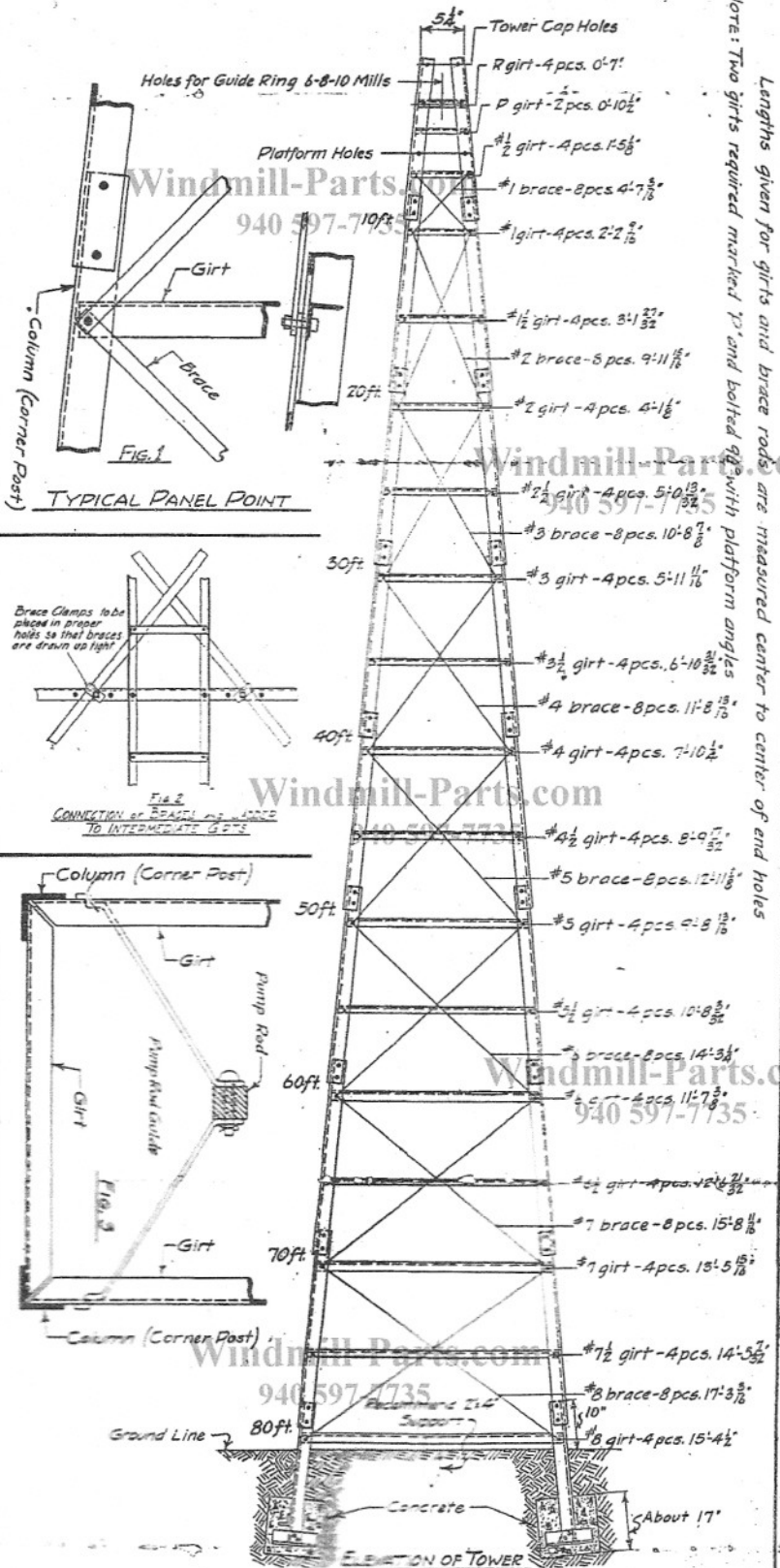
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Top Spread of No. 36 Tower is $7\frac{1}{4}$ "

Note: Two girts required marked 'P' and bolted together with platform angles

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Erection Diagram for Challenge EZ Built Windmill Tower
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