# Directions for Erecting Baker Towers

(For Erecting Mill Head, See Page 32)

Excavate anchor post holes by taking the four bottom bands and placing them on the ground forming square. Measure in from the corners toward the pump 6 inches, then from that point in each direction 3 feet. Dig holes 3 feet square and 4 feet deep.

Lay out the different parts of the tower as follows:

The corner posts first and remember the end of the bundle with the stencil marks on is ALWAYS the top end.

Lay out one corner complete with holes punched for corner steps.

After the tower is laid out and before cutting the wire on the flat braces, place the bundle with the stencil marked end toward the foot of tower. This will save turning any of the braces end for end.

Commence at the top to build tower. Build one side complete, then place some pieces across it and build another side on top of it; then go to the foot and raise the top sections the desired height and stay it by putting in the bottom bands. Commencing at top, put on the cap or turntable, then truing center and platform, then side bands and braces, on down to the foot. Then bolt on two upper anchor posts and the steel plates to bottoms of anchor posts.

It is important to remember that the lower holes on the bottom corner posts of

the tower also receive the bands and braces.

Do not put in tension bolts where braces cross until everything is finished and tower is raised. It is the placing of these bolts that gives our towers their TENSION and GREAT STRENGTH and makes the BEST tower on the market today.

The bands go inside with braces between bands and corner posts.

The lower ends of lower set of braces on all towers should be bolted to the outside of the corner posts of the tower, and this enables the erector to readily bolt anchor posts, the bolts that receive the anchor posts also receive the lower ends of lower braces, by this plan a double thickness is made for braces to pull against, which is a vital point in all proper tower construction.

Bolt a plank of sufficient length (about 8 feet longer than the spread of the tower) to the two lower corner posts. Drive stakes against this plank to keep tower in place

while raising. Remove the plank and bolt on the anchor posts.

Fasten a strong rope to top of tower just above the truing center, using block and tackle.

After tower is raised ten or fifteen feet at the top, hold in position with pike poles.

Proceed to raise tower gradually. 940 597-7735

It is well to fasten guy ropes to either side of tower so that same may not swerve in raising. When all is in readiness raise tower slowly, by hand as far as possible, then with heavy wood pikes, at the same time using the block and tackle; after same has been raised to the highest point in this manner, all hands should be turned to the block and tackle. Then plumb and square the tower, see that same stands directly over pump, and thoroughly tamp anchor post holes, remove all ropes. The same ropes may then be used in raising the engine and after same has been placed the vane and sections may be readily bolted to engine, adjust wood pump rod to iron pump rod at proper length, see that nuts are tight. Pour Baker Zero oil into oil case.

Some erectors prefer to erect towers from the ground up, in sections, which may be done if desired with assistance. Place the anchor securely in the ground and see

that same are perfectly level, so the tower will be plumb.

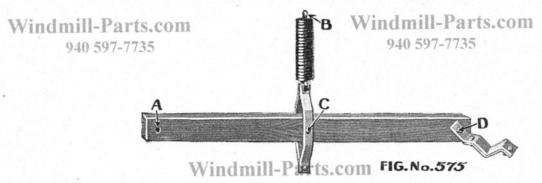
Care must be taken to see that tower centers with well, so that well rod will not bind. Bolt on lower set of corner posts, etc., placing plank across corners on bands on which to do the work.

Note—On 20 ft. and 55 ft. towers the lower bands and braces should be placed in upper splice hole. All other size towers these are placed in the lower splice holes.

Important—When cutting wood pump rod be sure that pump stroke corresponds to the stroke of Wind Engine. Do not allow cylinder plunger to strike upper or lower cylinder cap at stroke extremities. Securely tighten set screw and bolt through Wind Engine wheel hub. When windmill is in gear and pump handle is attached—make certain that handle has full stroke.

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# Directions for Installing Pull-Out



Above illustration discloses our patented Pull-Out device without the wires. To install, fasten Clamp "D" to angle corner post of tower at a point on various Towers:

Tower Height, feet Below Platform, feet	20	25	30	35	40	45	50	60	70	
Below Platform, feet	1/2	0/2	9	0	9	11	11	11	11	

Attach Pull-Out wire to point "B" and then run wire up through large Swivel and Mast Pipe attaching same to small Swivel at end of Pull-Out chain. Care should be taken not to twist wire around steel pump rod while placing same through Mast Pipe. Attach wire at point "A" and run same down to a point at convenient reaching distance from ground. Fasten adjustable clamp to lower brace of Tower at convenient point. Then attach Hand Hold to wire. In case Pull-Out is to be used with Automatic Regulator, the wire should be attached in hole below "C." Caurin should be taken so that spring "B" is parallel with Wood Pump Rod when mill is pulled out of gear. To pull mill out of gear, pull Hand Hold down and fasten to clamp on the lower brace.

### Arrangement of Braces on Different Towers

Twenty-foot towers have only one set of braces and are bolted to the four bands

close to where same cross, using eight \(^{5}\)/<sub>16</sub> x \(^{3}\)/<sub>4</sub>-inch bolts.

Twenty-five and thirty-foot towers have two sets of braces. On the lower set the braces are bolted to the four bands close to where the same cross. The upper set of braces do not bolt to bands but are bolted together where they cross, using twelve 516 x 34-inch bolts.

Thirty-five-foot towers have two sets of braces. The lower set of braces are bolted together on the bands where same cross. The upper set of braces are bolted to the four bands close to where the same cross, using twelve  $\frac{5}{16}$  x  $\frac{3}{4}$ -inch bolts. Forty-foot towers have three sets of braces. The lower set of braces bolt to band

where same cross. The second set of braces bolt same as lower braces, and third or upper set of braces do not bolt to bands but together where same cross, using twelve 5 16 x 3/4-inch bolts.

Forty-five-foot towers have three sets of braces. The lower set of braces are bolted to four bands where same cross, the second and third set bolt to four bands

close to where same cross bands, using twenty  $\frac{5}{6}$  x  $\frac{3}{4}$ -inch bolts.

Fifty-foot towers have four sets of braces. The lower and second set are bolted to bands where same cross, with four 1/16 x 1/2-inch bolts. The third and upper set of braces do not bolt to bands, but together, where same cross, using sixteen \( \frac{5}{16} \) x \( \frac{3}{4} - \)

Sixty-foot towers have five sets of braces, all of which are bolted to bands, using

forty 5/6 x 3/4-inch bolts.

# Spread at Base of Towers

9-11-37/-1/33											
Height Tower, feet	20	25	30	35	40	45			70	80	
Foot Spread, feet	41/2	6	6	7	8	9	10	101/2	12	14	

### Directions for Erecting Baker Mills

(Directions for Erecting Towers on Page 30)

By using a gin-pole and block and tackle pull the engine up onto the tower, sliding the engine's mast pipe down through both the ball-bearing turntable and the truing center. 940 597-7735

In putting in the iron pump rod and swivel, place the round side of rod toward the wheel. Connect the pullout wire rod to the pullout chain, see that chain is not kinked and has free working space.

The swivel and ball-bearing turntable are well greased before leaving factory. However as this grease often works out in shipping or in storage we recommend that these parts be thoroughly greased at time of erection. They should be oiled each year when the oil is changed in the oil bowl.

The erector has the option of either assembling the wheel on the ground or on the tower when the engine is in place. If preferred to assemble the wheel on the ground the hub may be removed from the engine by taking out steel pin with castellated nut and loosening set screw. Please note that set screw is countersunk and should be so assembled. Bolt the flat wheel arms and the angle iron braces onto the hub. The longer bolts are used entirely on the flat arms and should be double nutted. Next bolt in the wheel sections leaving all bolts loose till wheel is completely put together. Square up wheel so that it is perfectly true and securely tighten nuts. If so desired the same procedure may be followed on the tower, with engine in place.

In hanging the vane be sure that the vane stem goes in full depth of the socket. The two nuts on the brace rod of the vane are to go on the same side, so that one nut locks the other. See that vane hangs straight, or, better still, we suggest tilting slightly upward, then securely tightening set screw.

An iron weight is placed in the box with all Direct Stroke Mills, same to be fastened to the wheel arm nearest the platform, when the engine is on the extreme up-stroke.

See that plug is tight in bottom of oil bowl, and pour in correct amount of Baker Zero Oil. Place galvanized hood over engine making sure that it is tightly down in place. Secure hood by the two arm locks on the front and back.

Oil should be changed in engine once every year, using Baker Zero Oil. Drain out old oil by loosening plug in bottom of bowl. Pour in proper amount of oil sufficient for one year; more oil than this should never be in the bowl at any time as it will cause same to splash over top and run down tower. See page 24 for oil requirement.

Caution—Be sure that stroke of windmill corresponds with that of the pump, the cylinder plunger must not strike upper or lower cylinder cap. See that pump handle when attached does not hamper the Wind Engine's stroke when in gear.

#### **Pump Rod Guides**

The use of the pump rod guides to keep the pump rod straight is a great advantage in every H-A tower. The guides are made of stiff steel galvanized flats and are fastened to the corner posts of the tower by means of a steel pin and cotter pin. The other end is fastened to the wood pump rod. This overcomes all tendency of the pump rod to swing from side to side.

