TOWER SOLUTIONS

RAISING PERFORMANCE
WITH THE PUSH OF A BUTTON

SELF-ERECTING VS TELESCOPING TOWERS

The Advantages of Portable Self-Erecting Towers Over Telescoping Towers

Do you really have a Portable Tower?

Is a tower truly portable if you need six people and several hours to erect it? The answer used to be yes, but only if you only consider a decades old list of past portable tower manufacturers.

Historically, this list has been dominated by tip-up telescoping mast towers. These are made of several nested welded-truss triangular columns, 10 to 30 ft long. When nested, wider columns are on the bottom and the narrowest column on the top, resulting in a "stepped taper" mast.

Deploying telescoping towers is usually done by a serpentine cable running up and down between the nested columns. When the cable is winched in, the columns slide upward, deploying the mast. When at full height, an overlap between the associated columns serves as a structural connection between them. This overlap is often unrestrained, allowing some movement between columns. Combining this overlap movement with the decreasing stiffness from the "stepped-taper" mast, causes a reduction of mast rigidity, bottom to top, **limiting payload weight and payload stability.**

Telescoping towers also may require multiple sets of guy wires to achieve reasonable stability, where increments

between sets can be as low as 10 ft. Consequently, installing a telescoping tower instead of a self-erecting one demands more:

- Labor to deploy (especially with guy wires)
- Time to complete deployment
- Specialized knowledge in executing the proces

The net effect of all aspects results in them being less stable in heavy winds while supporting minimal payloads. All these issues defeat the purpose and benefits of "portable."

Tower Solutions' Self-Erecting Mast Design

Historically, self-erecting towers have not even appeared on the list of portable towers. Tower Solutions, however, is now re-writing that list. We have designed our self-erecting tower technology as an alternative to save you time and deliver a superior product.

Our largest tower, once positioned, only takes one person and eight minutes to raise 2,500 lb. to a height of 120ft. Telescoping towers commonly take 2-6 people and hours to raise 650 lb. to a height of 118 ft.

When a Tower Solutions mast is stowed, each side of the triangular mast is rolled up separately in a spiral on a square reel, also known as a bale.

The three bales are mounted at 120-degree increments around the center of the tower, on a supporting trailer frame. Wound up on each bale is a hinged chain of varying length flat truss-like sections, nesting into a squared spiral. A set of hinges between each of the sections allows rotation for nesting.

During deployment, the chain is pulled off the reel horizontally and rotated to a vertical orientation against a triangular lift center. During this rotation, hooks at each hinge link to hooks on their neighbor chain, locking the three sides together into a rigid triangular mast. A motor and gear system in the lift center drives gear racks on each chain section for raising or lowering the mast.

Get a closer look at our technology here and the main different types of towers on the market here.

Tower Solutions' Products are Safer

The purpose of a tower is to support a payload of equipment after raising it high enough to facilitate the payload's function. Installing a payload on top of a telescoping tower is always difficult or worse, potentially unsafe. Lighter payloads may be able to be attached (sideways) on the tower top plate while the nested mast columns are still in a stowed (horizontal) position. Once the payload is attached, the mast can be tilted up to a vertical orientation and then deployed to full height. For a heavy payload, however, the nested mast assembly may first need to be tilted into vertical position, where the payload is lifted onto the top. A technician would then have to climb the tower, or be raised by a separate lift, to align and secure the payload. An injury risk if ever there was one.

Tower Solutions designed our towers to keep your payload easily accessible and in a vertical orientation, making attaching and lifting your equipment quick and convenient. Our large tower dedicated work platform and vertical deployment makes installing, repairing, and maintaining your equipment easier. You can access your equipment anytime by simply lowering it to the platform. No climbing, cranes, awkward orientations, or personnel risks required!

Tower Solutions also has numerous safety sensors monitoring the tower operations at all times. If the ground shifts under a leveling jack, the controls system will notify the operator and not allow the tower to be raised until level is restored. If a foreign object becomes caught in the mast while retracting, the safety ring around the tower base will shut the tower off before any damage is done to the object or the tower. Emergency stops are positioned on the control pendant and in strategic locations so an operator can quickly stop mast movement. Other sensors watch for conditions that could damage the tower and stop the tower if such conditions are found. We are proud that, **in 23 years**, Tower Solutions has never **received a report of anyone being injured**, to any extent, while operating or associated with our towers!

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Tower Solutions' Products are More Reliable

With only one electric motor and gear system operating the mast, Tower Solutions' self-erecting masts are more reliable than their hydraulic, pneumatic, or cable winch counterparts that can leak oil, uncoil or kink. If your power dies in an emergency, our mast can still be deployed or retracted manually with a drill or hand-crank. In addition, there are no exposed liquid lubricants on our tower. Dry lubricant coatings are used where needed.

Tower Solutions Towers: Different from the Rest

The secret lies in our patented, interlocking column design and quality manufacturing. Our self-erecting masts are available in four sizes and configurations, each engineered with high-strength steel and aluminum alloys. Our masts self-assemble into a single unbroken column and elevate quickly with our control system, which also allows you to stop your payload at any height. When deployed, the sides of our mast are automatically interlocked to form a single contiguous, rigid and stable structure of unequaled stiffness and stability.

The dedicated work platform and vertical deployment of Tower Solutions products makes installing, repairing, and maintaining payload equipment easy. You can access the top of the tower and your equipment without climbing or disassembling the payload from tower. If the weather threatens, you need to do maintenance on the payload, or want to change the payload configuration---just bring the tower down!

Most often, Tower Solutions towers can be operated without guy wires. Our stability is the result of our continuous interlocking rigid column. A telescoping mast depends on guy lines for much of their stability. Guy wires can greatly enhance stability in high wind environments but, if guys are not needed, the labor cost of installing them, especially a short deployment, is measured in both time and money. Telescoping towers can require up to four guy wires per 10 ft section to assure they have the stability to stand heavy winds.

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Tower Solutions towers can lift equipment of up to 2,500 lbs. straight upwards (or 3,500 lbs. for our supertower option). Our 80 ft towers only need 3 – 4 guy wires to increase stability for 90 - 120 mph winds. The most guy wires you'll need to install are with our tallest tower module, the PTX-100-120, which requires six only under extreme weather conditions, steep grades, or in the case of long-term deployment. We even manufacture small towers, with no guy wires, to mount in truck beds or on a Polaris ATV's for mobile deployment.

In Summary

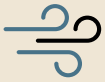
The portable tower industry has long been steeped in the myth that telescoping masts were the strongest, most efficient, most versatile and easiest to install towers available. That myth has been "busted" by Tower Solutions unique design, which beats telescoping towers on all four categories, plus when properly maintained, may last 3 – 4 times longer. Few competitors can reach the heights we offer, while providing the ability to elevate as heavy of equipment, and do so as rapidly.

KEY BENEFITS

FAST
80 Feet in
5 Minutes

SIMPLE
1 Man
Setup

STRONG
Lifts 1ton
Payload



STABLE
Withstands
Hurricane
Winds

OUR AGREEENT

We Guarantee
To Hit Spec and Target

Another measure of what a tower company can actually deliver is to compare top-of-the-line tower company websites. Most manufacturers' tower specifications are often not openly shared or are buried deep in confusing rhetoric. Tower Solutions wants you to know and shares our tower capabilities on every page of our website. We know that we manufacture the best tower products on the market and love to share all the facts about why.

To summarize, the benefits of our patented self-erecting tower design over telescoping towers include:

- No Telescoping, Cables, or Section Locks
- Safer for Operators and Observers
- Faster Deployment
- Support Heavier Payloads – Greater than 2,000 lbs
- More Inherent Stability
- Fewer Guy Wires (3 – 8 Max)

- Smaller On-site Footprint
- Minimal (4 hours) Training Required
- Compact Storage Requirements
- 3 to 4 times longer life
- Change Speed of Mast Retraction/Extending
- Wide Top Plate for Stable Payload Mounting
- Easy Side Mounting Payloads on Mast
- Payload/Mast Retraction for Easy Payload Mounting, Maintenance, or Repair Access

At Tower Solutions, we design and engineer our towers to be military-grade, reliable, and adaptable to meet your needs. Our towers allow you to do more and provide you with the freedom to go where others cannot. They are proven self-sustaining in hurricane winds, heavy dust environments, and any terrain.

Tower Solutions towers also have many options to make them configurable for a customer. Add features like generators, additional power, and remote monitoring. Explore our tower products and customizable options here.

Then, contact us with your tower application needs. Our team will deliver the best tower solution for you.

OUR PROCESS

Step 1

Identify Specification

Project managers and engineering meet to project details for specification, schedule, and cost.

Step 2

Engineer to Specification

Tower Solutions team custom designs solution for the customer application and timelines.

Step 3

Delivery and Validation

Onsite delivery of systems with validation of equipment and customer sign off.