Heights Tower Systems

TELESCOPING TOWER MANUAL

OPERATION OF THE TOWER:

Wait until the tower is erected into the vertical position before extending it for the first time; do NOT wind cable on the winch until the tower is vertical and stable.
When the tower is vertical and ready, slowly begin reeling in the winch. Carefully observe the winch and cable system while this is happening to make sure that you have properly set the outer cable outside the outer segment (as directed earlier in this manual). If everything proceeds smoothly, continue to reel in the winch.

IMPORTANT: Your Thern electric winch can only operate continuously for up to about 15-20 minutes. After fifteen minutes of continuous operation, you must let the winch rest for a full 30 minutes, whether the tower is going up or coming down.

Do not fold the tower over with the Fold-over-kit unless the Crank-Up tower is fully retracted.

For Towers not Equipped with Limit Switch Sensors:

There are **STOPS** set at around 42" to 48" (1 to 1.25 Meters) from the top of the tower segment, which prevent the tower from over-extending. Try to visually identify those points and be prepared to stop the winch as soon as the largest bottom Roller Guide approaches these Stops that are wrapped onto the top of the largest tower segment. If the winch is not turned off by the time the second segment reaches the top, it will keep pulling on the cable and pulley system and damage might eventually result. It is important to note that there is NO AUTOMATIC SHUT-OFF of the winch, so the operator must manually press the winch "OFF" switch.

A telescoping tower does not have to be extended all the way up to its Stops. The tower can be partially telescoped to any height less than the maximum. In fact, the lower the tower is extended, the more its windload capacity would be increased. So if your antenna system is signaling at a height lower than the maximum antenna height, it would be prudent to leave the tower at a somewhat less than maximum extended height, for wind-load purposes.

The Stops can be adjusted and reset at a lower height. *Never **raise*** the height of the Stops without written factory permision (this would void any warranty).

Remember that for every foot or meter you lower the tower, you will multiply that reduction by the total number of tower segments. . . For example, if you have four segment in your tower, lowering the Stops by 2 feet on the outer segment will reduce the overall height of the tower by 8 feet (2 ft. x 4 units = 8 ft.)

For Towers Equipped with Limit Switch Sensors:

Your tower is pre-wired with the limit sensor circuit of your choice, which will cause the winch to shut off when the maximum top sensor height is reached. It is a good idea not to adjust the location of these sensors without prior permission from the factory.

For Towers Equipped with manual Holding Brakes on the first segment; you will have two separate control ropes for the Holding Brake, one for retraction of the brake arms and one for the extension. If the Holding brake is used with a manual winch system, then the operator will have to wait to engage the brake once the upper stop on the tower is reached by segment extension.

In order to take the load off the winch when the tower is retracted and not in use, you must position the inside tower segment (with the Brake) above the brightly painted (purple) **Bottom Stops** welded to the outside tubes of the widest tower segment. These will support the retracted tower, allowing most of its weight to be taken off the winch and cable system. The person operating the winch must make sure the alternatively colored brake arms (green) are an inch or so above the purple colored brake stops, in order to clearly extend the brake arms. If it is difficult to gauge the distances and depths from the ground, a small binoculars may be helpful. Once the brake clears the welded brake stops, pull the ENGAGE-Brake rope to set the brakes in place. Now, you will be able to gently lower tower the tower on to the stops by letting out a few inches of winch cable. Double check to see that the Brake Arms are resting on the Brake Stops (green over purple). You should also notice that the cable has some slack in it, indicating that the tower is in fact resting on the brake and not the winch cable.

Be CAREFUL that no person allows their hands or feet to get between the Brakes and the Top Roller Guide while the tower is able to retract. (Tower should never be climbed when extending or retracting.) Also in the event where the weather creates icing, Brake may not work until ice melts off Brake and surrounding tower structure.

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MOUNTING THE ANTENNA:

The antenna and mast may be mounted to the Top Plate and Rotator when the tower is in the horizontal or vertical position, but it would probably be easier to mount them when the tower is folded over in a horizontal position. The exact method with which you mount your antenna depends on its size and type; you may want to consult with the antenna manufacturer for specifics.

MAINTENANCE OF TOWER:

There are a few items on the tower that require periodic maintenance.

A. Cables -- Cables should be checked once a year or sooner for fraying ends and kinks. If more than a few single wire strands appear broken at any location, it is recommended to replace the length of cable.

B. Roller Spools -- Eventually some of the roller spools in the end Roller Guide fixtures may show signs of wear or their edges may peen over. They should be looked over about once a year. If excessive wear is noticed, customer should consider replacing the roller spools in question. Contact Heights Tower Sys. for replacements.

C. Stainless Slide Leaves -- the stainless sheathing on the first rung below the outer segment pulley is meant to lessen friction and wear from the cable, and it may eventually wear out over several years. We have included some extra sheathing material with this manual in case it does and the customer would like to replace it. These sheaves could simply be formed and folded on to the rung by hand.

LIMIT SENSOR SYSTEM:

The Limit Sensor system ensures that the tower will stop while the winch is being manually controlled by the operator. Once the top or bottom limits (at about the 20 ft. and 1 ft. level, respectively) are reached, a target metal pad on the Bottom 22" Roller Guide will cause the Limit sensors to send a signal to the relay circuit, causing the winch to lose power in the direction it was travelling. The winch will still have power to move the tower in the opposite direction.

MOTOR OPERATED FOLD-OVER-KIT:

Please see the Fold-Over-Kit instructions on how to operate and maintain this system. It is important not to fold the tower over unless your telescoping tower is fully brought down into the retracted position.

The Gearmotor itself comes with a limited two-year warranty: please consult with the "Dayton Single- and Three-Phase Fractional AC Gearmotors -- Installation, Maintenance and Warranty Information" for details. The Grainger stock # for the Dayton Gearmotor is #6Z403, which is a triple reduction design, 22 rpm with 1105 in. lbs. of torque. The Grainger stock # for the Dayton Forward-Reverse Drum Switch is #6C013. Please call Grainger in the event of a problem with the drum-switch; the drum-switch is unlikely to have an extended warranty. Heights Tower Sys. can also provide replacements, since some are in stock.

TOWER WARRANTY:

The tower and accessorial structural items manufactured by Heights Tower Systems are warrantied for a period of one year from acceptance date. Warranty shall provide for repair or replacement and required service, such as the manufacturer views as necessary to return the tower structure to the same capacity as it was originally accepted, for any parts or areas of the tower found defective due to workmanship or sub-standard material.

Warranty does not cover defects or damage caused by neglect or misuse (customer must strictly follow all advice in owner's manual), accidents or natural and unnatural disasters or "acts of God", such as earthquakes or tornadoes.
warranty does not cover reconditioning of oxidized or rusted surfaces, or re-painting of worn painted surfaces. Warranty shall be null and void if alterations or modifications are made to any part of the tower structure or accessories without prior express permission from the Heights Tower Systems. Warranty does not cover conditions exceeding our stated specifications, such as wind-loads resulting from extremely high winds or additional antenna mounting beyond the tower's capability.

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