

Retractable Booms

The TS-Series Retractable Boom is one of the most versatile retractable booms in the industry. Designed for trouble free operation, the TS-Series Retractable Boom provides safe and easy access to your meteorological instrumentation; allowing your technician to bring the instruments back to the tower without having to climb out on the boom.

The TS-Series Retractable Boom can be configured to accept multiple instruments. We also work with your meteorological equipment suppliers to insure our boom will accommodate a variety of different installation specifications unique to each manufacturer.

Typically installed on an 18" face tower, the TS-Series Retractable Boom can be adapted to fit most any tower structure. The boom and roller box assembly are made from high-grade aluminum with stainless steel hardware. Rigid 2" square booms, coupled with our unique roller box assembly, provide a highly stable platform. Four aluminum rollers provide smooth and secure travel along the boom. The boom can be quickly removed from the roller box assembly simply by removing one bolt.

All components are highly resistant to harsh environments:

- Aluminum rollers in the roller box assembly ride on stainless steel shafts
- All mounting hardware is stainless steel
- Aluminum components are made from type 6061-T6, a highly corrosive resistant material
- The boom rollers are partially enclosed to prevent ice buildup and allow free travel in severe weather

For many years, our TS-Series Retractable Booms have been installed at numerous power generation facilities and military installations throughout the country. The TS-Series Retractable Boom is now becoming increasingly popular in the wind energy industry on small guyed and self-supporting towers, as hub heights have far outreached the capability of the typical tip-up tower. Today, our TS-Series Retractable Booms are being used on wind farms throughout the United States. Standard boom lengths are 8', 10' and 12'. Longer custom lengths are available upon request.



Wind Energy Accessories

Boom Adaptors

Changes the inside diameter of the boom to accept different sizes of instruments and mounts.

- Standard boom to 3/4"
- Standard boom to 25 mm



Mid Point Boom Mount

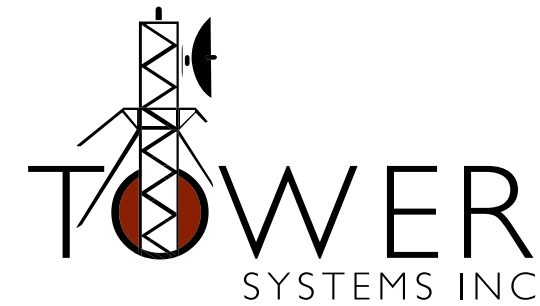
This allows instrumentation to be mounted at any point of the boom. The mount is fastened to the boom using set screws so changing position of instruments along the booms is a snap.

Riser

A 30" instrument mount is designed to accept a 1/2" tube on one end. The tube is held in place with two set screws spaced 6" apart to provide strength and stability. Custom lengths are available upon request.

Junction Box

A NEMA rated fiberglass enclosure, for joining multiple instrument cables into one location, can be mounted on the tower so only one cable needs to be run down to ground level. It includes two terminal blocks for a total of 14 termination spots and features quick release latches for easy access. Four cord connectors are also included to accept various cable sizes.



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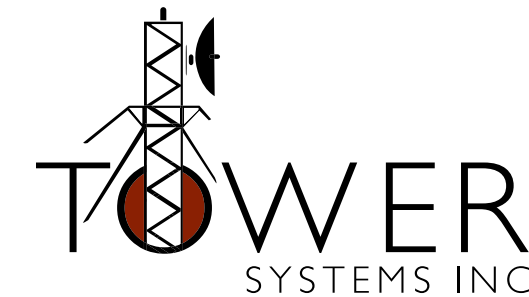


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why climb the tower when your instrumentation can take
THE *ELEVATOR?*

Instrumentation Elevator Systems and
Wind Energy Accessories From



Tower instrumentation requires maintenance and calibration. Tower climbers can be expensive and subject to availability. A cost effective solution is to bring the instrumentation down to ground level for service.

We offer 3 models to meet your requirements:

- Model TS-HOE
a manually driven system for towers under 30 meters
- Model TS-2000
a versatile power-driven elevator system
- Model TS-2500
an upgrade from the TS-2000, this system includes tower mounted connectors and enclosed cabling to protect from nature's elements



TS-HOE Elevator System offers all the strength and easy travel of the power driven elevators, but lowers your elevator investment. It is ideally suited for towers less than 30 meters with a light instrumentation load.

TS-2000 Elevator System can be designed for as many instrument levels as required and mounts virtually on any tower made by any manufacturer. A stainless steel messenger cable is attached to your signal cables. This cable becomes tensioned when the instruments reach the proper level. Our exclusive technique ensures correct carriage position under all conditions and keeps instrument cables secure and free from wind damage. Its safe and effective maintenance allows quick and easy access to your instrumentation under any conditions in any climate. Sensitive instrument packages can be lowered in severe weather and high wind conditions for maintenance; saving you time and money.



Guide rails:

Two parallel tubular rails provide a track that insures high stability no matter where the carriage is located on the tower. Other methods, such as flexible steel cables that are stretched between the top and bottom, often make it impractical to raise or lower the elevator during high winds. Our rails allow you to lower the carriage in inclement weather when service or inspection is often required.

Fast and easy carriage removal:

Two clamps on the back of each carriage assembly attach the carriages securely to the drive cable and allow fast and easy removal of the carriages from the elevator system with a 1/2" wrench. The carriages are easily positioned on the drive cable so that the instrumentation always returns to the correct vertical position on the tower.

Up to four carriages per elevator:

Standard boom lengths of 6' and 8' and a wide variety of platforms are available to meet your specific requirements.



Twelve rollers provide safe, secure travel:

The carriages ride the rails at four points, top and bottom, on both sides. Three rollers at 120° around the rail circumference reduce friction and provide smooth vertical travel with a minimum of horizontal motion.

Smooth travel in severe weather:

The rollers on all three elevator systems are partially enclosed to prevent ice build-up and allow free travel in severe weather. The model TS-2000 offers an optional de-icer kit that provides six ice chippers mounted around both rails, at the top and bottom of each carriage, to remove excess ice during travel. The model TS-2500 offers an additional electric heater to melt ice from the electrical connector assembly for each carriage.

Rugged materials and cable:

Aluminum and stainless steel are used throughout the system to give it a long, low maintenance lifespan. Our unique stainless steel double drum winch provides the necessary "grip" for complete control and safety of our endless loop stainless steel cable.



Summary of Specifications and Options:

Feature	TS-2500	TS-2000	HOE-25
Drive Power	1.0 Horsepower	2.0 115 or 230 VOLT, 50/60 HZ 20 Amp	Manual Drive
Stainless Steel Drive Cable	Standard	Standard	Standard
Messenger Cable	N/A	Standard	Standard
Auto. Electrical Connector	Standard	N/A	N/A
12 or 19 Pair Cable in Conduit	Standard	N/A	N/A
21" x 24" Carriage	Standard	Standard	Standard
Automatic Limit Switches	Standard	N/A	N/A
6' or 8' Boom Lengths	Standard	Standard	Standard
Junction Boxes	Standard	Standard	Standard
De-Icer Kit	Optional	Optional	Optional
Carriage Stand	Optional	Optional	Optional
Aspirator Mounts	Optional	Optional	Optional