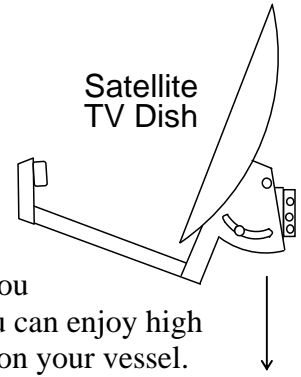


Track It TV™ - OPERATION & MOUNTING

Overview

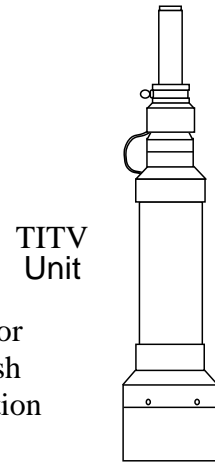
Use Any Satellite TV Dish & Receiver

The TITV (Track It TV™) Unit works with any DSS (Digital Satellite System) dish and receiver, domestic or international, that the user provides. Take advantage of the latest multi-satellite dishes, HDTV dishes, or larger 24" (or even some lightweight 32" dishes) for reception in "fringe" areas of the world. The robust motor and construction of the Track It TV™ Unit lets you mount any of these dishes onto the TITV rotating shaft, so that you can enjoy high quality digital satellite TV programming while swinging at anchor on your vessel.



Accurate Tracking

The Track It TV™ Unit uses an extremely accurate digital compass with no moving parts for tracking. A rapid compass sampling rate – over 30 times per second – and magnetic direction resolution of 1/10°, mean that the unit reacts very quickly to any movement of your vessel. This translates into very accurate tracking of the satellite TV signal, usually within 1/4° to 1/2°. This is well within the maximum horizontal tracking "window" of 6° for a typical 18" dish (4.5° for a 24" dish or 3.8° for a 32" dish). The width of this "window" depends on how accurately the dish elevation is set manually on the dish, since the vertical "window" of reception is also 6° for a typical 18" dish. We show you easy techniques for setting elevation to the center of this vertical "window" of reception, so even in less than smooth anchorages you will continue to receive satellite TV programming.



Quick Signal Recovery

An advantage the compass driven Track It TV™ Unit has over the signal driven tracking of higher priced units, is that if the TV signal is lost due to passing an obstruction while motoring, or due to a large wake that causes your boat to roll heavily, as soon as the obstruction or water disturbance has passed, the TV signal immediately reappears, since our compass continues to track accurately without the signal. The same events also cause the loss of TV signal by the typical signal driven tracking unit. But it often takes an annoying amount of time for such units to search and locate the signal again before tracking resumes.

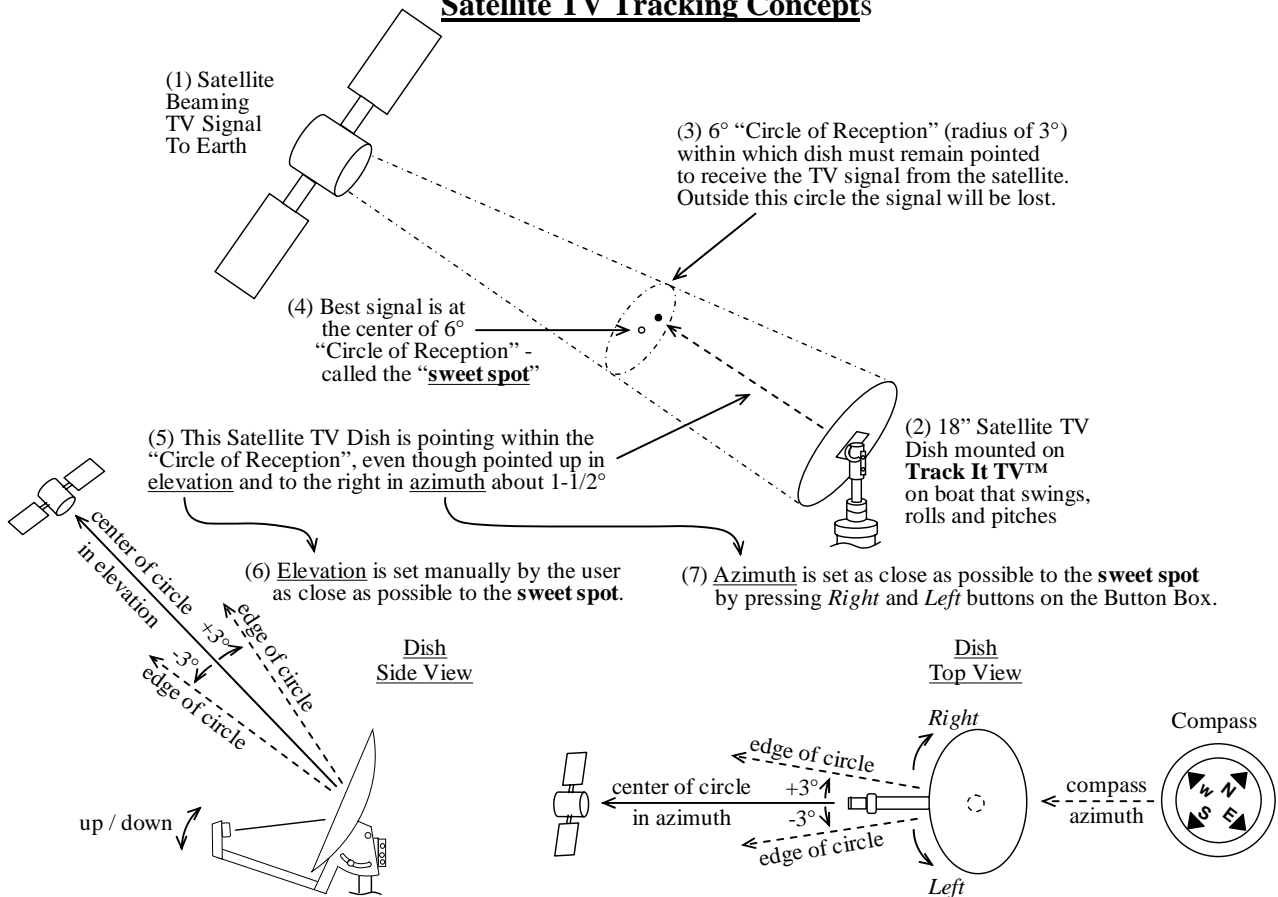
Mounting Flexibility And Light Weight

The slim, light-weight TITV Unit can often be tucked into locations where larger and heavier dome style dishes cannot. The unit is very easy to mount on 1 or 2 railings, on an aluminum pole that can be put almost anywhere to give required height to clear obstructions, as well as on decks or on the sides or tops of arches or cabins. Over many years working with customers, we have learned the best way to take advantage of the great mounting flexibilities provided by the TITV design, and it is all documented here.

Track It TV™ - OPERATION & MOUNTING

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Satellite TV Tracking Concepts



(1) The TV satellite beams its signal to earth.

(2) The satellite TV dish that must receive this signal is mounted on the TITV unit on your boat.

(3) The "target" that the dish must remain pointed at is the center of a 6° "circle of reception" - outside this circle the dish will not "see" the satellite TV signal.

(4) The user should strive to aim the dish at the **sweet spot** (the center of the 6° "circle of reception" shown with small circle) for the best signal.

(5) This shows that the dish is pointed up in elevation from (4) about 1-1/2°, and to the right in azimuth from (4) about 1-1/2°, but will still receive the TV signal because it is within the 6° "circle of reception", but it is better to move the dish toward the **sweet spot**.

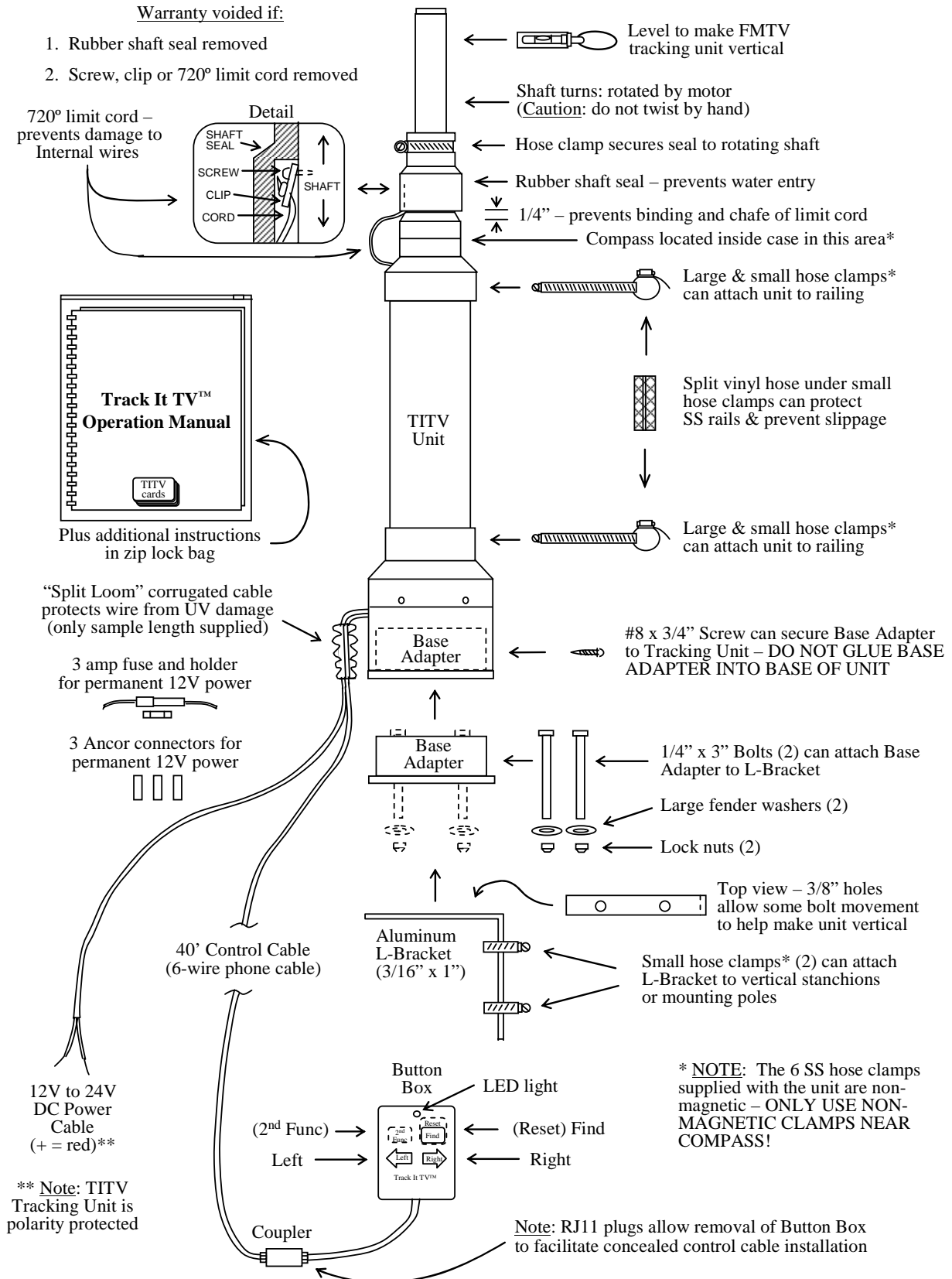
(6) Elevation must be set manually by the user moving the dish, up or down, to point the dish as close as possible to the **sweet spot**.

(7) Azimuth is set pressing the *Right* and *Left* buttons on the button box to point the dish as close as possible to the **sweet spot**. Memorize this best setting for future tracking by pressing (*2nd Func*) and (*Reset Find*) buttons simultaneously.

Track It TV™ - OPERATION & MOUNTING

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Track It TV™ Shipped Parts

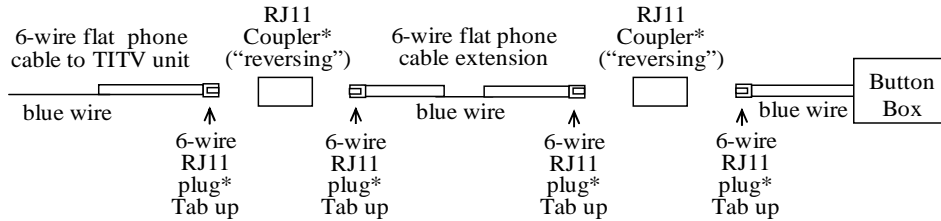


Track It TV™ - OPERATION & MOUNTING

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Extending or Shortening Button Box Control Cable

The drawing below shows how the button box control cable can be extended if needed, using another length of 6-wire modular flat telephone cable:

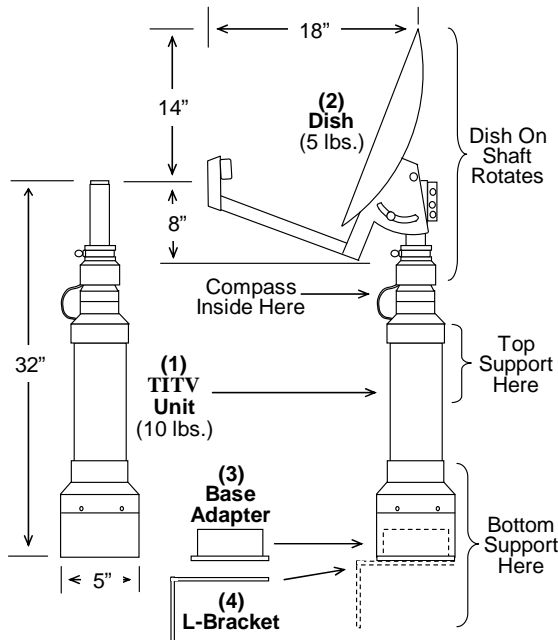


Also, the control cable from the unit can be made shorter, by cutting and crimping on a new 6-wire RJ11 plug.

Major Components for mounting

The four major components for mounting are shown in the drawing below:

(1) Track It TV™ Unit; (2) Satellite TV Dish; (3) Base Adapter; and (4) L-Bracket.



Important dimensions and weights are shown in the drawing. Dish dimensions are typical, but can vary several inches from those listed. The base adapter, if used, fits inside the bottom of the unit as illustrated. The L-bracket, if used, is bolted to the base adapter. The dish is mounted on the rotating shaft that rotates to track the satellite as the boat turns, guided by the compass inside the shaft. The unit must have both top and bottom supports when mounted as shown.

Track It TV™ - OPERATION & MOUNTING Overview

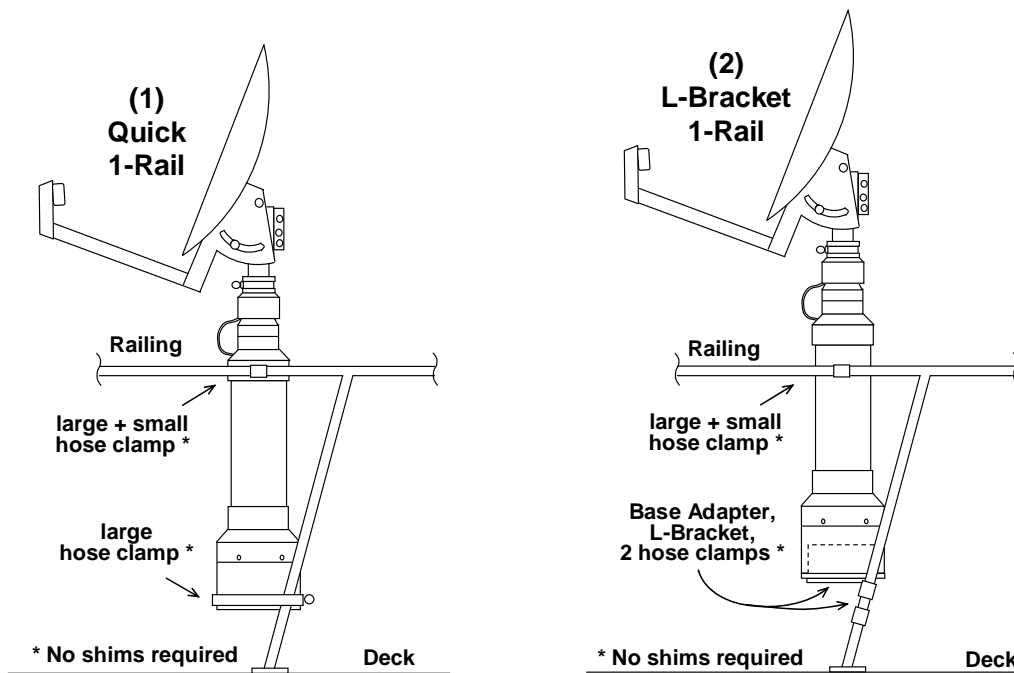
Mounting Methods Categorized

The following categorizes the mounting methods we have found from experience to work well for Track It TV™. We recommend trying the easiest one first. They are divided and ranked in order of difficulty as follows:

- (1) Easy 1-rail/stanchion or 2-rail mountings.
- (2) Versatile pole mountings.
- (3) Arch or cabin side mountings.
- (4) Standalone deck or limited area surface mountings.

Each mounting method covered briefly below has a much more detailed explanation in the **MOUNTING APPENDIX** of the full **Track It TV™ Operation Manual**.

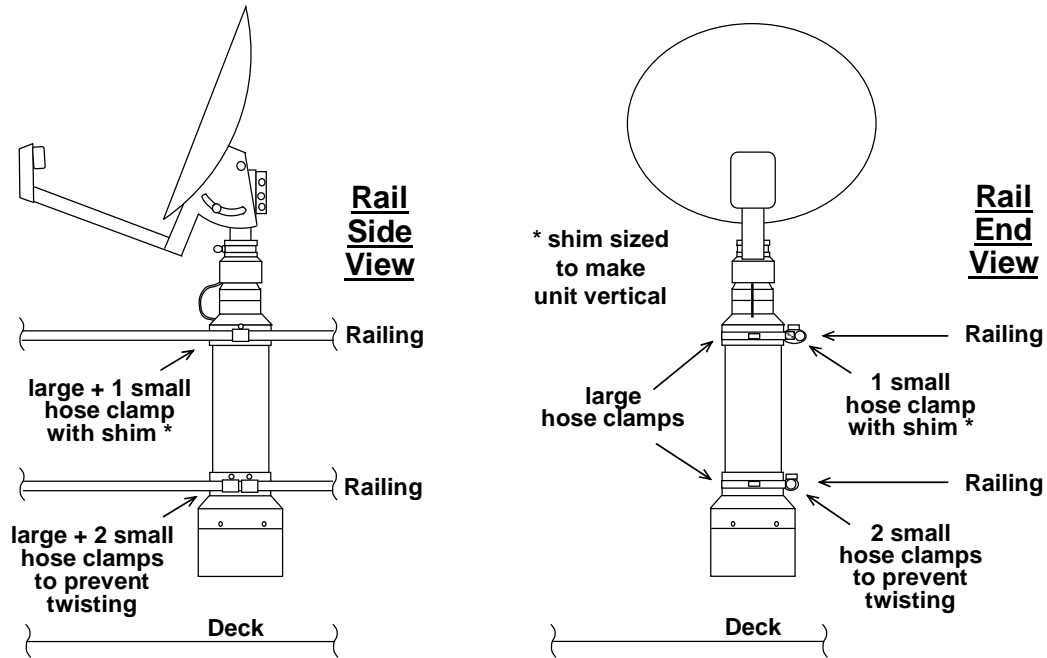
1-Rail/Stanchion Mountings



- (1) With just a few hose clamps near a stanchion, the unit can be quickly mounted and made vertical with absolutely no shims.
- (2) Similar to (1), but results in an even more rigid installation using the Base Adapter and L-Bracket. It is also easier to mount and dismount the unit for off-season or hurricane storage.

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Quick 2-Rail Mounting



With just a few hose clamps more rail area is opened up with this 2-rail mounting, but a shim is usually needed to make unit vertical.

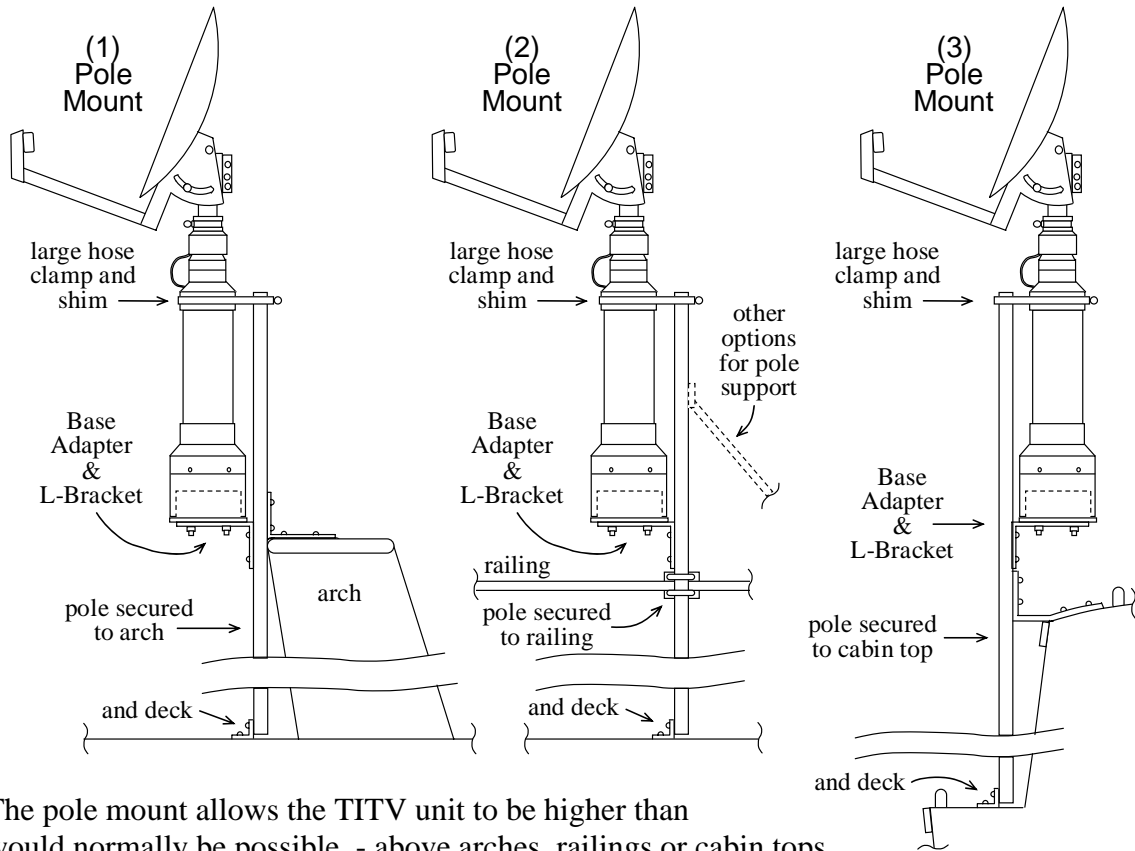
The 1-rail and 2-rail mountings are the easiest and quickest to use, but may not satisfy your need for a higher mounting location to clear an obstruction, or to give working room, or to allow a position that is far enough from some magnetic source that affects the Track It TV™ compass.

Mounting inside the rail may be better than outside because pilings and docks may hit the unit.

The next pages show more complex mountings that may be required to solve such problems.

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Versatile Pole Mountings



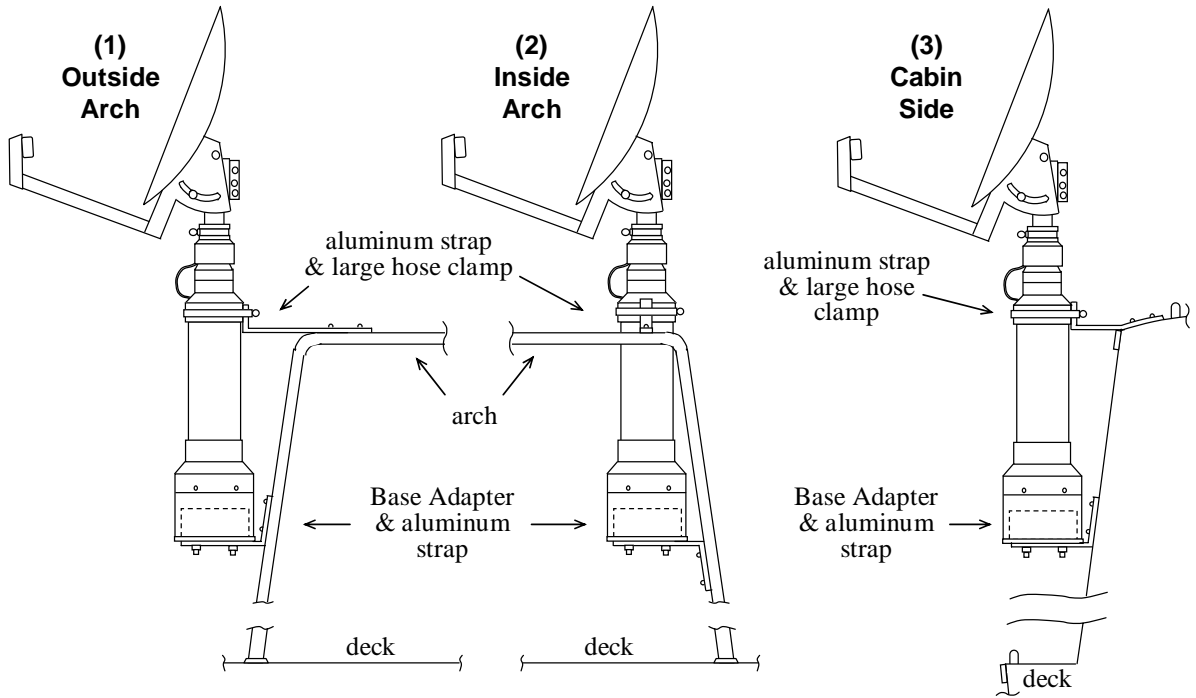
The pole mount allows the TITV unit to be higher than would normally be possible - above arches, railings or cabin tops, without interfering with deck space. But if adjusting of dish elevation is required, don't make the unit too high. There is great flexibility in how high you can elevate the unit - or it can even hang below an arch, railing or cabin side to achieve the precise dish height desired. Attaching the TITV unit directly to an arch, railing or cabin side or top generally limits such flexibility, and is often harder than the simple pole installation. The pole material we like is readily available from metal warehouses, metal fabricators or welding shops: 2" aluminum schedule 40 pipe (not electrical conduit) up to 8' high. Pole mounting is one of our favorite mountings, and second only to the rail mountings for convenience, ease and flexibility of mounting.

- (1) This option shows the pole attached to the deck and top of a radar arch - may be preferable to direct attachment to the arch.
- (2) This option shows the pole attached to the deck and a railing - useful for some extra height above the railing.
- (3) This option shows the pole attached to the deck and a cabin top - useful when the side of the cabin is a preferred location

There are additional details of TITV Unit attachment to the pole, including information on the shim that is needed, as well as various pole support alternatives.

Track It TV™ - OPERATION & MOUNTING
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Arch or Cabin Side Mountings

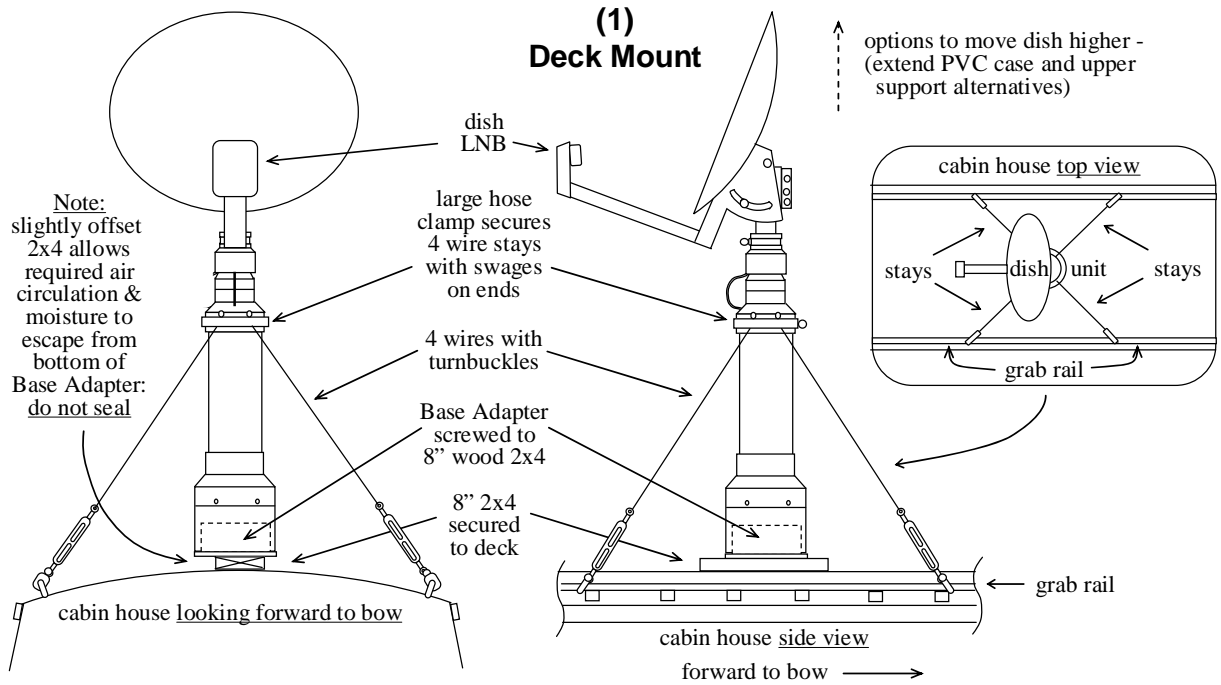


The arch and cabin side mountings are also relatively easy to accomplish. There is not as much height variation possible as with the pole mounting, but if these height constraints are acceptable, you do avoid having to get an aluminum pole. The aluminum strap we find most suitable for these mountings is 3/16" x 1", thick enough for strength, yet thin enough to bend.

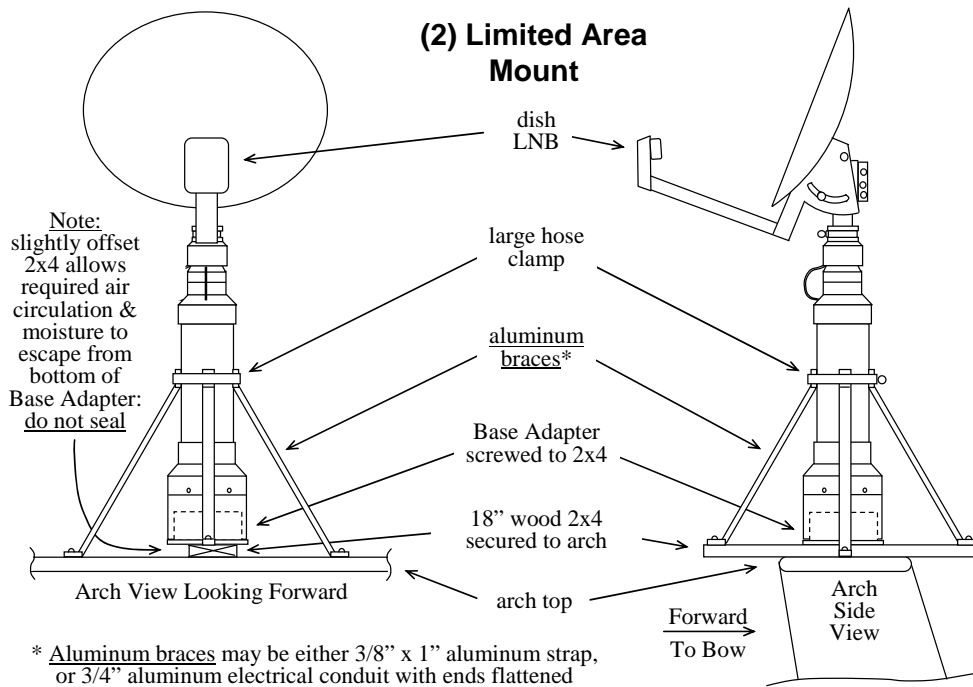
- (1) This shows what we call the “fire extinguisher” mounting, on the outside of an arch.
- (2) This shows an inside the arch “hanging” mount. Detailed drawings show (with another view) how the backward rake of most arches makes this possible.
- (3) This again is the “fire extinguisher” mount, but this time on the side of a cabin.

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Deck or Limited Area Mountings



(1) This shows a typical mounting on a cabin house deck top, utilizing wire stays and turnbuckles to support the top of the unit. Four wire stays must be used. There are options to move dish higher off deck.



(2) This shows a limited area mounting utilizing aluminum braces to support the top of the unit. There is an option for fewer supporting aluminum braces.