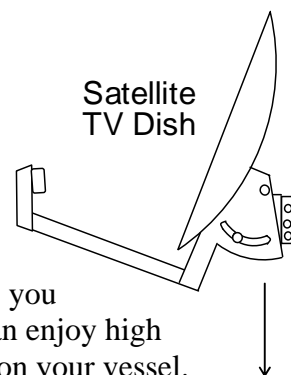


Follow Me TV® - OPERATION & MOUNTING

Overview

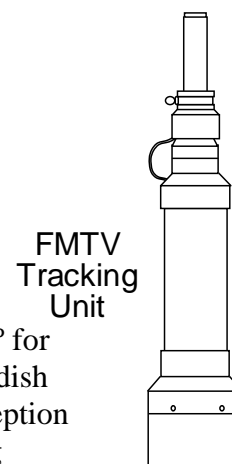
Use Any Satellite TV Dish & Receiver

The FMTV (Follow Me TV®) Tracking 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 FMTV Tracking Unit lets you mount all these dishes onto the FMTV rotating shaft, so that you can enjoy high quality digital satellite TV programming while swinging at anchor on your vessel.



Accurate Tracking

The FMTV Tracking 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 $1/10^\circ$, 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 $1/4^\circ$ to $1/2^\circ$. 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

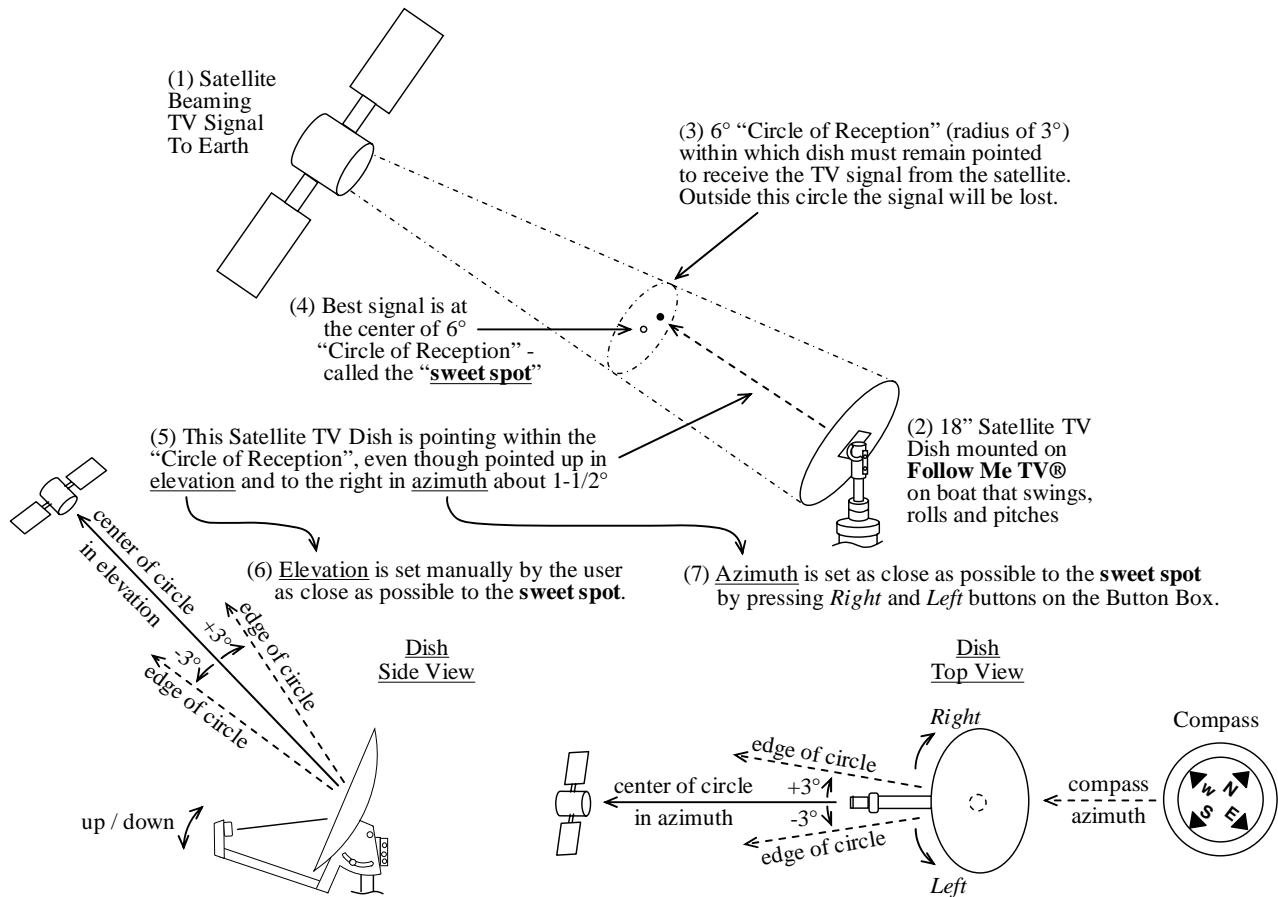
An advantage the compass driven FMTV Tracking Unit has over the signal driven tracking of higher priced units, is that if the TV signal is lost due to passing an obstruction while motoring, or due to a large wake that causes your boat to roll heavily, as soon as the obstruction or water disturbance has 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 FMTV 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 FMTV design, and it is all documented here.

Follow Me TV® - OPERATION & MOUNTING
Overview

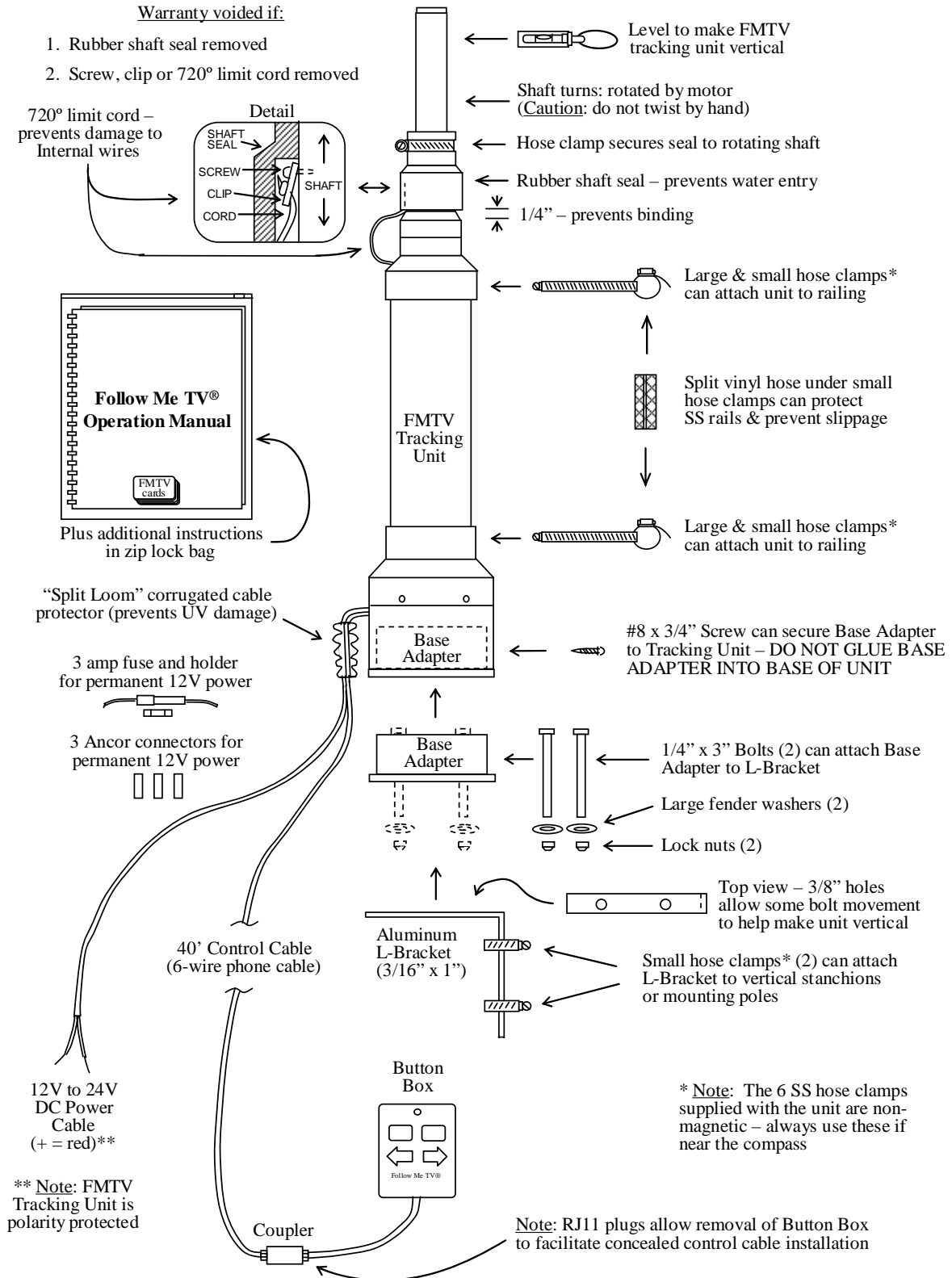
Satellite TV Tracking Concepts



- (1) The TV satellite beams its signal to earth.
- (2) The satellite TV dish that must receive this signal is mounted on the FMTV 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**. The *Find* button will return the dish to this azimuth after calibration/memorization of this direction (details in operation manual).

Follow Me TV® - OPERATION & MOUNTING Overview

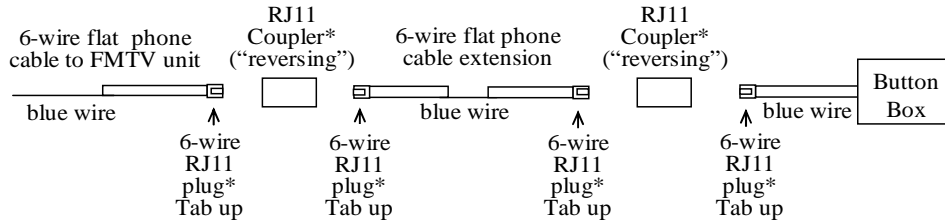
Follow Me TV® Shipped Parts



Follow Me TV® - OPERATION & MOUNTING
Overview

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:

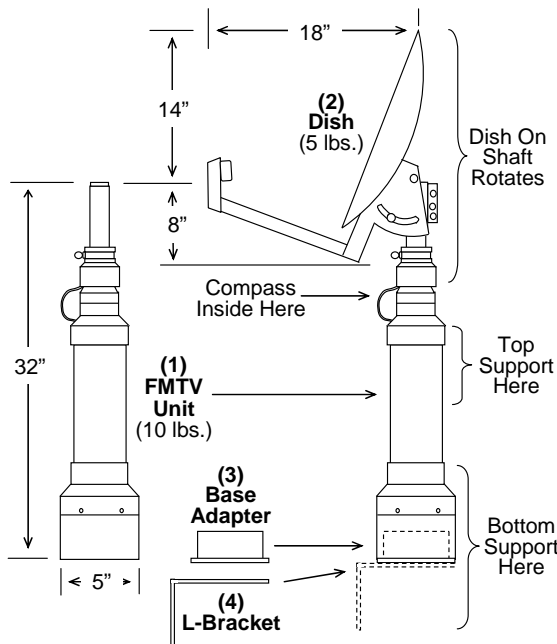


Also, the control cable from the unit can be made shorter, by cutting and crimping on a new 6-wire RJ11 plug.

Major Components for mounting

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

(1) Follow Me 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 (**Note:** dish and DSS receiver are purchased separately from a DSS Satellite TV manufacturer). 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.

Follow Me TV® - OPERATION & MOUNTING Overview

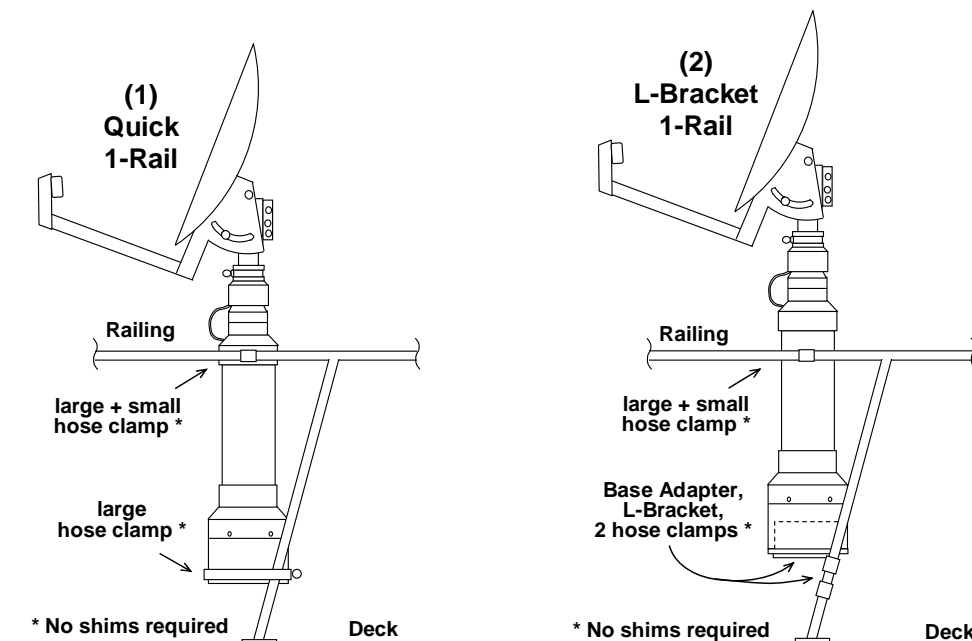
Mounting Methods Categorized

The following categorizes the mounting methods we have found from experience to work well for Follow Me 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 will have a page number reference to enable you to quickly find the corresponding detailed explanation in the **MOUNTING APPENDIX** (page 10).

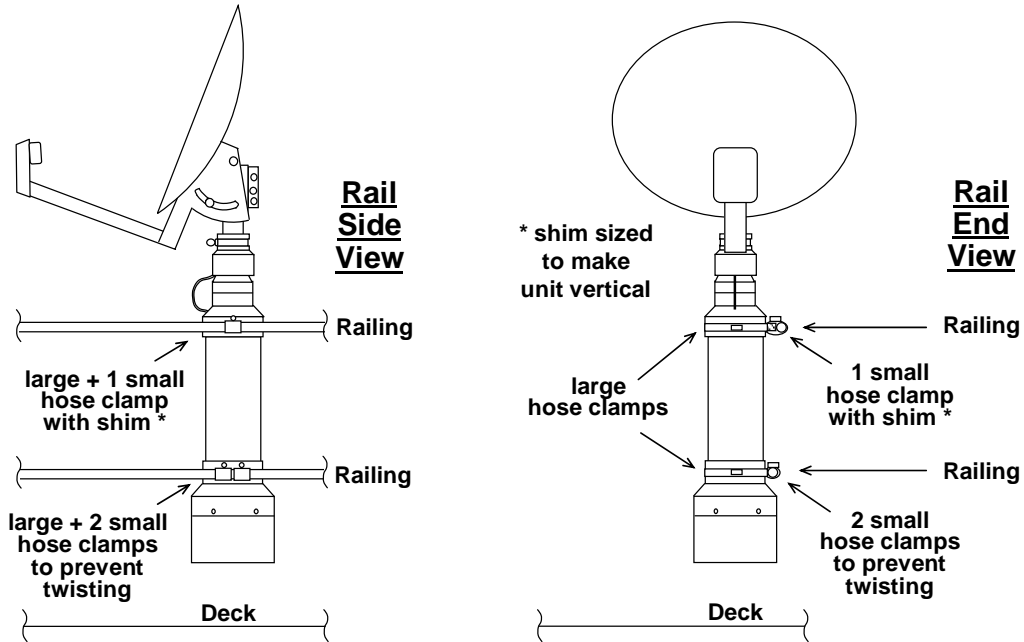
1-Rail/Stanchion Mountings



- (1) With just a few hose clamps near a stanchion, the unit can be quickly mounted and made vertical with absolutely no shims. See page 10 for details.
- (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. See page 11 for details.

Follow Me TV® - OPERATION & MOUNTING
Overview

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. See page 12 for details.

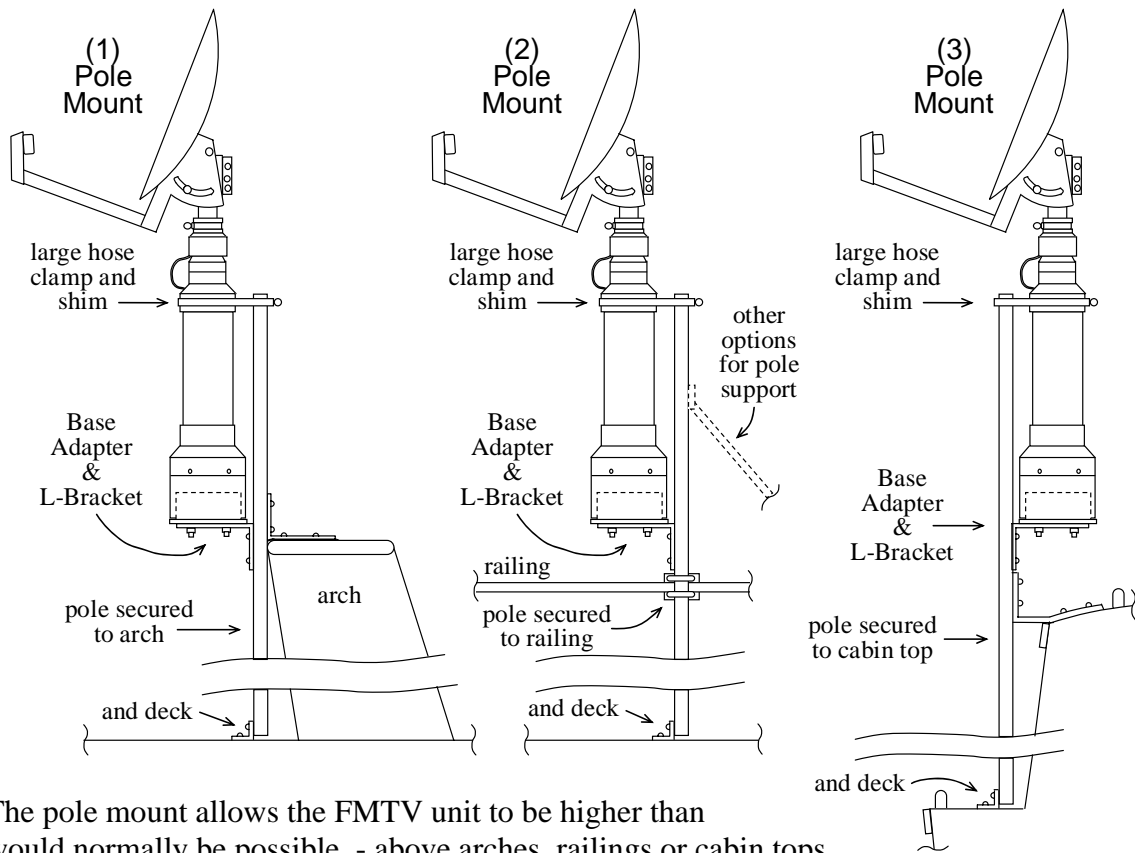
The 1-rail and 2-rail mountings are the easiest and quickest to use, but may not satisfy your need for a higher mounting location to clear an obstruction, or to give working room, or to allow a position that is far enough from some magnetic source that affects the Follow Me TV® compass.

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.

Follow Me TV® - OPERATION & MOUNTING
Overview

Versatile Pole Mountings



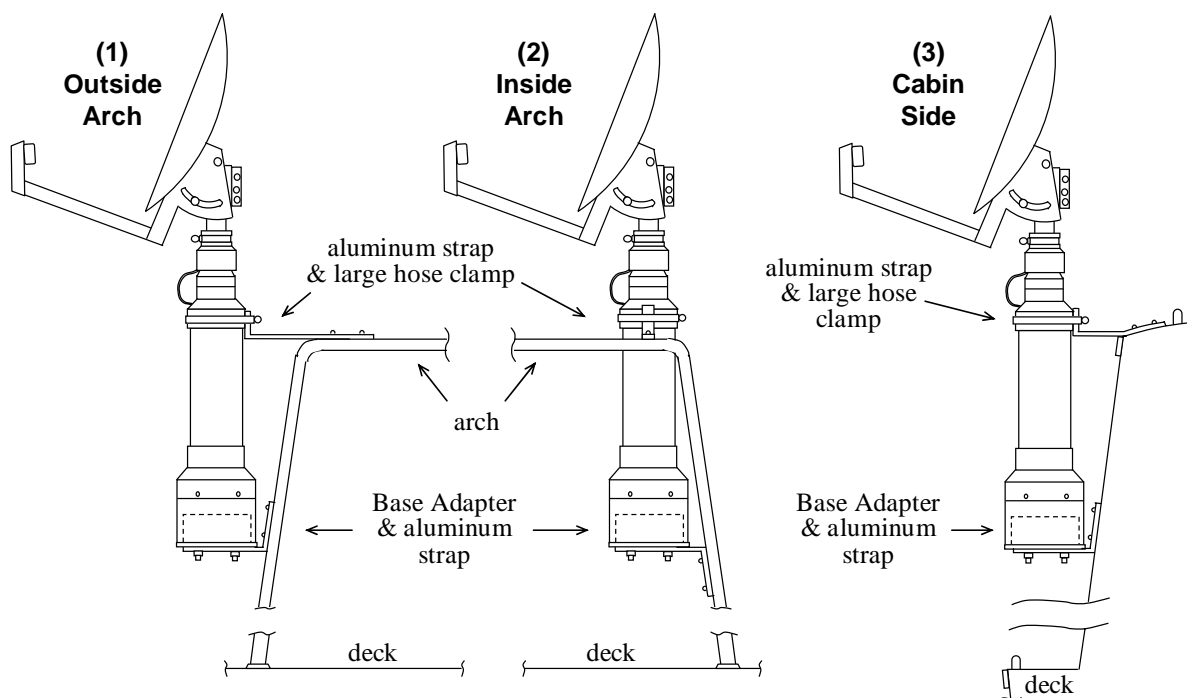
The pole mount allows the FMTV unit to be higher than would normally be possible - above arches, railings or cabin tops, without interfering with deck space. But if adjusting of dish elevation is required, don't make the unit too high. There is great flexibility in how high you can elevate the unit - or it can even hang below an arch, railing or cabin side to achieve the precise dish height desired. Attaching the FMTV 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: aluminum electrical conduit schedule 80, 1-1/4" ID, 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

See page 13 for details of FMTV Unit attachment to the pole, including information on the shim that is needed, as well as page 14 for various pole support alternatives.

Follow Me TV® - OPERATION & MOUNTING Overview

Arch or Cabin Side Mountings

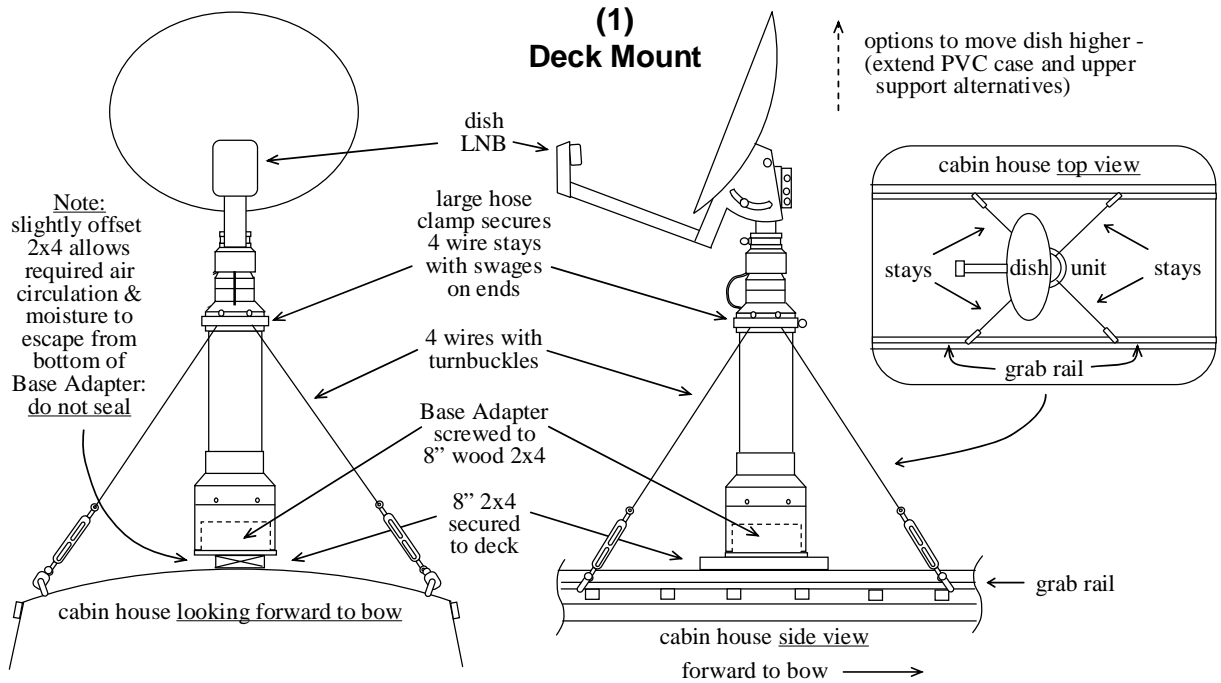


The arch and cabin side mountings are also relatively easy to accomplish. There is not as much height variation possible as with the pole mounting, but if these height constraints are acceptable, you do avoid having to get an aluminum pole. The aluminum strap we find most suitable for these mountings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

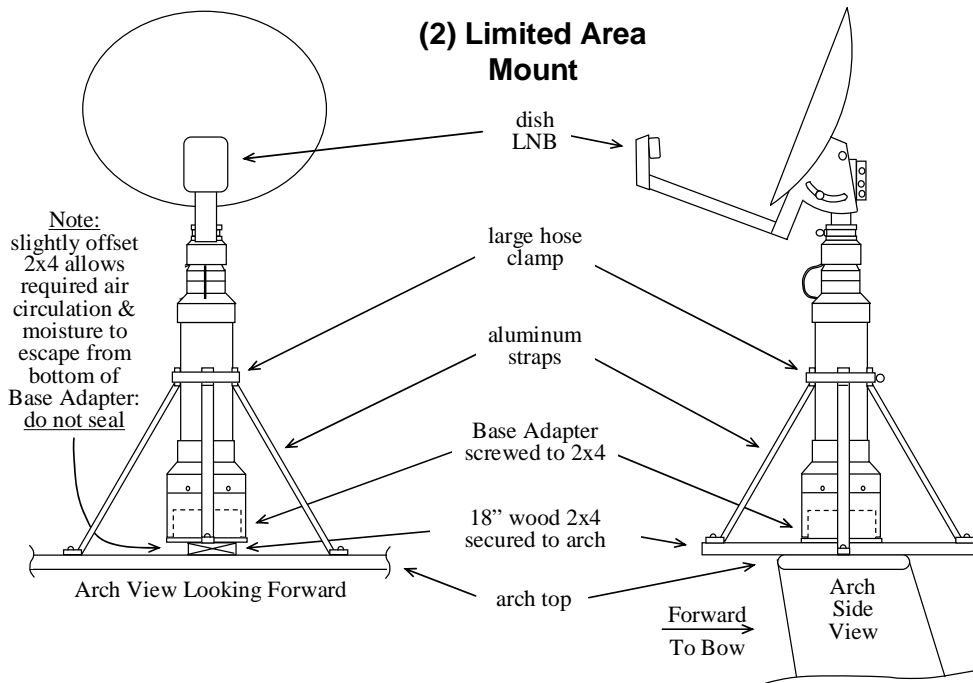
- (1) This shows what we call the “fire extinguisher” mounting, on the outside of an arch. See page 15 for details.
- (2) This shows an inside the arch “hanging” mount. The detailed drawings on page 16 will show (with another view) how the backward rake of most arches makes this possible.
- (3) This again is the “fire extinguisher” mount, but this time on the side of a cabin. See page 15 for details.

Follow Me TV® - OPERATION & MOUNTING
Overview

Deck or Limited Area Mountings



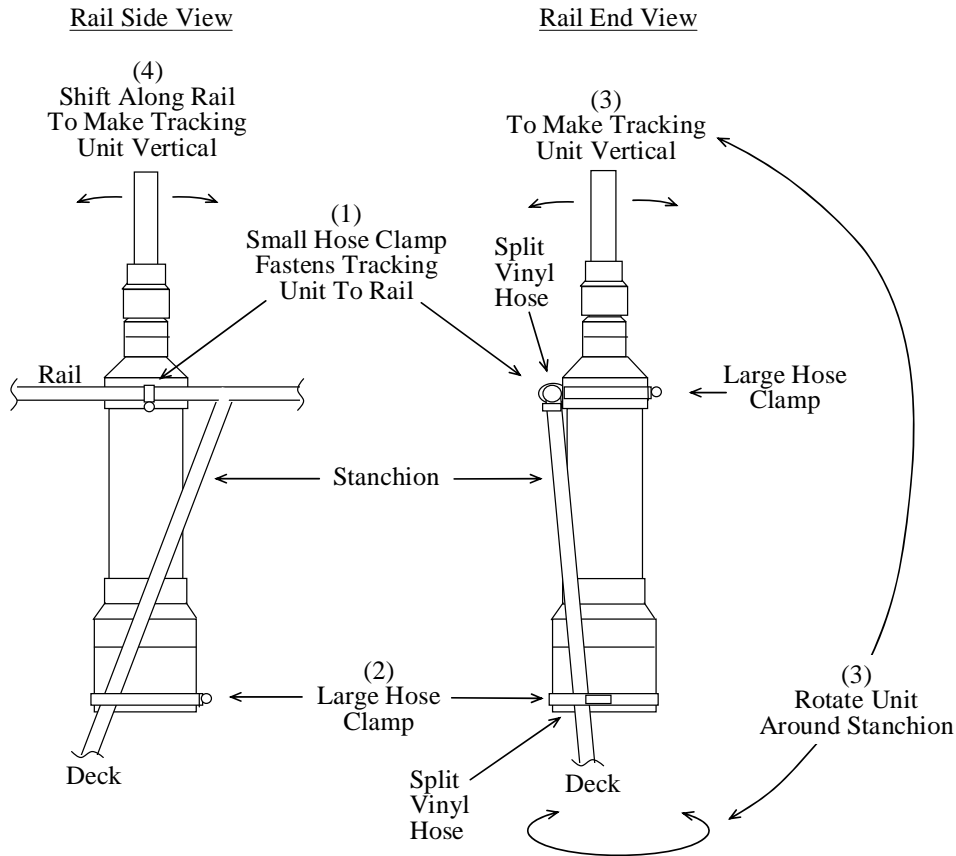
(1) This shows a typical mounting on a cabin house deck top, utilizing wire stays and turnbuckles to support the top of the unit. Four wire stays must be used. See page 17 for details. See page 18 for options to move dish higher off deck.



(2) This shows a limited area mounting utilizing aluminum straps to support the top of the unit. See page 19 for details and option for fewer supporting aluminum straps.

Follow Me TV® - MOUNTING APPENDIX
Details of Methods

Quick 1-Rail



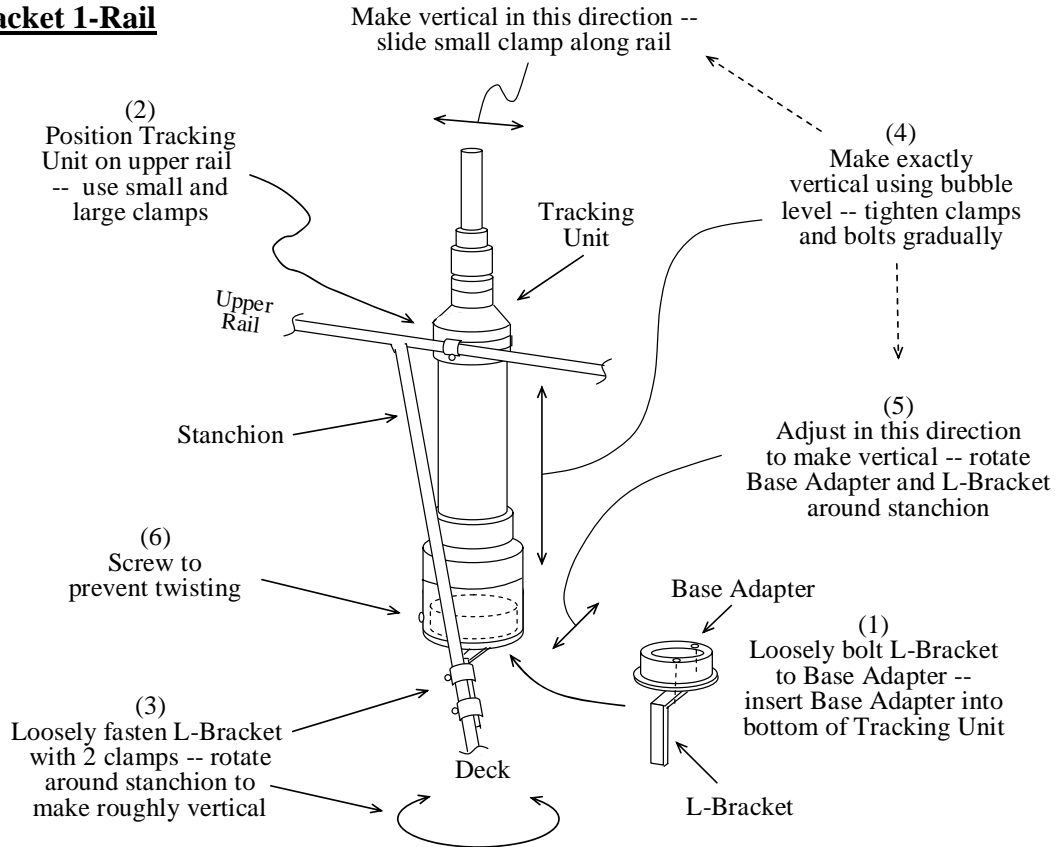
The sequence of events are:

- (1) Hang the unit loosely from the top rail using a hose clamp over split vinyl hose.
- (2) Secure the bottom of the tracking unit to the stanchion with one large hose clamp.
- (3) Put split vinyl hose between the rail and the tracking unit, and rotate tracking unit around stanchion to make it absolutely vertical in that direction.
- (4) The tracking unit is shifted along the rail to make absolutely vertical in the other direction. When sure everything is completely vertical, tighten down hard on all hose clamps.

Follow Me TV® - MOUNTING APPENDIX

Details of Methods

L-Bracket 1-Rail



If a more stable mounting is desired than that provided by Quick 1-Rail Mounting you can use this L-bracket mounting method as follows.

(1) Loosely bolt L-Bracket to Base Adapter (use two bolts – see page 13 for details), and insert Base Adapter into bottom of Tracking Unit.

(2) Position the Tracking Unit (with base adapter inserted) on the upper rail with interlocking small and large hose clamps.

(3) Loosely fasten L-Bracket to stanchion with 2 small hose clamps, adjusting to make Tracking Unit roughly vertical by rotating around stanchion.

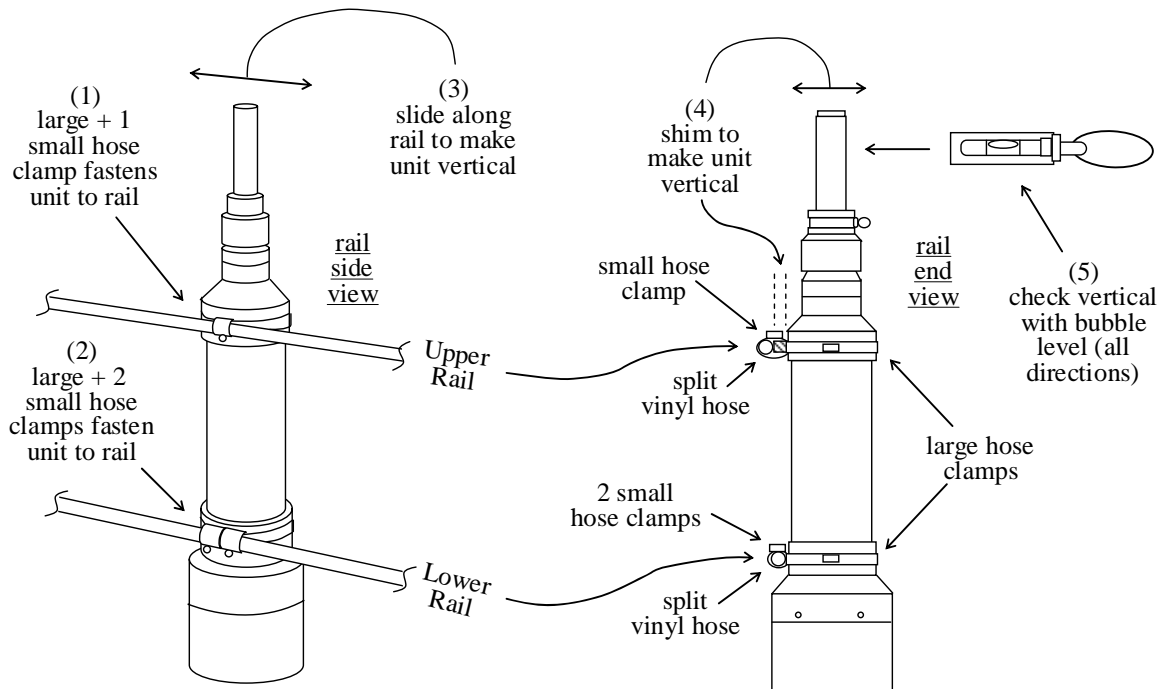
(4) Make Tracking Unit exactly vertical in all directions using bubble level – tightening various hose clamps and Base Adapter bolts gradually until everything is firmly seated and without movement.

(5) Adjust in this direction to make vertical by rotating Base Adapter and L-Bracket around stanchion.

(6) Secure the Tracking Unit to the Base Adapter with #8 x 3/4” screw provided to avoid twisting (drill 1/8” hole about 1” above bottom of Tracking Unit, heat screw to melt PVC and make threads as you screw in). Do not glue the base adapter into the base of the unit.

Follow Me TV® - MOUNTING APPENDIX
Details of Methods

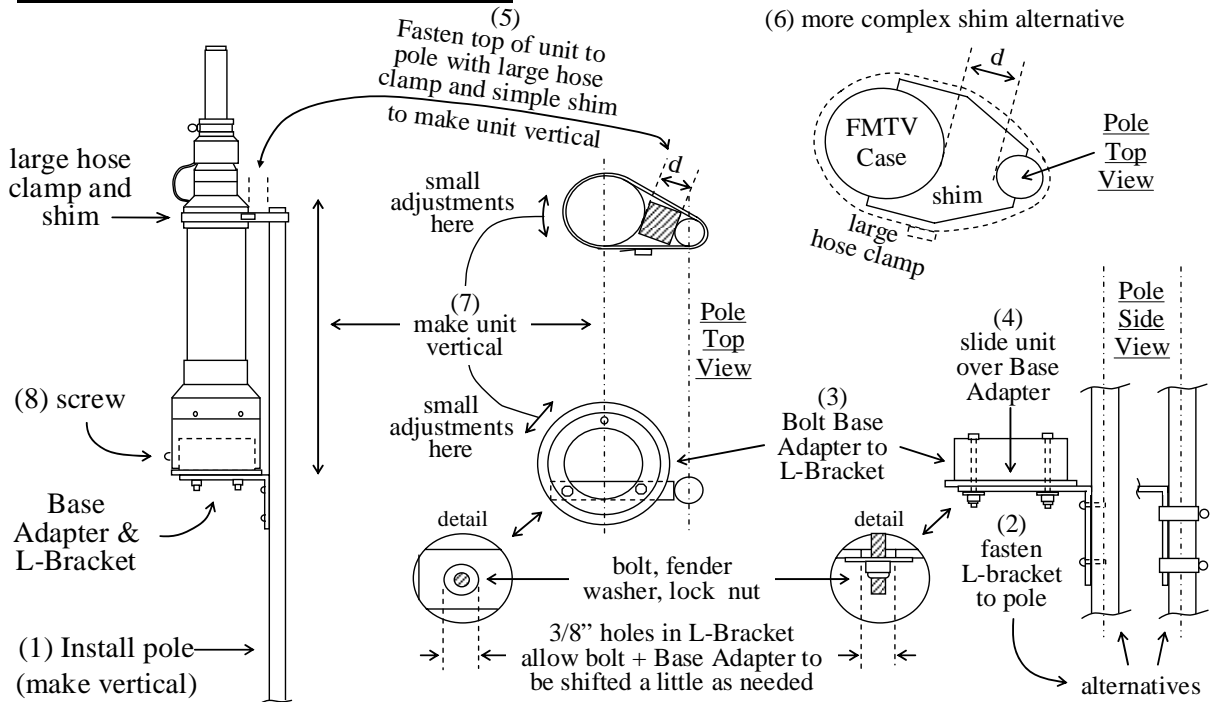
Quick 2-Rail



- (1) Hang unit loosely from the top rail using 1 small hose clamp over split vinyl hose (small hose clamp held firmly to unit body by large hose clamp).
- (2) Secure unit fairly firmly to bottom rail using 2 small hose clamps over split vinyl hose (2 small hose clamps held firmly to unit body by large hose clamp).
- (3) Slide upper small hose clamp and unit along upper rail to make vertical along railing axis.
- (4) Make a wooden shim to fit under top hose clamp that will make unit vertical perpendicularly to the rail. Tighten all hose clamps when both (3) and (4) make unit vertical in both directions.
- (5) Check unit with the bubble level to assure it's vertical in all directions.

Follow Me TV® - MOUNTING APPENDIX
Details of Methods

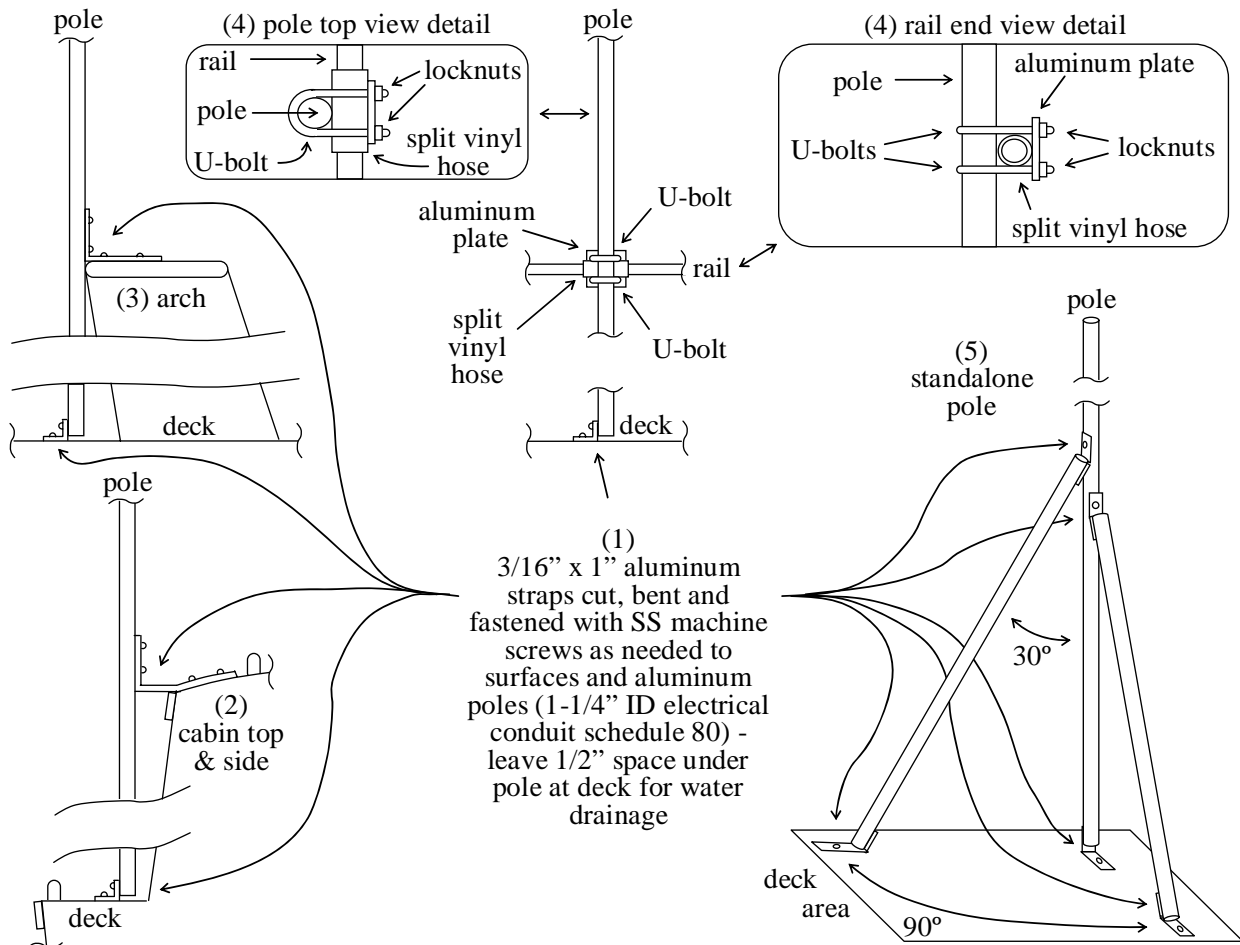
Pole Mounting – Attach Unit to Pole



- (1) Install pole – make vertical (see next page for options to attach to your vessel).
- (2) Fasten L-Bracket to pole (machine screw or hose clamp alternatives). Make sure pole top will be even with upper support (prevents coax cable catching).
- (3) Bolt Base Adapter to L-Bracket with bolts, fender washers, and lock nuts. Detail views show 3/8” holes in L-Bracket allow Base Adapter to be shifted a little.
- (4) Slide FMTV unit over base adapter.
- (5) Fasten top of unit with a large hose clamp and simple wood shim to make unit vertical. Make sure hose clamp/shim is near top of pole to prevent coax catching.
- (6) A more complex shim alternative for (5) above gives a more stable attachment. Shape shim to fit radius of FMTV Case (where attached) and pole.
- (7) Make small adjustments as needed to make unit perfectly vertical – can twist upper attachment a little and loosen lock nuts to shift lower support a little.
- (8) When satisfied that unit is in right place and vertical put in screw where shown to prevent unit twisting (drill small 1/8” hole and heat #8 x 3/4” SS screw before inserting to melt PVC slightly). Do not glue the base adapter into the base of the unit.

Follow Me TV® - MOUNTING APPENDIX
Details of Methods

Pole Support – Attachments and Options

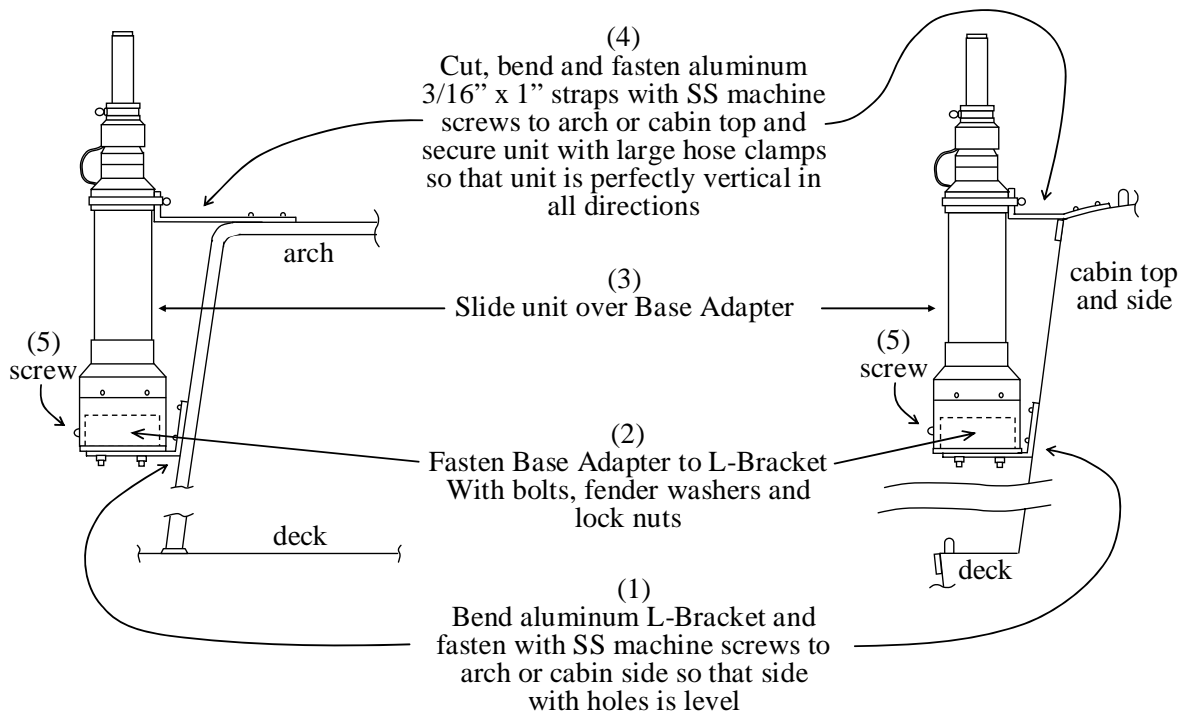


- (1) 3/16" x 1" aluminum strap material is easy to cut, bend and fasten with SS machine screws to surfaces and aluminum poles (1-1/4" ID electrical conduit schedule 80 is recommended). Be sure to leave 1/2" under poles at deck for water drainage.
- (2) Cabin top and side mounting requires custom strap shape and L-strap at bottom.
- (3) Arch provides a convenient place to fasten pole as shown.
- (4) Railings can be used as a support as well. Pole top and rail end detail views show how an aluminum plate and SS U-bolts with locknuts (rail protected by vinyl hose) can easily secure the pole to any horizontal railing.
- (5) In many situations a convenient anchor point is not available, but it is easy to rig a standalone pole with two additional lengths of pole angled at 90° from each other and about 30° from the load carrying pole. The support poles can be anchored at the bottom on the same or different levels, allowing great flexibility to avoid obstructions.

Follow Me TV® - MOUNTING APPENDIX

Details of Methods

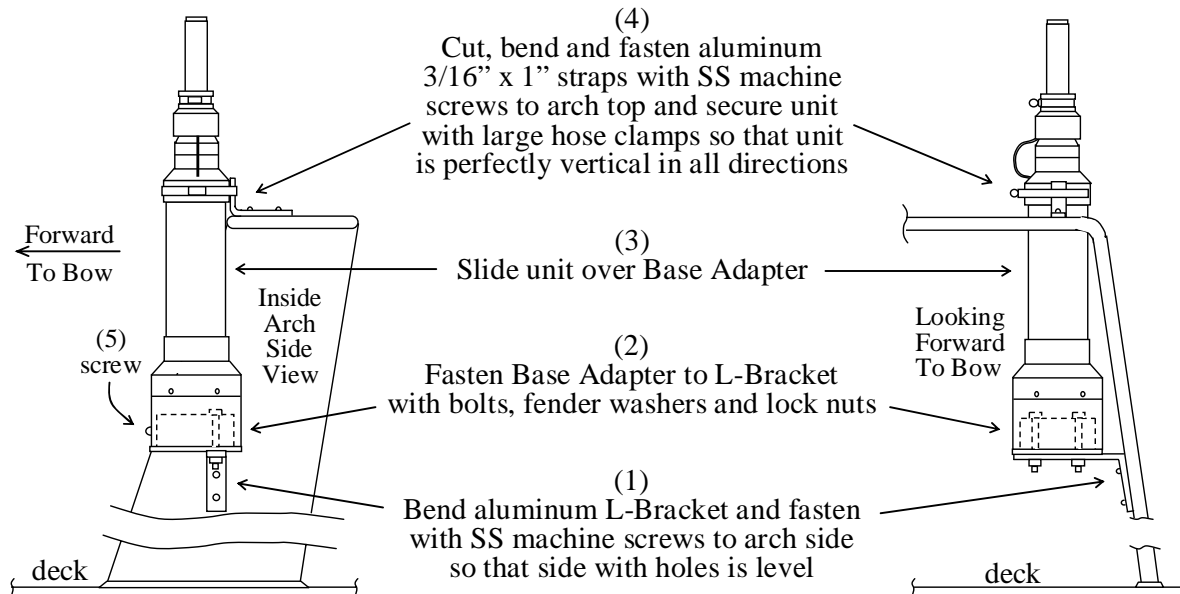
Arch Mounting – Outside Arch or Cabin Side



- (1) Bend aluminum L-Bracket and fasten with SS machine screws to arch or cabin side so that side with holes is level.
- (2) Fasten Base Adapter to L-Bracket with bolts, fender washers and lock nuts. See page 13 detail views that show fastenings and how 3/8" holes in L-Bracket allow Base Adapter to be shifted a little later to help make unit vertical.
- (3) Slide FMTV unit over Base Adapter.
- (4) Cut, bend and fasten aluminum 3/16" x 1" straps to arch or cabin top with SS machine screws. Secure unit with large hose clamps so that unit is perfectly vertical in all directions (use small shims if necessary at top and/or loosen lock nuts a little at bottom to move Base Adapter slightly to make vertical).
- (5) When satisfied unit is perfectly vertical, tighten everything and put in screw where shown to prevent unit twisting (drill small 1/8" hole and heat #8 x 3/4" SS screw before inserting to melt PVC slightly). Do not glue the base adapter into the base of the unit.

Follow Me TV® - MOUNTING APPENDIX
Details of Methods

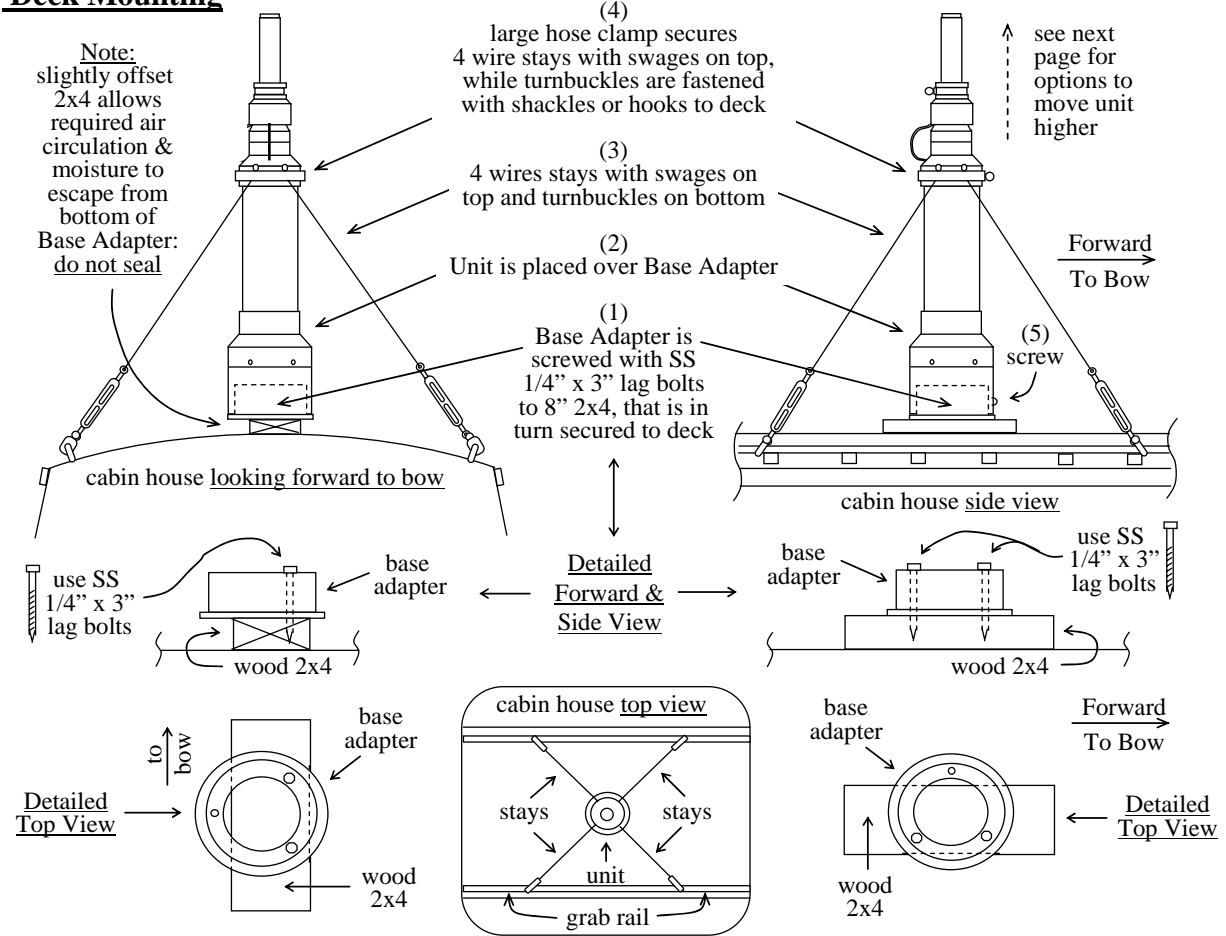
Arch Mounting – Inside Arch Side



- (1) Bend aluminum L-Bracket and fasten with SS machine screws to arch side so that side with holes is level.
- (2) Fasten Base Adapter to L-Bracket with bolts, fender washers and lock nuts. See page 13 detail views that show fastenings and how 3/8" holes in L-Bracket allow Base Adapter to be shifted a little later to help make unit vertical.
- (3) Slide FMTV unit over Base Adapter.
- (4) Cut, bend and fasten aluminum 3/16" x 1" strap to arch top with SS machine screws. Secure unit with large hose clamp so that unit is perfectly vertical in all directions (use small shims if necessary at top and/or loosen lock nuts a little at bottom to move Base Adapter slightly to make vertical).
- (5) When satisfied unit is perfectly vertical, tighten everything and put in screw where shown to prevent unit twisting (drill small 1/8" hole and heat #8 x 3/4" SS screw before inserting to melt PVC slightly). Do not glue the base adapter into the base of the unit.

Follow Me TV® - MOUNTING APPENDIX
Details of Methods

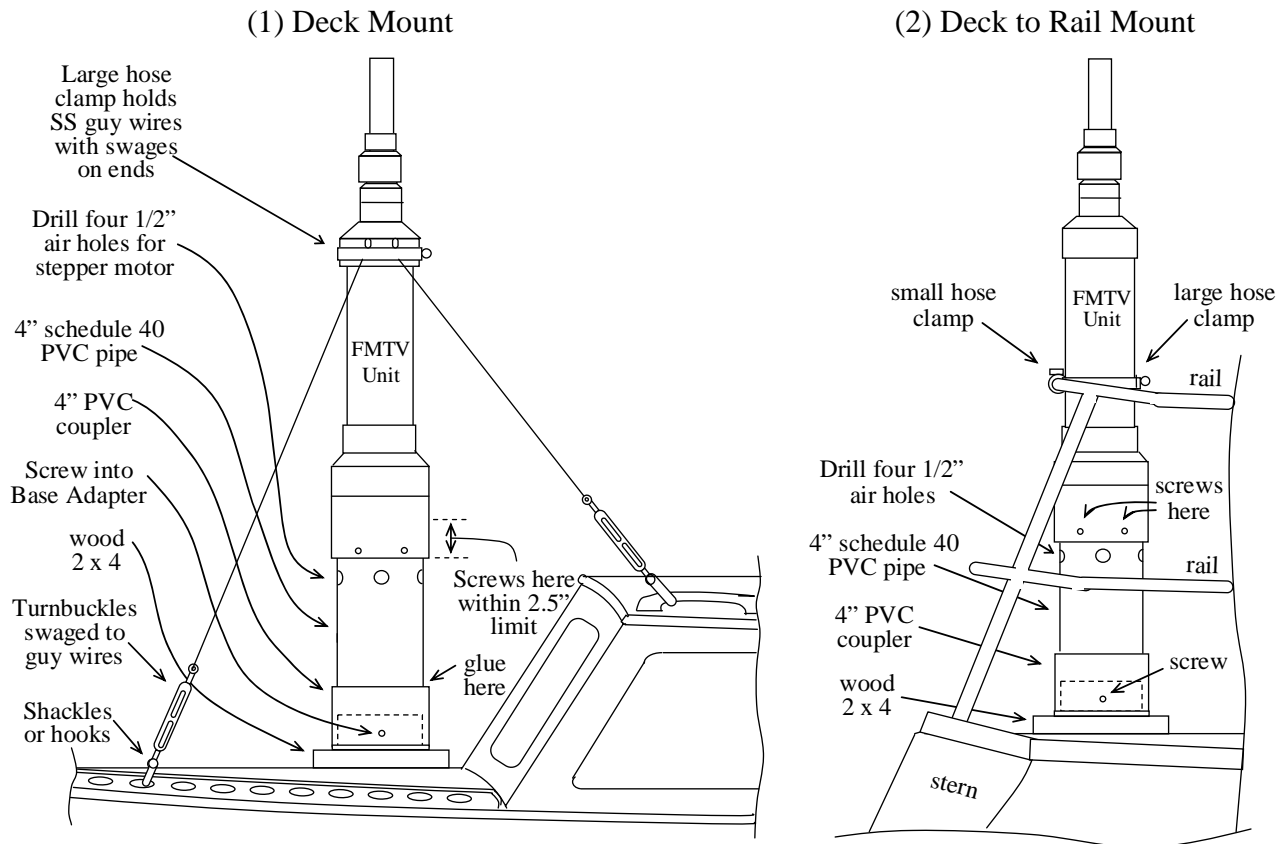
Deck Mounting



- (1) Base Adapter is screwed with SS 1/4" x 3" lag bolts to the 8" wood 2x4, that is in turn secured to the cabin house deck (see detailed drawings above). Shim 2x4 as needed to make as level as possible.
- (2) Unit is placed over Base Adapter.
- (3) 4 SS wire stays are made up with appropriate length for attachment points, with swages on top and turnbuckles on the bottom.
- (4) Large hose clamp secures the wire end with swages (wire is padded with tape under hose clamp to protect wire from damage), while the turnbuckles are fastened with shackles or hooks to any convenient grab rail (shown above), toe rail, pad eye or stanchion base that may be available. Make unit vertical using turnbuckle adjustments.
- (5) When satisfied unit is perfectly vertical, tighten everything and put in screw where shown to prevent unit twisting (drill small 1/8" hole and heat #8 x 3/4" SS screw before inserting to melt PVC slightly). Do not glue the base adapter into the base of the unit.

Follow Me TV® - MOUNTING APPENDIX
Details of Methods

Extending PVC Case



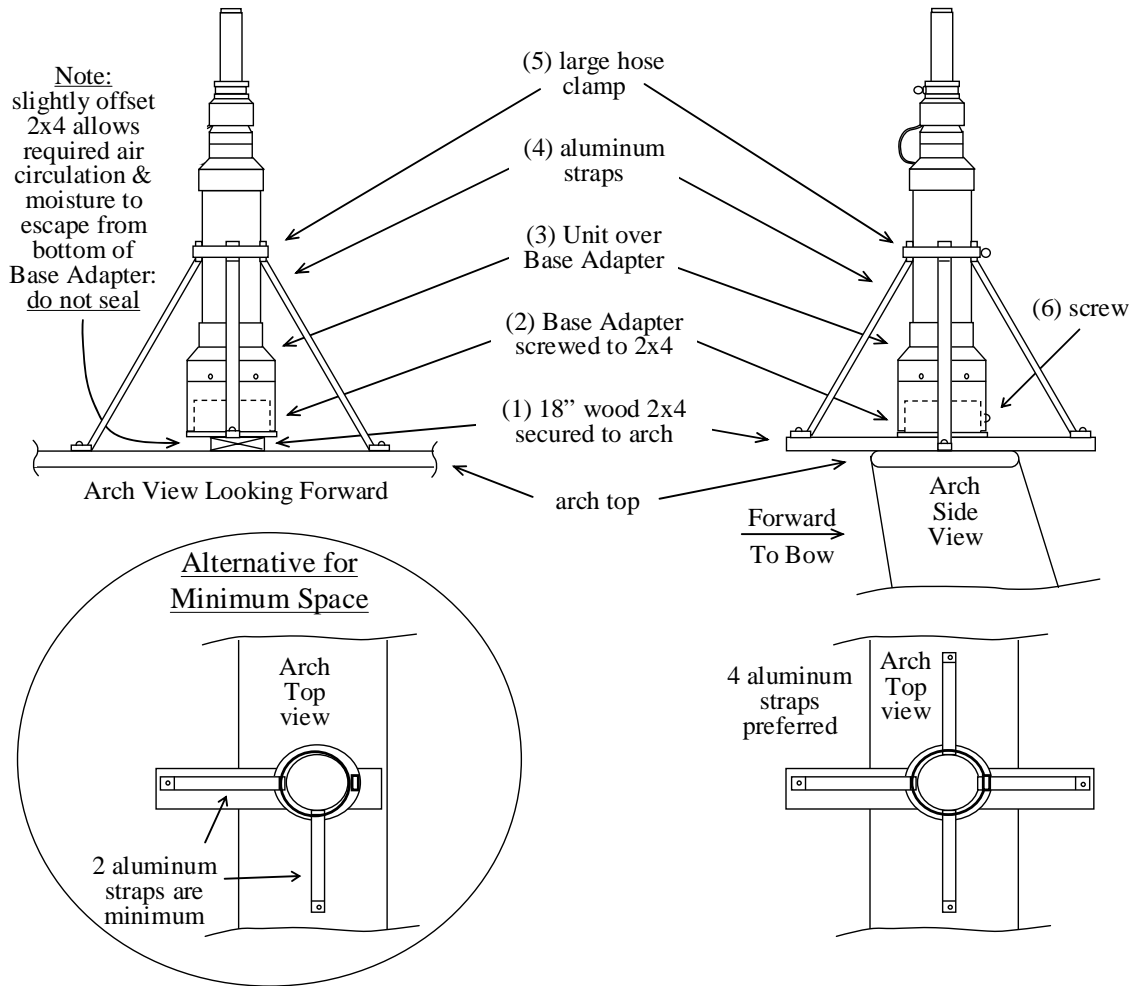
Warning: DO NOT GLUE 4" PVC pipe into bottom of unit. Only secure with screws.

(1) The deck mount, shown above left, uses a hose clamp to secure SS guy wires to the tracking unit mast (the wire will need a swaged stopper on the end and protection to keep the hose clamp from damaging the wire). Turnbuckles provide guy wire length adjustment, with shackles or hooks to allow attachment to any convenient rail, eye or stanchion base. Desired height is obtained by utilizing 4" PVC pipe and coupler which fits over the Base Adapter fastened to a small wood 2 x 4 base, either temporarily set on a non-skid deck, or permanently secured.

(2) The deck to rail mount, shown above right, takes advantage of the standard PVC pipe construction of the tracking unit. 4" schedule 40 PVC pipe will fit into the base of the tracking unit, while a 4" PVC coupler will mate to this pipe, which will then slip over the Base Adapter fastened by screws to a small wood 2 x 4, which is secured to the deck by screws, bolts, or gluing. The Tracking Unit body is secured to a stern rail or side rail with large and small hose clamps. The 4" pipe should be glued to the 4" coupler, while the 4" pipe should be secured with screws to the Tracking Unit to facilitate removal if necessary as shown. The 1/2" air holes are required to provide air circulation to the stepper motor. A screw secures the 4" coupler and pipe extension to the Base Adapter.

Follow Me TV® - MOUNTING APPENDIX
Details of Methods

Limited Area Mounting



- (1) 18" wood 2x4 secured to arch (alternative for minimum space is shorter 2x4).
- (2) Base Adapter is screwed to 2x4 (see page 17 for details).
- (3) Unit is placed over Base Adapter.
- (4) Aluminum straps are fabricated from 3/16" x 1" material as shown (alternative for minimum space only requires 2 straps, while preferred method for maximum strength requires 4 straps). Straps are fastened to 2x4 and arch top as shown.
- (5) A large hose clamp secures tops of aluminum straps to unit, allowing unit to be made perfectly vertical.
- (6) When satisfied unit is perfectly vertical, tighten everything and put in screw where shown to prevent unit twisting (drill small 1/8" hole and heat #8 x 3/4" SS screw before inserting to melt PVC slightly). Do not glue the base adapter into the base of the unit.