

# TRACVISION<sup>®</sup>

BY KVH INDUSTRIES



## TracVision M3 Installation Guide

# TracVision® M3 Installation Guide

These instructions explain how to install the TracVision M3 satellite TV antenna system on a vessel. Complete instructions on how to use the system are provided in the *Quick Start Guide* and *Receiver User's Guide*.

## Who Should Install the System?

To ensure a safe and effective installation, KVH recommends that a KVH-authorized marine technician install the TracVision M3 system. To find a technician near you, go to [www.kvh.com/wheretogetservice](http://www.kvh.com/wheretogetservice). If you purchased the product and decide to install it yourself, please see the enclosed warranty statement for warranty implications.

## Important Safety Precaution



CAUTION

DO NOT apply power to the TracVision antenna with the radome removed because the antenna has moving parts that can cause injury.

## Receiver Activation

Once the system is fully installed, the owner needs to call KVH's Activation Department to activate the receiver for DIRECTV® service:

**Toll-free at 1-866-551-8004**

The owner will need the red Activation Card when calling to activate. In addition, the antenna will need to be turned on and locked onto the satellite. See page v of the *Receiver User's Guide* for details.

### TracVision® Activation

Before you can start enjoying satellite TV, the TracVision receiver **must be activated**.

To activate your receiver, please follow the steps below:

1. Call KVH's Activation Department at:  
**1-866-551-8004**  
(24 hours a day, 7 days a week)  
You will need to provide the KVH Activation Department representative with a credit card number and the following KVH serial numbers:  
Receiver Serial Number      Antenna Serial Number  
(if purchased as part of a complete antenna system)  
R 051099999      A 051077777  
Installer: Please place antenna serial number in box above.
2. The KVH representative will provide you with 4 ID numbers necessary for activation. Enter these in the boxes below:  
Access Card Number      Receiver ID Number  
        
Hughes Serial Number      Model Number

Please save this card for future reference.  
You will need these numbers whenever you call DIRECTV.

54-02074-01, Rev. D

## Technical Support

If you need technical assistance, please contact KVH Technical Support:

**Phone:** 1-401-847-3327

**E-mail:** [techs@kvh.com](mailto:techs@kvh.com)

**Internet:** [www.kvh.com/help](http://www.kvh.com/help)

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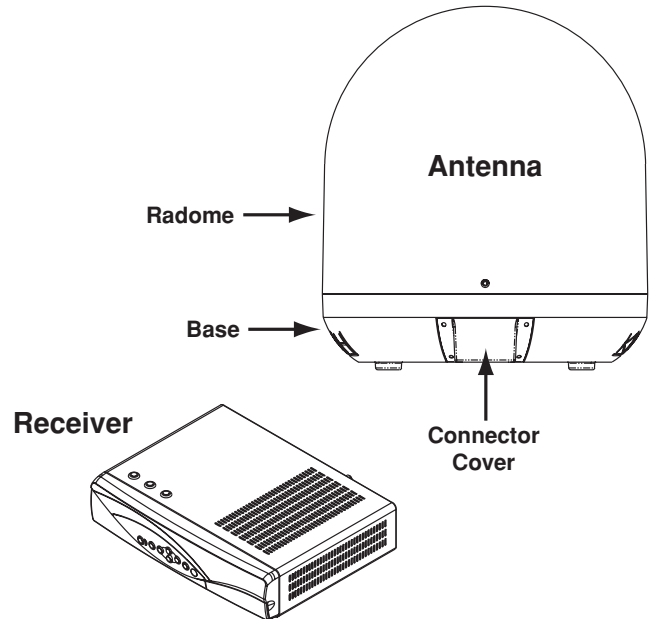
# 1

# Inspect Parts and Get Tools

1. Unpack the box and ensure it contains everything shown on the Contents List. *Save the packaging in case you need to reship the system.*
2. Carefully examine all of the supplied parts to ensure nothing was damaged in shipment.

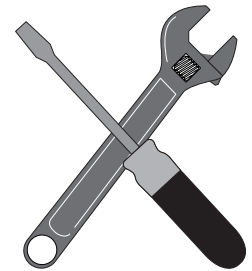


Always lift the antenna by the silver base and never by the radome or any portion of the internal antenna assembly.



3. Gather all of the tools and materials listed below. You will need these items to complete the installation.

- #2 Phillips screwdriver
- $\frac{7}{16}$ " open-end wrench
- $\frac{7}{16}$ " socket wrench
- $\frac{1}{2}$ " socket or open-end wrench
- Electric drill
- $\frac{5}{16}$ " (8 mm) drill bit
- Silicone sealant or equivalent
- Hole saw of desired diameter (for cable access hole, see page 4)
- Adhesive tape
- Light hammer
- Center punch
- Four  $\frac{1}{4}$ " fasteners (optional for mounting the receiver, see page 10)



4. Peel off the extra serial number label (taped to the antenna) and affix it in the appropriate box on the red Activation Card.

**TracVision® Activation**

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To activate your receiver, please follow the steps below:

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You will need to provide the KVH Activation Department representative with a credit card number and the following KVH serial numbers:

Receiver Serial Number	Antenna Serial Number <small>(if purchased as part of a complete antenna system)</small>
R 051099999	A <input type="text"/>

Installer: Please place antenna serial number in box above.

2. The KVH representative will provide you with 4 ID numbers necessary for activation. Enter these in the boxes below:

Access Card Number	Receiver ID Number
<input type="text"/>	<input type="text"/>
Hughes Serial Number	Model Number
<input type="text"/>	<input type="text"/>

Please save this card for future reference.  
You will need these numbers whenever you call DIRECTV.

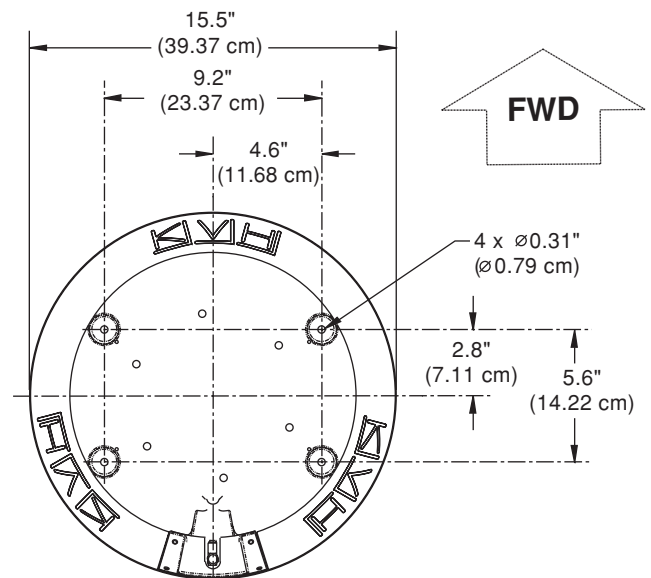
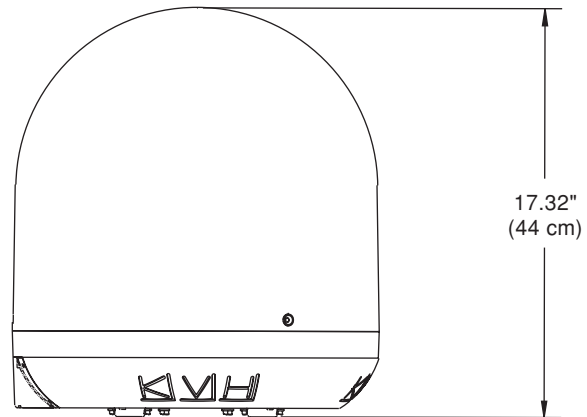
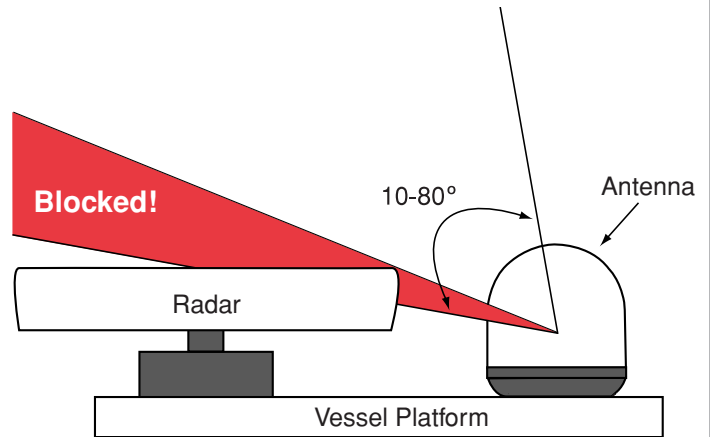
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**Affix Serial Number**

# 2 Plan the Installation

Before you begin, consider the following installation guidelines:

- Minimize blockage. The antenna requires a clear view of the sky to receive satellite TV. The fewer obstructions above decks, the better the system will perform.
- When choosing a mounting surface, ensure it is wide enough to accommodate the antenna's base. *See illustrations for antenna dimensions.*
- Ensure the mounting surface is flat, level (within  $\pm 2^\circ$ ), and strong enough to support the 18-pound antenna. Use a separate mounting plate, if necessary.
- Custom mounting solutions, including struts and masts, are available from several third-party manufacturers. Contact your local KVH dealer for details.
- KVH recommends that you do not mount the antenna on the same level as the radar, because the radar's energy might overload the antenna.
- Be sure to mount the antenna near enough to the supplied belowdecks receiver to allow you to connect the 50-ft. (15 m) coax cable between the antenna and the receiver, while still maintaining sufficient slack in the cable. **The antenna cable CANNOT be extended.**
- When choosing a location for the receiver, find a dry, well-ventilated area belowdecks away from any heat sources. Also be sure the receiver's front panel will be easily accessible to the user and the three lights on the top of the receiver will be visible.



# 3

## Prepare the Mounting Site

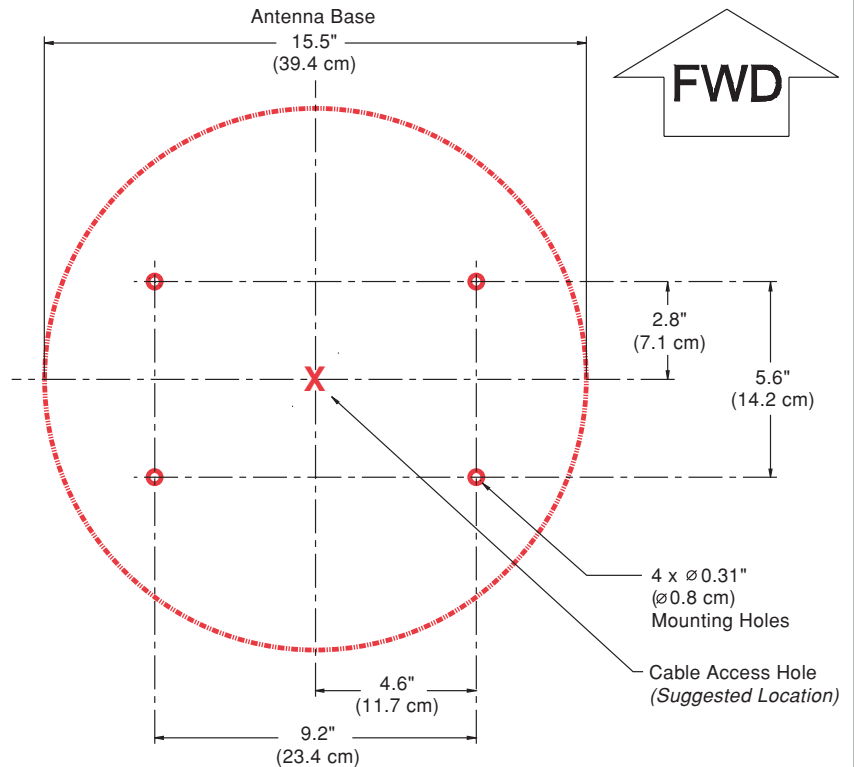
1. Unfold the supplied template and place it onto the mounting surface. Make sure the "FWD" (forward) arrow points toward the bow and is parallel to the vessel's centerline. *You do not need to mount the antenna exactly on the vessel's centerline, but the antenna's forward arrow must be parallel to it.*

2. Use the template to mark the four hole locations on the mounting surface.

3. Drill a  $\frac{5}{16}$ " (8 mm) hole at the four locations you marked in Step 2. *Later, you will insert four  $\frac{1}{4}$ "-20 bolts from above to secure the antenna to the mounting surface.*

4. Mark a location for the cable access hole, either in the center of the antenna mounting hole pattern or in an area aft of the antenna. *Later, you will route the antenna cable through this hole and into the vessel.*

5. Drill the cable access hole in the location you marked in Step 4. Be sure to size the hole appropriately to maintain a cable bend radius of at least 3" (75 mm). *If the hole location is in the center of the antenna mounting hole pattern, the diameter of the cable access hole must not exceed 3.5" (88 mm).* Smooth the edges of the hole to protect the cable.



Be sure the mounting surface is flat and level. Use a separate mounting plate, if necessary.

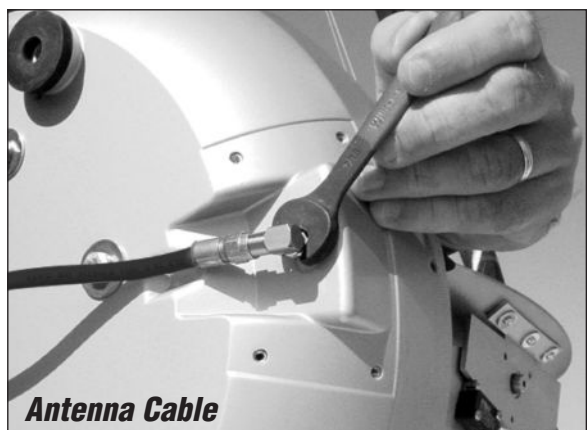
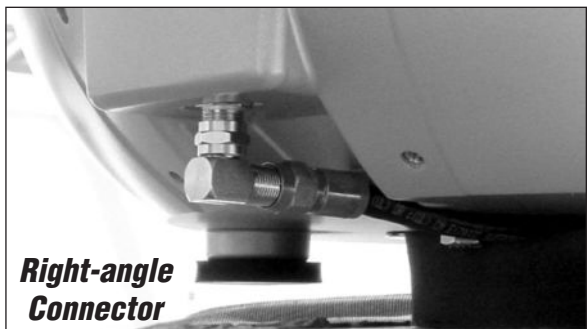
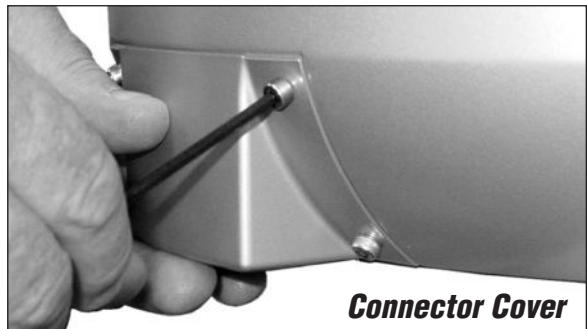
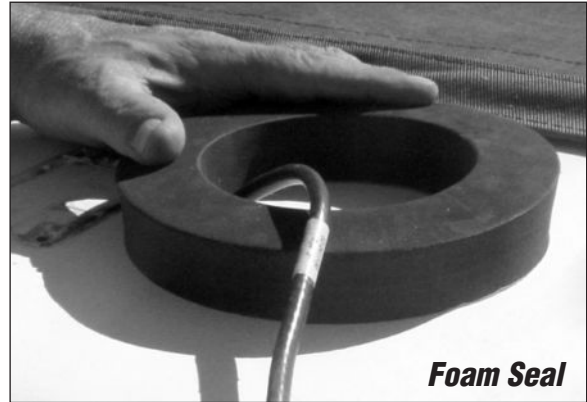


**Drilling Antenna Mounting Holes**

# 4

## Wire the Antenna

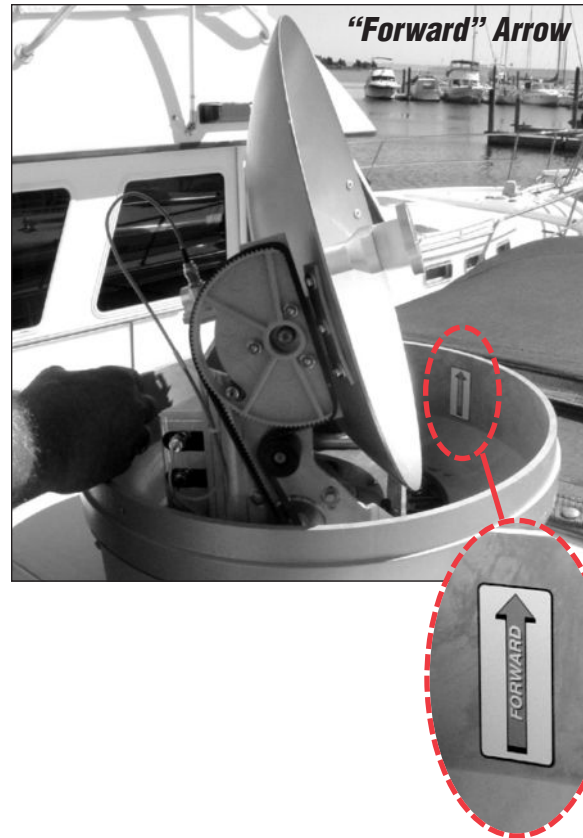
1. Clean and dry the antenna mounting surface.
2. Peel off the paper backing from the donut-shaped foam seal to expose the adhesive. Then press the foam seal down firmly onto the mounting surface, centered between the antenna mounting holes.
3. Using the supplied 3 mm Allen hex key, remove the connector cover from the antenna's base. Save the cover and the four M4 cap screws for later use.
4. Route either end of the antenna cable into the vessel. *Later, you will connect this end of the cable to the belowdecks receiver. You will connect the other end to the antenna.*
5. If you wish to route the cable beneath the antenna, attach the right-angle connector to the end of the cable. Hand-tighten, then tighten with a  $\frac{7}{16}$ " wrench for  $\frac{1}{4}$  turn to ensure an electrical and weather-proof connection
6. Connect the cable to the antenna. Hand-tighten, then tighten with a  $\frac{7}{16}$ " wrench for  $\frac{1}{4}$  turn. *Rigging tape is recommended to protect the connector.*
7. Reattach the cover over the connector. Secure in place with the M4 cap screws you removed in Step 3. The cover must be attached **before** you mount the antenna.
8. Leave an adequate service loop, approximately 8" (20 cm) of slack, in the antenna cable for easy serviceability.
9. Seal the cable access hole with silicone sealant or equivalent.



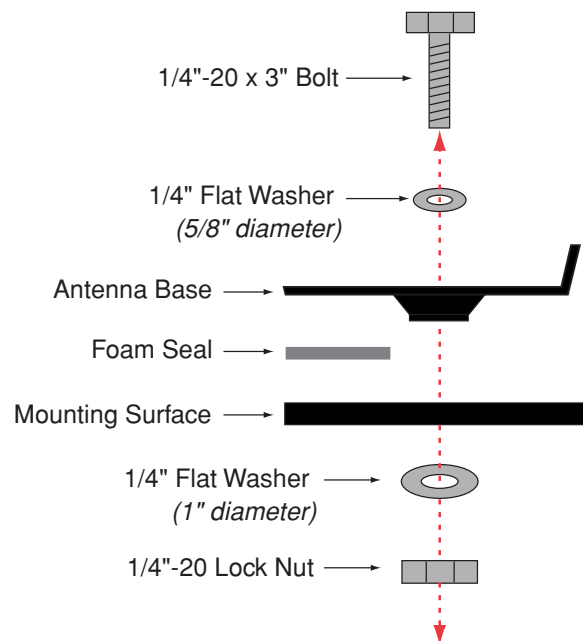
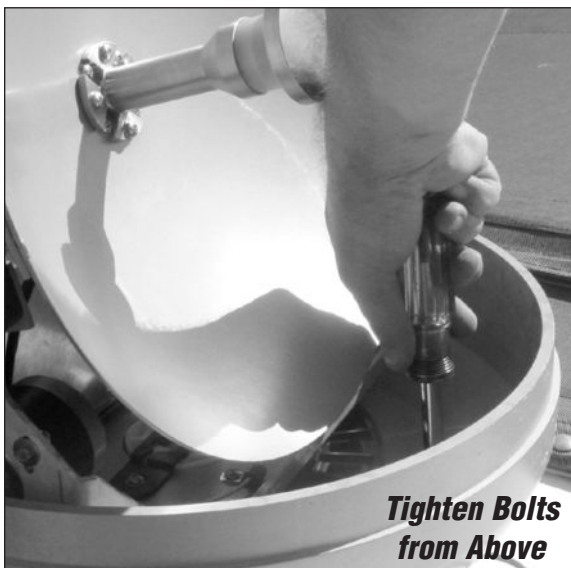
# 5

## Mount the Antenna

1. Remove the three #10-32 screws securing the radome to the antenna. Carefully remove the radome and set it aside in a safe place. *Due to the snug fit, some contact between the radome's sealing gasket and the antenna mechanism is normal.*
2. Position the antenna onto the mounting surface. The antenna's base should rest squarely atop the foam seal.
3. Align the four holes in the antenna's base with the four holes in the mounting surface. **Be sure the antenna's "Forward" arrow points toward the bow.**
4. Secure the antenna's base to the mounting surface using four  $\frac{1}{4}$ "-20 bolts,  $\frac{5}{8}$ " washers, 1" washers, and lock nuts, as shown in the illustration. Be sure to insert the bolts from above and use the supplied hardware for a secure installation.
5. Tighten the bolts until the foam seal is fully compressed and the antenna's four rubber feet are bottomed against the mounting surface.



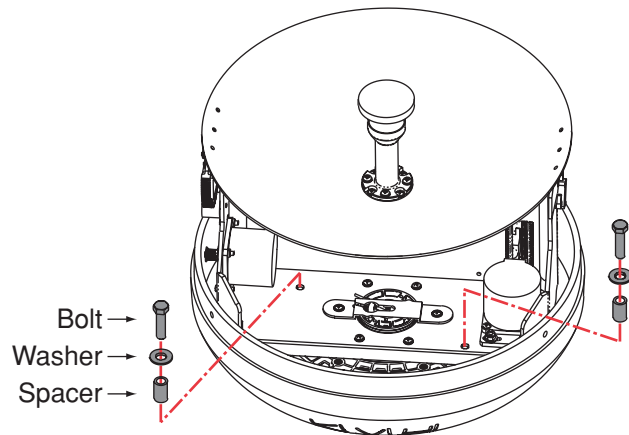
Insert the mounting bolts into the antenna's base from above, not below.



# 6

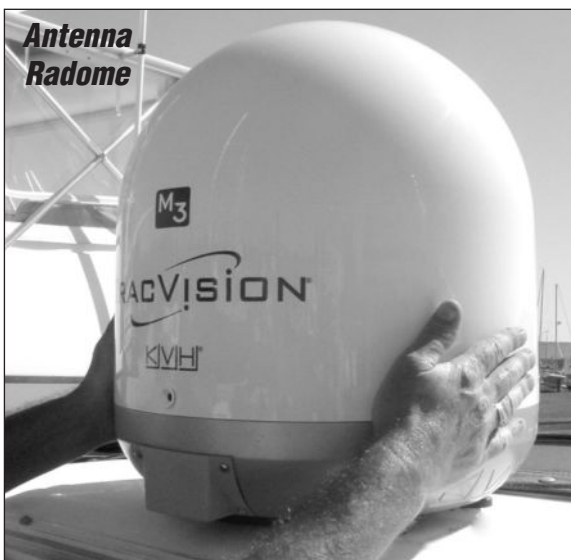
## Remove the Restraints

1. Using a  $\frac{7}{16}$ " socket wrench, remove the two bolts securing the antenna assembly to the base. Be sure to remove **both** of these shipping restraints, along with the washers and spacers. *Save the restraints for future use.*



Be sure to remove both shipping restraint bolts, washers, and spacers. The antenna will not work with these restraints still installed.

2. Reinstall the antenna radome. While pressing the radome down onto the base, secure the radome to the base using the three #10-32 screws you removed earlier. *The radome's "TracVision" labels should face fore and aft.*
3. Install a protective plastic screw cap (*supplied in the kit*) over each radome screw.





# 7 Wire the Receiver


1. Connect the antenna cable (A) to the "To KVH Antenna" jack. **Do not kink/stress the cable.**
2. Connect the RF converter cable (B) to the "RF Remote Input" jack.
3. Connect the receiver to the vessel's entertainment system (TV). Choose one of the following options:


- Option 1 - RCA-type A/V jacks (use bottom row)
- Option 2 - S-Video jack (provides best picture quality)
- Option 3 - RF coaxial connector

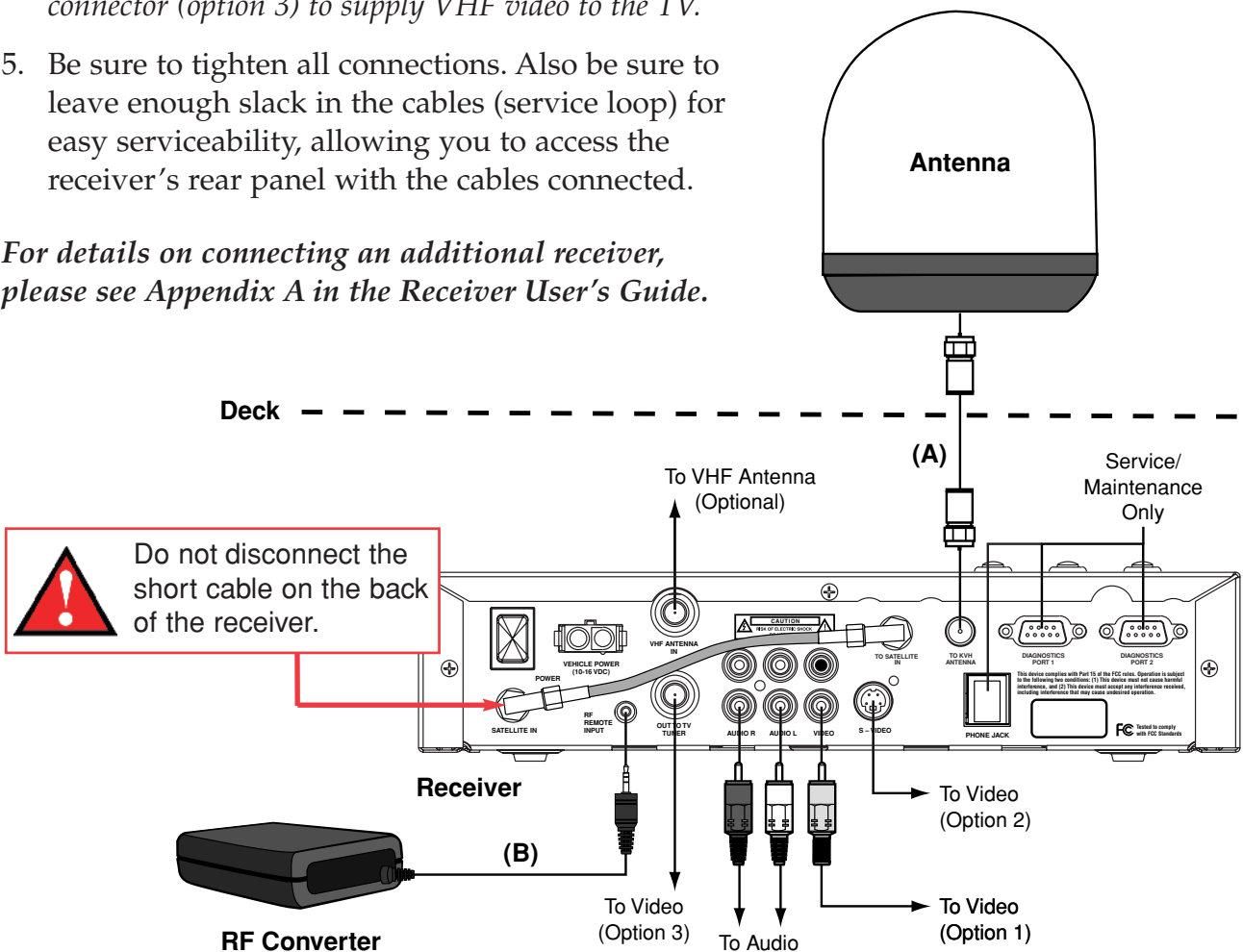
Cables for option 1 are included in the kit.

4. (Optional) If you have a VHF TV antenna onboard, you can connect it to the "VHF Antenna In" jack on the receiver. *If you connect a VHF antenna to the receiver, you need to use the receiver's RF coaxial connector (option 3) to supply VHF video to the TV.*
5. Be sure to tighten all connections. Also be sure to leave enough slack in the cables (service loop) for easy serviceability, allowing you to access the receiver's rear panel with the cables connected.

*For details on connecting an additional receiver, please see Appendix A in the Receiver User's Guide.*

 Do not shorten or extend the antenna cable. Since the antenna cable carries data, power, and communications, the integrity of this cable and its connections is very important.

 Be sure to route cables within the vessel appropriately to avoid damage. For example, do not route any cables through wet areas (bilges) or near hot exhaust pipes.



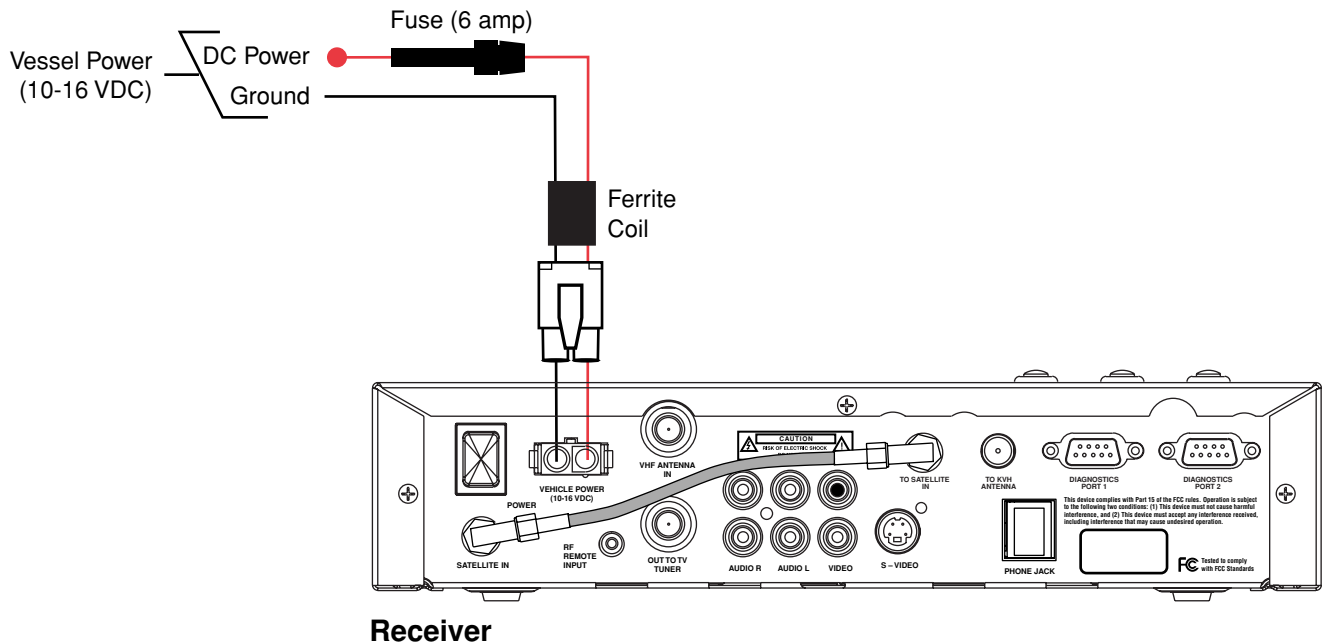
# 8 Connect Power

The receiver requires a 10-16 volts DC (VDC) power input supporting 50 watts (4.2 amps @ 12 VDC).

1. Before you connect the receiver's power wires, turn off vessel power and test the circuit to ensure no power is present.
2. Connect the receiver's individual power wires to a dedicated 10-amp or 15-amp circuit breaker. Connect the negative (black) wire to ground (power return), and connect the positive (red) wire to +12 VDC vessel power.
3. Plug the other end of the power wires into the "Vehicle Power" jack on the receiver's rear panel. Do not remove the small ferrite coil that is clamped onto the power wires. This coil suppresses EMI (electromagnetic interference) from the receiver.



For your own safety, shut down vessel power before you connect the wires.

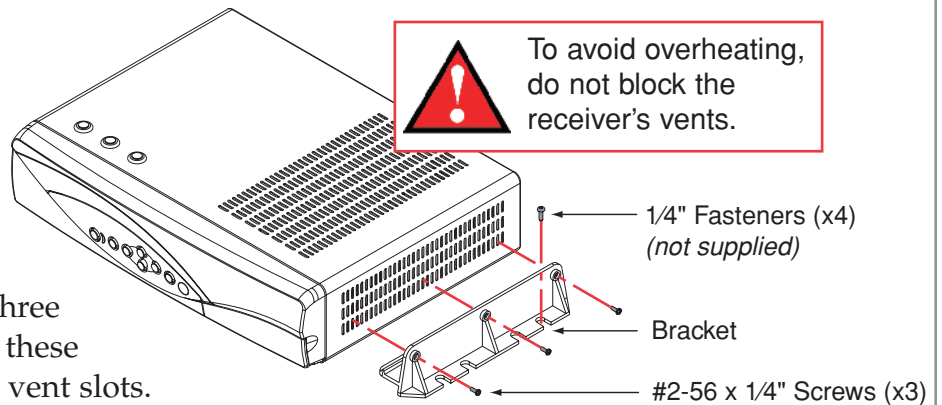


# 9

## Install the Receiver

Once all cables are connected, install the receiver inside the vessel.

1. If you wish to mount the receiver, attach the two mounting brackets to the sides of the receiver using three #2-56 screws. Simply screw these fasteners into the receiver's vent slots.



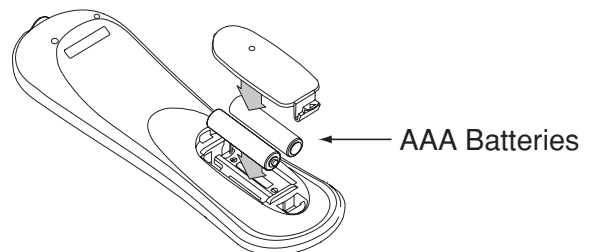
2. If you are using the mounting brackets, secure the brackets to the mounting surface using appropriate 1/4" fasteners (not supplied).
3. Place the RF converter at least 3 feet (1 meter) away from the receiver. If it is too close to the receiver, the remote control might not operate properly. Also avoid placing the RF converter behind a metal surface or in an area surrounded by metal.
4. If desired, mount the RF converter using the supplied Velcro fasteners.



# 10

## Install Batteries in Remote

1. Remove the battery compartment cover from the back of the remote control.
2. Insert two AAA batteries (supplied in the kit). Be sure to observe the correct polarity.
3. Replace the battery compartment cover.



# 11 Test the System

Now all you need to do is turn the system ON and ensure everything works properly.

1. Ensure the antenna has a clear view of the southern sky.
2. Apply power to the TV and the TracVision system.
3. Turn on the power switch on the receiver's rear panel.
4. Wait while the antenna searches the sky for the DIRECTV satellite. Once the antenna finds the satellite, the receiver downloads the program guide. A progress bar should display on your TV. (It could take 60 seconds to load the program guide, once it begins loading.)



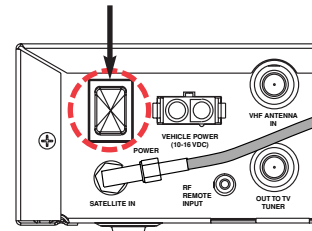
Only the DIRECTV preview channel (channel 100) is viewable until the owner activates the receiver.

*If the system shuts off after 30 seconds, simply press the "Antenna Power" button on the receiver's front panel.*

5. Once a DIRECTV picture appears on the TV, verify that the 3 status lights on top of the receiver are lit green.
  - A - VOLTAGE Light
  - B - RECEIVER Light
  - C - ANTENNA Light

*Refer to the Quick Start Guide and Receiver User's Guide for complete operation instructions and troubleshooting information.*

## Power Switch



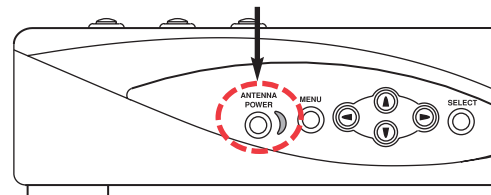
If your satellite dish is ready for DIRECTV® service, please wait until your Advanced Program Guide™ is prepared.

Installation

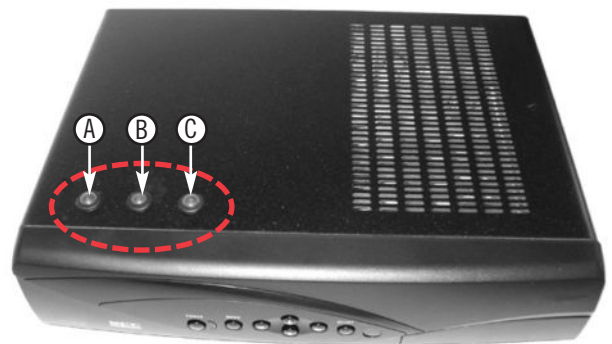


Acquiring guide data...

## Antenna Power Button



## Status Lights



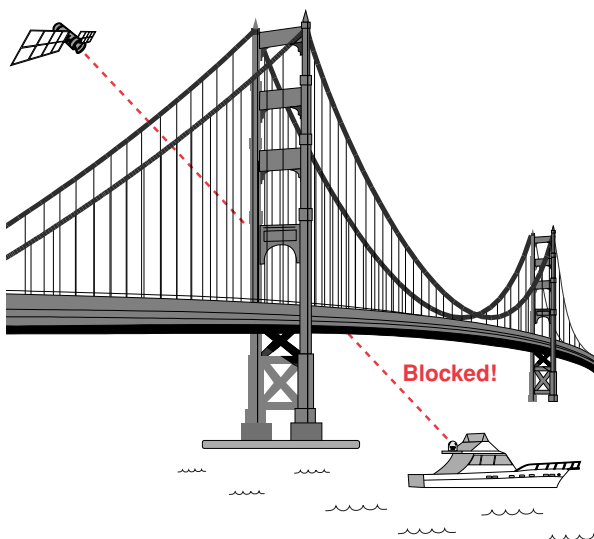
# Things the User Needs to Know

- Keep the radome installed on the antenna at all times. The radome protects the antenna's internal moving parts from wind, rain, and debris.



**CAUTION:** In the unlikely event that you need to remove the radome, remove power from the antenna first because the antenna's moving parts can cause injury.

- The receiver must be activated before it can receive DIRECTV programming.
- The antenna tracks the DIRECTV 101W satellite only. It cannot receive programming from other satellite TV service providers and it cannot receive channels broadcast on other satellites.
- The antenna must have a clear view of the southern sky to receive satellite TV. Common causes of blockage include trees, building, bridges, and equipment on the vessel itself.



- Heavy rain may temporarily interrupt reception.

### TracVision® Activation

Before you can start enjoying satellite TV, the TracVision receiver must be activated.

To activate your receiver, call:

1. Call KVH's Activation Center at **1-866-551-1000** (24 hours a day, 7 days a week). You will need to provide the following KVH serial numbers:

Receiver Serial Number (If purchased as part of a complete antenna system)

R

Antenna Serial Number

A

Installer: Please place antenna serial number in box above.

2. The KVH representative will provide you with 4 ID numbers necessary for activation. Enter these in the boxes below:

Access Card Number

Receiver ID Number

Hughes Serial Number

Model Number

Please save this card for future reference. You will need these numbers whenever you call DIRECTV.

54-0274-01, rev. D

!

The owner needs the red Activation Card to activate the receiver.

- The antenna should be cleaned regularly. Dirt buildup on the radome can affect satellite TV reception.
- The owner needs to register the system for product warranty validation. Refer to the Product Registration Form for details or visit: [www.kvh.com/register](http://www.kvh.com/register).
- It is **dangerous** to watch TV while piloting a vessel.
- The vessel must be located within the DIRECTV satellite's coverage area in order to receive satellite TV. To view a satellite coverage map, visit: [www.kvh.com/footprint](http://www.kvh.com/footprint).
- The receiver beeps to indicate the status of the antenna:
  - Two beeps** = Antenna is powering on
  - One beep** = Antenna is powering off
- Refer to the *Quick Start Guide* and the *Receiver User's Guide* for complete operation instructions.

TRACVISION<sup>®</sup>  
BY KVH INDUSTRIES

KVH<sup>®</sup>  
www.kvh.com

**KVH Industries, Inc.** • 50 Enterprise Center • Middletown, RI 02842-5279 U.S.A . • Phone: (401) 847-3327 • Fax: (401) 849-0045 • E-mail: info@kvh.com

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