

RCA

DIRECTV®

Multi-Satellite Dish Antenna

Changing Entertainment. Again.



Installer's Guide

Safety Information

DANGER! Avoid Power Lines!

When following the instructions in this guide to install and connect the DIRECTV® satellite dish and connections, take extreme care to avoid contact with overhead power lines, lights and power circuits. Contact with power lines, lights, and power circuits may be fatal.

CAUTION

Before connecting the satellite receiver, read the Safety Information that came packed with the satellite receiver.

Outdoor Dish Antenna Grounding

The outdoor dish antenna used to receive satellite signals and the cable used to connect the outdoor dish antenna to the indoor receiving unit are required to comply with local installation codes and the appropriate sections of the National Electrical Code (NEC), especially Articles 250, 810 and 820. These codes require proper grounding of the metal structure of the outdoor dish antenna and grounding of the connecting cable at a point where it enters the house (or other building). If you are having a professional installer make the installation, the installer must observe installation codes in making the installation. The *Satellite System Self-Installer's Kit* contains instructions on how to make the installation in compliance with the National Electrical Code (NEC). If additional local installation codes apply, contact local inspection authorities.

Compliance with National Electrical Code

Before installing the satellite system, check the electrical code guidelines in your area.

Note to Satellite Dish Installer

This reminder is provided to call your attention to articles 725-61, 810, and 820 of the 1999 National Electrical Code. Refer to article 810, in particular to 810-1 and 810-15, for required grounding of the metal structure of the Dish Antenna. Refer also to 810-2 which, by reference to article 820, requires that the satellite dish coaxial cable shield be connected to the grounding system of the building as close to the point of cable entry as practical.

Restrictions

Before installing your dish, check the zoning codes, covenants and community restrictions in your area. Some rules prohibit installing large satellite dishes, but may allow small ones. Also, there may be restrictions in your area that limit the mounting height of dishes.

If you encounter homeowner or community restrictions, call 1-800-679-4776. Personnel at this number can provide information that may be helpful when attempting to obtain permission to install a satellite system on your property.

ACTIVATION OF PROGRAMMING MAY BE SUBJECT TO CREDIT APPROVAL AND REQUIRES VALID SERVICE ADDRESS, SOCIAL SECURITY NUMBER AND/OR MAJOR CREDIT CARD. DEPOSIT OR PREPAYMENT MAY BE REQUIRED. Programming subject to change. You must be physically located in the U.S. to receive DIRECTV service. DIRECTV services not available outside the U.S. DIRECTV programming is sold separately and independently of DIRECTV System hardware. A valid programming subscription is required to operate DIRECTV System hardware. Activate your DIRECTV programming today at 1-800-DIRECTV (1-800-347-3288). Receipt of DIRECTV programming is subject to the terms of the DIRECTV Customer Agreement, a copy is provided at DIRECTV.com and with your first bill. DIRECTV, the Cyclone Design, and the EZALIGN logo are trademarks of DIRECTV, Inc., a unit of Hughes Electronics Corp., and are used with permission.

Chapter 1: Preparing for Installation

Installation Overview	4
Should I Do This Myself?	5
Step 1: Conduct a Site Survey	5
The Satellite Locations	6
How High Up in the Sky Are the Satellites?	6
Finding a Clear Line of Sight	6
Step 2: Find Satellite Dish Pointing Coordinates	7
Step 3: Confirm Your Site Selection	8
A Final Site Survey	9
Step 4: Estimate Cable Requirements	10
DIRECTV® Multi-Satellite Dish Hardware	11

Chapter 2: Mounting the Mast

Choose Where to Mount	14
Solid Wood or Lap Siding	14
Brick or Poured Concrete Surface	14
Hollow or Cinder Block Wall	14
Pole	14
Mounting The Mast on Solid Wood or Lap Siding	15
Important Considerations	15
Mounting Instructions	16
Installing a Spacer	17
Mounting the Mast on Brick or Poured Concrete	18
Important Considerations	18
Mounting Instructions	18
Mounting the Mast on a Hollow or Cinder Block Wall	20
Important Consideration	20
Mounting Instructions	20
Mounting the DIRECTV® Multi-Satellite Dish on a Pole	22
Important Considerations	22
Mounting Instructions	22

Table of Contents

Chapter 3: Final Installation

Leveling the Mast	26
Leveling Side-to-Side	26
Plumbing the Mast	27
Final DIRECTV® Multi-Satellite Dish Assembly	28
Step 1: Attach the Dish to the LNB Arm/Antenna Back Assembly	28
Step 2: Set the Tilt Adjustment	28
Step 3: Set the Elevation Adjustment	28
Step 4: Attach the Antenna to the Mast	29
Step 5: Run the Cables through the LNB Arm	29
Step 6: Attach the Cable(s) to the LNB / Attach the LNB to the Antenna	30
Step 7: Attach Grounding Block(s) to Your House	30
Step 8: Connect Cables and Ground Wire to the Grounding Block	31
Step 9: Route and Ground to the Central Building Ground	31
Step 10: Route Cables Into Your House	31
Final DIRECTV Connections	33
Acquiring and Fine Tuning the Signal	34
Step-By-Step Instruction for Acquiring and Fine Tuning the Signal	34

Chapter 4: Additional Information

Troubleshooting	38
Toll-Free Telephone Product Help	39
Limited Warranty	40

Preparing for Installation

Chapter Overview:

- Installation Overview
- Choose Where to Mount
- Conduct a Site Survey
- Find Dish Pointing Coordinates
- Confirm Your Site Selection
- Estimate Cable Requirements

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Preparing for Installation

Installation Overview

The manual is organized into steps that need to be performed in the order presented.

Preparing for Installation

- **Complete a Site Survey** – Visually survey your location to make sure it is suitable.
- **Obtain Dish Pointing Coordinates** – Use the on-screen menu system to obtain the exact coordinates (azimuth, elevation, and tilt) for pointing the dish. Directions for using on-screen menus can be found in your digital satellite receiver, HDTV, or HD set-top converter manual.
- **Select the Precise Mounting Site** – Use the dish pointing coordinates to conduct a precise site survey to determine the exact mounting site.
- **Estimate Cable Requirements** – Based on your mounting site, you will decide where you want the cables to enter your house, and measure how many feet of cable you need to complete the connections.

Mounting the Mast

- **Mount the Mast** – Mount the mast using step-by-step instructions for different mounting options.

Completing the Final Installation *IMPORTANT*

- **Square the Mast** – The mast must be perfectly plumb and level to obtain the signal(s).
- **Begin Dish Assembly** – Partially assemble the satellite dish antenna so that you can preset the correct elevation and tilt.
- **Set the Antenna's Elevation and Azimuth Coordinates** – *These are important steps.* Making sure that your elevation, azimuth, and tilt settings are correct will help you to more easily obtain the signals later on.
- **Complete the Dish Assembly** – Secure the antenna on the mast, connect the RG-6 coaxial cables to the LNBs, and attach the LNBs to the antenna.
- **Route the Cables to the Grounding Block** – Attach two grounding blocks to the house and route the cables from the multiswitch to the grounding blocks. Also, route a grounding wire from the grounding block to the central building ground.
- **Run the Cables into the House** – Run the RG-6 cables from the grounding blocks into the house.
- **Make the Final Connections** – Connect an RG-6 cable to any of the outputs on the multiswitch and to the satellite input(s) on your digital satellite receiver, HDTV, or HD set-top converter.
- **Acquire and Fine-tune the Satellite Signal** – Use the on-screen signal meter to check for a signal. Once the signal is obtained, adjust dish pointing azimuth and elevation *as needed* to achieve maximum signal strength for all satellites.
- **Order DIRECTV® Programming** – Call the service providers to order DIRECTV programming.

Should I Do This Myself?

While the installation is not difficult, it does require that you have some experience in electrical wiring and minor construction techniques. Also, you may have to climb a ladder, so you'll want to be comfortable working at heights.

Depending on how you install the DIRECTV® Multi-Satellite dish, you may be required to:

- Use power tools to drill holes in your house.
- Determine where utilities such as water pipes, electrical wiring, or gas lines are hidden within walls.
- Run coaxial cable through a foundation, under floors, or through interior walls.
- Ground an antenna and coaxial cable as recommended in the National Electrical Code (NEC)*.

If you have properly installed a previous satellite, outdoor television antenna, or a garage door opener, then you can be reasonably confident that you can install this system yourself.

If you have not worked with any of these products, then this probably isn't the time to learn about installation techniques. While deciding whether you are right for this job, you should also keep in mind that your DIRECTV Multi-Satellite dish requires more fine-tuning than a single-satellite antenna, possibly making it more difficult to obtain signal(s).

Consider contacting your local authorized retailer to recommend a professional installer.

Important!

The satellite dish must be plumb and level. Plumb means perfectly vertical; straight up and down. Level means a horizontal plane.

Step 1: Conduct a Site Survey

Your DIRECTV satellite dish is capable of receiving signals from multiple satellites from one mounted position.

Not only can there be NO obstructions between the DIRECTV satellite dish and the satellites, but you must also have the unit mounted **exactly plumb and level** in order to get HD and standard digital broadcasts from given coordinates.

When mounting your DIRECTV satellite dish, take into consideration future tree growth, house remodeling or additions, and new construction in your area. Also, realize that:

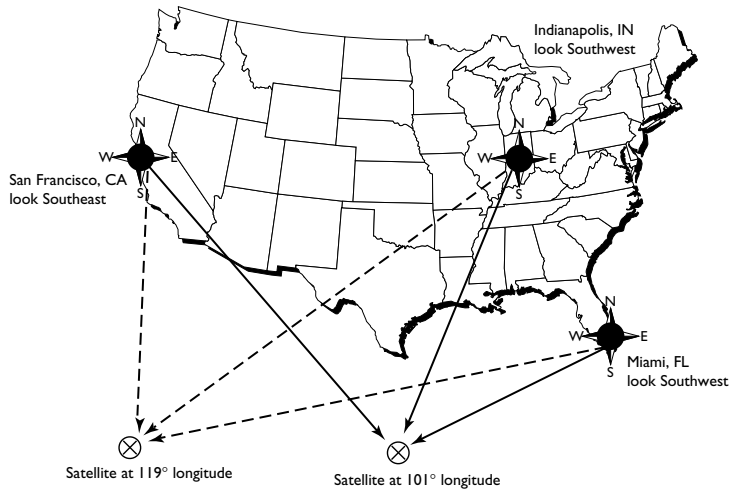
- The satellite signal WILL NOT PASS through leaves or branches.
- The satellite signal WILL NOT PASS through glass; don't try to install your DIRECTV satellite dish indoors.

*The National Electric Code is published by the National Fire Protection Association, Batterymarch Park, Quincy, Maryland, 02269. It is also available at many hardware stores and home centers.

Preparing for Installation

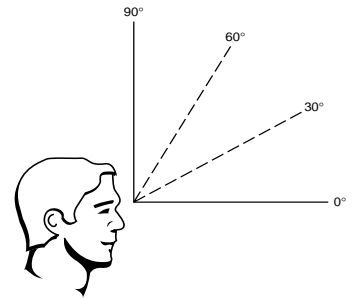
The Satellite Locations

The main DIRECTV satellites are located 22,000 miles above the equator at approximately 101° and 119° west longitude. This means if you live in Miami, you must have a clear line of sight to the southwest; if you live in San Francisco, you must have a clear line of sight to the south/southeast. (The satellite located at 110° west isn't shown in the illustration. If services from this satellite are offered in your local area, you'll be notified.)



How High Up in the Sky Are the Satellites?

Depending on where you live, the satellites will be at an elevation angle between 30 and 60 degrees. Southern states point more upward toward 60 degrees; northern states point more downward toward 30 degrees.



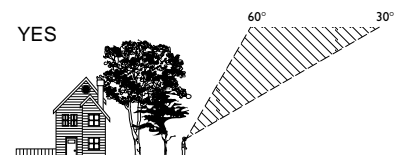
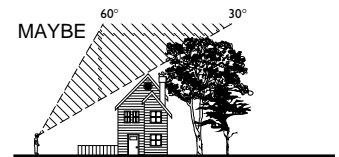
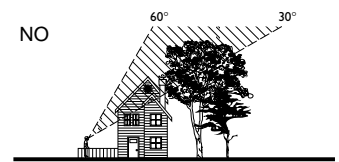
Finding a Clear Line of Sight

1. Go outside and locate at least one site on your property that has a clear view to the satellite. You should be reasonably certain you are pointing toward Texas (unless you're in Texas, in which case you should be looking due south). You may want to use a map.
2. Imagine an arc ranging from 30 to 60 degrees above the horizon.
3. Do you have at least one clear view to the satellite? Remember, no trees, leaves, buildings, or windows can be between the DIRECTV satellite dish and the satellite.

If the answer is *no*, your site may be unsuitable for installing the satellite system.

If the answer is *maybe*, you may want to contact your local DIRECTV dealer for information about having a professional installer conduct a thorough site survey.

If the answer is *yes*, your site should be suitable for installing the system. Continue with the following page.



Step 2: Find Satellite Dish Pointing Coordinates

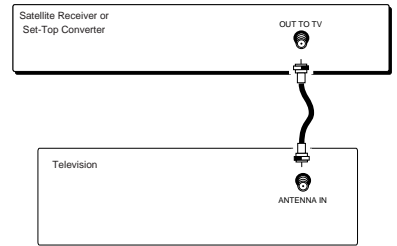
To find satellite dish pointing coordinates for your location, you need to first make sure that your digital satellite receiver, HDTV, or HD set-top converter is connected and working. Use the diagram on the right to connect your satellite receiver to your TV.

Then, enter into the satellite receiver, HDTV, or HD set-top converter's menu system and find the dish pointing menu. This menu should give you the precise dish pointing coordinates for your location.

Because this DIRECTV satellite dish can be used with several different types of products, we cannot show you the specific instructions for obtaining dish pointing information here. *See the User's Manual that came with your digital satellite receiver, HDTV, or HD set-top converter for more information about finding the dish pointing coordinates.*

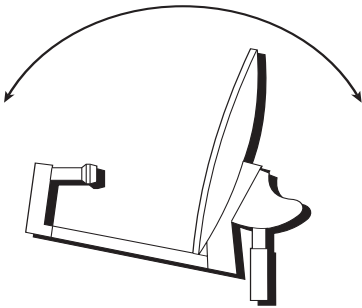
Tip

If you are using a digital satellite receiver or HD set-top converter, you can make a simple connection (as shown below) to get your dish pointing coordinates and to view the signal meter, two things you must do during the installation process.



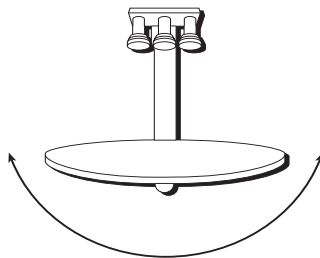
Record the Coordinates

When you've obtained the dish pointing coordinates from the satellite receiver, HDTV, or HD set-top converter's menu system, record the elevation, azimuth, and tilt numbers below. *You must complete this step before proceeding with the installation.*



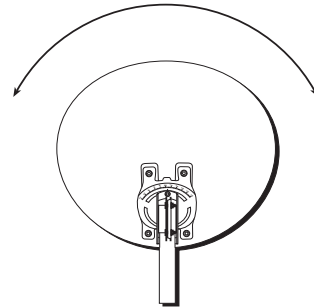
Elevation is the up/down angle that the dish is pointed.

Elevation _____



Azimuth is side-to-side direction that the dish is pointed.

Azimuth _____



Tilt is the circular rotation of the dish itself, like a steering wheel.

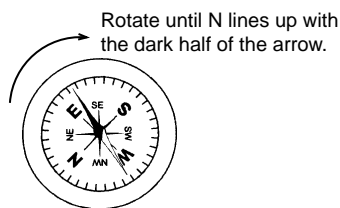
Tilt _____

Preparing for Installation

Step 3: Confirm Your Site Selection

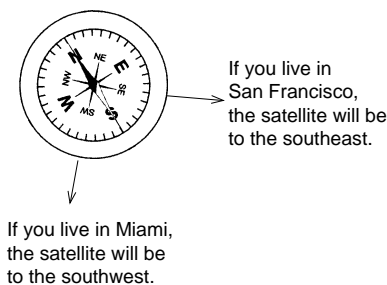
Based on your general site survey, you probably already know where you want to mount your DIRECTV® Multi-Satellite dish, but it's a good idea to follow the procedures outlined in this step in order to make sure that your site selection is a good one.

1. Go outside to your mounting site and hold a compass flat in the palm of your hand. Hold your hand still until the needle stops moving. Note that the dark, or colored half of the compass needle always points north. Read the instructions that came with the compass for details.
2. Rotate the compass so that the "N" (for north) is directly under the dark part of the

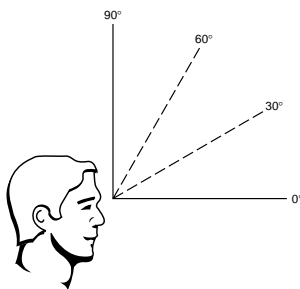


compass needle. Your compass is now aligned with north.

3. The marks around the outside edge of the compass represent azimuth degrees. Locate the tick mark on the compass edge that corresponds to the azimuth number you wrote on the previous page. This is the direction of your azimuth



setting (the direction the DIRECTV satellite dish will need to be pointed to receive signals from the satellites).



4. Raise your arm to the approximate elevation angle recorded on the previous page to make sure there are no obstructions in the signal path.
5. Repeat this survey in several places on your property if necessary until you find the best mounting location.

Note

You may want to review the section "Mounting the Mast" to consider the mounting options available to you before confirming your site selection.

Tip

Try to keep the compass away from any metal objects. Metal objects can cause inaccurate compass readings.

WARNING

Do NOT install the DIRECTV satellite dish near power lines, electric lights or power circuits. Contact with power lines, lights or power circuits *may be fatal*. It is strongly recommended that the DIRECTV satellite dish be located more than 20 feet from overhead power lines.

A Final Site Survey

Now that you've conducted a precise site survey using the dish pointing coordinates for your location, you should check one more time to make sure you have a clear view in the direction of the satellites.

I Don't Have a Clear View to the Satellites

If you don't have a clear view to the satellites, then your site may not be suitable for installing the DIRECTV® System. A professional installer may have an alternative solution—consider contacting your DIRECTV System dealer to find the name of an authorized DIRECTV System installer.

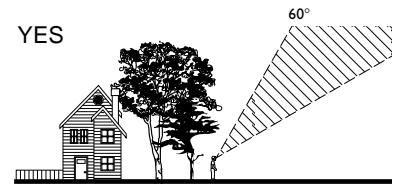
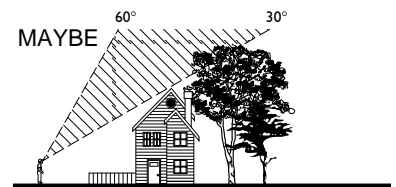
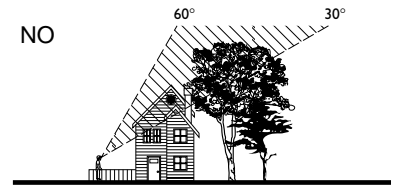
I'm Not Sure If I Have a Clear View

If you're not certain whether you have a clear view to the satellite, you have two choices:

- Continue with the installation and determine whether you have a clear view to the satellite by testing the system.
- Contact your satellite system dealer to find the name of an authorized satellite system installer who can help you verify that your property is suitable for installation.

I Have A Clear View to the Satellite

Your site should be suitable for installing the DIRECTV System. Continue with the installation.



Preparing for Installation

Step 4: Estimate Cable Requirements

Now that you've decided on the exact mounting site, you need to decide where you want the cable(s) to enter the house. The next step is to figure out approximately how much cable you are going to need.

1. Locate the central building ground. You will ground the satellite dish antenna (using the cable grounding block) to a single point in the central building ground. The following is a list of acceptable building ground points:
 - Grounded interior metal cold water pipe within five feet of the point where the cable(s) enter the building.
 - Grounded metallic service raceway.
 - Grounded electrical service equipment enclosure.
 - Eight-foot grounding rod driven into the ground (only if bonded to the central building ground by #6 or heavier bonding wire).
 - Other acceptable grounding electrodes that comply with sections 250 and 810 of the National Electrical Code (NEC).
2. Choose a location to mount the grounding block. The block should be as close as possible to the point where the cable(s) will enter the house.
3. Decide where, inside the house, you plan to put the digital satellite receiver, HDTV, or HD set-top converter.
4. Measure and record your cable requirements in the spaces provided below.

Distance from multiswitch to grounding block:

_____ feet

Distance from grounding block to central building ground:

_____ feet

Distance from grounding block to digital satellite receiver, HDTV, or HD set-top converter:

_____ feet

You can use the multiswitch to route up to four receivers. To use four receivers and calculate how much cable it will require, repeat this process four times.

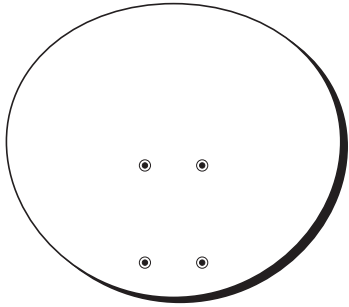
A Few Words About Grounding the System

Grounding the DIRECTV® System to the central building ground helps protect it and other components from lightning damage. Dish installation should comply with local codes and the National Electrical Code (NEC). Grounding the satellite system is something you can probably do yourself. But if you're not sure, you should contact a qualified electrician.

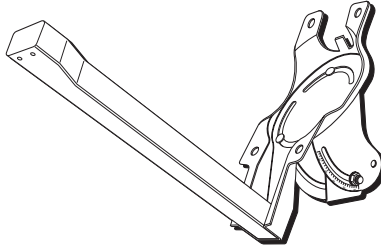
Preparing for Installation

DIRECTV® Multi-Satellite Dish Hardware

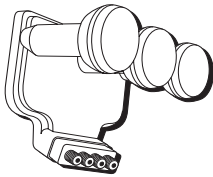
Use this page as a parts list for your DIRECTV satellite dish, but do not assemble the dish yet.



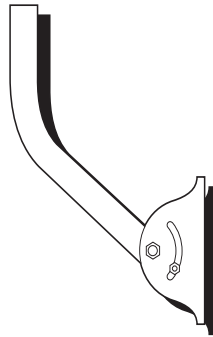
Multi-Satellite Dish Reflector



LNB Arm/Antenna Back Assembly



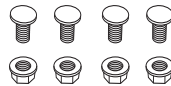
Triple-head, Multi-Satellite LNB with built-in Multi-Switch for four Independent Outputs



Mast



LNB Mounting Hardware



Dish Mounting Hardware

Tip

To avoid short circuits, do not use twist-on connectors for the coaxial cables. Use crimp-on connectors instead.

Note

You must use Type CL2 RG-6 coaxial cable(s) from the multiswitch to the SATELLITE IN jack on the digital satellite receiver, HDTV, or HD set-top converter. Other types of coaxial cable, such as that used for cable TV (RG-59), will not work for your system.

Note

If your total RG-6 coaxial cable length from the dish to the satellite receiver, HDTV, or HD set-top converter is more than 100 feet per coax cable, you may need an additional installation component, such as a line amplifier or multi-switch, to compensate for the longer cable length.

Note

For access to all High Definition programming, a DIRECTV High Definition Receiver DIRECTV Receiver and High Definition television equipment is required.

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Mounting the Mast

Chapter Overview:

- Choose Where to Mount
- Mounting The Mast on Solid Wood or Lap Siding
- Mounting the Mast on Brick or Poured Concrete
- Mounting the Mast on a Hollow or Cinder Block Wall
- Mounting the DIRECTV Multi-Satellite Dish on a Pole

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Mounting the Mast

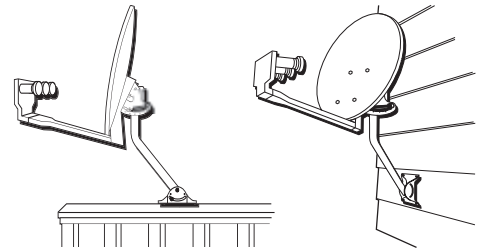
Choose Where to Mount

VERY IMPORTANT: Make sure that the mast is both PLUMB and LEVEL. If the mast is not PLUMB and LEVEL, the elevation, azimuth, and tilt settings you get from on-screen instructions will not be accurate and you may not be able to acquire the signal.

Solid Wood or Lap Siding

Important Considerations:

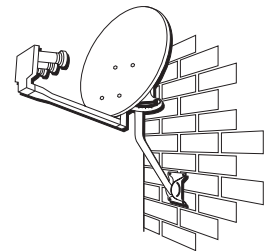
- Do NOT mount the DIRECTV® Multi-Satellite dish where someone might use it as a handrail.
- Do NOT mount the DIRECTV satellite dish on any type of aluminum or vinyl siding.
- Do NOT mount the DIRECTV satellite dish on any type of composite paneling, such as fiber board, particle board, or strand board.
- Do NOT mount the DIRECTV satellite dish under an eave or overhang that may block or partially shadow the DIRECTV satellite dish.
- Make sure the wooden surface is structurally sound and can support the weight of the DIRECTV satellite dish.



Brick or Poured Concrete Surface

Important Considerations:

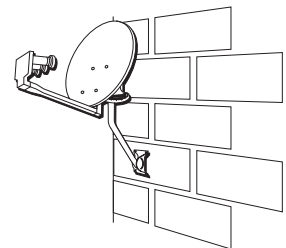
- The wall anchors used must have a strength of at least 300 pounds of pullout pressure. The use of B4015 or equivalent double-expansion anchors is recommended.
- Do NOT mount the DIRECTV satellite dish under an eave or overhang that may block or partially shadow the DIRECTV satellite dish.



Hollow or Cinder Block Wall

Important Consideration:

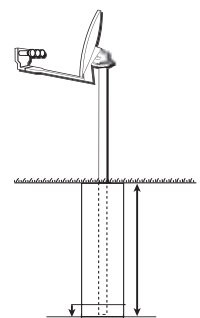
- Do NOT mount the DIRECTV satellite dish under an eave or overhang that may block or partially shadow the DIRECTV satellite dish.



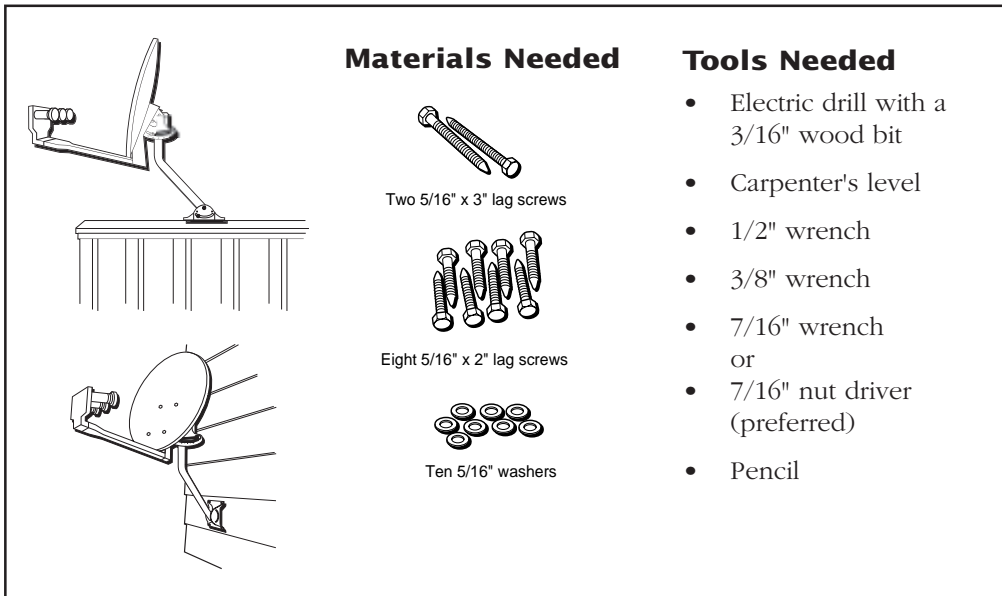
Pole

Important Considerations:

- Do NOT install the pole in wet or marshy areas.
- The pole must go at least three feet below the surface.
- If the length of pipe above ground is too long, guy wires may be needed to increase the stability of the mount in windy conditions.
- You will need to ground the pole in addition to the antenna and coaxial cable.
- The pole that has been secured in the ground with concrete replaces the mast that was supplied with your DIRECTV satellite dish. When mounted to a pole, the DIRECTV satellite dish is held on the pole by the LNB arm/antenna back assembly.



Mounting The Mast on Solid Wood or Lap Siding



DANGER

AVOID Power Lines!

When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits *may be fatal*. It is recommended that the DIRECTV satellite dish be located more than 20 feet from overhead power lines.

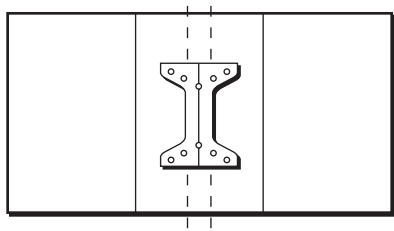
Important Considerations

- Do NOT mount the DIRECTV® Multi-Satellite dish where someone might use it as a handrail.
- Do NOT mount the DIRECTV satellite dish on any type of aluminum or vinyl siding.
- Do NOT mount the DIRECTV satellite dish on any type of composite paneling, such as fiber board, particle board, or strand board.
- Do NOT mount the DIRECTV satellite dish under an eave or overhang that may block or partially shadow the DIRECTV satellite dish.
- Make sure the wooden surface is structurally sound and can support the weight of the DIRECTV satellite dish.

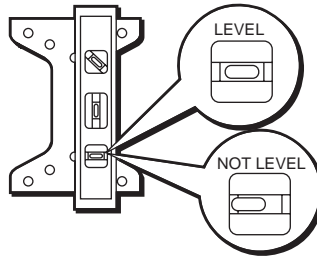
Mounting the Mast

Mounting Instructions

1. Locate the center of a stud where you want to secure the mounting foot. Make sure you locate and secure the mounting foot to the center of a wall stud. **Do not mount the DIRECTV® Multi-Satellite dish near the edge of a stud.**
2. Hold the mounting foot in a position so the center line is centered on a stud or solid wood surface.
3. If you are mounting on a sloped or vertical surface, use a carpenter's level to verify that the center line is perfectly vertical.

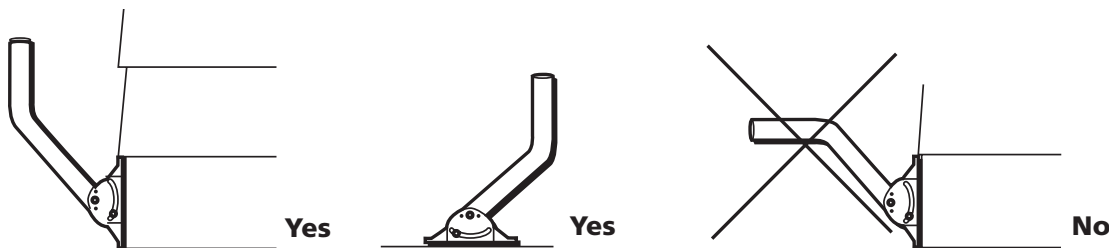


Step 2: Center the foot on the stud.



Step 3: Make sure the mounting foot is level.

4. Use a pencil to mark the two center holes and the eight outside corner holes of the mounting foot.
5. Remove the mounting foot and drill two 3/16" holes in the two center hole locations and four 3/16" holes in the four outside corner locations.
6. Use a wrench to loosen the nuts on the mounting foot so that you can rotate the mast to access both of the center mounting holes.
7. Hold the mounting foot over the holes so that the top part of the mast will rotate and point straight up. The mast needs to be perfectly plumb and level in order for the dish to receive a satellite signal (see Chapter 3 for more information on how to use the mast to make sure the mast is plumb and level).



Step 7: Make sure that the top of the mast is plumb (pointing straight up). See chapter 3 for more information on how to use the mast to make sure the mast is plumb and level.

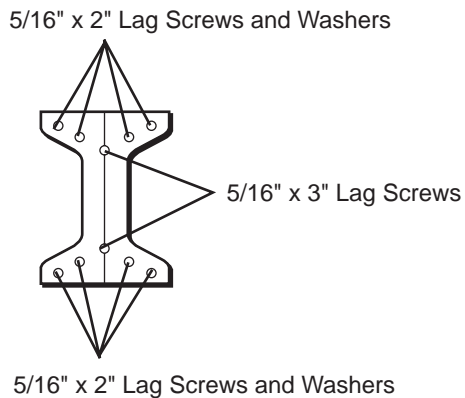
Tip

To locate a stud underneath panel siding, locate the nails securing the panel to the wall. The nails usually align with the center of the stud and provide an easy guide.

IMPORTANT

The satellite antenna must be plumb and level. Plumb means perfectly vertical; straight up and down. Level means a horizontal plane.

8. Install two 5/16" x 3" lag screws into the two center holes on the mounting foot. Securely tighten the screws into the center of the wood beam.
9. Put washers on the 5/16" x 2" lag screws, insert the screws into the four outside holes and securely tighten them.

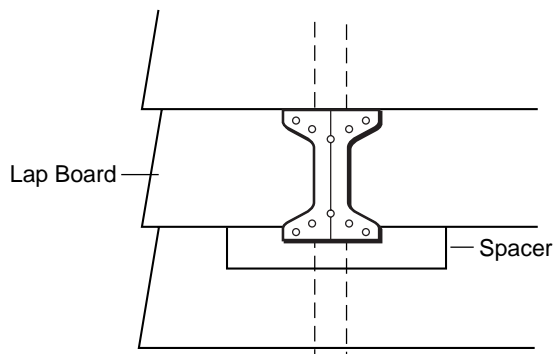


Steps 8 and 9: Insert the lag screws.

10. Go to the next section, "Final Installation," to complete the installation process.

Installing a Spacer

When the mounting foot spans two pieces of siding, it should be positioned so most of the foot is on the top board. A spacer should be installed to help hold the bottom of mounting foot in place. The spacer can be made of either solid wood or plastic.



Position the mounting foot on the top board when it spans two pieces of siding.

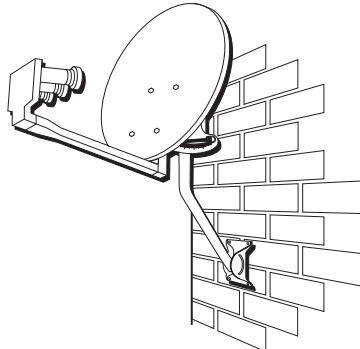
Mounting the Mast

Mounting the Mast on Brick or Poured Concrete

DANGER

AVOID Power Lines!

When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits *may be fatal*. It is recommended that the DIRECTV satellite dish be located more than 20 feet from overhead power lines.



Materials Needed

- Eight B4015 or equivalent double expansion anchors
- Eight #20, 1/4" x 3" machine screws
- Eight 5/16" washers

Tools Needed

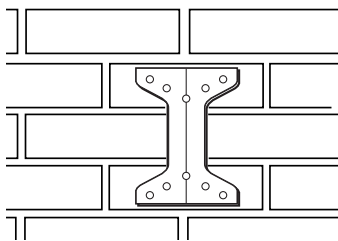
- Electric drill with 1/2" masonry bit
- Carpenter's level
- Screwdriver
- Hammer
- 7/16" wrench or 7/16" nut driver (preferred)
- Pencil

Important Considerations

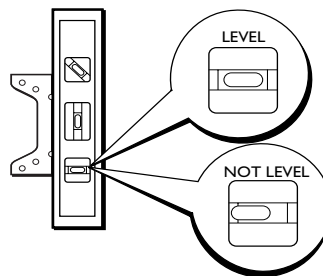
- The wall anchors used must have a strength of at least 300 pounds of pullout pressure. The use of B4015 or equivalent double-expansion anchors is recommended.
- Do *not* mount the DIRECTV® Multi-Satellite dish under an eave or overhang that may block or partially shadow the DIRECTV satellite dish.

Mounting Instructions

- Hold the mounting foot in position on the mounting surface.
- If you are mounting on a vertical or sloped surface, use a carpenter's level to ensure that the center line is vertical. This is an important step to ensure that the DIRECTV satellite dish will stand exactly plumb and level.



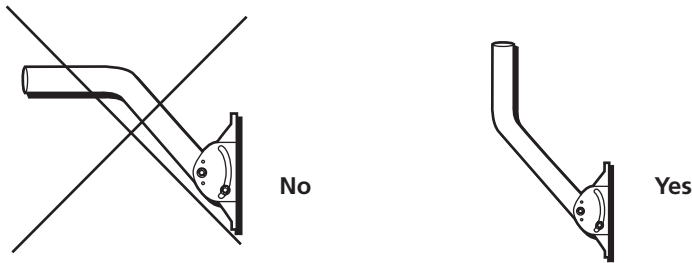
Step 1: Hold the mounting foot in position.



Step 2: Make sure the mounting foot is level.

- Mark the eight outside holes on the mounting foot.

4. Remove the foot and drill eight 1/2" holes in the locations you marked using a specialty masonry drill bit.
5. Insert four B4015 or equivalent double-expansion anchors.
6. Use a wrench to loosen the nuts on the mounting foot so you can rotate the mast to access both of the center mounting holes.
7. Hold the mounting foot over the holes so the top part of the mast will rotate and point straight up (see Chapter 3 for more information on how to use the mast to make sure the mast is plumb and level).



Step 7: Make sure that the top of the mast is plumb (pointing straight up).

8. Insert and tighten the machine screws.
9. Go to the next section, "Final Installation," to complete the installation process.

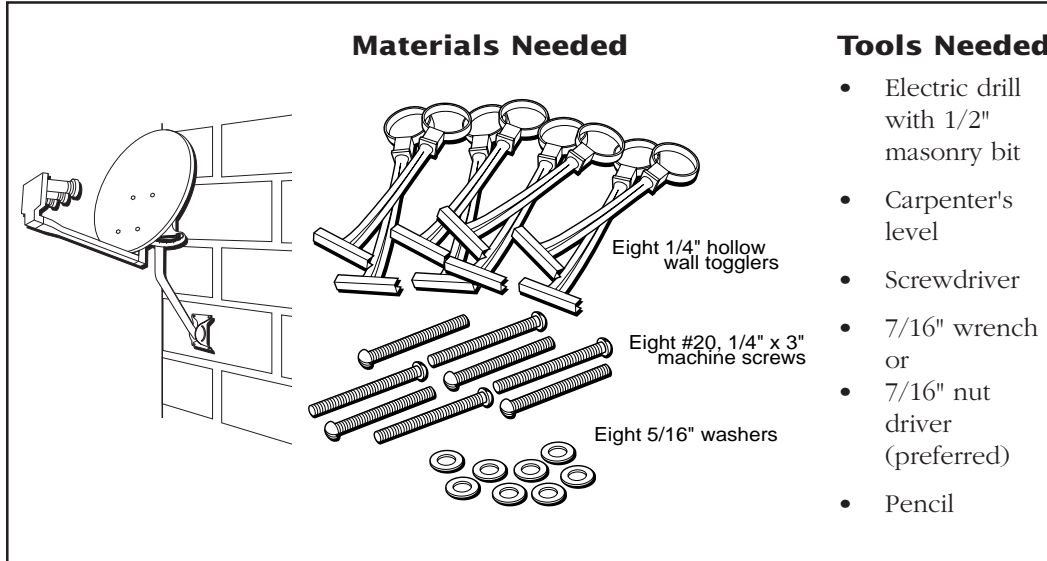
Mounting the Mast

Mounting the Mast on a Hollow or Cinder Block Wall

DANGER

AVOID Power Lines!

When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits *may be fatal*. It is recommended that the DIRECTV satellite dish be located more than 20 feet from overhead power lines.

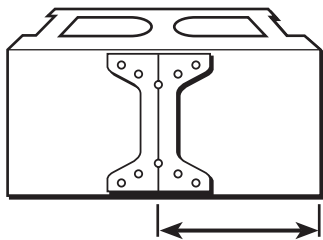


Important Consideration

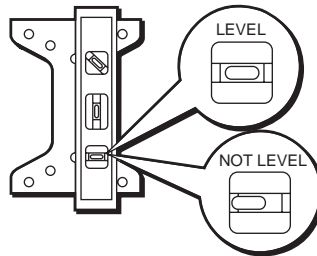
- Do *not* mount the DIRECTV® Multi-Satellite dish under an eave or overhang that may block or partially shadow the DIRECTV satellite dish.

Mounting Instructions

- When installing togglers in cinder blocks, it is important to position them in the core of the block. To position the mounting foot on the wall, measure 7 1/2" from one edge of the block and mark the center of the block.
- Center the mounting foot on the mark you made.
- Level the center line of the mounting foot using a carpenter's level.



Step 2: Center the mounting foot.



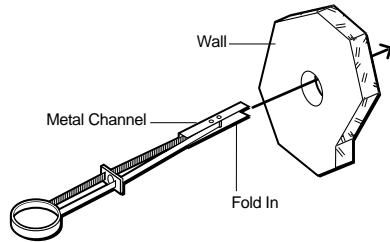
Step 3: Level the center line of the mounting foot.

- Mark the eight outside corner holes.
- Remove the mounting foot. Drill a 1/2" hole at the marked locations.

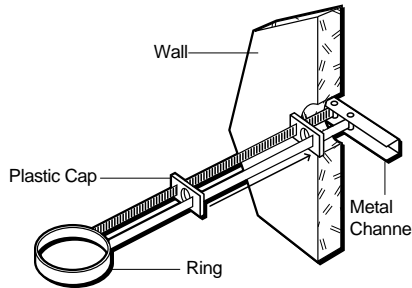
Mounting the Mast

6. Install the togglers:

- a. Carefully fold one end of the metal channel along the plastic straps. Hold the metal channel flat against the plastic straps and slide it through the hole.
- b. Pull the ring so the metal channel rests flush behind the wall. Hold the ring tight and slide the plastic cap along the straps until the cap is flush with the wall.

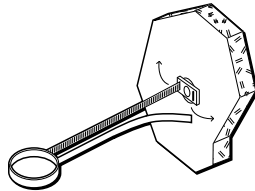


Step 6a: Slide the metal channel through the hole.



Step 6b: Make sure the plastic cap is flush with the wall.

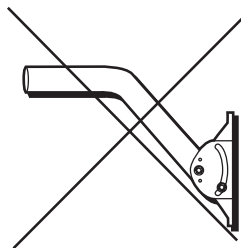
- c. Push the straps side-to-side to snap them off flush with the wall.



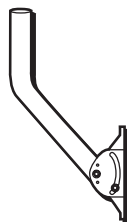
Step 6c: Snap off straps flush with the wall.

- d. Repeat for all eight holes.

7. Use a 7/16" wrench to loosen the nuts on the mounting foot so you can rotate the mast to access both of the center mounting holes.
8. Hold the mounting foot over the holes so the top part of the mast will rotate and point straight up. For the final mounting, you should use the bubble level inside the EZALIGN™ mast to make sure the mast is perfectly plumb and level.



No



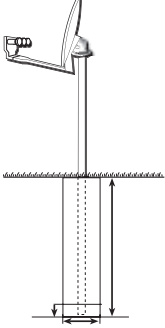
Yes

Step 8: Make sure that the top of the mast is plumb (pointing straight up).

9. Place washers on each of eight #20, 1/4" x 3" machine screws and attach the mounting foot to the wall. Securely tighten the screws.
10. Go to the next section, "Final Installation," to complete the installation process.

Mounting the Mast

Mounting the DIRECTV® Multi-Satellite Dish on a Pole



Materials Needed	Tools Needed
<ul style="list-style-type: none">One 1 1/4" inner diameter schedule 40 galvanized steel pipe with a measured outer diameter of 1.6"Three bags quick-setting concrete	<ul style="list-style-type: none">Carpenter's levelScrewdriverHammerHacksawShovel or post hole diggerPencil

DANGER

AVOID Power Lines!

When following these instructions, take extreme care to avoid contact with overhead power lines, electric lights, and power circuits. Contact with power lines, electric lights, or power circuits *may be fatal*. It is recommended that the DIRECTV satellite dish be located more than 20 feet from overhead power lines.

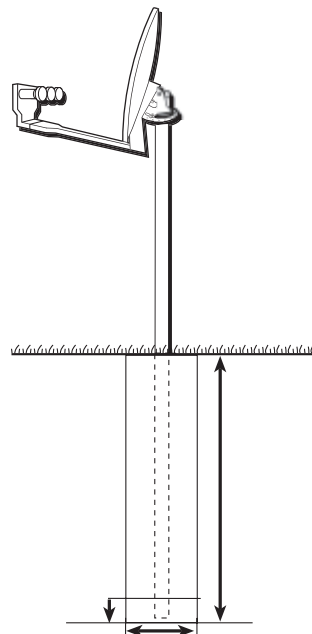
Important Considerations

- Do *not* install the pole in wet or marshy areas.
- The pole must go at least three feet below the surface.
- If the length of pipe above ground is too long, guy wires may be needed to increase the stability of the mount in windy conditions.
- You will need to ground the pole in addition to the antenna and coaxial cable.
- The pole that has been secured in the ground with concrete replaces the mounting foot and mast assembly which were supplied with the DIRECTV satellite dish. The DIRECTV satellite dish is held on the pole by the mast clamp.

Mounting Instructions

1. Dig a hole 36" deep and 8" to 12" wide at the mounting location.

The depth of the hole must extend at least 6" below the frost line. For most installations, a pole 6' long is sufficient, since this allows 3' of the pole to be below the ground and 3' above ground.

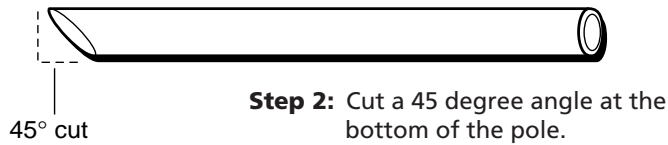


Step 1: The depth of the hole must extend at least 6" below the frost line.

Tip

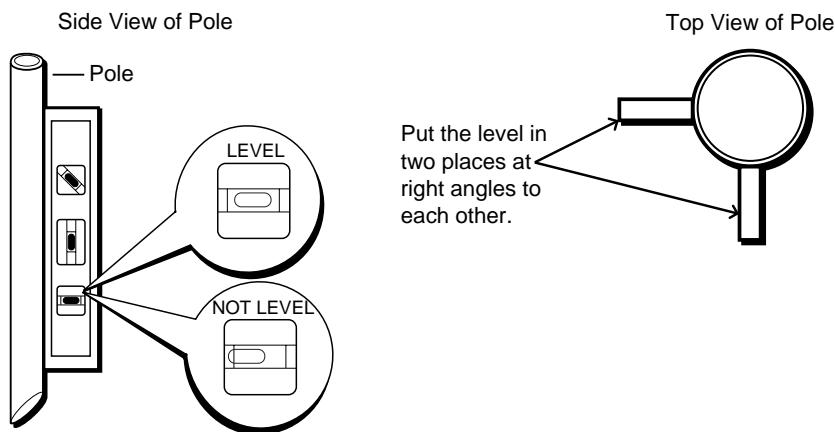
You might opt to put the mast on the pole before cementing the pole to make sure the mast can be secured properly.

2. Use a hacksaw to cut a 45 degree angle at the bottom of the pole. This will prevent the pole from rotating in the concrete over time.



3. Place the pole in the hole and use a small amount of dirt or stones to hold the pole upright. You may need to attach guy wires to help keep the pole upright.
4. You can level the pole using the a carpenter's level taking readings in two spots 90 degrees from each other on the sides as shown below. A circular carpenter's level is recommended for this task; it will tell you if the mast is plumb and level from all angles with just a single reading. Level the pole at two different locations that are at right angles to each other. *It is essential that the pole be plumb.*

Important Tip: Taking the time to properly level the pole now will save time adjusting it later.



Step 4: Level the pole by using a carpenter's level to take a reading in two places that are 90 degrees from each other.

5. Fill the hole with quick drying cement. Stop filling when the cement is about two inches from the top of the hole.
6. Let the cement dry completely before you mount the dish on the pole.
7. Go to the next section, "Final Installation," to complete the installation process.

Tip

Most hardware stores should carry an inexpensive carpenter's level. These inexpensive levels can tell you when the mast is plumb and level in all directions with just one reading.

IMPORTANT

Make sure the mast is plumb and level before the concrete sets.

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Final Installation

Chapter Overview:

- Leveling the Mast
- Final DIRECTV® Multi-Satellite Dish Assembly
- Routing and Grounding the Cables
- Running Cable into the House
- Making the Final Connections
- Acquiring and Fine Tuning the Signal

Changing Entertainment. Again.



Final Installation

Leveling the Mast

Making sure the mast is plumb and level is one of the most important steps in installation. If the mast is not plumb and level, the elevation, azimuth, and tilt settings you get from on-screen instructions will not be accurate. This makes it difficult to obtain the satellite signal(s).

The mast must be even in both the side-to-side and the front-to-back directions. Side-to-side leveling determines whether the mounting foot is level. Front-to-back leveling determines whether the mast is plumb and level.

Important Tip: Taking the time to properly level the pole now will save time adjusting it later. You can use the internal bubble to perform all plumbing tasks, but a carpenter's level may be handy in case you can't see the bubble easily due to the mast location.

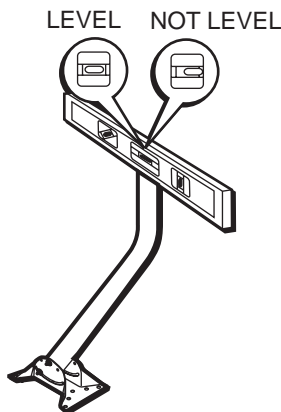
Leveling Side-to-Side

1. If you mounted the mast on a vertical surface, such as a wall, you leveled the mast side-to-side when you mounted the mast foot. Skip to the next section, "Leveling Front-to-Back."
2. To check whether the mast is level side-to-side, place a carpenter's level on the mast as shown below.
3. Is the bubble centered in the level's window?

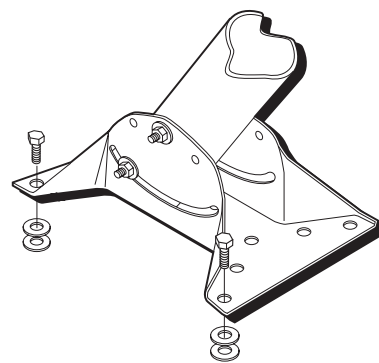
If the answer is *yes*, go to the next section, "Leveling Front-to-Back," to continue the installation process.

If the answer is *no*, complete the following steps:

- a. If the bubble is not centered, determine which side of the mounting foot needs to be raised.
- b. Unscrew the lag or machine screws from that side of the mounting foot.
- c. Place washers between the mounting foot and the mounting surface. Use enough washers to level the mounting foot.



Step 2: Verify that the mast is level side to side.



Step 3: If the mast is not level, add washers to level the foot.

- d. Secure the mounting foot with the lag or machine screws.

IMPORTANT

Making sure the mast is plumb and level is one of the most important steps in installation. If the mast is not plumb and level, the elevation, azimuth, and tilt settings you get from on-screen instructions will not be accurate. This makes it difficult to obtain the satellite signal(s).

Tip

Any hardware store should have an inexpensive carpenter's level that can tell you when the mast is plumb and level in all directions at once.

CAUTION

Use caution when installing, adjusting or dismantling the DIRECTV® satellite dish and mast. The weight of the dish may cause the DIRECTV satellite dish and mast to swing down and strike you, a bystander, or nearby objects. This could cause personal injury or damage to the dish. Never insert your fingers inside the mast. Always grip the mast around its outside circumference.

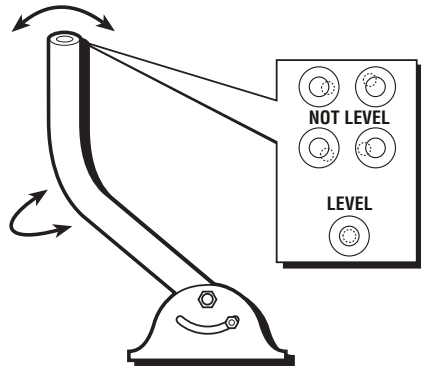
Plumbing the Mast

There are two ways you can plumb the mast: the internal bubble level (inside the mast), and by using a carpenter's level.

Using the Internal Bubble Level

The mast pivots up and down, and from side to side. The mast has a bubble level located in its top opening, which will help you make sure the mast is plumb and level.

1. Make sure the bubble level frame is seated properly in the mast. Press down flat on the frame so that it's even with the top edge of the mast.



2. Loosen the four mast bolts slightly.
3. Move the mast vertically (up/down) or horizontally (side to side) until the bubble in the bubble level is centered as shown in the diagram below.

Important Tip: Taking the time to properly align the pole now will save time adjusting it later.

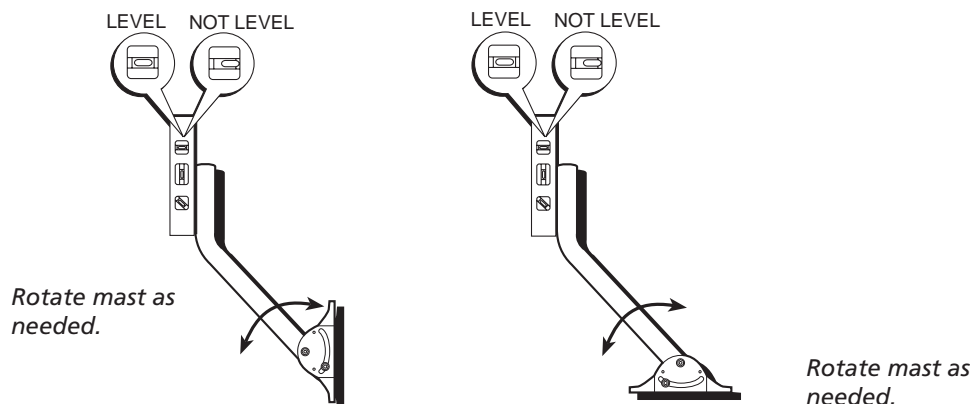
3. Keep holding the mast in place with the bubble centered in the level. Tighten the bolts on the sides of the mast base with a 7/16" nut driver. (You can also use an adjustable wrench if you don't have a 7/16" nut driver.) Make sure the bolts are secure.

Using a Carpenter's Level

1. Loosen the two bolts securing the mast to the mounting foot so the mast moves freely.
2. Place a carpenter's level on the mast as shown in the figures below. Move the mast so the bubble is centered in the level's window.

Important Tip: Taking the time to properly level the pole now will save time adjusting it later.

3. Tighten the two bolts securing the mast to the mounting foot.

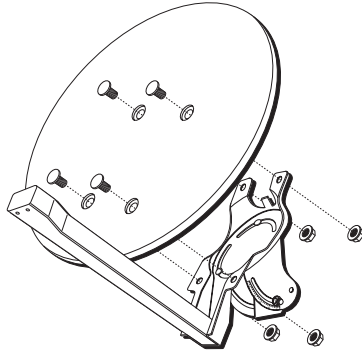


Final Installation

Final DIRECTV® Multi-Satellite Dish Assembly

Step 1: Attach the Dish to the LNB Arm/Antenna Back Assembly

Use the dish mounting hardware to attach the dish to the LNB Arm/Antenna Back assembly as shown.



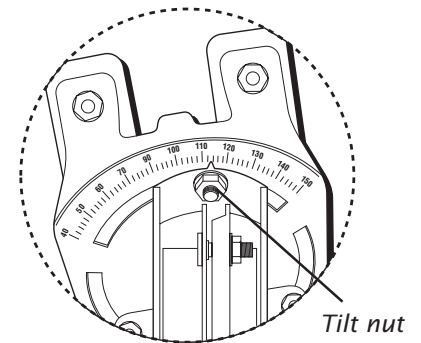
Step 2: Set the Tilt Adjustment

- Loosen the tilt nuts at the back of the antenna assembly.
- Use the tilt dish pointing coordinate you obtained from the satellite receiver, HDTV, or HD set-top converter's menu system (you wrote the number on page 7) to set the tilt of the dish.

Set the tilt so that the correct degree of tilt aligns with the mark on the side of the mast clamp and *not* the bolt or nut.

- Tighten the tilt nuts.

Important: Do not change the tilt adjustment once you've tightened the tilt nuts, even if you have difficulty finding the satellite signal during alignment. Unlike the elevation and azimuth coordinates, the tilt should remain the same throughout the fine-tuning process – do not fine tune the tilt. For some of the Eastern Seaboard states, however, there may be an exception. See step 5 on page 36.

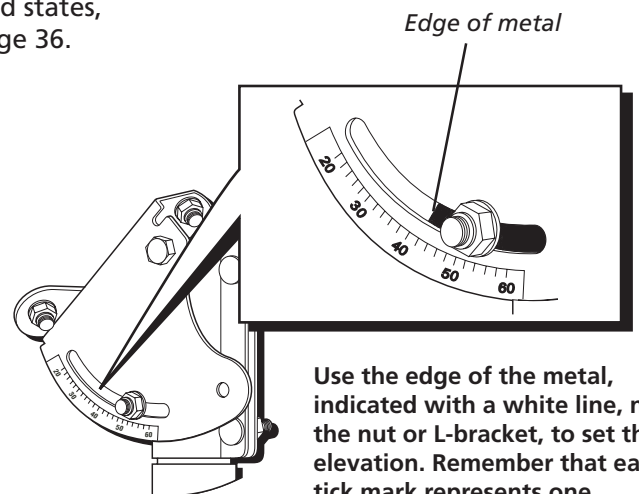


Step 3: Set the Elevation Adjustment

- Loosen the two elevation nuts (one on each side) and pivot bolt.
- Use the elevation dish pointing coordinate you obtained from the satellite receiver, HDTV, or HD set-top converter's menu system (you wrote the number on page 8) to set the elevation of the dish.

Set the elevation so that the correct degree of elevation aligns with the mark on the edge of metal and *not* the bolt or nut.

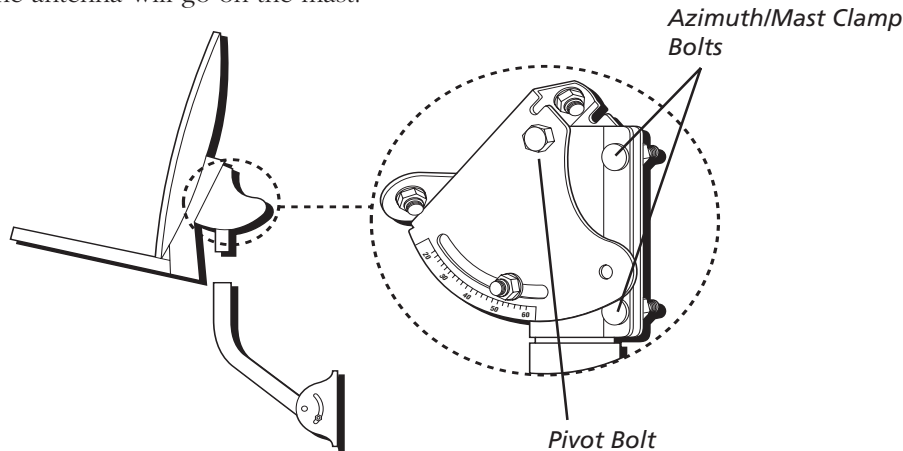
- Tighten the elevation nuts – **but not completely**. Your elevation adjustment is just preliminary. You will probably need to fine tune this adjustment later on.



Use the edge of the metal, indicated with a white line, not the nut or L-bracket, to set the elevation. Remember that each tick mark represents one degree.

Step 4: Attach the Antenna to the Mast

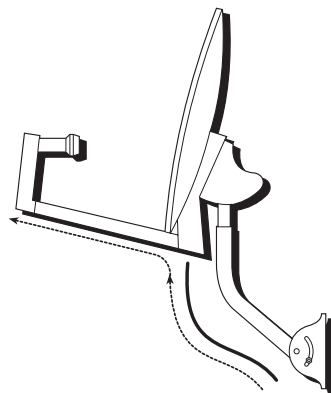
- Make sure that the mast is secure before setting the dish on top of it.
- Slide the back of the antenna assembly onto the top of the mast until it stops at the pivot bolt. You might need to loosen *slightly* the two azimuth/mast clamp bolts so the antenna will go on the mast.



- Tighten the two azimuth/mast clamp bolts and the pivot bolts *just enough* to keep the antenna from moving up or down. You should still be able to move the antenna from side to side (for azimuth alignment).

Step 5: Run the Cables through the LNB Arm

- Push one end of the RG-6 coaxial cable(s) you plan to run to your satellite receiver, HDTV or HD set-top converter up through the LNB Arm.



RG-6 Coaxial Cable

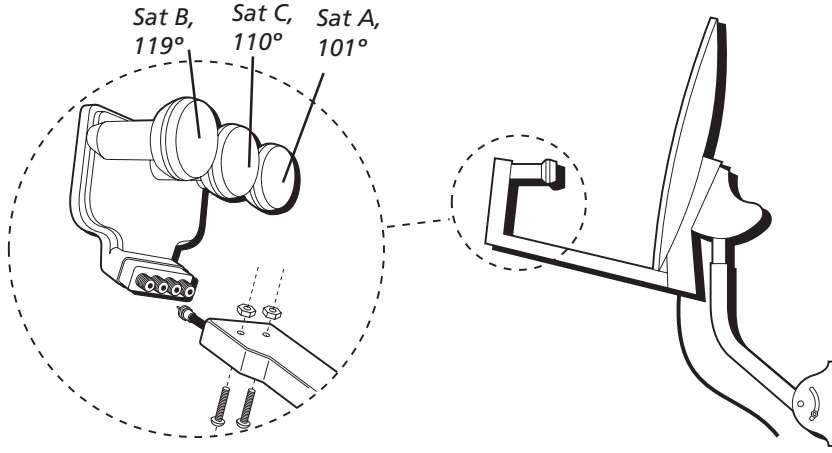
Important: Before you install coaxial cables, look at the inside of each cable connector to make sure there isn't any dirt, moisture, or other foreign material in the connector. Also, make sure the aluminum cable shielding foil or braid isn't touching the copper center conductor.

The triple-head LNB multi-switch with your antenna has four identical outputs, each supporting one independently operating receiver. To simplify future installation of additional receivers, you might want to route more than one cable through the LNB Arm at this point.

Final Installation

Step 6: Attach the Cable(s) to the LNB / Attach the LNB to the Antenna

- Hold the triple-head LNB close to the end of the LNB Arm.
- Attach the cable(s) running through the LNB arm to the output jack(s) on the triple-head LNB multi-switch.



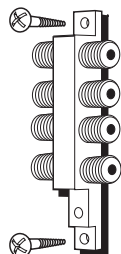
- Attach the triple-head LNB onto the LNB arm and fasten it with the included mounting hardware (Philip screws and nuts).
- Dress the cable(s) with the enclosed tie wraps, allowing for a water drip loop if necessary.
- Attach the grounding wire to the satellite dish's mounting foot. The grounding wire can be attached anywhere on the metal part of the antenna, but there is a convenient grounding screw at the mast base.

Note: You have up to four LNB output jacks available to connect additional satellite receivers, but if you plan to connect less than that, we suggest you use 75 ohm termination caps for the jacks you're not using (found at most satellite retailers), and protect them from the environment with electrical tape.

Step 7: Attach Grounding Block(s) to Your House

Grounding the DIRECTV® System to the central building ground helps protect it and other components from lightning damage. Dish installation should comply with local codes and the National Electrical Code (NEC). Grounding the satellite system is something you can probably do yourself. But if you're not sure, you should contact a qualified electrician.

- Attach the grounding block(s) to the side of your house close to the point you have chosen as the coaxial cable entry point.
- You may have to use anchors, togglers, or wood screws depending on the surface on which you are mounting the grounding block.



Step 7: Attach the grounding block(s) to the side of your house at your designated entry point. You can use 2 2-way blocks or one 4-way block.

IMPORTANT

The United States National Electrical Code (NEC) specifies that coaxial cable that is exposed to lightning shall be connected to the grounding system of the building as close to the point of cable entry as possible.

CAUTION

For the best protection to your equipment, ground the dish and the coaxial cables to the same place in the building. If you don't do this, a nearby lightning strike could damage your dish, the receiver, and/or your TV.

Step 8: Connect Cables and Ground Wire to the Grounding Block

- Make a 3"–5" drip loop using cable clips at the grounding block as shown on the bottom of this page. This will prevent water from running into the connection at the grounding block. Connect the cables to the grounding block.
- Connect the grounding (messenger) wire to the grounding block.

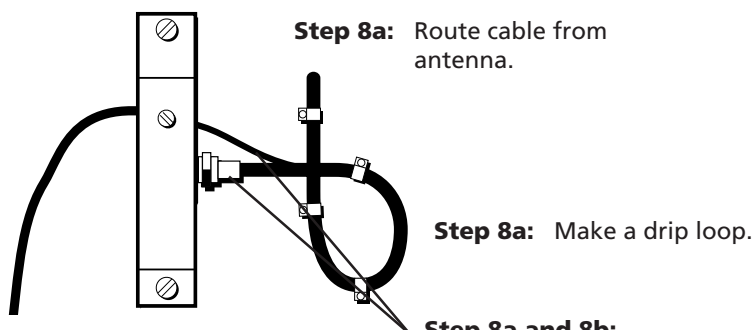
Note

When using a pole mount, you need to attach the grounding wire to the metal pole using a 1 1/2" grounding clamp.

Step 9: Route and Ground to the Central Building Ground

- Locate an acceptable central building ground, which include any of the following:
 - Grounded interior metal cold water pipe within five feet of the point where it enters the building.
 - Grounded metallic service raceway.
 - Grounded electrical service equipment enclosure.
 - Eight-foot grounding rod driven into the ground (only if bonded to the central building ground by #6 or heavier bonding wire).
 - Other acceptable grounding electrodes that comply with sections 250 and 810 of the National Electrical Code (NEC).
- Locate the grounding wire (#10 copper or #8 aluminum) that will extend from the grounding block to the central building ground.
- Attach the grounding wire to the grounding block by placing it through the wire hole in the grounding block and tightening the screw.
- Route the grounding wire from the grounding block to the central building ground, and connect it to the central building ground.

Step 10: Route Cables Into Your House



Steps 9b and 9d: Connect the #10 copper or #8 aluminum grounding wire and route to the central building ground.

Cable Routing Tips

- If you are routing the grounding wire along the ground, make sure the wire is buried deep enough so that it will not be damaged or uncovered.
- If you are routing the wire or cable above the ground, use cable clips to secure the two to a wall or surface.
- Make sure you route the grounding wire in an area where people or animals are not likely to come in contact with the cable.

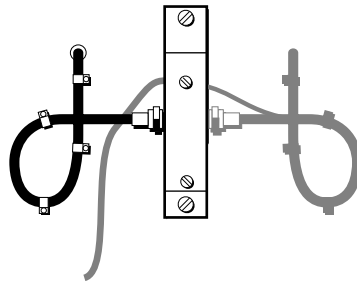
Final Installation

- a. Drill a hole in the location you want the coaxial cable to enter your house.
- b. Place some silicone grease on the connector and connect the RG-6 coaxial cable that will extend from the grounding block to the satellite receiver, HDTV, or HD set-top converter.
- c. Make a 3"-5" drip loop using cable clips at the grounding block.
- d. Be sure to ground the multi-switch.

CAUTION

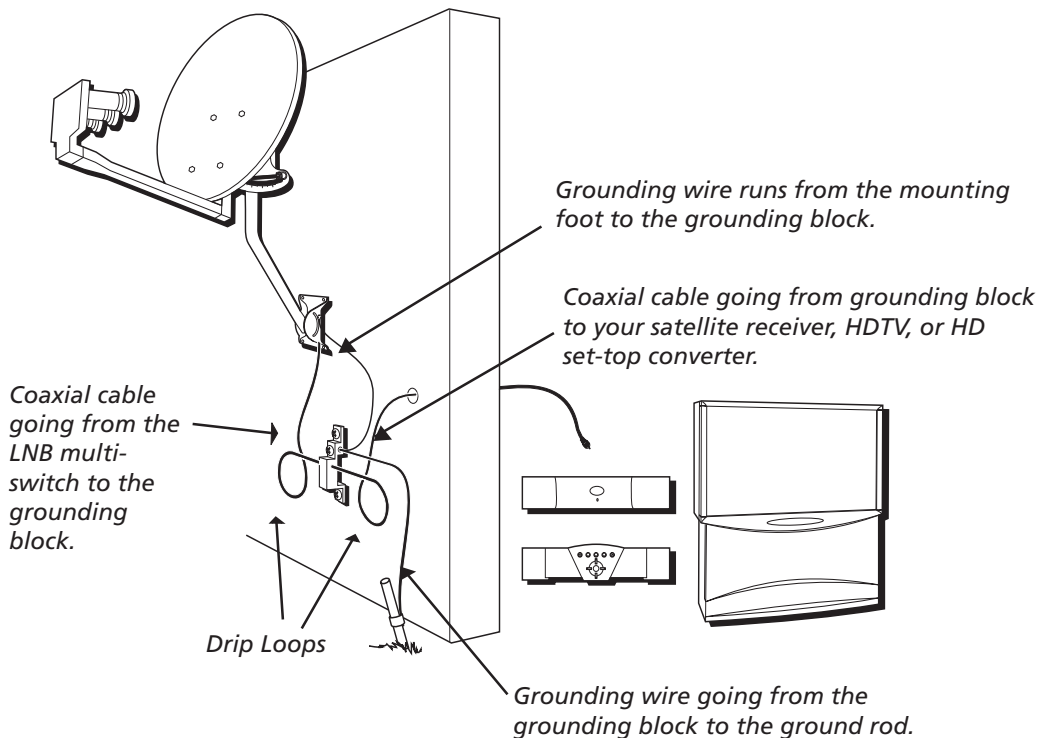
Before drilling, make sure there are no wires or pipes behind the wall in the area of the hole.

Step 10c: Make a drip loop.



Step 10b: Connect the RG-6 cable to the grounding block.

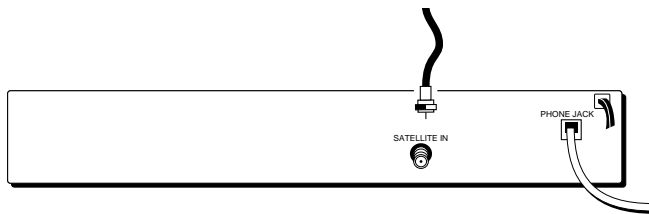
- e. Use a silicone sealant to seal all outside connections and the hole you drilled for the coaxial cable to enter your house.



Final DIRECTV Connections

1. Connect the RG-6 coaxial cable to the SATELLITE IN jack for satellite cable at the back of the digital satellite receiver, HDTV, or HD set-top converter as shown. *Do not connect the coaxial cable to the IN FROM ANTENNA jack.*
2. Take one phone off the hook to prevent electric shock from incoming calls.
3. Connect a phone cord from the back of the digital satellite receiver, HDTV, or HD set-top converter to a phone jack.

Step 1: Connect the RG-6 cable to the IN jack for satellite reception on the back of the digital satellite receiver, HDTV, or HD set-top converter.



Steps 2 and 3: Take the phone off the hook before you connect a phone cord from an outlet to the back of the digital satellite receiver, HDTV, or HD set-top converter.

About the Phone Connection

The satellite receiver, HDTV, or HD set-top converter calls a telephone number once a month or so to update your DIRECTV® programming account. It is also used to order Pay Per View (PPV) events. These calls only take a few seconds.

Acquiring and Fine Tuning the Signal

Now that you have installed the DIRECTV® Multi-Satellite dish and routed all of the cable, it's time to acquire and fine tune the signal. Before you begin, you may want to go outside and double-check the azimuth, elevation, and tilt settings on the dish to make sure they correspond to the on-screen coordinates given.

- Make sure that the elevation indicator is aligned with the edge of metal, not the washer or the bolt. Remember that the indicator is white.
- Make sure the antenna's mast clamp is "tilted" to the degree markers indicated.
- Use a compass to verify that the azimuth setting on the dish is correct.

When you are confident that the settings are correct, bring up the satellite receiver, HDTV, or HD set-top converter's Dish Pointing menu screen again and use the on-screen signal meter to see if you are getting a signal. However, once you have acquired a signal, you must fine tune it to ensure you have the strongest settings possible.

Refer to your digital satellite receiver, HDTV, or HD set-top converter manual for on-screen menu information.

If you are not receiving a signal, you need to incrementally adjust the azimuth setting on the dish. After you receive a signal, you will want to continue to adjust your settings to get the best possible signal.

Step-By-Step Instruction for Acquiring and Fine Tuning the Signal

1. Read the instruction manual that came with your digital satellite receiver, HDTV, or HD set-top converter to determine how to access the on-screen signal meter.

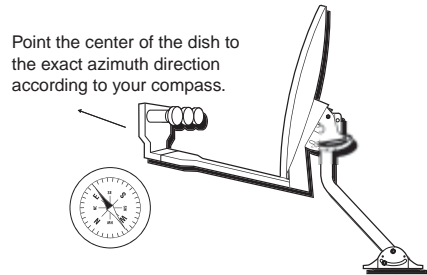
The signal meter shows you when you have locked onto a satellite's broadcast signal, it gives you the signal strength. It is easiest to use the signal meter with the help of another person to relay signal strength values to you, or by moving the TV displaying the signal meter so you can see it.

2. In the on-screen menus, make sure you select the correct type of satellite dish (round or oval) and the correct number of LNBS (3 location satellite dish = 3 LNBS). The signal meter will give you the pointing coordinates for your antenna, and values will depend on the type of antenna you have selected. Failure to select the correct dish will result in wrong pointing angles as well the inability to receive certain programming.

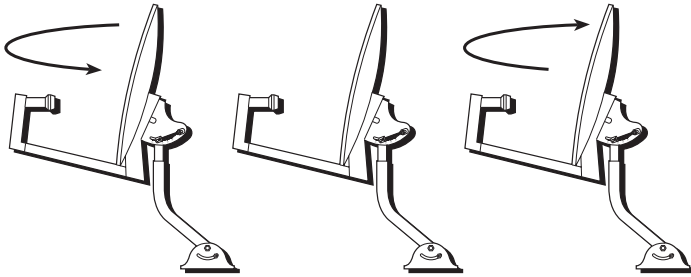
Maximum Signal Strength

While the maximum signal meter value is 100, the signal strength you achieve will probably be less. Although there is no difference in picture quality between signal strengths of 60 and 85 percent, the higher the signal, the less likely you are to experience signal outages during adverse weather.

3. Access the signal meter. Set signal meter to the satellite located at 101 degrees longitude (this might also be represented on-screen as “Satellite 1” or “Satellite A”). At this point you will probably not have a signal.

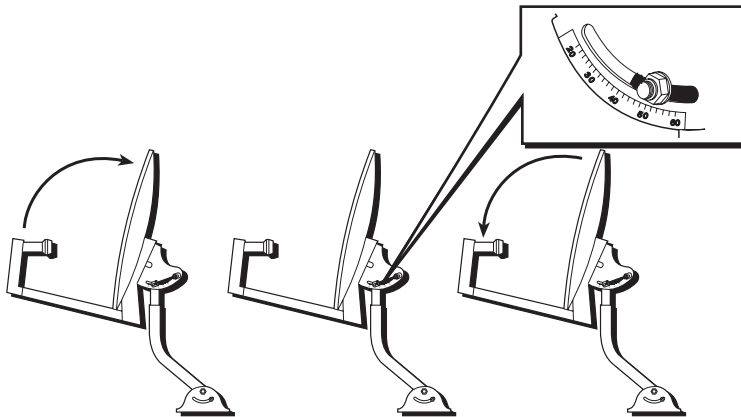


- a. Using a compass, adjust the azimuth by moving the antenna slightly left (east) of the azimuth value for your location.
- b. Sweep the antenna towards the right (west) and through the azimuth point by moving the dish in approximately three degree increments and pausing to wait for an updated value from signal meter. *If the signal is found and signal meter is locked, go to step 4.*



Step 3b: Adjust the azimuth until you find a signal.

- c. If after sweeping the antenna completely to the west, the satellite signal is not found, adjust the elevation +2 degrees and sweep the azimuth again.
- d. If the signal is still not found, adjust the elevation -2 degrees from the original value (-4 degrees from current setting) and sweep the azimuth again. We recommend using a socket wrench to loosen the elevation adjustment hardware.



Step 3d: Adjust the elevation until you find a signal.

Tip

You can adjust your TV's volume to hear the signal meter from the dish location, or you may want a friend to watch the signal meter and relay the strength reading to you.

Tip

To make sure you have the strongest possible signal(s), move the dish until you get a continuous tone, then continue moving until the single tone stops. Go back to the strong setting, then repeat the process in the opposite direction. Do this until you know where the strongest setting is.

Final Installation

- e. If the signal is still not found, check to make sure the cables are connected correctly. Also verify the azimuth, elevation and tilt angles for your location and the plumbness of the mast using a carpenter's level.
4. With the signal meter locked and displaying a value greater than 0, adjust the azimuth until the signal meter value is maximized. Then further maximize the signal meter value by finely adjusting the elevation angle. Make a note of the elevation and the azimuth angles where signal meter was the highest. The elevation angle can be read from the scale, the azimuth angle can be noted by marking the mast and antenna bracket using a pencil, crayon, soap, etc.
5. Switch the signal meter to satellite located at 119 degrees west longitude (this might also be represented on-screen as "Satellite 2" or "Satellite B"). If the antenna, mast, and multi-switch have been installed properly, the signal meter should be locked. In most of the U.S., the Tilt Adjustment should be fixed. However, because of the large Tilt angle to the 119° satellite in Eastern Seaboard states, a small amount of Tilt fine-tuning adjustment may improve the 119° signal strength without significantly changing the 101° signal reading. For these states, the following Tilt fine-tuning procedures are recommended:
 - a. Follow the alignment procedures above; tighten the Elevation and Mast clamp bolts.
 - b. Fine-tune the Tilt Adjustment first by +3 degrees and then -3 degrees. Tilt is optimized when you see the 101° signal reading essentially unchanged and the 119° signal strength improved by several points. Set Tilt to the optimized point and tighten the Tilt nuts.
6. Once again, sweep the azimuth until the signal meter value for the satellite located at 119 degrees west longitude is maximized, then adjust the elevation to peak the reception for the satellite at 119 degrees west longitude. Make a note of the elevation and azimuth angles.
7. Switch the signal meter to the satellite located at 101 degrees latitude to make sure that signal meter is locked for both satellites.
8. Further maximize, fine-tune the signal strength on both satellites by adjusting the elevation.
9. Carefully tighten all of the bolts, trying not to move the antenna on the mast while you do so. When done tightening the bolts, make sure that signal meter is still locked for all satellites.
10. Confirm the final signal-peak readings at all three satellite locations. Sat C (110 degrees, transponders 8, 10 and 12) should be aligned automatically.

Note that if the antenna moves or the signal meter values change significantly lower while tightening the bolts, slightly loosen the elevation bolts (so they are still somewhat snug), and adjust to maximize signal strength; then carefully tighten them again.

Additional Information

Chapter Overview:

- Troubleshooting
- Toll-Free Telephone Product Help
- Limited Warranty
- Index

Changing Entertainment. Again.



Troubleshooting

Can't Pick Up the Satellite Signal

Most problems with signal acquisition can be traced to one of these points: *improper cabling and connections or inaccurate positioning and pointing of the DIRECTV® Multi-Satellite dish.*

Cabling and Connections Problems

1. Make sure you're using the proper type of RG-6 coaxial cable to connect the LNB to the grounding block and the grounding block to the satellite receiver. Standard Cable TV coaxial cables (RG-59) will *not* pass the satellite signals properly. *Important: Do not connect the RG-6 cable from the dish or grounding block to any existing TV cable in your house.* Do not use conventional TV splitters. They will not pass the satellite signals.
2. Make sure the Access Card is fully inserted into the Access Card slot.
3. Check all cable connections to make sure they are securely fastened to the proper connectors, from the TV, to the satellite receiver, and all the way out to the dish LNBs. Make sure the coaxial cable connector center conductor is not bent or broken.
4. Make sure the cable from the dish to the receiver is connected to the SATELLITE IN jack on the back of the receiver (*Not* the ANTENNA IN jack).

DIRECTV Multi-Satellite Dish Positioning and Pointing Problems

1. Verify that you are using the correct azimuth and elevation for your city by using the dish pointing menu.
2. Make sure the DIRECTV satellite dish is physically set to the correct coordinates given on the dish pointing menu by verifying that:
 - **The DIRECTV satellite dish mast is plumb and level.**
 - The white indicator on the azimuth clamp (edge of metal, *not* the washer or the bolt) is aligned to the correct elevation and that the polarization is set correctly.
3. Use a compass to verify that the center of the antenna is pointed toward the correct azimuth reading (number) as indicated by the dish pointing menu. Nearby metal objects may cause a compass to give an inaccurate reading.
4. Make sure there are no obstructions (trees, buildings, windows, your body or hands, etc.) that might be blocking the satellite signal.
5. Slowly rotate the DIRECTV satellite dish left or right (one tick mark at a time) pausing at each for 3–5 seconds until the on-screen signal meter produces one continuous tone.
6. If you can't acquire a signal by rotating the DIRECTV satellite dish left and right, readjust the elevation of the dish by:
 - Returning the center of the dish to the original azimuth (left-to-right compass direction).
 - Loosening the elevation nuts and the pivot bolt on the LNB feed tube and position the DIRECTV satellite dish upward or downward (one tick mark at a time). When finished, retighten the nut.

Hear a Dialing Sound While Talking on the Phone (If the Satellite Receiver is Connected to a Phone Line)

Your satellite receiver may be attempting to call the billing center. Under normal conditions, the receiver hangs up any time it detects what it interprets as a voice on the line. After four unsuccessful attempts to get a dial tone, the receiver is designed to call out regardless of the status of the line. If you're using the phone when the receiver calls out, you'll hear a dialing sound. Don't worry; your phone connection will not be interrupted.

If you lose the satellite signal temporarily, the problem can usually be traced to one of these points:

1. **Rain Fade**—Rain fade is a normal, temporary loss of a satellite signal due to the inability of the satellite signal to penetrate unusually heavy, rain-filled clouds, rainfall, or snowfall. Rain fade tends to be brief, lasting only as long as the heavy cloud condition persists.

To minimize rain fade effects, maximize your signal strength. Then, when rain fade occurs, you have the best chances of having a signal that is still strong enough to view.

Make sure the DIRECTV® Multi-Satellite dish is mounted securely. The strong winds that often accompany heavy rainstorms can move the dish out of position if it is not mounted securely.

Also, heavy/wet snow and ice buildup on the DIRECTV satellite dish can block the satellite signal until the buildup is removed.

2. **Overheated Components**—The satellite receiver must receive adequate ventilation to work safely and properly. If the receiver overheats, the satellite signal may deteriorate until adequate ventilation is restored. Do not stack VCRs or other components on top of the satellite receiver.

Toll-Free Telephone Product Help

You can reach Thomson multimedia Inc. at the following number: 1-800-679-4776 (toll free inside USA)

Thomson provides a toll-free telephone number to help you with any problems you may encounter with your DIRECTV® System, as many problems can be diagnosed over the phone. If necessary, a replacement unit can be shipped to you.

Please have your DIRECTV System model/serial number and date of purchase ready when you call. If your unit is out of warranty, we will quote the cost of an exchange unit to you.

Returning Equipment to Thomson for Repair or Exchange

If we are unable to resolve your problem over the phone we will gladly service your unit or exchange it for a new or refurbished unit. Refer to the limited warranty included in the booklet to learn about your specific rights and responsibilities. *Always consult Thomson and get a Return Authorization number before returning anything.* Obtain a Return Authorization (RA) number from the telephone representative before returning your equipment to avoid delays, accounting errors, or even loss of your unit.

Important Information to Customers Who Ship Defective Equipment to Thomson multimedia Inc.

The Thomson representative who authorizes the return of your equipment will give you an RA number over the phone. The representative will also provide you with instructions on where and how to return your unit. Write the RA number in large, clear characters on the outside of the box. *To avoid confusion and misunderstandings, shipments without an RA number clearly visible on the outside of the box will be returned to you at your expense.*

Include a brief note describing the problem and any conversations you have had with Thomson personnel about the problem. Include your name, address and model/serial number of your unit. These numbers are located on the back of your receiver. If your DIRECTV System is within the warranty period, please provide a copy of the bill of sale to verify purchase date. Use the original box and packing material to protect the equipment from damage in shipment. *For your protection, insure all shipments for full replacement value and use a reliable shipper.* Thomson assumes no responsibility for warranty shipments from the customer to the factory if not shipped in the manner prescribed by Thomson.

Additional Information

Limited Warranty

What your warranty covers:

- Any defect in materials or workmanship.

For how long after your purchase:

- 1 year for parts.
- The warranty for rental units begins with the first rental or 45 days from date of shipment to the rental firm, whichever comes first.

What we will do:

- Replace the defective portion of your DTVS Antenna with a new or, at our option, refurbished parts.
- Labor costs for the removal and re-installation of defective parts are your responsibility.

How you get service:

- Call 1-800-679-4776 and have your unit's date of purchase and model number ready.
- A representative will troubleshoot your problem over the phone.
- If the representative determines that your antenna/dish is defective they will arrange to provide you the replacement parts necessary for its repair.

What your warranty *does not* cover:

- Acts of nature, such as but not limited to lightning damage.
- Damage from misuse or neglect.
- A unit that has been modified or incorporated into other products or is used for institutional or other commercial purposes.
- Units purchased, serviced or operated in Alaska or outside the U.S.A.
- Loss of programming.
- Installation

Limitation of Warranty:

- **THE WARRANTY STATED ABOVE IS THE ONLY WARRANTY APPLICABLE TO THIS PRODUCT. ALL OTHER WARRANTIES, EXPRESS OR IMPLIED (INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE) ARE HEREBY DISCLAIMED. NO VERBAL OR WRITTEN INFORMATION GIVEN BY THOMSON MULTIMEDIA INC., ITS AGENTS OR EMPLOYEES SHALL CREATE A WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THIS WARRANTY.**

- **REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER. THOMSON MULTIMEDIA INC. SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT OR ARISING OUT OF ANY BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT. THIS DISCLAIMER OF WARRANTIES AND LIMITED WARRANTY ARE GOVERNED BY THE LAWS OF THE STATE OF INDIANA. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED TO THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE.**

Product Registration:

- Please complete and mail the Product Registration Card packed with your antenna. It will make it easier to contact you should it ever be necessary. The return of the card is not required for a warranty coverage.

How state law relates to warranty:

- This warranty gives you specific legal rights and you may have other rights that vary from state to state.

If you purchased your product outside the United States:

- This warranty does not apply. See your dealer for warranty information.

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Visit the RCA website at www.rca.com

If your satellite system needs service, please contact your dealer or the nearest Service Center from the telephone book yellow pages. Please do not send any products to the Indianapolis address listed in this manual or on the carton. This will only add delays in service for your product.

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