

## Outdoor Antenna Rotator

### Control Box



### Drive Motor



### Preliminary Testing

Test your antenna rotator before mounting outdoors.

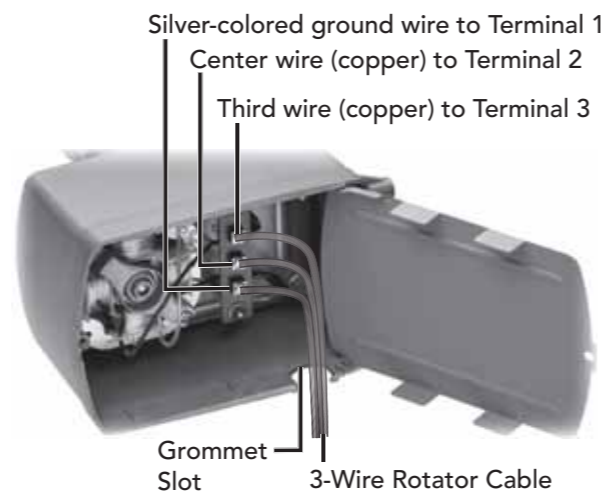
- In your home, temporarily connect the Drive Motor to the control; see steps below.
- Synchronize and test the antenna rotator; see next column.

### Step 1: Installing

Use 20-gauge three-wire rotator cable (not included) to connect the Drive Motor to the control. The instructions in the following two sections include specific references to this **RadioShack** rotator cable. It has a silver-colored ground (or neutral) wire, while the cable's other two wires are copper. If you use another brand of cable to connect your antenna rotator, one of the three wires in the cable should be different in some way—this is the ground (or neutral) wire.

### Wiring the Drive Motor

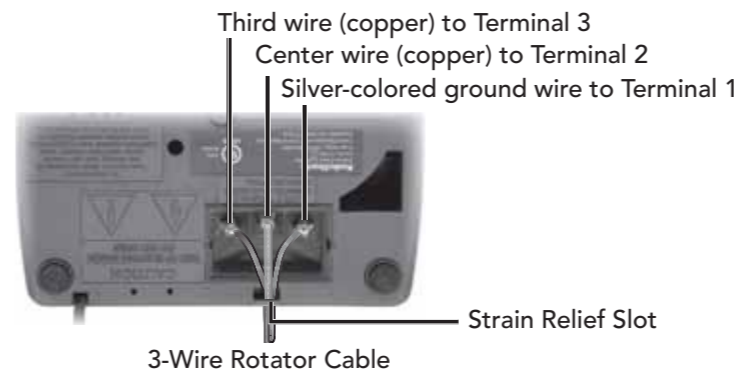
1. Use a screwdriver to remove the screw from the Drive Motor's cover and open the cover.
2. Separate the cable's three wires to about 1½ inches (3.8 cm) down the cable and strip off about ½ inch (1.3 cm) of insulation from each wire.
3. Remove the cable grommet from the housing, then insert the cable's three wires through the grommet.
4. Loosen the three terminal screws, then connect the silver-colored ground wire to Terminal 1, the center wire (copper) to Terminal 2, and the third wire (copper) to Terminal 3.
5. Check the wiring order, then tighten all three terminal screws.



6. Slide the grommet back up the cable, then place the grommet back into its slot in the housing.
7. Close the cover, then secure it with the screw.

### Wiring the Control Box

1. On the other end of the cable, separate the cable's three wires to about 1½ inches (3.8 cm) down the cable and strip off about ½ inch (1.3 cm) of insulation from each wire.
2. Insert the tip of a pen or pencil into the clear cover's notch, lift up the edge, and remove the cover.
3. Run the cable through the strain relief slot on the bottom of the control.
4. Loosen the three terminal screws, then connect the silver-colored ground wire to Terminal 1, the center wire (copper) to Terminal 2, and the third wire (copper) to Terminal 3.



5. Check the wiring order, then tighten all three terminal screws.
6. Replace the clear cover.

**CAUTION:** Be sure there are no loose strands of wire that could short between the terminals.

### Synchronizing and Testing

1. After you wire the Drive Motor to the Control Box, plug the power cord into a standard AC outlet.
2. Turn the Rotator Dial fully clockwise. The red dot on the Rotator Dial slowly moves clockwise and the top of the Drive Motor turns. When the rotator reaches the end of rotation, the top of the Drive Motor stops turning, the Control Box's motor turns off, and the dot stops moving.

**Note:** Depending on the original setting of the Drive Motor, it might stop turning before the motor turns off. If this happens, wait for the red dot to stop moving before you proceed to Step 3.

3. Turn the Rotator Dial fully counterclockwise. The red dot on the Rotator Dial slowly moves clockwise and the top of the Drive Motor turns. When the control's motor turns off and the dot stops moving, the control and the Drive Motor are synchronized.

Set the Rotator Dial to **N** (north) to align the two arrows on the side of the Drive Motor.

**Note:** If the arrows do not align, try Steps 2 and 3 again. If the Drive Motor's arrows still do not align when you set the control's dial to **N**, take the Antenna Rotator to your local **RadioShack** store for assistance.

4. Disconnect the rotator cable from the Control Box so that you can mount the Drive Motor.

Thank you for purchasing your Outdoor Antenna Rotator from **RadioShack**. Turn the dial on the control from inside your home to select an antenna direction and the Drive Motor will turn the antenna to accurately position even the largest TV antenna. Please read this user's guide before installing, setting up and using your new product.

### What's Included

Control	Drive Motor
Plain Nut (4)	Lock Nut (8)
Clamp (Long x 1, Short x 3)	U-Bolt (2)
Channel Markers (84 x 1)	Stud (4)
User's Guide	

### Specifications

Power Source .....	120VAC, 60Hz, 60W, 0.6A
Rotation .....	360°±5°
Rotation Torque .....	120 lbs./Inch (54.4 kg/cm) Min
Rotation Speed .....	0.93 rpm ±0.7 rpm
Motor .....	18VAC
Gear Ratio .....	3100 (±100) to 1
Vertical Load .....	99 lbs. (44.9 kg) Max
Vertical Force Bearing .....	up to 4000 lbs (1814.4 kg)
Wind Load Breaking System .....	up to 70mph (113 kph)
Thrust Bearing .....	loads up to 250 lbs (113.4 kg)
Mast Size .....	1 1/3 to 1 3/4" (3.4 to 4.4 cm) in Diameter

Specifications are subject to change and improvement without notice. Actual product may vary from the images found in this document.

### Limited Warranty

This product is warranted by **RadioShack** against manufacturing defects in material and workmanship under normal use for ninety (90) days from the date of purchase from **RadioShack** company-owned stores and authorized **RadioShack** franchisees and dealers. For complete warranty details and exclusions, check with your local **RadioShack** store.

RadioShack Customer Relations  
300 RadioShack Circle  
Fort Worth, TX 76102

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[www.radioshack.com](http://www.radioshack.com)



Protect the environment by recycling used electronics. Go to [www.ecyclingcentral.com](http://www.ecyclingcentral.com) to find a recycle location near you.

**WARNING:** To reduce the risk of fire or shock hazard, do not expose this product to rain or moisture.



### CAUTION

**RISK OF ELECTRIC SHOCK  
DO NOT OPEN**



**CAUTION:** TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER OR BACK. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.



This symbol is intended to alert you to the presence of un-insulated dangerous voltage within the product's enclosure that might be of sufficient magnitude to constitute a risk of electric shock. Do not open the product's case.



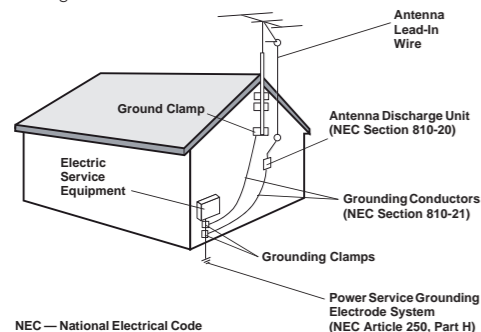
This symbol is intended to inform you that important operating and maintenance instructions are included in the literature accompanying this product.

Over for more instructions →

## Important Safety Instructions

Your antenna rotator, consisting of a control and a drive, has been engineered and manufactured to assure your personal safety. Improper installation or abuse of the rotator, or the antenna connected to it, can result in potential electrical shock hazards. In order not to defeat the safeguards incorporated into the rotator, observe the following basic rules for its installation, use, and servicing.

1. An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal.
2. If the drive unit is installed on an outdoor antenna, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the antenna lead-in wire and drive unit to control unit, interconnecting cables to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.



NEC — National Electrical Code

Power Service Grounding Electrode System (NEC Article 250, Part H)

3. Your control is provided with ventilation openings to allow heat generated during operation to be released. If these openings are blocked, heat build-up can cause failure of the control and external damage. Therefore:
  - Never block the ventilation slots by placing the control on a soft surface, such as a bed, sofa, or rug.
  - Never place the control in a built-in enclosure unless proper ventilation is provided.
  - Never cover the control's openings with cloth or other material.
  - Never place the control near or over radiators, heat registers, amplifiers, or other heat sources.
4. Your control might be equipped with a polarized AC line plug (one blade of the plug is wider than the other). This safety feature allows the plug to fit into the power outlet only one way. Should you be unable to insert the plug fully into the outlet, try reversing the plug. Should it still fail to fit, contact your electrician to replace the obsolete outlet. Do not defeat the safety purpose of the polarized plug.
5. Operate the control only from an AC power source as indicated on the bottom of the control. Do not use DC.
6. Overloaded AC outlets and extension cords are dangerous, and so are frayed power cords and broken plugs. They may result in a shock or fire hazard. Unplug the control and call your service technician for replacement.
7. Do not allow anything to rest on or roll over the power cord, and do not place the control where the power cord is subject to traffic or abuse. Pay particular attention to the cord at the plug and the point where it exits from the control unit. This may result in a shock or fire hazard.
8. All individuals, especially children, should be cautioned about dropping or pushing objects into any openings. Some internal parts carry hazardous voltages and contact can result in electrical shock. Objects dropped into the control may also result in a fire hazard.
9. Never expose the control to rain or water. If it becomes damp or wet, or if liquids are spilled into it, unplug the control and have it inspected by a service technician before further use. Liquids, rain, or excessive moisture may cause electrical shorts which can result in fire or shock hazards. Never operate the control near water (such as a swimming pool, bathtub, sink, or washing machine) or in a wet basement.
10. Unplug the control before cleaning it. Use a slightly damp (not wet) cloth. Do not use an aerosol directly on the control, since it may overspray and cause electrical shock.
11. Whenever the rotator exhibits a distinct change in performance, unplug the control and call your dealer or service technician.
12. Any attempt to disassemble the control or drive portions of the rotator may expose you to high voltage or other hazards. Observe all cautionary labels, warnings, and safeguards.
13. If the control has been dropped or the case has been damaged, fire and shock hazards may exist. Unplug the control and have it checked by a service technician before use.
14. When replacement parts are required, have the service technician verify that the replacement parts have the same safety characteristics as the original parts. Unauthorized substitutions may result in a risk of fire or electric shock, or other risks.
15. Upon completion of any service or repairs to the rotator, please ask the service technician to perform routine safety checks to determine that the rotator is in a safe operating condition.
16. For added protection of the control during a lightning storm or when the control is to be left unattended for an extended period of time, unplug it from the wall outlet and disconnect the drive cable. This will prevent possible shock, fire hazard, and damage to the control due to lightning storms or power line surges.
17. Always use extreme caution when installing a rooftop antenna and drive system to reduce the risk of falls. Wear rubber-soled shoes and use a sturdy ladder. Do not install the antenna or drive system on a windy day or when the roof is wet or covered with ice or snow.

## Step 2: Preparing the Antenna Mast

To install your Antenna Rotator outside, you need two separate masts: a support mast for the Drive Motor and an antenna mast for the antenna itself. The support mast can be whatever length is appropriate. However, before you mount the antenna, cut the antenna mast using the following guidelines. If the antenna is:

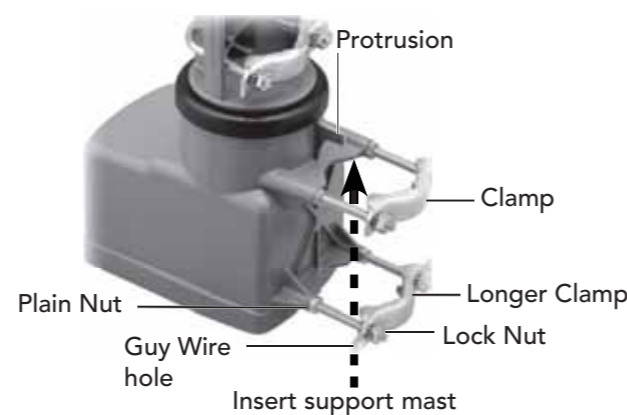
- up to 5 feet (1.5 m) long, the mast length should not exceed 5 feet (1.5 m).
- between 5 and 8 feet (1.5 and 2.4 m) long, the mast length should not exceed 3 feet (0.9 m).
- over 8 feet (2.4 m) long, the mast length should not exceed 2 feet (0.6 m).
- over 8 feet (2.4 m) long with braces, cut the antenna mast 12 inches (0.3 m) below the point where you attach the braces to the mast.

If you mount two antennas to the mast, the mast length should not exceed 4 feet (1.2 m). Mount the small antenna on top of the mast and the larger antenna 12 inches (0.3 m) from the bottom of the mast.

## Step 3: Mounting the Drive Motor

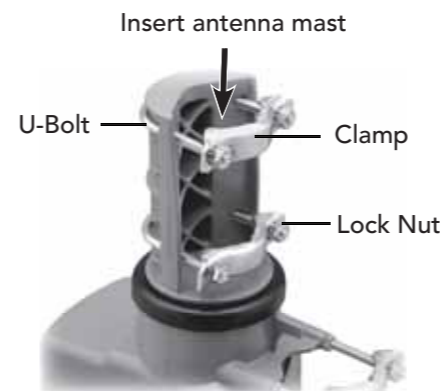
You can mount the Drive Motor on a support mast  $1\frac{1}{8}$  to  $1\frac{3}{4}$  inches (2.9 to 4.4 cm) in diameter. If the mast is over 5 feet long, we recommend using guy wires to secure the mast.

**WARNING:** Select a mounting location where the antenna cannot come in contact with power lines while you install it, and where it cannot fall across power lines if a guy wire should fail.



1. Thread a plain nut over the unslotted end of one of the studs until it is about 1 inch (2.5 cm) from the unslotted end. Screw the stud's unslotted end as far as it will go into one of the Drive Motor housing's holes. Firmly tighten the nut against the housing to secure the stud. Repeat this step with the other three studs.
  2. One of the supplied clamps is longer than the other three. Slide this longer clamp over the lower pair of studs and one of the other clamps over the upper pair of studs. Then, with the toothed side facing the housing, thread a lock nut onto each stud. Leave the clamps loose so you can easily slide the mast behind the clamps.
  3. Slide the Drive Motor onto the support mast until the Drive Motor's protrusion rests on top of the mast.
  4. Use a  $\frac{7}{16}$ -inch (11 mm) wrench to tighten the lock nuts.
- CAUTION:** Overtightening can deform and weaken the mast.
5. If you use guy wires to secure the mast, guide the wires through the lower clamp's two outer holes.

## Step 4: Mounting the Antenna



1. Insert the two U-bolts into the holes in the top portion of the Drive Motor. Slide a clamp over the ends of each U-bolt.
2. With the toothed side facing the housing, thread a lock nut onto each U-bolt end. Leave the clamps loose so you can easily insert the mast.
3. Slide the antenna mast behind the clamps, then rotate the mast until the antenna points north. Tighten the lock nuts.

**CAUTION:** Overtightening can deform and weaken the mast.

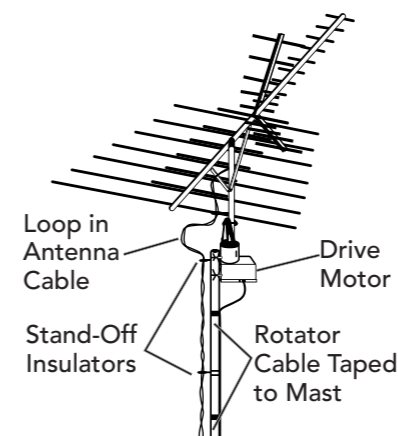
**Note:** When most stations are south of your antenna, point the antenna south. If you do this, remember that the antenna points in the opposite direction from that indicated on the control. Use direction markers (not supplied) to clearly identify the antenna's direction (see "Channel and Direction Markers").

4. Attach the antenna cable to the antenna as described in your antenna's user's guide.

## Step 5: Routing the Cables

Make a generous loop near the Drive Motor to allow full rotation of the antenna.

- If you have 75-ohm coaxial antenna cable, tape the cable directly to the support mast.
- If you have 300 ohm twin-lead antenna cable, attach it to the antenna and support mast using stand-off insulators (not included) about every 4 feet (1.2 m). Twist the cable about four times between each insulator.



Tape the rotator cable directly to the support mast.

Route the antenna cable to your TV and connect it according to the instructions in your antenna's owner's manual. Route the rotator cable from the Drive Motor to the Control Box, then connect it (see "Wiring the Control Box" on the previous page).

## Operation

To rotate the antenna, turn the control's dial to the desired direction. While the antenna rotates, the control's red dot moves, indicating the direction of antenna rotation.

When the antenna reaches the selected direction, it stops.

**CAUTION:** Do not force the Rotator Dial past N in either direction. Doing so might damage the device.

## Channel and Direction Markers

Rotate the antenna to find out which position provides the best signal for each station. Use the supplied channel markers to mark these channels on the Control Box. When you want to watch a particular channel, set the antenna rotator control to the marked setting.

Sometimes heavy winds can move the antenna, thus affecting the reception of the marked channels. If this happens, loosen the clamps' lock nuts, reposition the antenna so it points in the proper direction, then tighten the lock nuts to secure the antenna.

Use direction markers (not supplied) to relabel the control's direction indicators if you pointed your antenna south instead of north. For example, place a "North" marker over the control's S (south) direction indicator.

## Do More with Your Antenna Rotator

Visit your local **RadioShack** store or [radioshack.com](http://radioshack.com) to purchase these and other useful products.



### 100-Ft. Rotator Control Cable

- Conductor rotator cable—easily connect your antenna rotator to your control box
- Color-coded



### 40" Boom Length, 17 Elements Outdoor Antenna for UHF-Only

- Ideal for fringe areas or when UHF and VHF stations are in different directions
- Tuned for precise band coverage



### 3 1/2" Wood Screw Standoffs with Insulators 4-Pack

- Wood screw standoffs with insulators for twin-lead or coaxial TV cable