Outdoor Antenna Rotator

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 1 1/2 inches (3.8 cm) down the cable and strip off about 1/2 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. Replace the clear cover.

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

Wiring the Control Box
1. On the other end of the cable, separate the cable’s three wires to about 1 1/2 inches (3.8 cm) down the cable and strip off about 1/2 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.

Third wire (copper) to Terminal 3
Center wire (copper) to Terminal 2
Silver-colored ground wire to Terminal 1

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 counterclockwise 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.

Over for more instructions
Important Safety Instructions

Your antenna rotor, consisting of a control and a drive, has been engineered and manufactured to meet stringent safety standards. However, if the control or the antenna rotor is not used in the manner described in this manual, it can result in potential electric 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. All controls and the drive unit should not be used under wet conditions or near water. Do not install the antenna or drive system on a windy day or when the roof is wet or covered with ice or snow.

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 surge voltages 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 the control unit interconnecting cables, and grounding clamps. See the appropriate section from NEC - National Electrical Code.

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 an upholstered chair.
   • Never install the control in a built-in enclosure unless proper ventilation is provided.

4. Operate the control only from an AC power source as indicated on the bottom of the control. This safety feature allows the plug to fit into the wall outlet only one way. If the plug does not fit into the outlet, or the plug feels too tight, contact your service technician for replacement.

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 hazard. Ungrounded electrical outlets, extension cords, and plugs are unprotected and may allow dangerous electrical currents to pass through your body.

7. Do not allow anything to rest on or roll over the power cord. Do not place this control where the power cord is subject to traffic or abuse. Heavy objects, liquids, or excessive moisture may cause electrical shorts or damage to the cord at the plug and the point where it exits from the control unit. This may result in a shock hazard.

8. Never place the control near or over a radiator, heat register, amplifiers, or other heat sources. Never place the control in a built-in enclosure unless proper ventilation is provided.

9. 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 wall outlet only one way. If the plug does not fit into the outlet, or the plug feels too tight, contact your service technician for replacement.

10. Operate the control only from a grounded (3-prong) outlet. This safety feature allows the plug to fit into the wall outlet only one way. Some objects dropped into the control may also result in a fire hazard.

11. Whenever the rotator exhibits a distinct change in performance, unplug the control and call your service technician for replacement.

12. Any attempt to disassemble the control or drive portion of the rotor may expose you to high voltage or other hazards. Observe all customary labels, warnings, and safeguards.

13. If the control has been dropped or the case has been damaged, inspect it for fire and shock hazards. 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 impair the safety of the antenna rotor.

15. Upon completion of any service or repairs to the rotator, please ask the service technician to perform routine checks to ensure 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, unplug the rotator cable from the Drive Motor and the Control Box, then connect it (see “Wiring the Control Box” on the previous page).

17. Always use extreme caution when installing a rooftop antenna and drive system to avoid the risk of fires. Wear rubber-soled shoes and avoid touching any metal objects. Turn off the TV and disconnect the rotator 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 6 feet (1.5 and 2.4 m) long, the mast length should not exceed 5 feet 3 feet (1.7 m).
   • over 8 feet (2.4 m) long, the mast length should not exceed 2 feet 6 inches (0.6 m).
   • over 8 feet (2.4 m) long with braces, cut the antenna mast 12 inches (3 m) below the point where you attach the braces to the mast.

If you mount two antenna masts to the rotator mast, the 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 1½ to 1¾ 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.

Step 4: Mounting the Antenna
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. With the toothed side facing the housing, thread a lock nut onto each U-bolt. 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 “Direction 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.

1. If you have 75-ohm coaxial antenna cable, tape the cable directly to the support mast.

2. 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 cables together to reinforce them.

3. Route the cable between each insulator.

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 rotor 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 clamp’s lock nuts, reposition the antenna so it points in the proper direction, then tighten the lock nuts to secure the antenna.

Do More with Your Antenna Rotator
Visit your local RadioShack store or radioshack.com to purchase these and other useful products.

100-Ft. Rotator Control Cable
• Conductor rotate cable easily—connect your antenna rotor 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

3½” Wood Screw Standoffs with Insulators 4-Pack
• Wood screw standoffs with insulators for twin-lead or coaxial TV cable

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