

# HDTV ROTATOR

## MODEL ROTR100

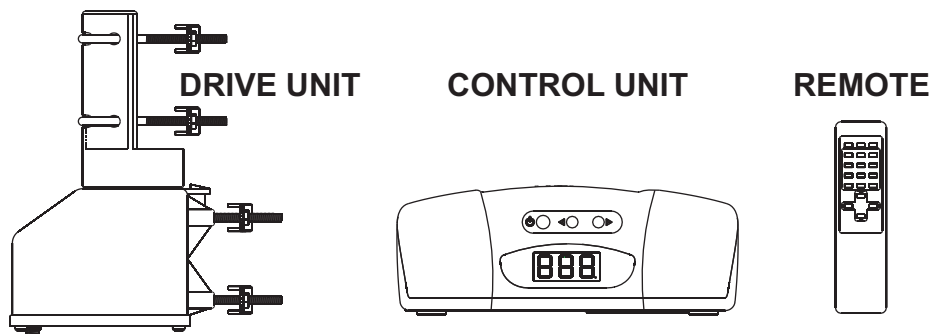
### INSTALLATION GUIDE

#### ONE-CABLE OFF-AIR ANTENNA ROTATOR AND CONTROLLER

MADE IN CHINA

#### ROTR100 INCLUDED PARTS:

- (1) DRIVE UNIT
- (1) CONTROL UNIT
- (1) REMOTE CONTROL  
(2 AA BATTERIES INCLUDED)



**NOTE: Length of antenna boom may not exceed 131"**

#### SPECIFICATIONS

Rotation Time	60 seconds (max) for 360 deg
Total Rotation	450 deg (1.25 rotations)
Motor Voltage	+18VDC
Motor Current	350 mA (max)
Mechanical Torque	120 inch-lbs
Return Accuracy	2 deg
Position Sensor	Hall sensor
Signaling Format	DiSEqC 1.2
Pre-amplifier Power	+17VDC at 50mA (max) when used (See notes, Page 6)
Attenuation - Drive Unit	1dB (max) 54-806MHz
Attenuation - Control Unit	1dB (max) 54-806MHz
Input Power	120VAC, 20W
<u>Coax Cable Length</u>	<b>200' (max) RG-6 solid copper center conductor (with no pre-amplifier), 150' (max) as above, but with an 80mA pre-amplifier (See notes, Page 6), 75' (max) RG-6 copper covered steel (with no pre-amplifier)</b>
Remote Control Codes	Compatible with many Universal Controllers (See Remote Control Commands, Page 8)

*The above specifications are typical and subject to normal manufacturing and service tolerances. These specifications are subject to change without notice.*

#### INSTALLATION GUIDE

##### VERIFYING ROTATOR OPERATION AND PREPARING FOR INSTALLATION

It is most convenient to make yourself familiar with the operation of the rotator from the comfort of your living room, rather than after installation.

- Unpack the Drive Unit, the Controller and the Handheld Remote Control .
- Install batteries in the Remote Control.
- Connect a short piece of coaxial cable from the controller's "ROTATOR" jack to the drive unit's "FROM CONTROLLER" JACK.
- Plug the controller into a 120VAC power source.
- Switch the unit on.
- Set the unit to 000 degrees by performing a "RESYNCHRONIZATION" as outlined in that section.
- Ensure that the North mark on the body is aligned with the arrow on rotating shaft (+/- 3 deg).
- Make yourself familiar with the available functions - see Remote Control Commands (Page 7).
- Return the unit to 000 degrees in preparation for installation.

**NOTE: Before proceeding to roof, see Rotator Drive Units Assembly, Page 2.**

## ROTATOR DRIVE UNIT ASSEMBLY AND INSTALLATION

- Ensure the controller is set to 000 degrees (North). Ensure that the drive unit's arrow and North line are aligned.
- Switch off and unplug from 120VAC for the duration of the installation process.
- First ensure that the proposed location of the rotator, antenna masts and the antenna are well clear of any overhead power lines. (Refer to the Antenna Installation Safety Sheet, normally supplied with an off-air antenna.)
- Ensure the antenna mast is perfectly vertical prior to installation.
- Attach the Rotator to the mast by installing the four bolts ④ and tightening the two C-clamps ② evenly, using the four nuts ③. See Fig 2
- Attach the antenna to the rotator using a very short (approx 12 inch) stub mast and the two U-bolts ①. Tighten the two C-clamps ② evenly, using the nuts ③. Use the shortest possible stub-mast to minimize wind loading. See Fig 3
- Make certain the small end of the antenna is pointing in the direction of the arrow and North line.
- Secure the completed assembly to fixed mast and align with the antenna pointing NORTH.

### Assembly Diagram

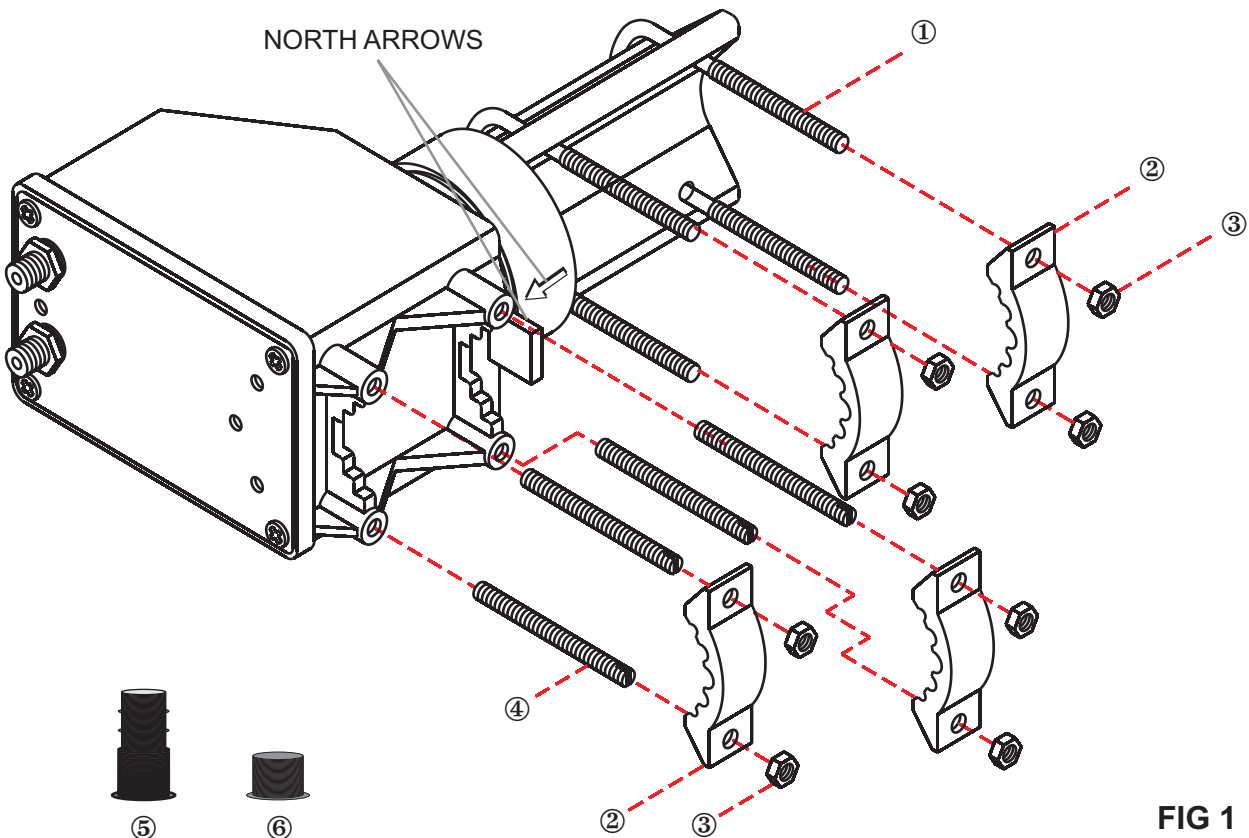


FIG 1

#### Contents

		QTY
①	U-Bolt, 1/4-20UNC	2PC
②	C-Clamp	4PC
③	Nut, 1/4-20UNC	8PC
④	Bolt, 1/4-20UNCX70L	4PC
⑤	Rubber Cable Boot	2PC
⑥	Rubber Blanking Boot	1PC

**CAUTION:** Installation of this product near power lines is dangerous. This product and attached antenna must be installed well clear of any overhead power lines. Failure to do so could lead to severe injury or even death.

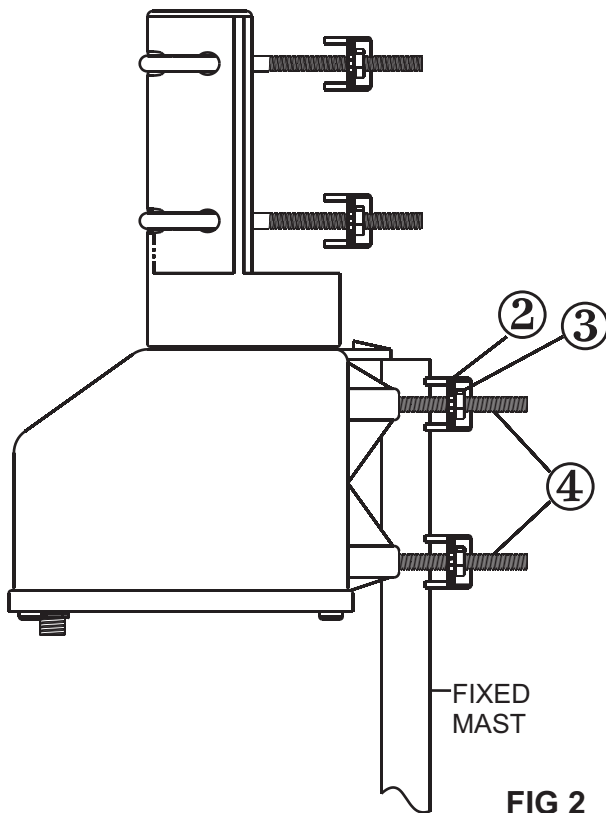


FIG 2

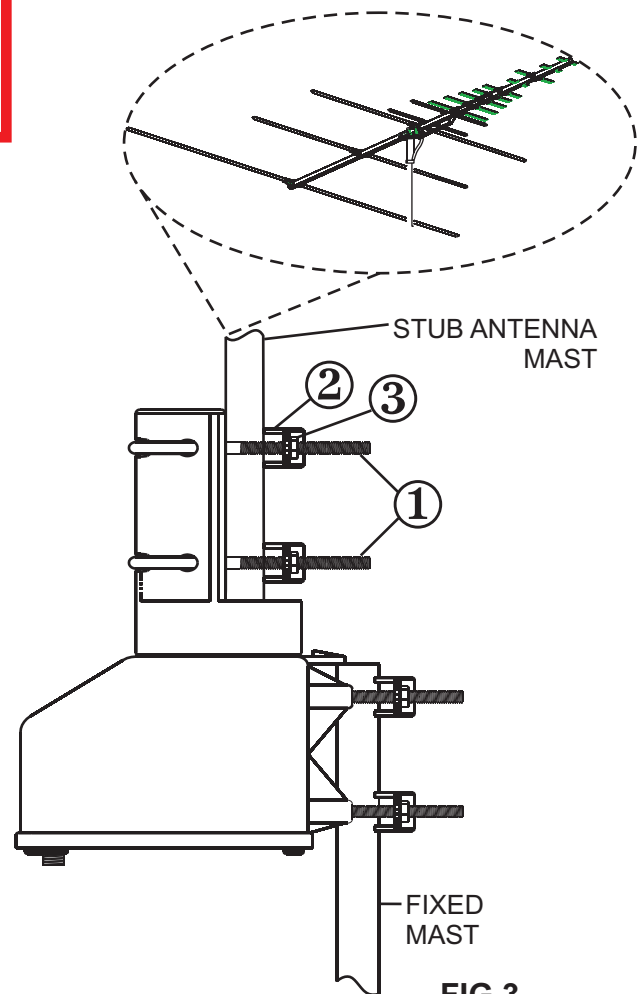


FIG 3

## COAX CABLE CONNECTIONS

Prior to making these connections, unplug the rotator controller and receiving equipment from 120 VAC power source. **Install rubber boots onto cable attaching connectors.**

### 1. USING THE ANTENNA COAX CABLE FOR ROTATOR POWER / CONTROL.

This unit is designed to be capable of using the same coax cable for passing both received VHF/UHF signals and providing rotator power and control. (See Fig 4)

- Connect the antenna to the drive unit's "TO ANTENNA" jack using a sufficient length of coax cable to allow for mast rotation (1.25 turns) and a rain-drip loop.
- Connect the drive unit "FROM CONTROLLER" jack to the indoor controller via the main coax download.

Due to voltage drops, the maximum coax cable length is 200' with solid copper conductor RG-6/U coax, or 75' with copper covered steel conductor RG-6/U coax cable.

If it is desired to use a preamplifier, see below.

### Using A Preamplifier Or Amplified Antenna

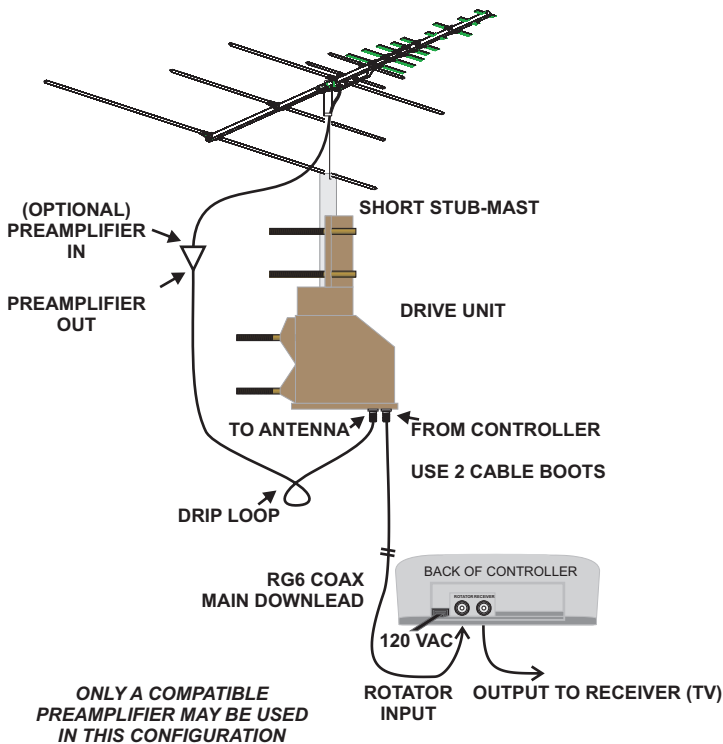
- Only a suitable preamplifier designed for powering by +17 VDC at less than 50mA may be inserted between the antenna and drive unit's "TO ANTENNA" jack. Contact Pro Brand for a suitable preamplifier.
- The preamplifier is powered from the rotator controller.
- When using a preamplifier that does not conform to the above specification, or where it is desired to use separate rotator and antenna cables, see **USING SEPARATE COAX CABLES FOR THE ANTENNA AND THE ROTATOR** Page 4.

## 2. USING SEPARATE COAX CABLES FOR THE ANTENNA AND THE ROTATOR.

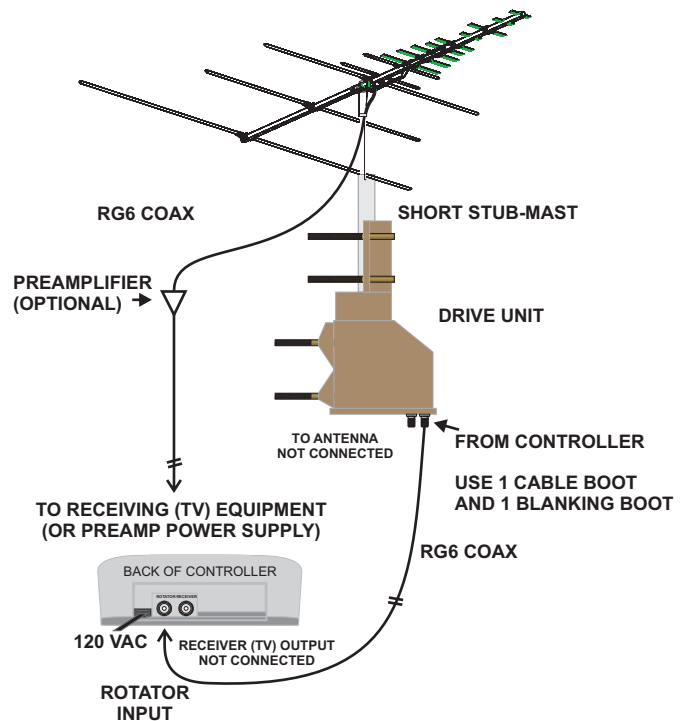
If it is NOT desired to use the rotator's power coax for passing VHF/UHF signals, or it is desired to use a preamplifier that does NOT conform to the specification of +17 VDC at less than 50mA power, then a separate coax cables must be used for the signal feed and rotator power/control feed.

See Fig 5

- Install a separate VHF/UHF signal coax cable for the antenna (and pre-amp, if used).
- Do not connect anything to the drive unit's "TO ANTENNA" jack, but do install the supplied, rubber blanking weather boot.
- Do not connect anything to the controller's "RECEIVER" jack.



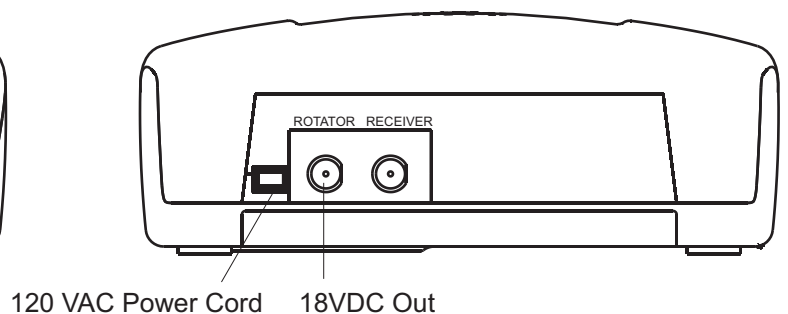
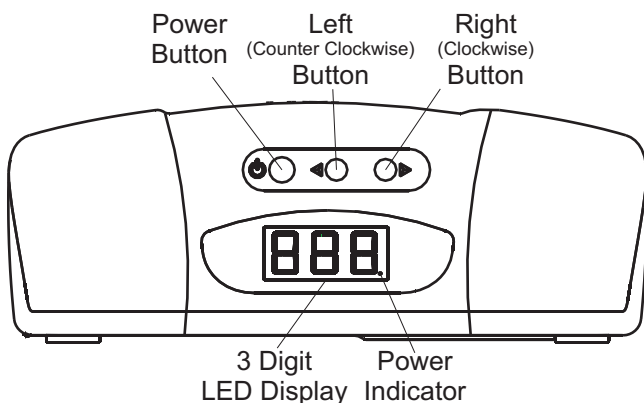
**FIG 4:**  
SINGLE COAX CABLE INSTALLATION WITH  
COMPATIBLE PREAMPLIFIER



**FIG 5:**  
SEPARATE ROTATOR AND ANTENNA  
CABLE INSTALLATION

## INSTALLING THE CONTROLLER

- Install the controller within range of the infra-red handheld remote control.
- Connect as shown in Fig 4 or Fig 5.



## **OPERATING THE SYSTEM**

### **POWERING THE SYSTEM**

- Plug the control unit in to the 120 VAC power source. This puts the unit into OFF/STANDBY mode. Note the green LED on the display.
- Press the POWER button to switch the unit on. The display will indicate the current position, e.g. "186" degrees; or the current channel, e.g. "P27".
- Switch the unit OFF by pressing the POWER button again.
- When the unit is OFF, only the POWER button is functional.

### **MOVING THE ANTENNA MANUALLY**

- Press the LEFT arrow to make the antenna turn counter-clockwise, or the RIGHT arrow to make the antenna turn clockwise. When the rotator is turning, the display will indicate the digital compass angle position.
- When 000 has been reached, pressing the left arrow will have no effect; similarly when 450 has been reached, pressing the right arrow will have no effect.
- Note that a single, quick press of left or right will move the antenna approximately 1 degree. Rotation speed is approximately 6 degrees per second (or one minute per rotation).

### **MOVING THE ANTENNA DIRECTLY TO A DIGITAL COMPASS LOCATION**

- You may turn the antenna directly to a digital compass location by pressing 3 digits in sequence on the remote.
- The 3 digits will normally be in the range 000 to 360; but may be 000 to 450 (see minimizing rotation time).
- For example, press "090" to point east, press "180" to point south, "270" to point west, "000" or "360" to point north.

### **MINIMIZING ROTATION TIME**

Note that the rotator is capable of turning 450 degrees, even though only 360 deg is needed to cover all possible directions.

The reason for this feature is to minimize rotation time when the most frequently used locations are slightly either side of north, e.g. north-west (315 deg) and north-east (045 deg).

000 deg is the same position as 360 deg. 090 deg is the same position as 450 deg, etc.

For example, if north-west and north-east are the most common locations, then use 405 deg for north-east (not 045 deg).

### **STORING A DIGITAL COMPASS LOCATION**

- First optimize the antenna position manually using the left and right buttons on the remote.
- Decide what preset number you wish to give to the location. It is convenient to assign locations the same number as the TV channel number. Note that the preset channel number range is from "01" to "99". Do NOT use "00" as that is reserved for other functions.
- For example, to store a location as Position 07, press "STORE; 07; STORE". That position is now stored.

### **MOVING THE ANTENNA TO A STORED LOCATION**

- Press the RECALL key followed by the two digit stored location, e.g. "RECALL 07". The rotator will start turning to the stored location.

### **MOVING THE ANTENNA BETWEEN STORED LOCATIONS**

- You may move the rotator between stored locations by pressing the UP or DOWN keys.
- The display will cycle through the stored locations, e.g. "P08, P13, P22, P35".
- The rotator will only start moving after the key has been released for half a second.

## **DELETING A SINGLE STORED LOCATION**

- For example to delete stored location “07”, press “DELETE; 07; DELETE”.
- The display will then count down “5, 4, 3, 2, 1, 0”. During that countdown you have chance to cancel the command by pressing ESCape.

## **DELETING ALL STORED LOCATIONS**

- To delete all stored locations, press “DELETE; 00; DELETE”.
- The display will then count down “10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0”. During that countdown you have chance to cancel the command by pressing ESCape.

## **TOTAL RESET COMMAND**

- In the highly unlikely event that the software becomes “locked-up”, it is possible to reset all data in the unit's memories. This is achieved by pressing “DELETE; 00; STORE”.
- The display will then count down “10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0”. During that countdown you have chance to cancel the command by pressing ESCape.
- After this command, it will be necessary to set up and store all desired locations.

## **RESYNCHRONIZATION**

- This is performed when the antenna is first installed. Normally, further resynchronization is not needed. However, in the most severe conditions of wind and heavy loading it may become necessary.
- Resynchronization is achieved by pressing “STORE; 00; STORE”.
- The display will then count down “10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0”. During that countdown you have chance to cancel the command by pressing ESCape.
- The rotator performs a synchronization sequence, then turns to 000.

## **ESCape KEY**

- For command involving multiple button presses, if the ESCape key is pressed before the final key press, previous keyed inputs are cancelled.
- A rotation to either a preset location or a digital compass location may be cancelled during the rotation by pressing the ESCape key. The display will then show the digital compass angle location.

## **NOTES**

### **INITIAL POWERING**

When the rotator is first powered, it may turn immediately. This action is caused by a power interruption after the previous command, but before it is completed. This is to keep the antenna position synchronized with the position displayed on the controller.

### **DISPLAY BLINKING**

When the rotator is turning (display is blinking), the system will not process commands entered though the controller except for an ESCape command to stop the rotation.

### **COAX CABLE TYPE**

Do not use coax cable with a copper covered steel center conductor as it has approximately three times the DC resistance of coax with solid copper center conductor.

### **AUTOMATIC PRE-AMPLIFIER POWER**

If a DC short is present or if maximum pre-amplifier current is exceeded the pre-amplifier power will automatically switch off. To restore pre-amplifier power, perform a “hard reset” (unplug and plug it back in).

### **GROUNDING**

In order to provide increased immunity against lightning related static and surge conditions, the coax cable may pass through a well specified grounding block at the entrance to the house/building. The grounding block case is closely connected to a nearby ground rod.

Follow the antenna manufacturer's instructions and local electrical codes.



## REMOTE CONTROL KEYS

### POWER:

Switch Controller between stand-by and ready.

### 0 - 9 numeric keys:

Used for moving to, or storing desired location numbers and direction angles

### ESC:

Cancel current operation or programming mode.  
Stop antenna moving.

### ◀ or ▶ :

Manually move the antenna clockwise or counter clockwise.

### ▲ or ▼ :

Move between saved locations.

### Store:

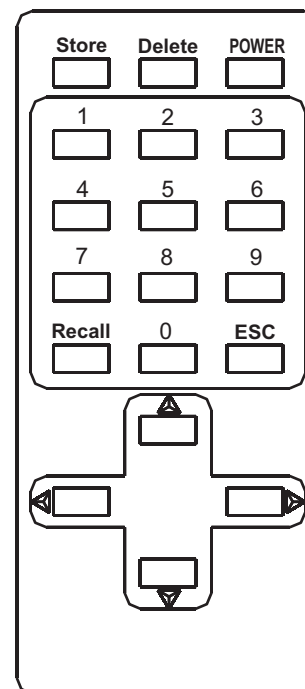
Save current location as a designated position.

### Delete:

Deleting a single stored location or all stored locations.

### Recall:

Recall a saved antenna position.



## REMOTE CONTROL COMMANDS:

(xx = 01 to 99)

### Store a memory location:

**STORE xx STORE**

### Move to a memory location:

**RECALL xx**

or: **UP / DOWN**

### Move to an angle:

**abc (abc = 000 to 450)**

or: **LEFT / RIGHT**

### Delete a memory location:

**DELETE xx DELETE**

### Delete all memory locations:

**DELETE 00 DELETE**

### Resynchronization:

**STORE 00 STORE**

### Total reset:

**DELETE 00 STORE**

### Cancel a command:

**ESCape**

## USING A UNIVERSAL REMOTE CONTROL

There is a limited compatibility with many Universal Remote Controls. The rotator may emulate a Toshiba satellite receiver. It will normally be necessary to program the rotator using the original remote control. The Universal Control will usually offer the basic functions of Power and Channel (programmed position) UP/DOWN.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for Help.



**CAUTION: Installation of this product near power lines is dangerous. This product and attached antenna must be installed well clear of any overhead power lines. Failure to do so could lead to severe injury or even death.**

### ONE YEAR LIMITED WARRANTY

Pro Brand International, Inc. (PBI) warrants this Eagle Aspen product against any defects in materials or workmanship within 1 (one) year from date of purchase. No warranty claim will be honored unless at the time the claim is made, you present proof of purchase to an authorized PBI dealer (if unknown, please contact Pro Brand International, Inc, 1900 West Oak Circle, Marietta GA, 30062, Telephone 770-423-7072).

PBI (at its option) will either repair or replace the defective product at no charge to you. This warranty covers parts, but does not cover any costs incurred in removal, shipping or reinstallation of the product. This limited warranty does not apply if the product is damaged, deteriorates, malfunctions or fails from: misuse, improper installation, abuse, neglect, accident, tampering, modification of the product as originally manufactured by PBI, usage not in accordance with product instructions or acts of nature such as damage caused by wind, lightning, ice or corrosive environments such as salt spray and acid rain.

The 1 Year Warranty is provided on the condition that the equipment is properly delivered with all handling and freight charges prepaid to your PBI distributor for return to our factory for repair or replacement. PBI distributors will arrange for the replacement or repair and return to you without charge the product which failed due to defective material or workmanship.

PBI WILL NOT ASSUME ANY LIABILITIES FOR ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, MADE BY ANY OTHER PERSON.

ALL OTHER WARRANTIES WHETHER EXPRESS, IMPLIED OR STATUTORY INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY ARE LIMITED TO THE 1-YEAR PERIOD OF THIS WARRANTY.

The foregoing shall be the sole and exclusive remedy of any person, whether in contract, tort or otherwise, and PBI shall not be liable for incidental or consequential damage or commercial loss, or from any other loss or damage except as set forth above.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion of limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

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