

OWNER'S MANUAL



**THIS MANUAL CONTAINS
INSTRUCTIONS FOR:**

- INSTALLATION
- LOCATE THE SATELLITE
- OPERATION
- TROUBLESHOOTING
- EXPLODED PARTS DRAWING
- WARRANTY

AntennaTek, Inc.

425 S. Bowen, #4

P.O.Box 851

Longmont, CO 80502-0851

www.antennatek.com

(303)772-9591

SECTION I INSTALLATION

CONTENTS FOR ALL MODELS

Qty. Description

1	Dish or reflector
1	LNB with single output
1	Lift assembly
1	15' Coaxial cable
1	Ceiling plate
1	Rotation handle
1	Elevation handle assembly
10	#8x1" Round head sheet metal screws
4	#8X3/4" Round head screws
1	Spring
1	Washer
4	1/4" x 1/2" Carriage screw
4	1/4" Nut

MODEL: MSS 20

2	15' Coaxial cable
1	LNB with dual output(no single output)

TOOLS REQUIRED:

Mechanical Installation

- Electric drill.
- Drill bits: 1/16" and 1/2" Dia.
- 1-1/2" Diameter hole saw
- Phillips Screwdriver
- Hex nut driver
- Extension cord
- Combination wrenches (2)
- Tape measure or ruler
- Hacksaw
- Pliers or vise grips

Supplies

- Non-hardening caulking compound or silicone

1. Installation Planning

A. Pre-wired Vehicles:

Follow the instructions in this manual in conjunction with the RV manufacturer's recommendations to locate and install the lift assembly.

B. All other Vehicles:

Location of the lift assembly must allow dish to point towards the rear of the vehicle when resting in the travel position, and must clear all roof mounted equipment when being raised, lowered or rotated. The roof should be flat and not be more than 5.0" thick. If the roof is not flat you may need a roof wedge. If the roof

is more than 5.0" , you may need an extention kit. Both items are available as options.

The inside ceiling must be clear of obstructions to ceiling plate and handle.

For the cleanest installation, it is recommended that the coaxial cable enter through the roof and be hidden inside a closet or cupboard.

Locating the lift assembly close to the satellite receiver will simplify the installation.

WARNING !!! READ BEFORE INSTALLING

- Electricity Kills!!! Power lines may be overhead. Care must be taken when installing or raising the dish and lift assembly. Before drilling, care must be taken not to damage any wiring that may be located between the vehicle roof and ceiling.

- You will damage your system and void your warranty if:

You drive your vehicle with the dish in raised or partially raised position

Lower the dish with the pointers on the ceiling plate and rotation handle misaligned

2. Installation

Step 1: Tape the drill template to the roof of the vehicle in the position where the lift assembly will be installed.

Note: The arrow must point towards the rear of the vehicle. 30" of rearward clearance is required.

Step 2: Using a 1-1/2" diameter hole saw, cut a hole through the roof and ceiling for the center shaft.

Step 3: Drill ten mounting screw holes 1/16" diameter, approximately 1" deep.

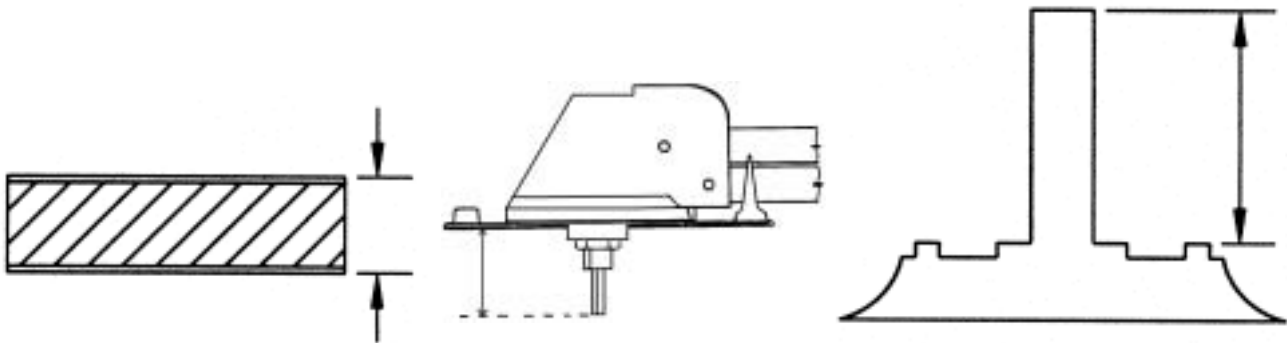
Step 4: Select the location and drill one 1/2" diameter hole through the roof only for the coaxial cable. Remove drill template and clean around mounting area.

Step 5: Measure the thickness of the roof. Using the table and illustrations below, cut the elevation shaft and rotation handle to the correct length for the vehicle's roof.

Step 6: Caulk the bottom of the baseplate with a liberal amount of non-hardening sealing compound, then position and attach the lift assembly to the roof with ten #8x1" round head full threaded sheet metal screws. Use one of the screws to tighten the coaxial cable with the cable clamp. Cover all screws with sealing compound. Keep sealing compound away from the surface between base plate and pivot plate to avoid any resistance while you rotate the dish.

Failure to caulk the base plate correctly will result in water leaking into your vehicle.

If the location you selected to install the lift assembly is not level you need to use a roof wedge between the base plate and the roof to keep the dish leveled. When using the roof wedge, caulk the grooved side with sealing compound and place that side on the roof. In addition caulk the bottom of the base plate as described above. The roof wedge is an optional item sold separate.



Roof Thickness	Elev. Shaft Length	Rot. Handle
1" Min.	2 1/4"	1/2"
1 1/2"	2 3/4"	1"
2"	3 1/4"	1 1/2"
2 1/2"	3 3/4"	2"
3"	4 1/4"	2 1/2"
3 1/2"	4 3/4"	3"
4"	5 1/4"	3 1/2"
4 1/2"	5 3/4"	4"
5"	6 1/4" Max	NO CHANGE

NOTE: Make sure there is adequate cable available for free rotation of the dish.

Center the roof protection plate 7 1/4" from the rear of the base plate, peel the protective backing from the double-sided tape and press firmly onto the roof.

Step 7: Mount dish to the lift assembly using four 1/4"x1/2" bolts.

Step 8: Connect the 15' coaxial cable to the LNB cable and tighten. Feed the cable through the 1/2" hole into the inside of the vehicle. Seal around the hole and the cable with liberal amount of sealant to prevent water leak. Route the cable to the satellite receiver location.

Step 9: Locate the ceiling plate over the rotation handle with pointers aligned and slide assembly over shaft in ceiling. Mark hole positions and remove rotation handle. Mount ceiling plate in place using four #8x3/4" round

head screws.

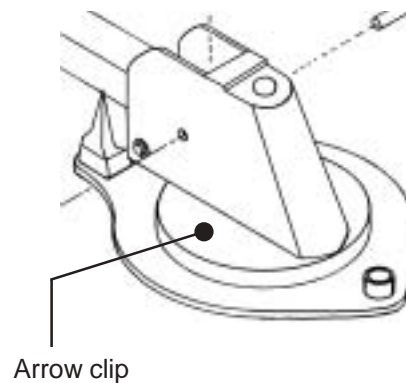
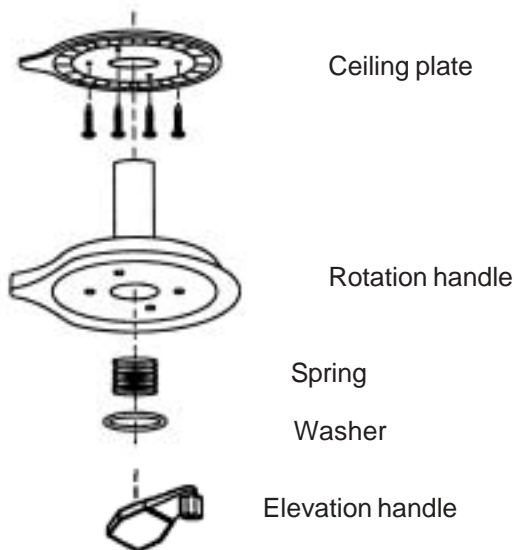
Step 10: Assemble rotation handle, spring, washer and elevating handle (See illustration). Slide all parts over shaft and tighten the screw in the elevation handle.

Step 11: Operate the lift and rotate mechanisms to check for correct operation (See Section II - Operating Instructions).

Step 12: Connect the coaxial cable from the LNB to the connector marked "SATELLITE IN" on the rear of the satellite receiver. Attach a coaxial cable to the connector marked "VHF (SAT) UHF" on the rear of the satellite receiver and connect to the television set. If you have an off air TV antenna, attach the coaxial cable from the antenna to the connector marked "IN FROM ANTENNA" on the rear of the satellite receiver. When the satellite receiver is ON, you can watch the satellite channels. When the satellite receiver is OFF, you can watch the OFF AIR channels.

MAINTENANCE:

Lubricate the gears and the "O" ring on the elevating shaft assembly at least twice yearly or as required. With the dish in the down position remove the 7/8-14 plug and spray a liberal amount of silicon lubricant on the gears and the "O" ring. Install the 7/8-14 plug. Remove the arrow clip on the gear housing and spray silicon lubricant into the hole. Install the arrow clip.



SECTION II LOCATING THE SATELLITE

To Locate The Satellite

1. Turn on the receiver and the TV. Select a TV station. Raise the dish all the way up by turning the elevation handle clockwise approximately 17 turns while in travel position. Resistance will be felt when dish is all the way up.

Note: The pointer on the rotation handle indicates the direction of the dish. One full turn corresponds to approximately 7 degrees of elevation change.

2. Turn the elevation handle counter clockwise (ccw) the number of turns indicated in the table below to get the elevation for your location.

3. Pull the rotation handle down and rotate the dish towards south until picture appears on TV set. Sweep dish slowly side to side to maximize signal strength. If necessary change the elevation by 1/4 turn increments.

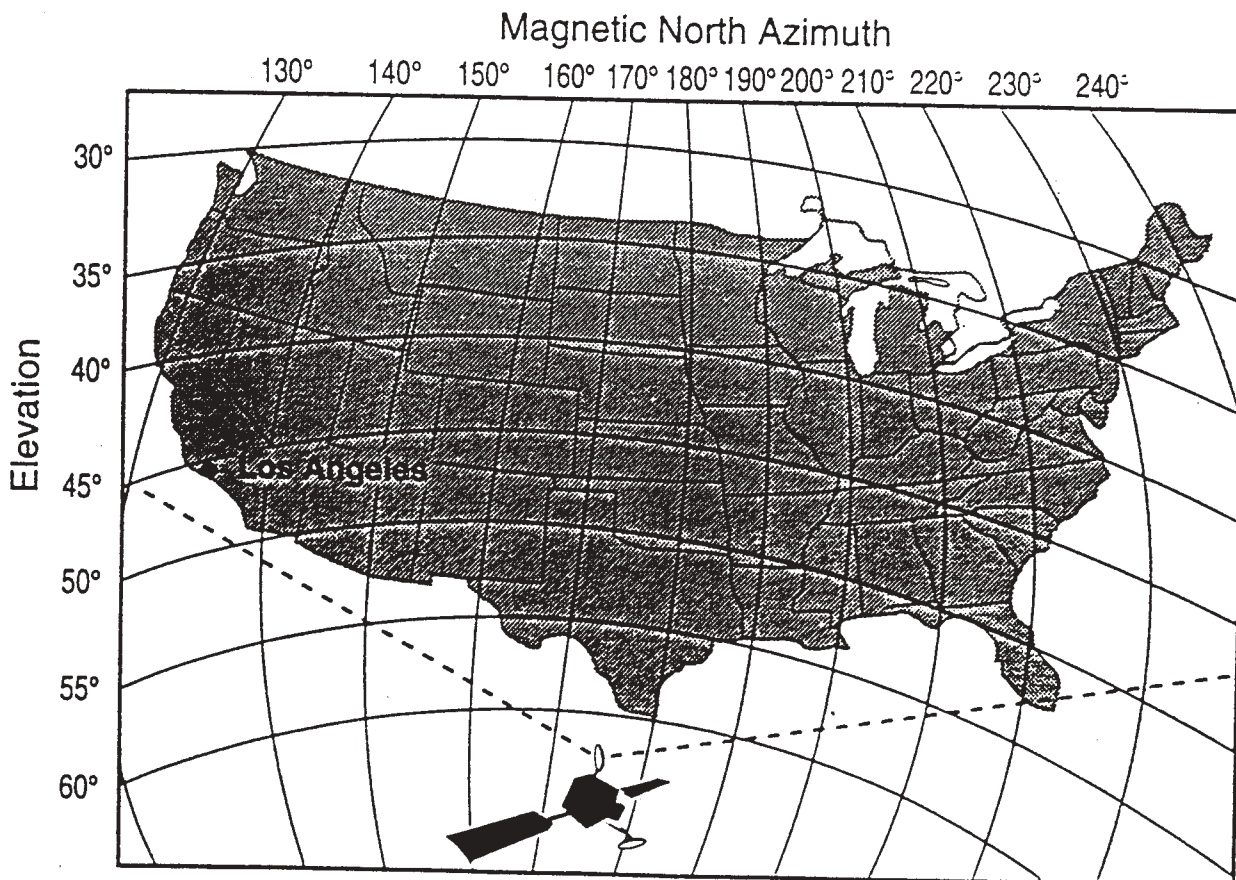
Note: Some receivers display the signal strength on the

TV set. You can use this option to maximize the signal strength by sweeping the dish from side to side.

Satellite finders, sold as an optional item, can also indicate the signal strength.

If you get a strong signal on your satellite finder but not picture on the TV you have locked onto the wrong satellite (DISH NET is 10 degrees west of DIRECT TV).

Approximate Elevation	# of Turns ccw
60	0
53	1.0
46	2.0
39	3.0
32	4.0



SECTION III OPERATION

1. To Raise & Rotate Dish

Warning: *Vehicle must not be driven with dish in raised or partially raised position. Worm gear or worm may break as a result.*

A : Rotate elevation handle clockwise approximately 17 turns to raise the dish all the way up(resistance will be felt in the handle when dish is all the way up).

B: Rotate elevation handle counterclockwise to lower the dish to the desired position.

C: Pull rotation handle down to disengage gear from ceiling plate and rotate dish to desired position based on the geographical location.

2. To Lower Dish

A: Pull rotation handle down to disengage gear from ceiling plate and rotate the dish until the pointer on the ceiling plate is aligned with the pointer on the rotation handle. Rotate elevation handle counterclockwise until you hear the dish touch the roof (resistance will be felt in the handle).

WARNING: *Lowering the dish with the pointers misaligned will damage the gears , elevating handle or gear housing.*

B: Turn the power on your receiver and TV off.

WARNING !!! **Align the pointers on the ceiling plate and rotation handle before you lower the Dish**

SECTION IV TROUBLESHOOTING

Elevation handle turns, but dish does not raise or lower.

Handle loose
Stripped gears

Tighten screw
Replace gears

Dish will not rotate

Rotation handle engaged to ceiling plate
Obstruction when raised
Excessive caulking between base plate and pivot plate
Friction adjustment

Pull down to disengage from ceiling plate
Remove obstruction
Remove extra caulking

Adjust center lock nut using a 15/16" deep socket

Picture not clear
Note: Signals may be interfered with or blocked if the dish is too close to obstructions such as buildings or trees.

Dish or vehicle position
Television
Cables

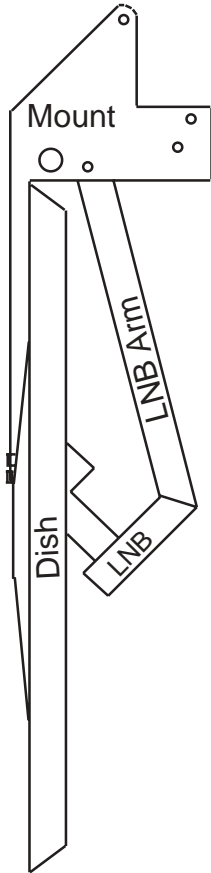
Change dish elevation 1/4 turn
See installation steps 13 & 14
Move vehicle
See "Locate the satellite" steps 1 through 3

Water leaks through the center shaft into the vehicle

Base plate not caulked correctly
Missing O-ring
Loosen center lock nut

Remove lift ASM from roof and caulk correctly
Install O-ring
Adjust center lock nut using a 15/16" deep socket

SECTION V EXPLODED PARTS DIAGRAM

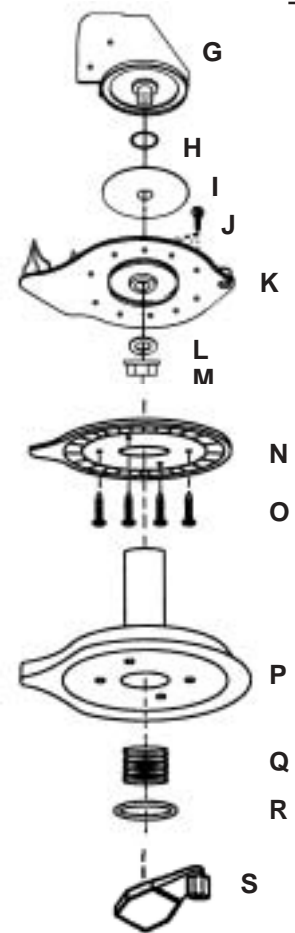
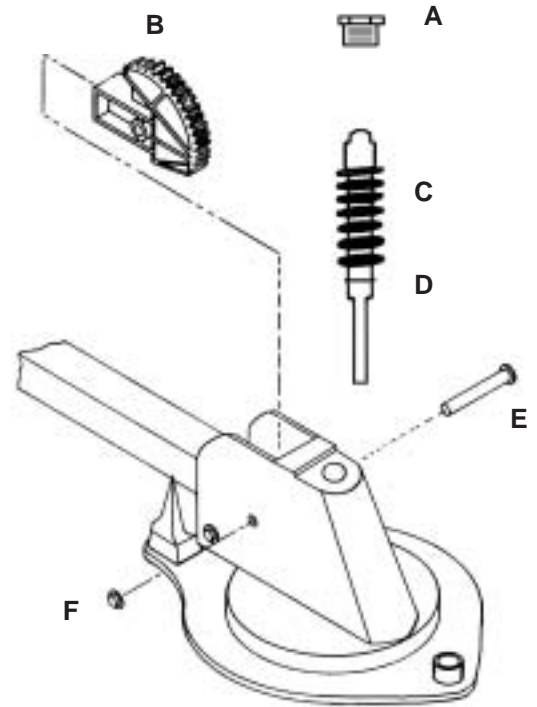


- A 7/8-14 Nylon Plug 065614
- B Worm Gear 065563
- C Elev. Shaft asm 065640
- D Small O-Ring 065568
- E 1/4"x 2 1/2" Bolt 030062
- F 1/4" Nut 030064
- G Gear Housing 065610
- H Large O-Ring 065569
- I Disc washer 065561C
- J #10x1" Screw 065581
- K Base Plate 065551C
- L 3/4" Washer 065660C
- M 3/4-16 Nylon Nut 065612
- N Ceiling plate 065651
- O #8x3/4" Screw 065574
- P Rotation Handle 065656
- Q Sprin 030280
- R Washer 065659
- S Elev. Handle 065542

Gear Kit: P/N 019605 contains
 1 065563
 1 065640
 1 065568
 1 065614

Distributors:

- Arrow Distributing (800) 228-1001
- Coast Distribution (800) 495-5858
- DTI (800) 289-0919
- AntennaTek (888) 349-8303



Sold
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SECTION VI WARRANTY

Know your rights and responsibilities before operating this product! Please read the "limited warranty" provided below carefully. Improper operation and maintenance, abuse, neglect, etc. will void your warranty.

AntennaTek, Inc. LIMITED WARRANTY

1. Duration:

- A. Satellite Antenna and lift : One year(365 days) from date of purchase.
- B. LNB : 90 days from the date of purchase.

2. Who gives the warranty?

AntennaTek, Inc. (the "Company")

3. Who receives this warranty?

The original purchaser (the "Purchaser"), other than for the purpose of resale.

4. What is covered under this warranty?

- A. Repair or replacement at no charge, parts found by the Company to be defective, provided that the Company receives notice of the defect within the duration of the warranty.
- B. Payment of reasonable freight charges incurred to repair or replace the defective part, as pre-authorized by the Company via an "Authorization to Return" form. Expedited shipment or shipment other than that offered by the Company is available as an optional, customer paid service.

5. What is not covered under this warranty?

A. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THE WARRANTY. LIABILITY FOR INDIRECT OR CONSEQUENTIAL DAMAGES FOR ANY INCIDENTAL EXPENSES, UNDER ANY AND ALL WARRANTIES IS EXCLUDED.

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

B. Any failure that results from accident, purchaser's abuse, neglect, improper maintenance, or failure to operate and use the product in accordance with the instructions provided in the owner's manual supplied with the product.

C. Any labor charges, travel time, or mileage incurred as a result of installing the replacement part.

D. Any failure that results from improper installation of the product.

E. Any component not sold or manufactured by the company.

F. Any loss of programming.

6. Responsibilities of purchaser under this warranty.

- A. Provide proof of purchase to qualify for credits under provisions of coverage.
- B. Promptly notify the seller, or alternately the Company, of any claim hereunder.
- C. Obtain Authorization to Return from the Company and return the product to the Company: AntennaTek, Inc., 425 S. Bowen St., #4, Longmont, Colorado 80501.
- D. Use reasonable care in the maintenance, operation, use and storage of the product in accordance with the instructions contained in the owner's manual.

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