



# TACO Antenna

*A division of WADE Antenna, Inc.*

## INSTRUCTION BOOKLET

### D4000/D5000 SERIES OMNI-DIRECTIONAL VHF/UHF Antennas



# General Description

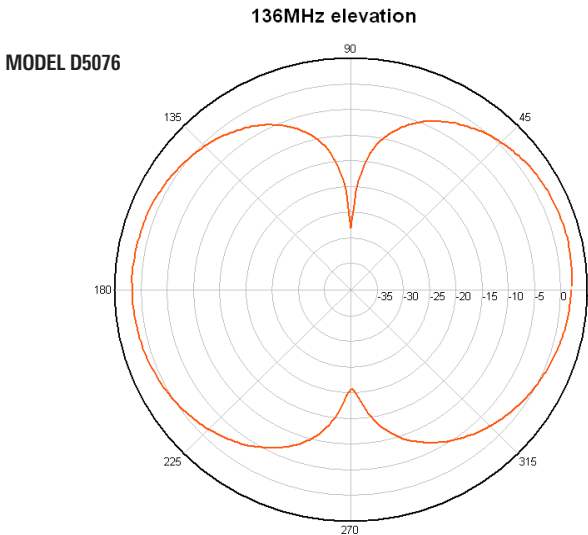
The TACO Model D4000 and D5000 series antennas are vertically polarized omnidirectional antennas, specifically designed to provide optimum performance throughout the DOT/FAA frequency band ranging 118-136 MHz and 225-400 MHz. The internal elements or dipoles are enclosed in a fiberglass radome, ultimately resulting in a lightweight, low profile, rugged communications antenna.

The D4000 or 5000 series antenna mounts to the top of the mast, thus sheltering the transmission line from any environmental exposure. Some D4000 series models are also available with an adapter capable of mounting to a 1.66" O.D. mast.

# Theory of Operation

The process employed in a D4000 or D5000 series antenna incorporates the patented Muldipol™ concept. The utilization of this technique results in a unit having excellent "broadband" halfwave dipole characteristics over its entire specified frequency bandwidth. The desired "figure eight" radiation pattern is generally constant throughout the band. Through "broadband" suppression of extraneous currents upon the transmission line, the undesirable "Clover Leaf" pattern is avoided.

A grounding lug is provided at the base of each antenna for supplemental grounding capability.



# Specifications

## VHF FREQUENCIES ONLY

MODEL	# OF OUTPUTS	FREQUENCY RANGE (MHz)	GAIN (dBic Max)	HPBW DEGREE	TERMINAL: TYPE AND QUANTITY	LENGTH		WEIGHT		MOUNT #
						IN	CM	LBS	KG	
D4061A1	1	118-136	4.5	40	N1	121.5	308.6	19.0	8.62	1
D4072	2	118-136	2.0	75	N2	153.0	388.6	17.0	7.73	1
D4076	1	118-136	2.0	75	N1	55.5	141.0	6.0	2.72	2
D5061A1	1	118-136	4.5	40	N1	121.5	308.6	19.0	8.62	1
D5072	2	118-136	2.0	75	N2	153.0	388.6	17.0	7.71	1
D5076	1	118-136	2.0	75	N1	55.5	141.0	6.0	2.72	2
D5075	1	150-175	2.0	75	N1	56.0	142.2	6.0	2.72	2

## UHF FREQUENCIES ONLY

MODEL	# OF OUTPUTS	FREQUENCY RANGE (MHz)	GAIN (dBic Max)	HPBW DEGREE	TERMINAL: TYPE AND QUANTITY	LENGTH		WEIGHT		MOUNT #
						IN	CM	LBS	KG	
D4062A	1	225-400	4.5	40	N1	69.5	176.5	13.5	6.12	2
D4074	2	225-400	2.0	75	N2	85.0	215.9	12.0	5.44	1
D4077	1	225-400	2.0	75	N1	30.5	77.5	5.0	2.27	2
D4078	3	225-400	2.0	75	N3	121.5	308.6	17.0	7.71	1
D5062A	1	225-400	4.5	40	N1	69.5	176.5	13.5	6.12	2
D5074	2	225-400	2.0	75	N2	85.0	215.9	12.0	5.44	1
D5077	1	225-400	2.0	75	N1	30.5	77.5	5.0	2.27	2
D5078	3	225-400	2.0	75	N3	121.5	308.6	17.0	7.71	1

## VHF AND UHF FREQUENCIES

MODEL	# OF OUTPUTS		FREQUENCY RANGE (MHz)	GAIN (dBic Max)	HPBW DEGREE	TERMINAL: TYPE AND QUANTITY	LENGTH		WEIGHT		MOUNT #
	VHF	UHF					IN	CM	LBS	KG	
D4071	1	2	118-136 / 225-400	2.0	75	N3	111.5	283.2	17.0	7.71	1
D4073	1	1	118-136 / 225-400	2.0	75	N2	85.0	215.9	12.0	5.44	1
D5071	1	2	118-136 / 225-400	2.0	75	N3	111.5	283.2	17.0	7.71	1
D5073	1	1	118-136 / 225-400	2.0	75	N2	85.0	215.9	12.0	5.44	1

### NOTE:

Use model numbers above disregarding trailing suffixes other than those listed above, should there be any in your antenna model number.

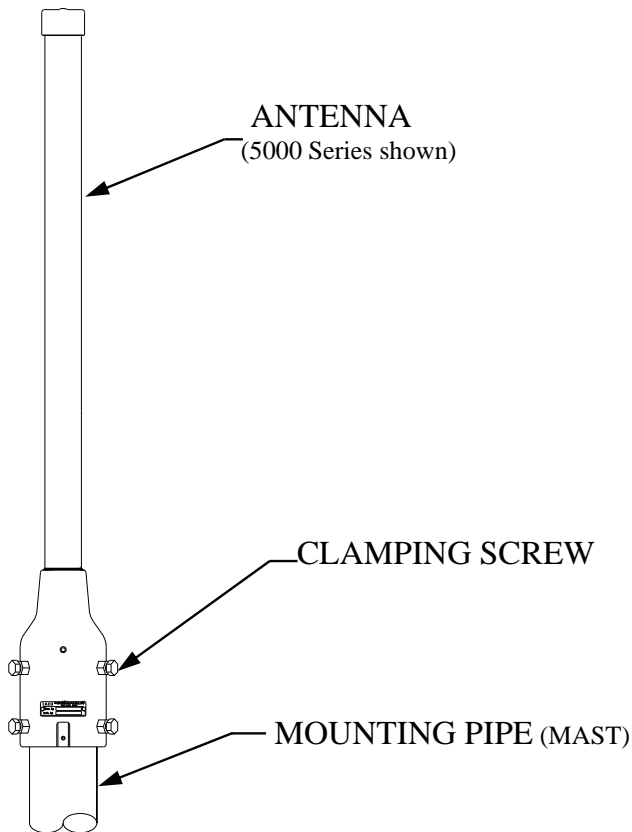
### MOUNT NUM. DIAMETERS

(1) = 2.875 inch (7.3 cm) O.D. Pipe

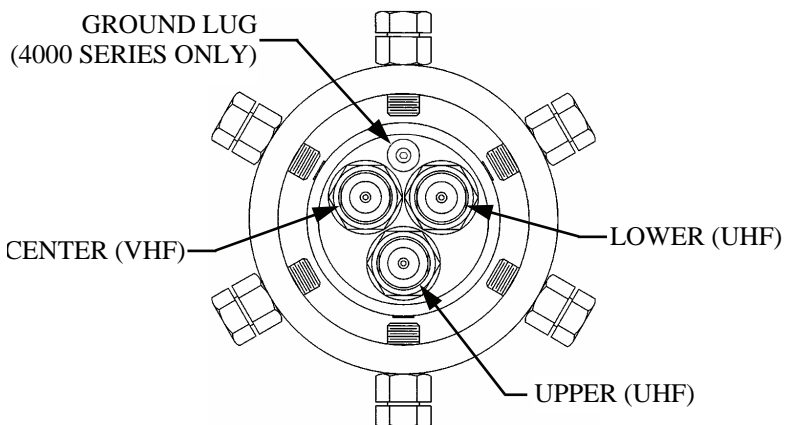
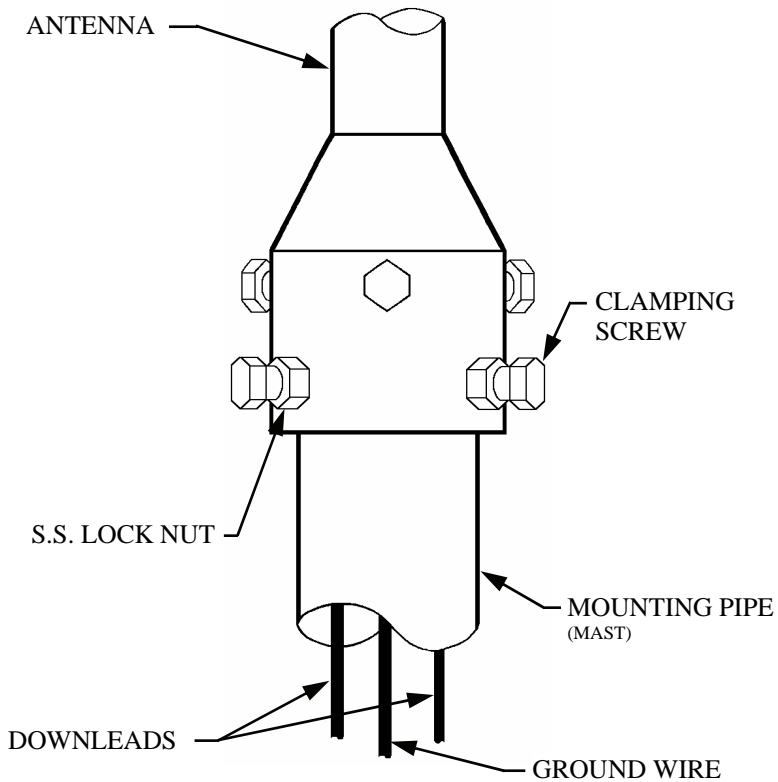
(2) = 2.875 inch (7.3cm) O.D. Pipe and also includes adapter for 1.66 (4.2cm) O.D. Pipe  
**D4000 series only**

# Assembly

1. Loosen the clamping screws on the antenna. See mounting detail.
2. Pull downleads up through the mounting pipe and make the connection to the antenna.
3. If grounding your equipment, do so at this time by following the Safety Precautions procedure.
4. Slide the clamping end of the antenna onto the mounting pipe.
5. Alternately secure the clamping screws making sure to keep the mounting pipe centred with the antenna.
6. After final tightening, lock clamping screws into position using the supplied stainless steel hex nuts.



## ANTENNA ASSEMBLY

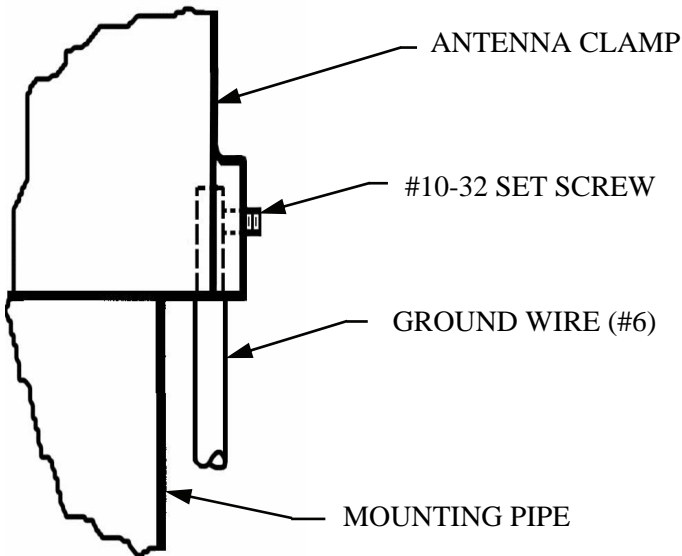


### MOUNTING DETAIL (4000 SERIES SHOWN)

# Safety Precautions

To protect your antenna and receiver from lightning damage, you should ground your equipment.

1. Slide the ground wire (#6 recommended) into the ground lug as shown below and tighten the #10-32 x 3/8 set screw.
2. Connect the ground wire to a ground rod; driven at least four (4) feet into the ground.
3. Keep antenna and cable a safe distance from any power lines.



**GROUNDING DETAIL  
(FOR 5000 SERIES ONLY)**

# Typical Specifications

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## ELECTRICAL

- 30 dB Minimum Isolation Between Any Two Dipoles
- Vertical Polarization
- Omni Directional: 0.5 dB Uniformity (azimuth)
- Voltage Standing Wave Ratio (Max.) 2:1
- Terminals "N" Female
- Terminal Impedance 50 Ohms
- VHF Applied Power 350 W
- UHF Applied Power 250 W
- Vertical Beam Deviation +- 10 Deg.

## ENVIRONMENTAL

- Built to Military Standards
- Rain, salt-fog, sand, dust and fungus to MIL-STD.810F
- Temperature, barometric pressure and humidity to MIL-STD.210C
- Temperature: -50°C to +70°C
- Relative Humidity: 5% to 100%
- Altitude: Sea Level To 10,000 ft. (3,048 m)
- Filament Wound Fiberglass Radome

## Features

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- Rugged Lightweight Construction
- Transportable
- Compact
- Combination of UHF and VHF options
- High isolation between antenna elements

## Options and Acronyms

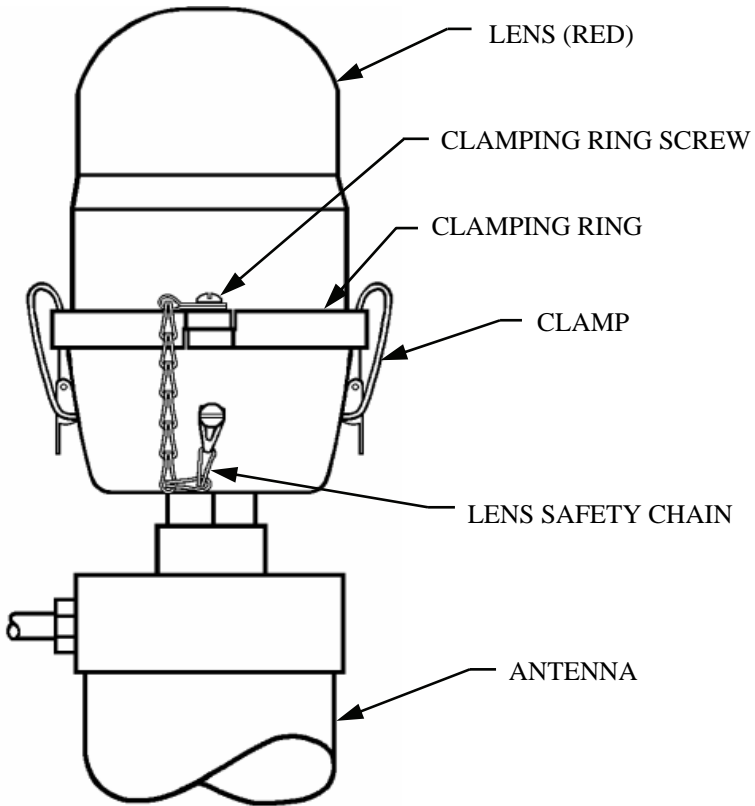
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- Lightning Rod ( L )
- Bird Cap (BC)
- Aluminum Base (A)
- Frequency Alteration (F)
- Carc (C), White (W), Green (G), Desert Sand (D)
- Obstruction Light / Lightning Rod (OL)

Contact our sales representatives or consult our sales specification sheet to find out if these options are available for your application.

# Obstruction Light Assembly-E

1. Install supplied light bulb (100 Watt, 130 Volts industrial) in lamp socket.
2. Remove one screw on the clamping ring and open it to slide onto the bottom of the lens; close the ring on the bottom groove of the lens and reinstall the screw.
3. Place the lens on the lamp, as shown below, and clamp down using the lamp clamps.



**OBSTRUCTION LAMP DETAIL**



# Replacement Parts

To obtain replacement parts, please contact us directly at our offices at:

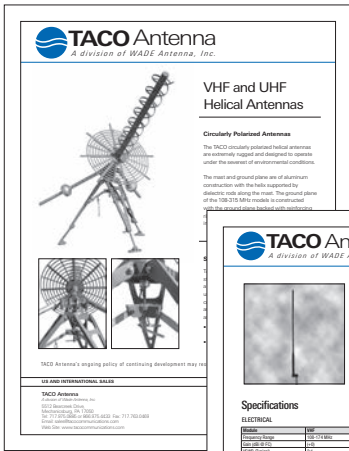
**Canada:** Tel: (519) 756-7157 | (800) 463-1607  
 Fax: (519) 756-5056

**USA/International:** Tel: (717) 975-0885 | (866) 975-4433  
 Fax: (717) 763-0469

Email: sales@tacoantenna.com  
 www.tacoantenna.com

# Other Communications Antennas

- Coax Stub
- Helical
- Yagi
- Screen Reflector Yagi
- D2000 Multipol



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### VHF and UHF Helical Antennas

**Circularly Polarized Antennas**

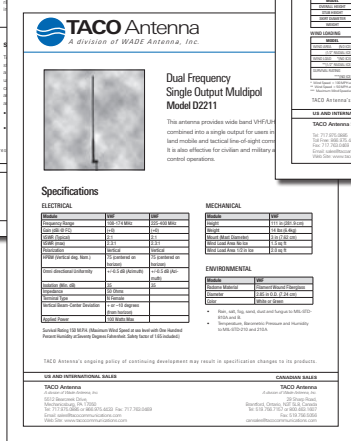
The TACO circularly polarized helical antennas are extremely rugged and designed to operate under the severest of environmental conditions. The mast and ground plane are of aluminum construction with the helix supported by dielectric rods along the mast. The ground plane of the D2000 Model is constructed from the ground plane bonded with carbon fiber.

**Specifications**

Model	F11 (MHz)	AS-390A (MHz)
Length	10.0	10.0
Weight	10.0	10.0
Power	10.0	10.0
Gain	10.0	10.0
Impedance	10.0	10.0
SWR	10.0	10.0
Frequency Range	10.0	10.0
Operating Temperature	10.0	10.0
Storage Temperature	10.0	10.0
Humidity	10.0	10.0
Shock	10.0	10.0
Vibration	10.0	10.0
Corrosion	10.0	10.0
Material	10.0	10.0
Finish	10.0	10.0
Coating	10.0	10.0
Mounting	10.0	10.0
Accessories	10.0	10.0

**USA AND INTERNATIONAL SALES**

**TACO Antenna**  
 A Division of WADE Antenna, Inc.  
 10000 University Blvd., Suite 100  
 Fort Worth, TX 76154  
 Tel: 717.975.0885 | 866.975.4433 | Fax: 717.763.0469  
 Email: sales@tacoantenna.com  
 www.tacoantenna.com



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### Dual Frequency Single Output Multipole Model DZ211

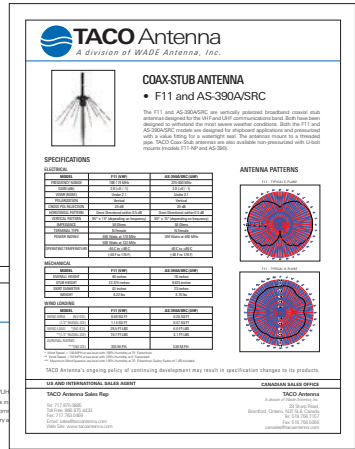
This antenna provides wide band UHF/VHF omnidirectional in a single model for use in land mobile and tactical line-of-sight comms. It is also effective for coexist and military or control operations.

**Specifications**

Model	F11 (MHz)	AS-390A (MHz)
Length	10.0	10.0
Weight	10.0	10.0
Power	10.0	10.0
Gain	10.0	10.0
Impedance	10.0	10.0
SWR	10.0	10.0
Frequency Range	10.0	10.0
Operating Temperature	10.0	10.0
Storage Temperature	10.0	10.0
Humidity	10.0	10.0
Shock	10.0	10.0
Vibration	10.0	10.0
Corrosion	10.0	10.0
Material	10.0	10.0
Finish	10.0	10.0
Coating	10.0	10.0
Mounting	10.0	10.0
Accessories	10.0	10.0

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### COAX-STUB ANTENNA

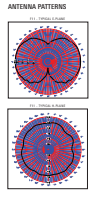
• F11 and AS-390A/SRC

The F11 and AS-390A/SRC are vertically oriented broadband omnidirectional antennas designed for the VHF and UHF communications bands. Both have been designed to withstand the most severe weather conditions. Both the F11 and AS-390A/SRC models are designed for 100-watt operation and are protected with a silver flang for a weathering seal. The antenna mount is a standard plate. TACO Coax-Stub antennas are also available non-grounded with carbon mounts (models F11-NP and AS-390).

**Specifications**

Model	F11 (MHz)	AS-390A/SRC (MHz)
Length	10.0	10.0
Weight	10.0	10.0
Power	10.0	10.0
Gain	10.0	10.0
Impedance	10.0	10.0
SWR	10.0	10.0
Frequency Range	10.0	10.0
Operating Temperature	10.0	10.0
Storage Temperature	10.0	10.0
Humidity	10.0	10.0
Shock	10.0	10.0
Vibration	10.0	10.0
Corrosion	10.0	10.0
Material	10.0	10.0
Finish	10.0	10.0
Coating	10.0	10.0
Mounting	10.0	10.0
Accessories	10.0	10.0

**Antenna Patterns**



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