TECHNICAL MANUAL and INSTALLATION INSTRUCTIONS

V-132 Series
35-FOOT HEAVY DUTY WHIP ANTENNA

VTM-11-002 - Rev A

Valcom Manufacturing Group, Inc.

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REVISION SHEET

Revision	Description	Date
-	Original Issue	May 2, 2011
A	Cleaned up formatting, revised paint type and improved maintenance information	October 22, 2013

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1.0 V-132 INFORMATION

1.1 Introduction

This section describes the electrical and mechanical properties of the V-132 series fibreglass whip antennas. Information necessary to install, operate and maintain the antenna system is covered in the sections to follow.

1.2 Technical Reference Data

Electrical Properties		
	V-132	V-132FT
Frequency Range	1.6 MHz to 30 MHz	1.6 MHz to 30 MHz
Resonant Frequency	5.9 MHz (nominal)	5.9 MHz (nominal)
Power Rating	5 kW (average)	5 kW (average)
Dry Withstanding Voltage	25 kV	25 kV
Electrical Length	34.9 ft (10.4 m)	36.5 ft (11.1 m)

Mechanical Properties		
	V-132	V-132FT
Top Section Length	18.5 ft (5.6 m)	18.5 ft (5.6 m)
Base Section Length	17.4 ft (5.3 m)	18.0 ft (5.5 m)
Typical Assembly Length	35.9 ft (10.9 m)	36.5 ft (11.1 m)
Center of Gravity	10.5 ft (3.2 m)	10.4 ft (3.2 m)
Weight	Approx 146 lbs (66.2 kg)	Approx 149 lbs (67.6 kg)
Conductor Material	Copper straps embedded in the fiberglass and thermo-setting epoxy resin composite	Copper straps embedded in the fiberglass and thermo-setting epoxy resin composite
Joints	Bronze ferrule C/W SST locking screws	Bronze ferrule C/W SST locking screws
Finish	Polyurethane, white	Polyurethane, white
Mounting Position	Vertical	Vertical
Base Diameter	13.5 in (34.3 cm)	13.5 in (34.3 cm)
Mounting Hole Diameter	0.687 in (1.74 cm)	0.687 in (1.74 cm)
Mounting Holes Dimensions	8 places equally spaced on a 10.75 in (27.3 cm) diameter bolt circle	8 places equally spaced on a 10.75 in (27.3 cm) diameter bolt circle
Operating Temperature	-60°F to +150°F (-50°C to +65°C)	-60°F to +150°F (-50°C to +65°C)
Ice Loading Test	0.75 in (1.87 cm) at 100 mph (160 km/hr)	0.75 in (1.87 cm) at 100 mph (160 km/hr)
Wind Loading Test	Up to 150 mph (240 km/hr) relative	Up to 150 mph (240 km/hr) relative

1.3 General Description

The V-132 series heavy duty whip antenna is a rugged whip antenna designed for marine environment applications, specifically shipboard. It is the commercial version of the AS-2537C/SR currently in use by the United States Navy. It is intended to be used as part of an overall communication system which consists of a transmitter (or receiver or transceiver), an antenna coupler and the antenna. The V-132 is used around the world in many applications with requirements in the 1.6 MHz to 30 MHz bands for marine and aeronautical communication systems.
Different model versions of this antenna are available depending on the specific application. The standard V-132 is a side-fed, heavy duty antenna. The V-132FT is a feed-through version, heavy duty antenna.

1.4 Electrical Description

The Valcom, V-132 model, is a field proven 35-foot (10.7 m) epoxy fibreglass antenna. It is capable of operating with an average power of up to 5 kW over the frequency range of 1.6 to 30 MHz. The standard V-132 has a 3/8-24 side feed terminal. The antenna can also be ordered as a V-132FT which comes equipped with a feed-through insulator mounted on the bottom of the base. The feed through insulator also has a threaded post for connection.

1.5 Mechanical Description

Top-Section. The top-section is a hollow, tapered cylinder made of circumferentially and longitudinally wound fibreglass filaments using a thermosetting epoxy resin matrix. Copper strips are embedded in the composite and are secured at the top end to a hemispherical corona ball and at the bottom end to a female threaded ferrule. The surface is sanded to a smooth finish, then it is primed and painted with a polyurethane surface coating.

Base-Section. The base-section is constructed and finished in the same fashion as for the top-section, except that the diameter expands out to meet the mounting base. Embedded copper conductors are connected to the threaded male ferrule at the top and to a conducting ring near the bottom. The side feed terminal extends from the bottom ring to the surface of the antenna approximately 11.0 inches from the bottom of the base flange. The feed through version of this antenna instead has an epoxy/fibreglass insulator bolted to a recess in the bottom of the flange. The base can withstand a flash-over voltage of 25 kV.

2.0 INSTALLATION

2.1 Unpacking

Open the shipping crates and remove the antenna sections and any possible accessories purchased with it. Remove all packing material including the male ferrule protector on the antenna section. The V-132 antenna, as shipped, consists of the items listed in Table 3.1. Check that all of the items are present and in good condition.

2.2 **New Site Preparation** Check to see that the site is free of cables, debris and other obstructions.

2.3 Assembly and Installation of Antenna on the site

The following steps should be followed to assemble theV-132 whip antenna. (1)Obtain three to four saw horses or other supports that will hold the complete antenna horizontally at a convenient working height and place them in the assembly area. The assembly are a must be a cleared working space approximately 40 feet long and 20 feet wide.

(2)Support the base section(item1,Table3.1)on two of the saw horses. (3)Support the top section(item2,Table3.1)on the other two saw horses so that the two sections lie in the same straight line.

(4)Make sure the threads of the male ferrule on the base section are clear of foreign material and not damaged.

(5)Assemble these cond antenna section onto the base section and tighten to align the arrows (if applied)at the joint using the strap wrench supplied(item 3, Table 3.1).

(6)Install the set screws at the joint and seal over with the sealant provided. A final torque between 65-85 in-lbs is acceptable for the set screws.

(7)The antenna is now ready to be raised to its final position. Possible options are to use a crane or a buckettruck.

(8)Once the antenna is in the vertical position, secure the antenna with appropriate 5/8" hardware.A final torque between 90-100ft-lbs is acceptable for the bolts.

2.4 Electrical Installation

Connect a suitable feed wire from the antenna to the coupler.

3.0 PARTS LIST

3.1 General

A list of parts shipped with Valcom V-132 whip antenna appears in Table 3.1.

Table 3.1 - List of Parts for the V-132 Whip Antenna

Item No.	Part Number	Description	Qty	Notes
1		Base Section	1	
2		Top Section	1	
3		Strap Wrench	1 ea	
4		Silicone Sealant	1	
5		Setscrew Kit	1 set	
6		Technical Manual and Installation Instructions	1 ea	

Table 3.2 -Listofparts required for full ground installation (ordered separately)

Item No.	Part Number	Description	Qty	Notes
1	VHB-13	Hinged BasePlate for V-132 Antenna	1	Optional
2	VGS-36100	Ground screen kit for V-132 Antenna	1	Optional

4.0 MAINTENANCE

4.1 Scheduled Maintenance

The antenna is virtually maintenance free. The external finish is a polyurethane two-part compound paint. The minimum finish life before showing signs of deterioration should be at least six years under normal climate condition. When used in salt-water environments, it is recommended to wash the antenna base with fresh water to remove any build-up of dried salt residue. This should be performed on a monthly basis or after prolonged exposure to sea-spray. Use a small wire brush to clear any debris from the drain groove found in the bottom of the antenna base. All threaded hardware, including the base mounting bolts, the set-screws at the joint and the input power connection should be inspected for signs of damage and to ensure proper tightness (suggested torque settings can be found on pages 4 and 5). In most cases a quick visual inspection is all that is required. This must be performed on a monthly basis or whenever practical.

4.2 Corrective Maintenance

Generally, no corrective maintenance is possible or required. If one section is severely damaged, it must be replaced by a new section. Workshops having experience in handling epoxy fibreglass composite structures may attempt the repair of minor surface damage if practicable.

NOTE
DO NOT USE LEAD BASE PAINT TO TOUCH-UP OR REPAINT THE ANTENNA. USE ONLY EPOXY BASE PAINT.

5.0 QUICK REFERENCE DATA

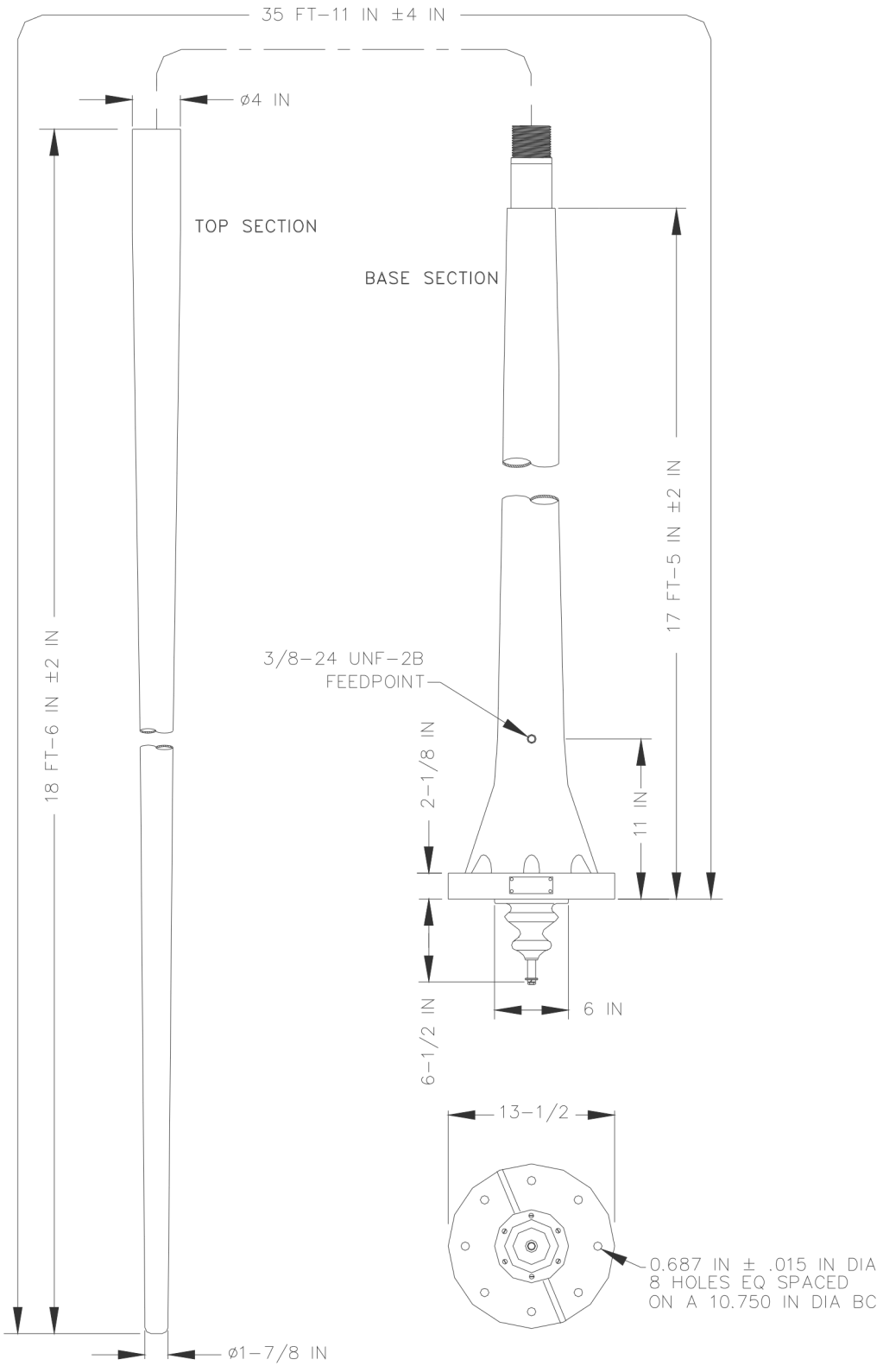
5.1 Manufacturer's Address

Postal address:
Valcom ManufacturingGroup,Inc P.O. Box 603 Guelph, Ontario Canada N1H 6L3

Shipping address:
Valcom Manufacturing Group, Inc 175 Southgate Drive Hanlon Industrial Park Guelph, Ontario Canada N1G 3M5

5.2 Outline Drawing

The following page shows the outline drawing of the V-132 Series antenna.


35 FT–11 IN ±4 IN
ø4 IN
TOP SECTION
BASE SECTION
18 FT–6 IN ±2 IN
17 FT–5 IN ±2 IN
3/8–24 UNF–2B
FEEDPOINT
2–1/8 IN
11 IN
6–1/2 IN
6 IN
13–1/2
0.687 IN ± .015 IN DIA
8 HOLES EQ SPACED
ON A 10.750 IN DIA BC
ø1–7/8 IN