POINTER AVIONICS
SkyHunter406.com

# OPERATING, INSTALLATION AND MAINTENANCE MANUAL

# **SKYHUNTER 406**™ AF/HF

MANL:INS:SH:X:XX

# TABLE OF CONTENTS

# Table of Figures



# LIST OF TABLES

# 1 SYSTEM DESCRIPTION

The SkyHunter 406$^{TM}$ AF/HF models are of type Automatic Fixed , transmitting on 121.5/406.037 MHz and designed for use on either fixed or rotary wing aircraft. 6-position g-switch models are also available for helicopter use, SkyHunter 406$^{TM}$ HF .

| TYPE | Single Axis G-Switch | 5 Axis G-Switch | Internal GPS Receiver |
|---|---|---|---|
| AF | X | | X |
| HF | X | X | X |

**Fig. 1 – System Description**

The entire line of SkyHunter 406$^{TM}$ ELT's has been designed, tested, and certified to meet or exceed the requirements of TSO C126a. Our SkyHunter 406$^{TM}$ ELT has been designed, tested, and certified to meet the needs of both Commercial and General Aviation.

The SkyHunter 406$^{TM}$ incorporates an internal GPS receiver in ALL models allowing the transmission of exact co-ordinates to the COSPAS-SARSAT satellites .

The SkyHunter 406$^{TM}$ can be automatically or manually activated and transmits the standard sweep tone on the 121.5 MHz frequency for a minimum of 50 hours. Every 50 seconds of the first 24 hours of an ELT activation a digital message is transmitted on the 406.037 MHz frequency. The digital message will be decoded by COSPAS-SARSAT.

As a comparison, the 121.5 MHz frequency ELT's in the past would bring search and rescue within 20 km of the ELT. The 406.037 MHz frequency will bring search and rescue within 5 km of the ELT. If the GPS co-ordinates are transmitted the search area will be reduced.

After an activated ELT has been detected and the position calculated the 121.5 MHz signal is used to home in on the crash site.

The standard Remote Connector (yellow), SkyKey Programmer (blue), and Maintenance Programmer (red) are colour coded for ease of component recognition during maintenance procedures.

## 1.1 APPROVALS

### 1.1.1 Canada

#### *1.1.1.1 Transport Canada CAN-TSO-C126a*

#### *1.1.1.2 Industry Canada*

### 1.1.2 USA

#### *1.1.2.1 FAA TSO-C126a*

### 1.1.3 Europe

#### *1.1.3.1 ETSO CAN-TSO-C126a*

## 1.2 SKYHUNTER 406™ ELT INSTALLATION KITS

### 1.2.1 406 ELT Auto Fixed - Helicopter with High Velocity Antenna, PREWIRED REMOTE SWITCH

**Kit Part # SKYH:PRE:HF:K:HV**

Kit Includes:

SKYH:XXE:HF:X:02 SkyHunter 406 HF Transmitter with 6 position G switch
REMT:ROC:SH:A:XX Remote Rocker Panel Switch Assembly
REMT:MCO:SH:X:XX Remote Rocker Switch Male Connector
REMT:BUZ:SH:A:PR Backshell with Cable Assembly(PREWIRED with 25 feet of cable)
BRKT:KIT:SH:A:XX Mounting Bracket
ANNT:HVG:SH:A:XX High Velocity ELT/GPS Antenna
CABL:BNC:SH:A:2X Antenna Cable
CABL:GPS:SH:A:QD Quick Disconnect GPS Cable
BATT:XLS:SH:A:XX Battery Pack
LABL:ELH:SH:X:XX ELT Located Here decal

### 1.2.2 406 ELT Auto Fixed- Helicopter with High Velocity Antenna, NOT PREWIRED REMOTE SWITCH

**Kit Part# SKYH:XXE:HF:K:HV**

Kit Includes:

SKYH:XXE:HF:X:02 SkyHunter 406 HF Transmitter with 6 position G switch
REMT:ROC:SH:A:XX Remote Rocker Panel Switch Assembly
REMT:MCO:SH:X:XX Remote Rocker Switch Male Connector
REMT:BUZ:SH:A:XX Backshell and Buzzer Assembly(NOT PREWIRED)
BRKT:KIT:SH:A:XX Mounting Bracket
ANNT:HVG:SH:A:XX High Velocity ELT/GPS Antenna
CABL:BNC:SH:A:2X Antenna Cable
CABL:GPS:SH:A:QD Quick Disconnect GPS Cable
BATT:XLS:SH:A:XX Battery Pack
LABL:ELH:SH:X:XX "ELT LOCATED HERE" decal

### 1.2.3 406 ELT Auto Fixed - Helicopter with Whip Antenna, NOT PREWIRED REMOTE SWITCH

**Kit Part# SKYH:XXE:HF:K:XW**

Kit Includes:

SKYH:XXE:HF:X:02 SkyHunter 406 HF Transmitter with 6 position G switch
REMT:ROC:SH:A:XX Remote Rocker Panel Switch Assembly
REMT:MCO:SH:X:XX Remote Rocker Switch Male Connector
REMT:BUZ:SH:A:XX Backshell and buzzer assembly(NOT PREWIRED)
BRKT:KIT:SH:A:XX Mounting Bracket
ANNT:XXW:SH:A:XX SkyHunter Whip Antenna
CABL:BNC:SH:A:2X Antenna Cable
BATT:XLS:SH:A:XX Battery Pack
LABL:ELH:SH:X:XX "ELT LOCATED HERE" decal

### 1.2.4 406 ELT Auto Fixed - Helicopter with Whip Antenna, PREWIRED REMOTE SWITCH

**Kit Part # SKYH:PRE:SH:K:XW**

Kit Includes:

SKYH:XXE:HF:X:02 SkyHunter 406 HF Transmitter with 6 position G switch
REMT:ROC:SH:A:XX Remote Rocker Panel Switch Assembly
REMT:MCO:SH:X:XX Remote Rocker Switch Male Connector
REMT:BUZ:SH:A:PR Backshell and Cable assembly (PREWIRED with 25 feet of cable)
BRKT:KIT:SH:A:XX Mounting Bracket
ANNT:XXW:SH:A:XX SkyHunter Whip Antenna
CABL:BNC:SH:A:2X Antenna Cable
BATT:XLS:SH:A:XX Battery Pack
LABL:ELH:SH:X:XX ELT Located Here decal

### 1.2.5 406 ELT Auto Fixed with Whip Antenna , NOT PREWIRED REMOTE SWITCH

**Kit Part# SKYH:XXE:AF:K:XW**
Kit Includes:

SKYH:XXE:AF:X:02 406 SkyHunter 406 AF Transmitter
REMT:ROC:SH:A:XX Remote Rocker Panel Switch Assembly
REMT:MCO:SH:X:XX Remote Rocker Switch Male Connector
REMT:BUZ:SH:A:XX Backshell and Buzzer Assembly(NOT PREWIRED)
BRKT:KIT:SH:A:XX Mounting Bracket
ANNT:XXW:SH:A:XX SkyHunter Whip Antenna
CABL:BNC:SH:A:2X Antenna Cable
BATT:XLS:SH:A:XX Battery Pack
LABL:ELH:SH:X:XX "ELT LOCATED HERE" decal

### 1.2.6 406 ELT Auto Fixed with Whip Antenna, PREWIRED REMOTE SWITCH

**Kit Part# SKYH:PRE:SH:K:XW**

Kit Includes:

SKYH:XXE:AF:X:02 406 SkyHunter 406 AF Transmitter
REMT:ROC:SH:A:XX Remote Rocker Panel Switch Assembly
REMT:MCO:SH:X:XX Remote Rocker Switch Male Connector
REMT:BUZ:SH:A:PR Backshell with Cable Assembly(PREWIRED with 25 feet of cable)
BRKT:KIT:SH:A:XX Mounting Bracket Kit
ANNT:XXW:SH:A:XX SkyHunter Whip Antenna
CABL:BNC:SH:A:2X Antenna Cable
BATT:XLS:SH:A:XX Battery Pack
LABL:ELH:SH:X:XX ELT Located Here decal

### 1.2.7 406 ELT Auto Fixed with High Velocity Antenna, NOT PRE WIRED REMOTE SWITCH

**Kit Part# SKYH:XXE:AF:K:HV**

Kit Includes:

SKYH:XXE:AF:X:XX SkyHunter 406 AF Transmitter
REMT:ROC:SH:A:XX Remote Rocker Switch Assembly
REMT:MCO:SH:X:XX Remote Rocker Switch Male Connector
REMT:BUZ:SH:A:XX Backshell and Buzzer Assembly(NOT PREWIRED with 25 feet of cable)
BRKT:KIT:SH:A:XX Mounting Bracket
ANNT:HVG:SH:A:XX High Velocity ELT/GPS Antenna
CABL:GPS:SH:A:QD GPS Quick Disconnect Cable
CABL:XX2:SH:A:XX Antenna Cable
BATT:XLS:SH:A:XX Battery Pack
LABL:ELT:SH:X:XX "ELT LOCATED HERE" decal

### 1.2.8 406 ELT Auto Fixed with High Velocity Antenna, PREWIRED REMOTE SWITCH

**Kit Part# SKYH:PRE:SH:K:HV**

Kit Included:

SKYH:XXE:AF:X:XX SkyHunter 406 AF Transmitter
REMT:ROC:SH:A:XX Remote Rocker Panel Switch Assembly
REMT:MCO:SH:X:XX Remote Rocker Switch Male Connector
REMT:BUZ:SH:A:PR Backshell with Cable Assembly(PREWIRED with 25 feet of cable)
BRKT:KIT:SH:A:XX Mounting Bracket
ANNT:HVG:SH:A:XX High Velocity ELT/GPS Antenna
CABL:GPS:SH:A:QD GPS Quick Disconnect Cable
CABL:XX2:SH:A:XX Antenna Cable
BATT:XLS:SH:A:XX Battery Pack
LABL:ELT:SH:X:XX ELT Located Here Decal

**Table 1 – SkyHunter 406™ Install Kit Part Numbers**

## 1.3 FLEET OPERATOR OPTIONS:

### 1.3.1 SkyKey Programmer-Blue KEYY:XXP:SH:B:TS

SkyKey Programmer for Fleet Operators, installed in each aircraft and programmed with specific Aircraft information so that an alternate ELT can be placed on board reducing "down time" for aircraft. The SkyKey is blue to indicate the additional capabilities it has when used to connect the Remote Rocker Switch to the Skyhunter 406™.

### 1.3.2 SkyKey Maintenance –Red KEYY:XXM:SH:R:XX

SkyKey Maintenance Programmer is used to return the SkyHunter 406 ™ ELT back to default settings. After using a SkyKey Maintenance Programmer, the ELT will have to be re-programmed. The Maintenance Programmer is red to denote that it will remove the aircraft ID if attached to the SkyHunter 406™.

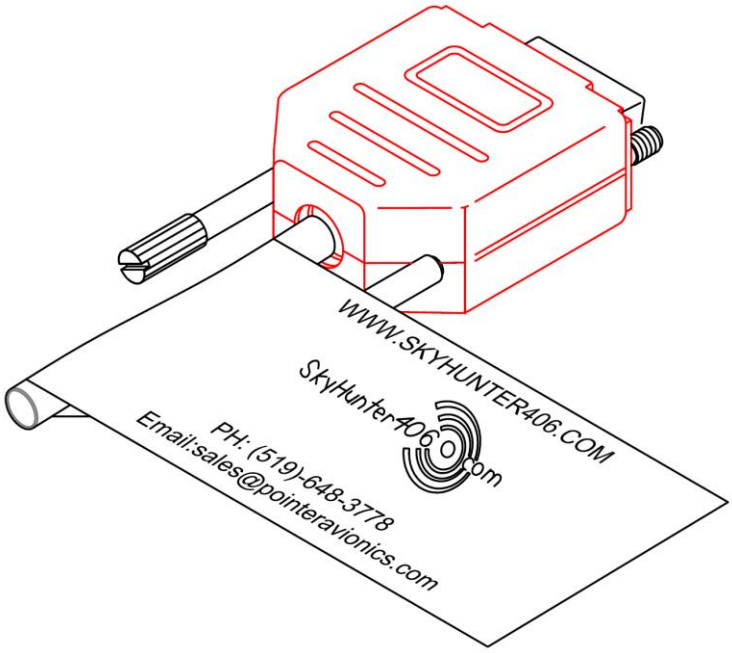



**Fig. 2 – SkyKey Maintenance Programmer-Red, KEYY:XXM:SH:R:XX**

# 2 REPLACEMENT PARTS

## 2.1 TRANSMITTER

The SkyHunter 406™ AF and SkyHunter 406™ HF models are designed to be installed on board aircraft and transmit on 2 frequencies. The 406.037 MHz frequency is used to transmit location and aircraft identification and the 121.5 MHz frequency is used in the final stage of rescue to narrow the location of the distressed aircraft during SAR efforts.

## 2.2 BATTERY PACK – BATT:XLS:SH:A:XX

The 5 Volt Non-Rechargeable battery pack is comprised of 4 “D” Cell Li-$SO_2$ batteries which have an operational life of 5 years before needing replacement.

## 2.3 SKYHUNTER 406 ROD/GPS ANTENNA – ANNT:XVG:SH:A:XX

This ROD/GPS antenna is rated for 600 knots and works with all SkyHunter406 ELT installation kits. The antennas has a built in GPS receiving antenna. The antenna transmits on the 121.5 MHz and 406.037 MHz frequencies .

## 2.4 WHIP ANTENNA (121.5/406 MHZ) – ANNT:XXW:SH:A:XX

The whip Antenna is designed to allow a simpler mounting option. This antenna transmits on both 121.5 and 406 MHz frequencies. It requires only one hole for mounting. **Note : The Whip antenna does NOT provide the COSPAS-SARSAT Type approved GPS positioning since the whip antenna does not have a built in GPS antenna. The internal GPS antenna of the ELT MAY work depending on the aircraft fuselage material when mounted inside the aircraft.**

## 2.5 REMOTE SWITCH ASSEMBLY – REMT:ROC:SH:A:XX

The Remote Switch Assembly contains an HD DB15 yellow connector housing with an externally mounted audible indicator. The assembly comes complete with a panel mount rocker switch for the cockpit .

The rocker panel switch has 3 positions “ON”/”ARM”/”RESET” with a light to indicate activation and error codes during a self test. It is attached to the ELT via an HD DB15 connector using a 5 (4 wire + shield) conductor cable.

## 2.6 MOUNTING BRACKET KIT – BRKT:KIT:SH:A:XX

The bracket should be mounted near the tail of the aircraft and comes with a Velcro® Strap to securely contain the SkyHunter 406™ ELT in its bracket.

## 2.7 ANTENNA CABLE – CABL:BNC:SH:A:X2

An RG 400 cable with BNC ends attaches the Antenna to the ELT. The cable will have a length of 2 meters (approx. 6 feet).

## 2.8 GPS QUICK DISCONNECT CABLE – CABL:GPS:SH:A:QD

This RG 400 cable with SMA ends will allow the ELT to be attached to the GPS antenna.

## 2.9 SKYKEY PROGRAMMER KEYY:XXP:SH:B:TS

SkyKey Programmer for Fleet Operators, installed in each aircraft and programmed with specific ELT and Aircraft information so that an alternate ELT can be placed on board reducing "down time" for aircraft. The SkyKey is blue to indicate the additional capabilities it has when used to connect the Remote Switch to the Skyhunter 406™.

## 2.10 SKYKEY MAINTENANCE KEYY:XXM:SH:R:XX

SkyKey Maintenance Programmer is used to return the SkyHunter 406 ™ ELT back to default settings. After using a SkyKey Maintenance Programmer, the ELT will have to be re-programmed. The Maintenance Programmer is red to denote that it will remove the aircraft ID if attached to the SkyHunter 406™.

# 3 DESIGN FEATURES

## 3.1 PHYSICAL FEATURES

The SkyHunter 406™ models are constructed of durable plastic, with round edges that can be easily grasped by one hand. The Velcro® strap is simple and easy to remove for maintenance or portability.

## 3.2 INTERNAL GPS RECEIVER

All SkyHunter 406™ models have been fitted with a GPS receiver which, when accompanied with the external GPS antenna will allow accurate tracking without interfacing with an onboard NAV system.

## 3.3 SKYKEY PROGRAMMER

The SkyKey Programmer enables aircraft registration information to be stored with the aircraft. Upon SkyHunter 406™ ELT installation the registration information that is stored in the SkyKey can be transferred to ELT memory.

# 4 SPECIFICATIONS

## 4.1 TSO-C126A STATEMENT

"The conditions and tests for TSO approval of this article are minimum performance standards. Those installing this article, on or in a specific type or class of aircraft, must determine that the aircraft installation conditions are within the TSO standards. TSO articles must have separate approval for installation in an aircraft. The article may be installed only according to 14 CFR part 43 or the applicable airworthiness requirements."

## 4.2 TYPE

- 2 frequency ELT (121.5 MHz and 406.037 MHz)
- Automatic Fixed
- COSPAS-SARSAT Category 1 (-40 C to +55 C)

## 4.3 406 MHZ TRANSMISSION

- Frequency: 406.037 MHz +/- 1 kHz
- Output power: 5 W (37dbm +/- 2dbm)
- Modulation Type: Bi Phase L Transmission (16K0G1D)
- Transmission duration: 520 ms
- Autonomy: 24 Hrs at -40 C

## 4.4 121.5 MHZ TRANSMISSION

- Frequency: 121.5 MHz +/- 6 kHz
- Output Power: 50mW (17dbm) minimum
- Modulation Type: 3K20A3X
- Modulation rate: 85% - 100 %
- Frequency of the modulation signal: 1420 Hz to 490 Hz with decreasing sweep
- Autonomy: 50 hours at -40 C

## 4.5 AUTOMATIC ACTIVATION

- Acceleration Switch (G-Switch) activates with a change in velocity of 2.3 G's.
- 5 Position G-Switch is incorporated in addition to the main G-Switch for HF Model.

## 4.6 BATTERY

- The 5 Volt Non-Rechargeable battery pack is comprised of 4 "D" Cell Li-$SO_2$ batteries.

## 4.7 HOUSING

- Material: Molded Plastic
- Colour: Yellow
- Dimensions (with mounting bracket): 200 x 130 x 80 mm
- Weight (with battery pack): 1.5 kg

## 4.8 ENVIRONMENTAL CONDITIONS

- RTCA DO-160F

## 4.9 QUALIFICATIONS

- TSO-C126a

# 5 INTERFACES

## 5.1 SMA CONNECTOR (A)

The SMA Connector is used to connect the external GPS antenna.

## 5.2 BNC CONNECTOR (B)

The BNC connector is used to connect the external transmitting antenna.

## 5.3 USB CONNECTOR (C)

Micro USB connector is used for web testing and programming.

## 5.4 HIGH DENSITY DB15 CONNECTOR (D)

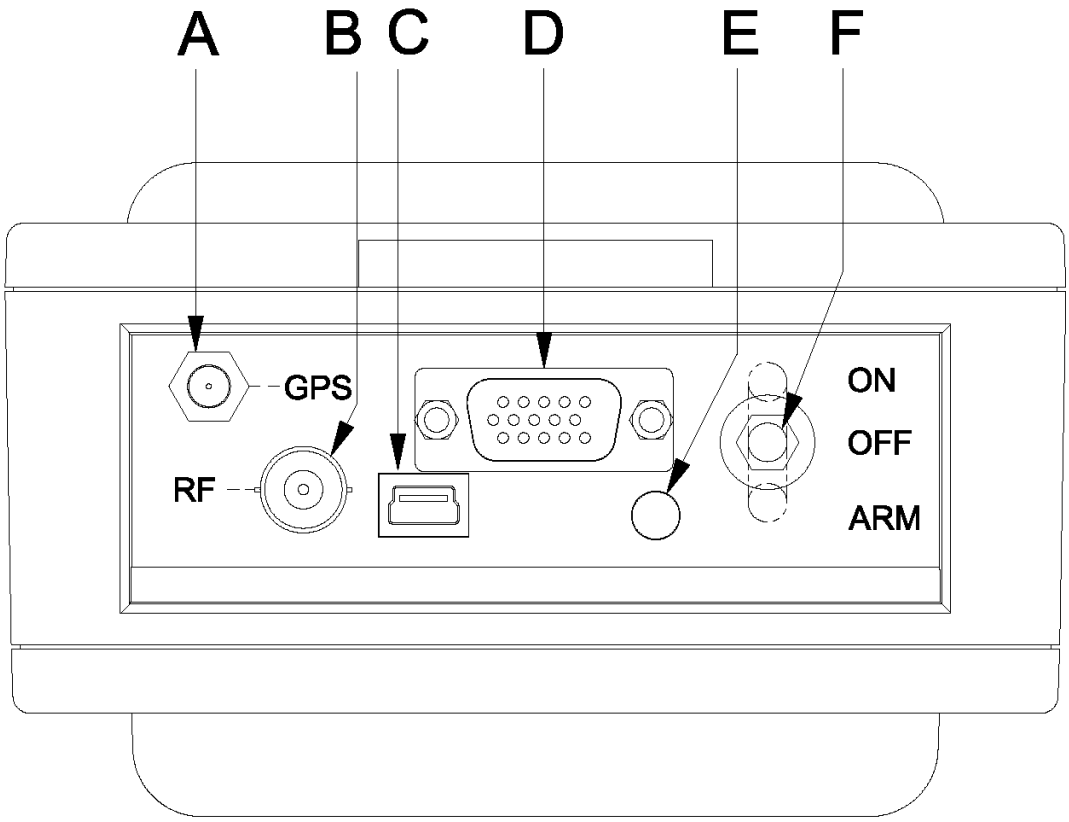
The HD DB 15 connector is used to interface with the SkyKey as well as the connection to the remote switch.

## 5.5 VISUAL INDICATOR MULTI COLOUR LED (E)

The Visual Indicator on the SkyHunter 406™ ELT shows status and error codes. See Section 7 for LED coding.

## 5.6 LOCKING TOGGLE SWITCH (F)

The Logging Toggle Switch allows for “ON” “OFF” and “ARM” operation.



# 6 INSTALLATION

## 6.1 REGULATORY REQUIREMENTS AND GUIDELINES

### 6.1.1 Canada – Transport Canada

All Installations must be performed in accordance with Canadian Aviation Regulations (CAR)

Part V, Chapter 551, Paragraph 551.104.

### 6.1.2 United States of America – FAA

Installation instructions in this manual constitute approved data to be utilized in the installation of the SkyHunter 406 ELT as a TSO compliant product as appropriately documented by a Form 8130-3 or its equivalent.

In accordance with FAR Part 43, the installer must adhere to the aircraft manufacturer's instructions and guidelines provided by FAA document AC 43.13-2.

### 6.1.3 International

All installations in aircraft outside of Canada and USA must be performed in accordance with the applicable regulatory rules and regulations.

## 6.2 MOUNTING BRACKET KIT INSTALLATION

- The Mounting Bracket Kit should be installed as far toward the rear of the plane as possible to enhance its survivability in a crash. Rotary wing aircraft should mount it as close as possible to the transmission or rotor shaft assembly.
- It must be accessible to ground crews for servicing.
- It should be accessible for maintenance removal and manual activation in the event of an emergency.
- It must be attached to a structurally sound, suitably flat and stable surface, with minimal vibration.
- The Mounting Bracket Kit MUST be mounted parallel to the line of flight and must be attached to the aircraft with screws of a type suitable for aviation use.
- All aircraft installing the AF model , must have the Mounting Bracket Kit installed with the direction of flight arrow forward facing around the roll axis. **For aircraft installing the AF Model in a Helicopter, please note the aircraft bracket may be pointed downwards up to a 45˚ angle to the yaw axis if necessary.**
- The drill pattern for the SkyHunter 406™ mounting bracket is the same as the drill pattern for Pointer Model 3000-10/11 and 4000-10/11 mounting brackets to facilitate easier swap outs. Use the mounting bracket as a template or refer to Section 10 for drilling pattern dimensions.
- The following are mounting guidelines found in DO-204A in regards to ELT Mounting : “The ELT unit shall be mounted to primary aircraft load-carrying structures such as trusses, bulkheads, longerons, spars or floor beams (not aircraft skin) or a structure that meets the requirements of the following test. The mounts shall have a maximum static local deflection no greater than 2.5mm when a force of 450 Newtons (100 lbf) is applied to the mount in the most flexible direction. Deflection measurements shall be made with reference to another part of the airframe not less than 0.3 m or more than 1.0 m from the mounting location.”

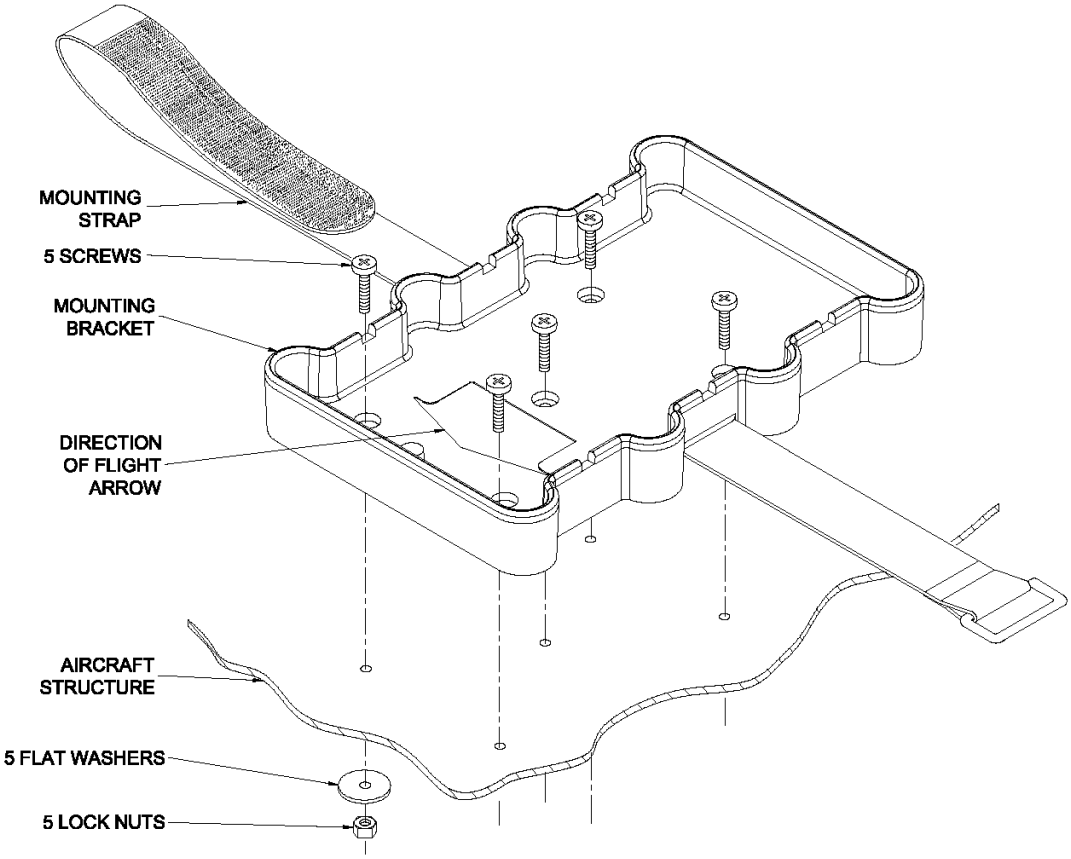
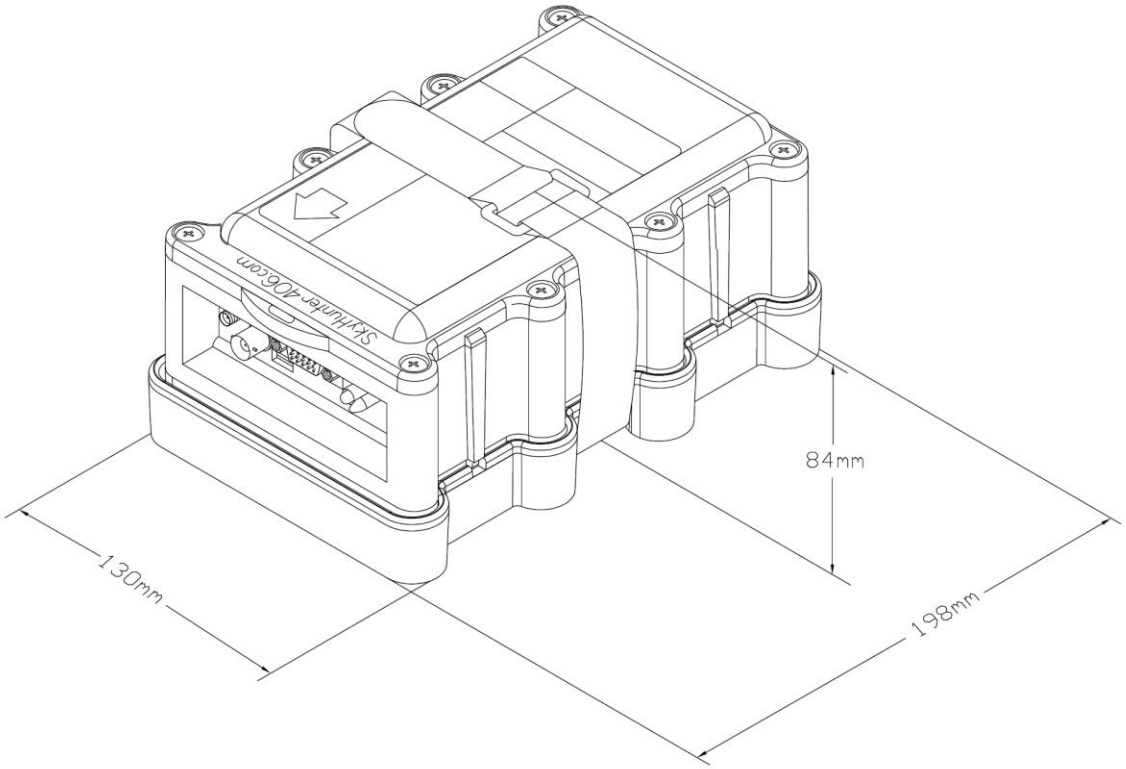



**Fig. 3 - Mounting Bracket Kit, BRKT:KIT:SH:X:XX**

Note : ALL mounting hardware such as screws, nuts and washers are not included

## 6.3 ELT INSTALLATION DIMENSIONS WITH MOUNTING BRACKET



## 6.4 REMOTE SWITCH KIT INSTALLATION

### 6.4.1 Remote Switch Assemblies

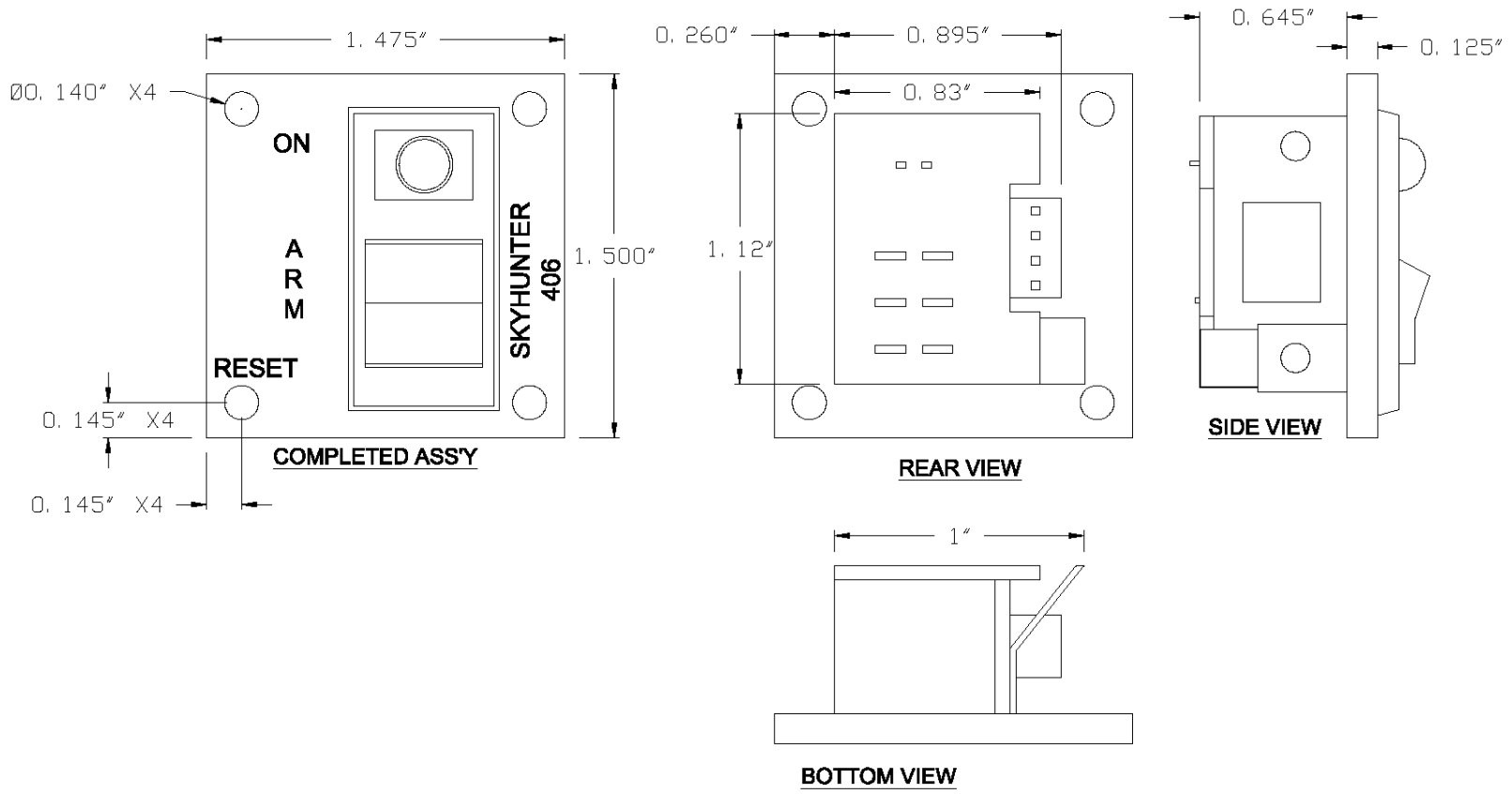
**WARNING !!: The Remote Switch components contain components sensitive to static electricity: ESD precautions should be used. Do not bend or modify existing connections on the HD-DB15 as this could destroy components or inhibit correct ELT operation.**

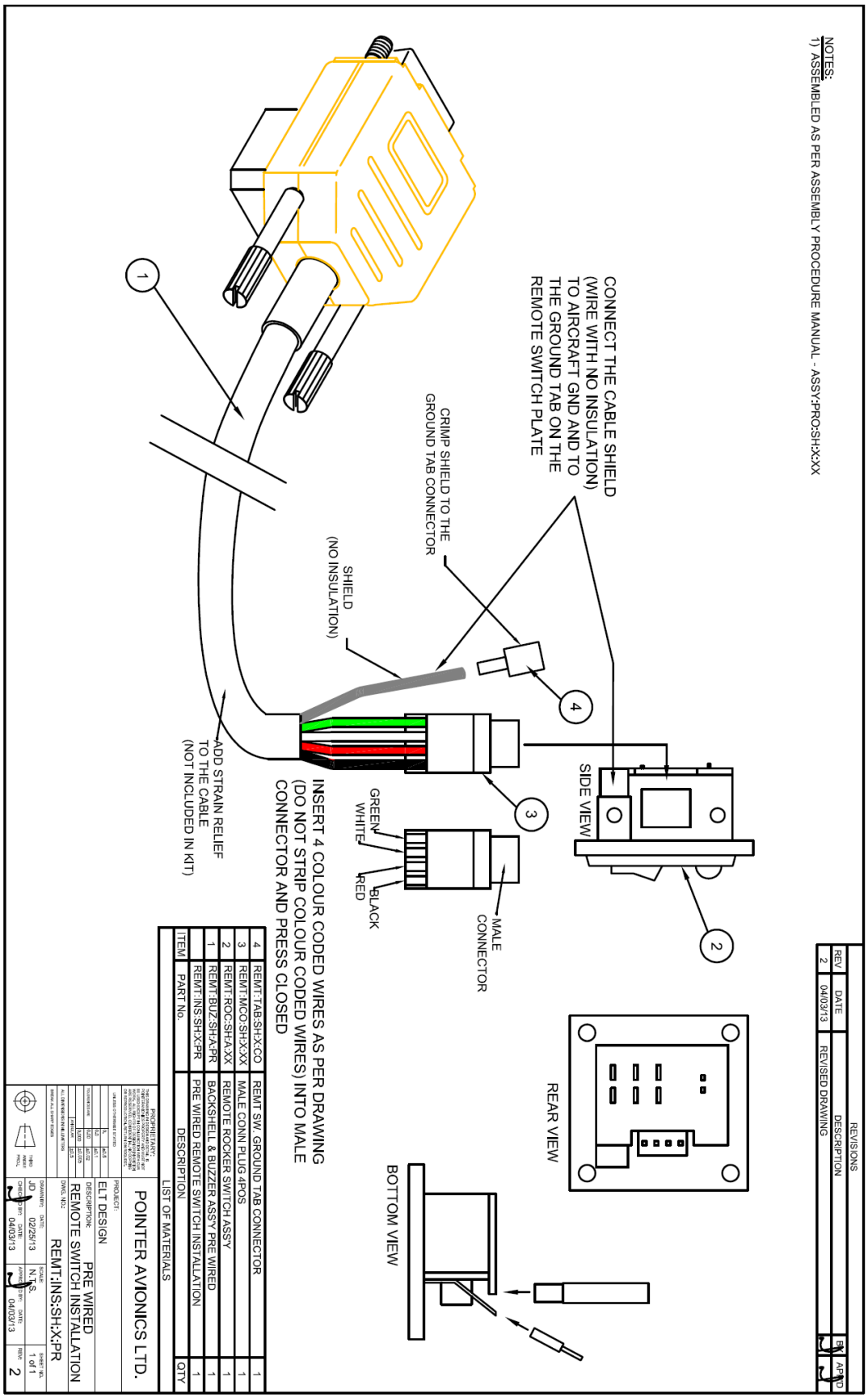
The instructions in this guide should be followed to ensure a systematic and correct installation. Be sure all parts listed below have been included in your kit:

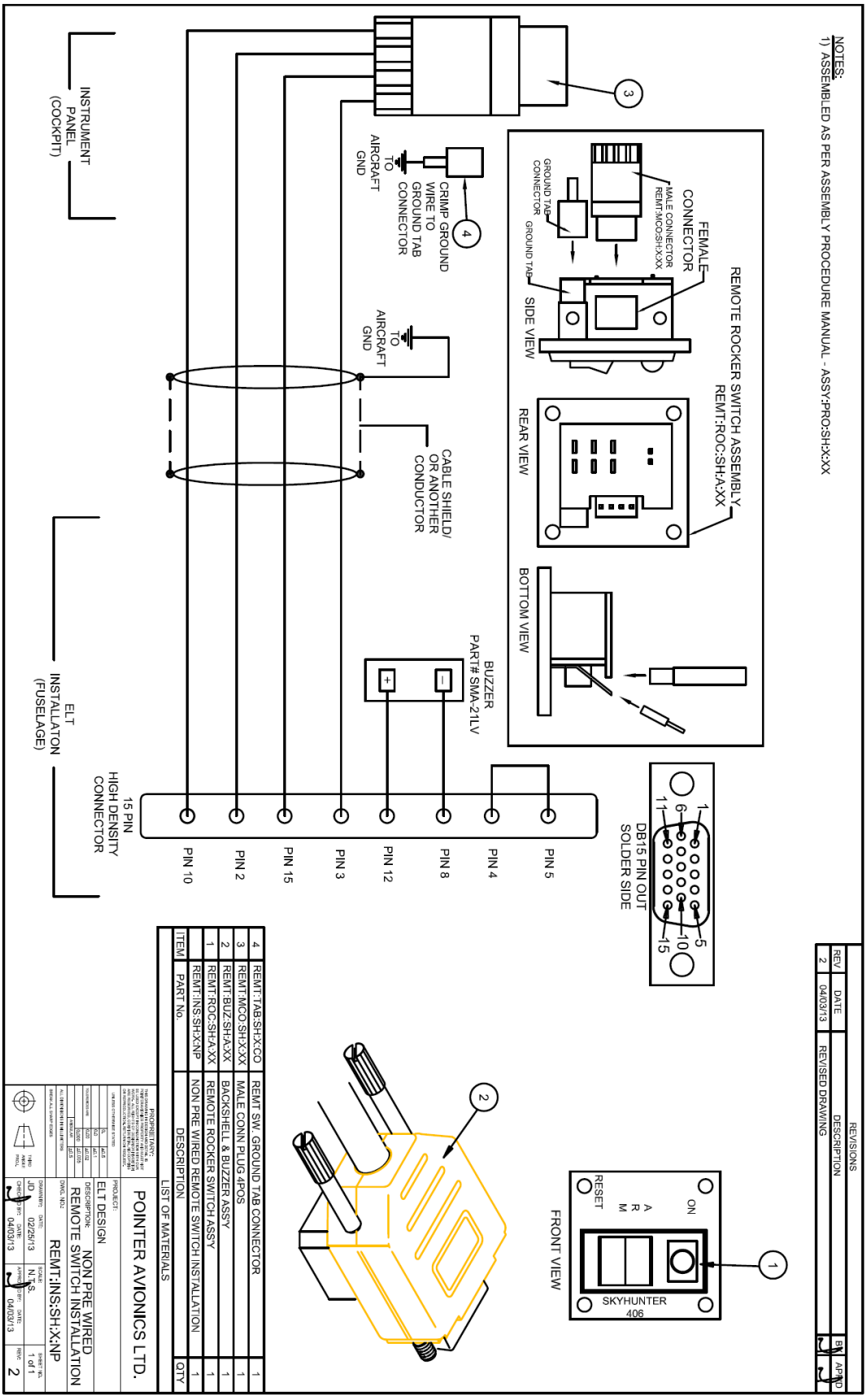
**Remote Switch Components :**

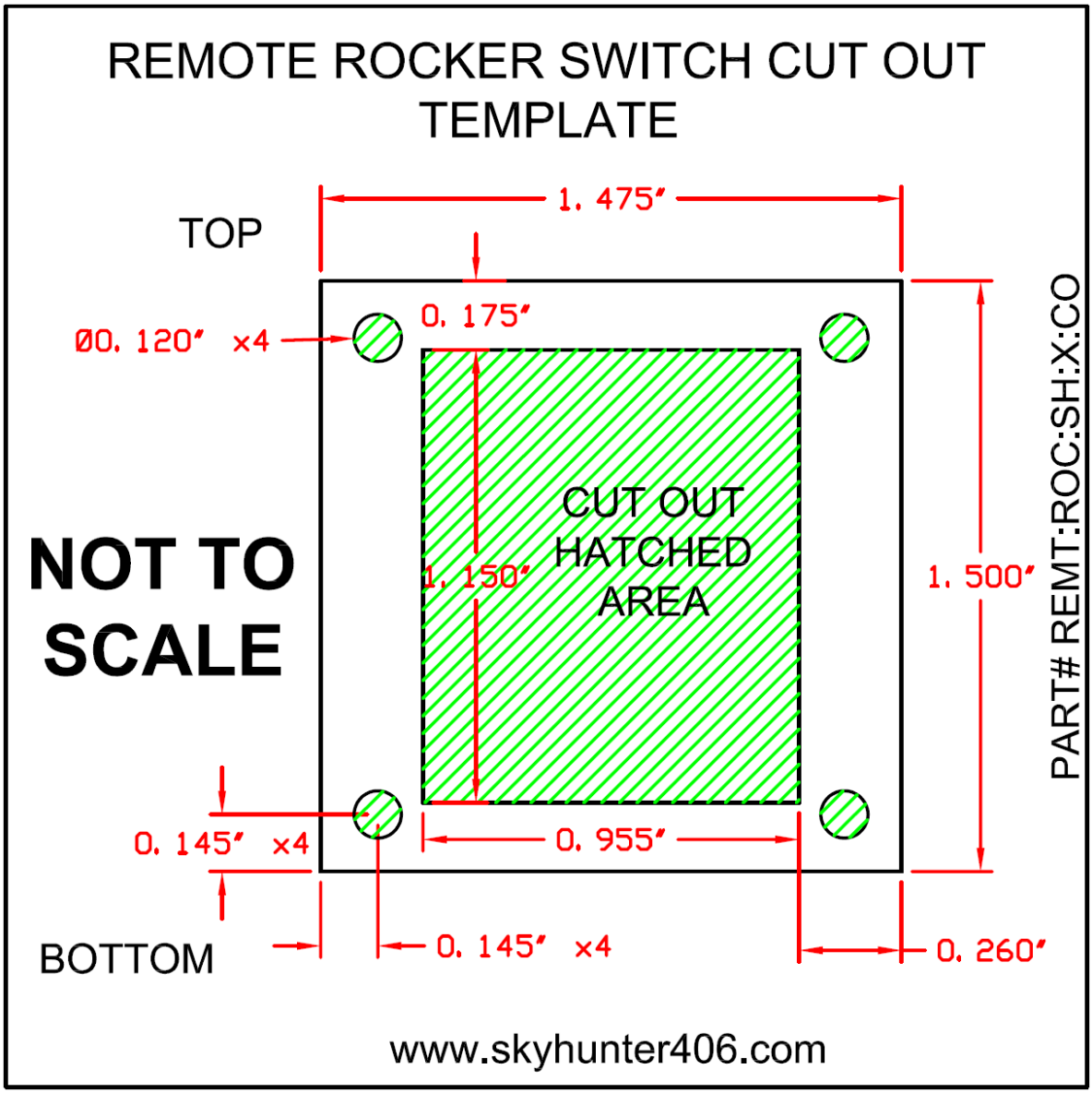
1. Remote Switch with Pre-wired assembly, this kit **DOES** include 25 feet of cable.
   A. REMT:ROC:SH:A:XX – Remote Rocker Switch Assembly
   B. REMT:MCO:SH:X:XX – Remote Rocker Switch Male Connector
   C. REMT:BUZ:SH:A:PR – Backshell with Cable Assembly(25 ‘ of cable)
2. Remote Switch with Non- Prewired Assembly, this kit does **NOT** include any wire.
   A. REMT:ROC:SH:A:XX – Remote Rocker Switch Assembly
   B. REMT:MCO:SH:X:XX – Remote Rocker Switch Male Connector
   C. REMT:BUZ:SH:A:XX – Backshell & Buzzer Assembly(Requires customer wire)
3. Special order remote kits available.

# REMT:ROC:SH:A:XX
# REMOTE ROCKER SWITCH ASS'Y




NOTES:
1) ASSEMBLED AS PER ASSEMBLY PROCEDURE MANUAL - ASSY:PRO:SH:X:XX
REVISIONS
REV
DATE
DESCRIPTION
BY
APP'D
2
04/03/13
REVISED DRAWING
CONNECT THE CABLE SHIELD (WIRE WITH NO INSULATION) TO AIRCRAFT GND AND TO THE GROUND TAB ON THE REMOTE SWITCH PLATE
CRIMP SHIELD TO THE GROUND TAB CONNECTOR
SHIELD (NO INSULATION)
ADD STRAIN RELIEF TO THE CABLE (NOT INCLUDED IN KIT)
SIDE VIEW
REAR VIEW
BOTTOM VIEW
GREEN
WHITE
BLACK
RED
MALE CONNECTOR
INSERT 4 COLOUR CODED WIRES AS PER DRAWING (DO NOT STRIP COLOUR CODED WIRES) INTO MALE CONNECTOR AND PRESS CLOSED
ITEM
PART No.
DESCRIPTION
QTY
4
REMT:TAB:SH:X:CO
REMT SW. GROUND TAB CONNECTOR
1
3
REMT:MCO:SH:X:XX
MALE CONN PLUG 4POS
1
2
REMT:ROC:SH:A:XX
REMOTE ROCKER SWITCH ASSY
1
1
REMT:BUZ:SH:A:PR
BACKSHELL & BUZZER ASSY PRE WIRED
1
REMT:INS:SH:X:PR
PRE WIRED REMOTE SWITCH INSTALLATION
1
LIST OF MATERIALS
POINTER AVIONICS LTD.
PROJECT:
ELT DESIGN
DESCRIPTION:
PRE WIRED
REMOTE SWITCH INSTALLATION
DWG. NO.:
REMT:INS:SH:X:PR
DRAWN:
JD
DATE:
02/25/13
SCALE:
N.T.S
SHEET NO.
1 of 1
CHECKED:
DATE:
04/03/13
APPROVED:
DATE:
04/03/13
REV:
2


NOTES:
1) ASSEMBLED AS PER ASSEMBLY PROCEDURE MANUAL - ASSY:PRO:SH:X:XX
REVISIONS
REV
DATE
DESCRIPTION
BY
APP'D
2
04/03/13
REVISED DRAWING
REMOTE ROCKER SWITCH ASSEMBLY
REMT:ROC:SH:A:XX
FEMALE CONNECTOR
MALE CONNECTOR
REMT:MCO:SH:X:XX
GROUND TAB
GROUND TAB CONNECTOR
SIDE VIEW
REAR VIEW
BOTTOM VIEW
CRIMP GROUND WIRE TO GROUND TAB CONNECTOR
AIRCRAFT GND
CABLE SHIELD/ OR ANOTHER CONDUCTOR
BUZZER PART# SMA-21LV
INSTRUMENT PANEL (COCKPIT)
ELT INSTALLATON (FUSELAGE)
15 PIN HIGH DENSITY CONNECTOR
PIN 10
PIN 2
PIN 15
PIN 3
PIN 12
PIN 8
PIN 4
PIN 5
DB15 PIN OUT SOLDER SIDE
FRONT VIEW
ON
ARM
RESET
SKYHUNTER 406
ITEM
PART No.
DESCRIPTION
QTY
1
REMT:INS:SH:X:NP
NON PRE WIRED REMOTE SWITCH INSTALLATION
1
2
REMT:ROC:SH:A:XX
REMOTE ROCKER SWITCH ASSY
1
3
REMT:BUZ:SH:A:XX
BACKSHELL & BUZZER ASSY.
1
4
REMT:MCO:SH:X:XX
MALE CONN PLUG 4POS
1
5
REMT:TAB:SH:X:GO
REMT SW. GROUND TAB CONNECTOR
1
LIST OF MATERIALS
PROPRIETARY NOTICE
PROJECT:
POINTER AVIONICS LTD.
ELT DESIGN
DESCRIPTION:
NON PRE WIRED REMOTE SWITCH INSTALLATION
DRAWING NO.:
REMT:INS:SH:X:NP
DRAWN BY:
JD
DATE:
02/25/13
SCALE:
N.T.S.
SHEET NO.
1 of 1
CHECKED BY:
DATE:
04/03/13
APPROVED BY:
DATE:
04/03/13
REV:
2


REMOTE ROCKER SWITCH CUT OUT TEMPLATE
TOP
1. 475″
Ø0. 120″ x4
0. 175″
CUT OUT HATCHED AREA
1. 150″
1. 500″
NOT TO SCALE
PART# REMT:ROC:SH:X:CO
0. 145″ x4
0. 955″
BOTTOM
0. 145″ x4
0. 260″
www.skyhunter406.com

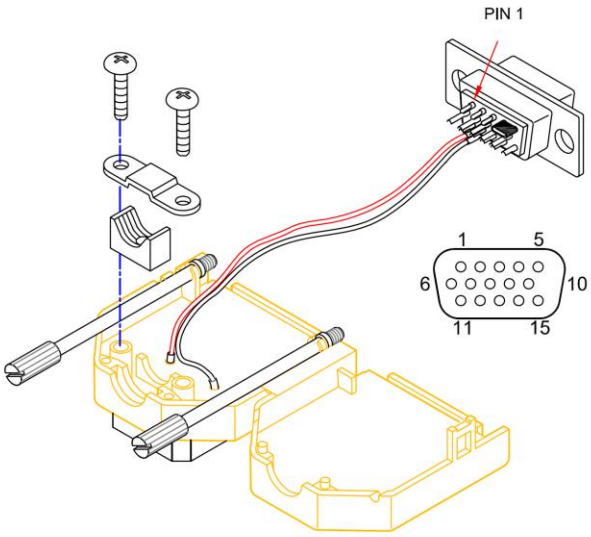



**Fig. 4 - Remote Connector and Buzzer Assembly , REMT:BUZ:SH:A:XX**

1. Determine the remote switch location on the control panel. Use the cut out decal , part # REMT:ROC:SH:X:CO, as provided as a template. The chosen location should take into account pilot visibility and access for installation.

2. Cut a 1.150" X 0.955" inch hole at the chosen location with a chassis hole punch.

3. Clean the area around the hole .

#### *6.4.1.1 Remote Switch with Pre Wired assembly, (Cable supplied with kit)*

4. Pull the panel end of the shielded remote cable through the prepared panel hole. Dress and insert the wires into the remote switch male connector as shown in the **Pre wired Remote Switch Installation Diagram, part # REMT:INS:SH:X:PR, *found in SECTION 6*.** Press the male connector until closed. Insert into the Remote Rocker Switch Assembly.

#### *6.4.1.2 Remote Switch with Non Pre Wired Assembly, (requiring customer supplied wire )*

*5.* Carefully, so as not to damage, open the clamshell. Dress and solder the wires to the plug end as shown in the **Non Pre Wired *Remote Switch Installation Diagram, part # REMT:INS:SH:X:NP, found in SECTION 6*.**

6. Insert the strain relief block into the clamshell. Secure the remote wire with the metal retainer and two screws. Place the threaded ends of the thumbscrews into the holes on the HD DB15 and snap them into place. Apply an electronic grade, non corrosive RTV Silicone around the wires entering the rear of the connector to help seal out moisture and close the clamshell.

7. The remote connector is ready to be connected to the ELT unit.

8. Pull the panel end of the shielded remote cable through the prepared panel hole. Dress and insert the wires into the remote switch male connector as shown in the **Pre wired Remote Switch Installation Diagram, part # REMT:INS:SH:X:PR, *found in SECTION 6*.** Press the male connector until closed. Insert into the Remote Rocker Switch Assembly

### 6.4.2 SkyKey Programmer – KEYY:XXP:SH:A:XX

**CAUTION – BE SURE YOUR SKYKEY HAS BEEN PROGRAMMED WITH YOUR AIRCRAFT INFORMATION AT AN APPROVED SKYHUNTER406 MAINTENANCE SHOP BEFORE INSTALLATION**

Using the remote switch kit instructions replace the yellow remote connector with the blue SkyKey connector.

In your SkyKey you will notice a green wire extending from pin 2, this will be your access point for pin 2 as the pin is shared with the memory module.

Once the wiring is complete use the label that comes with your SkyKey and wrap it around the cable near the ELT. The maintenance facility will have your Aircrafts unique HEX ID written on this label and it must stay with your SkyKey.

Using the Sky Key programmer will allow you to swap the SkyHunter 406™ ELT out with other SkyHunter 406 ELT's as long as the SkyKey and the ELT's have the same country code.

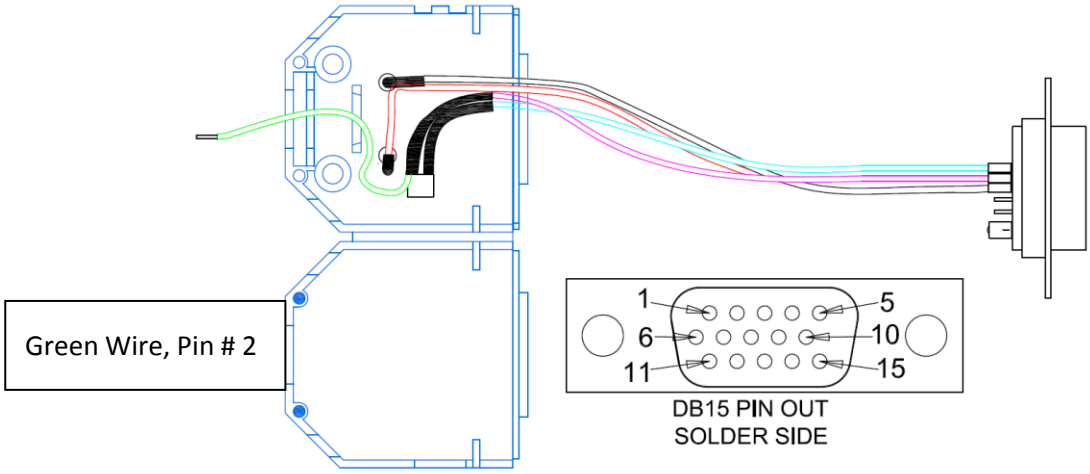



**Fig. 5 – SkyKey Programmer, KEYY:XXP:SH:A:XX**

## 6.5 ANTENNA INSTALLATION

Locate a position where the antenna can be installed vertically (up to 15° off the vertical plane is acceptable) and as far aft as possible. Refer to AC 43.13

The following factors must also be considered:

- Antenna must be mounted as far away as possible from other Very High Frequency (VHF) antennas.
- The antenna should be as close as possible to the transmitter.
- Must not foul other antennas in flight.
- Antennas should be vertically polarized when aircraft is in the normal flight attitude.

  The antenna should be mounted as close to the ELT as practicable. Coaxial cable connecting the Antenna to the ELT should not cross aircraft production breaks. The coaxial cable should be secured to the aircraft structure and when the coaxial cable is installed and the connectors are mated, each end should have some slack.

### 6.5.1 ROD/GPS Antenna ANNT:XVG:SH:A:XX

This ROD/GPS antenna is compatible with all SkyHunter406 ELT installation kits. The antenna transmits on the 121.5 MHz and 406.037 MHz frequencies and allows GPS position acquisition and update the aircraft current position.

#### *6.5.1.1 Antenna Mounting*

Using the mounting diagram in section 10 cut out the mounting hole in the aircraft skin. Drill the mounting holes. Mount the antenna using a doubler plate as required. Use eight screws to hold the antenna securely in place.

### 6.5.2 Whip Antenna (121.5 MHz/406 MHz) ANNT:XXW:SH:A:XX

You will notice in the mounting diagram for this Whip antenna located in section 10 that this is most similar to the original whip antenna mounting. Although you will not have GPS reception capabilities with this antenna (when ELT is installed) you will only have one hole to drill for mounting or reuse the existing whip antenna hole.

### 6.5.3 Right angle antenna and gps connectors

These right angle connectors are available to help with the installation of antennas that are installed in a restricted space environment.

ANNT:CON:SH:X:01

ANNT:CON:SH:X:03

### 6.5.4 Ground Plane Requirement (Wood/Fabric and composite aircraft)

The following has been reproduced from AC 43.13-2B, please refer to for a more up to date version.

*6.5.4.1 When the antenna is not mounted to a conductive surface capable of providing a required ground plane for operation, a ground plane must be fabricated.*

*6.5.4.2 Most antennas require a ground plane of approximately 24" by 24". While the rule of thumb is to provide a minimum of ¼ wavelength of the operation frequency, larger is better and ground plane symmetry is critical. Gaps in antenna coverage or performance may occur if a ground plane is not symmetrical.*

*6.5.4.3 Wire mesh is the best material to use when a solid plate is not practical. Heavy aluminum foil can also be used. In all cases, electrical continuity from the ground plane to airframe ground is essential.*

*6.5.4.4 Be sure the ground plane is well attached to the airframe with cement or epoxy if not otherwise supported. This will prevent noise problems or erratic operation that could occur as an antenna base is separated from its ground plane. This may distort antenna coverage or operation.*

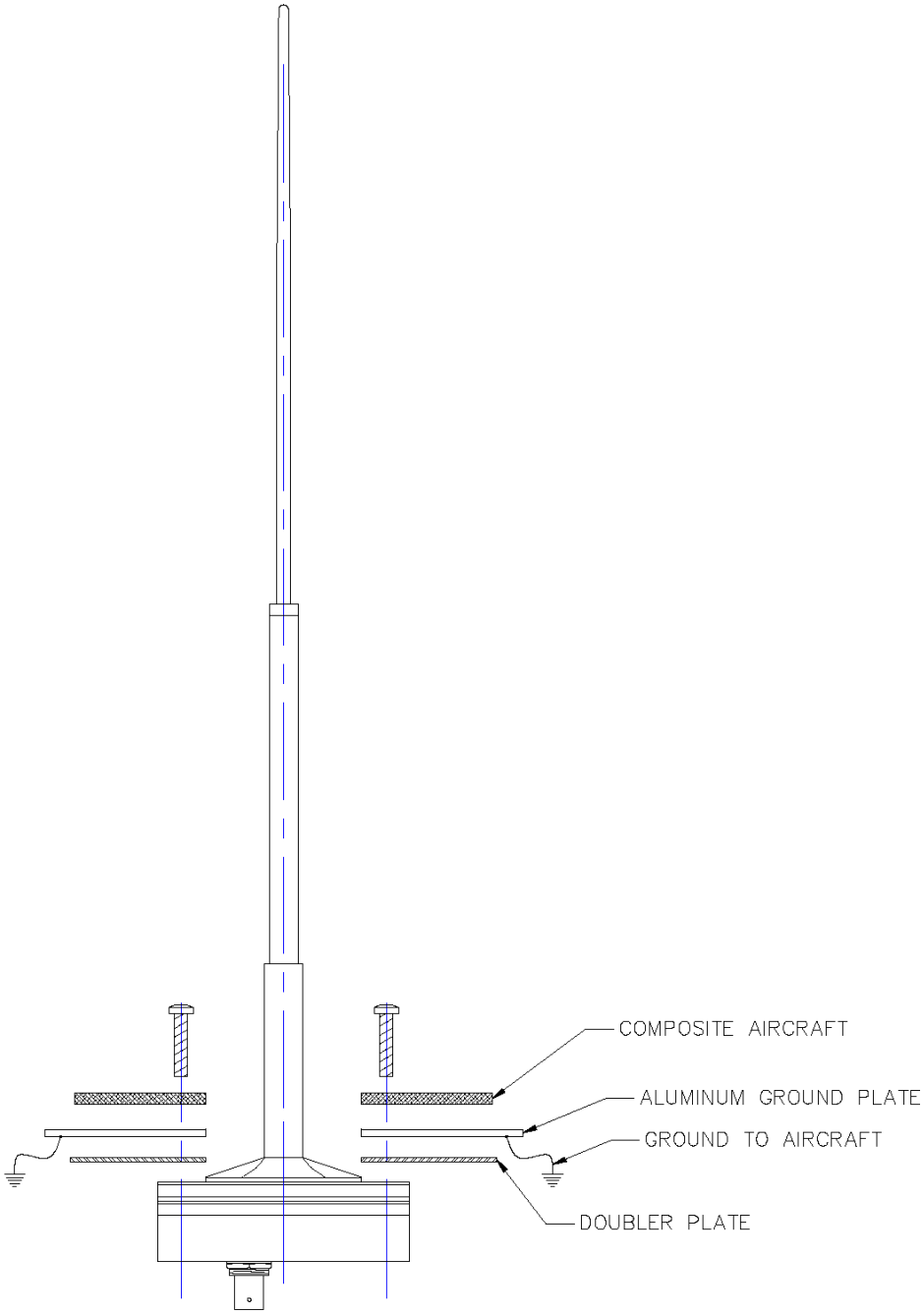
### 6.5.5 Ground plane sizing

The ground plane should be as large as possible but when size is restricted, the following should be used as a guideline.

| Frequency | Wavelength | ¼ Wavelength |
|---|---|---|
| 121.5 Mhz | 97 inches | 24 inches |
| 406.037 Mhz | 29 inches | 7 inches |

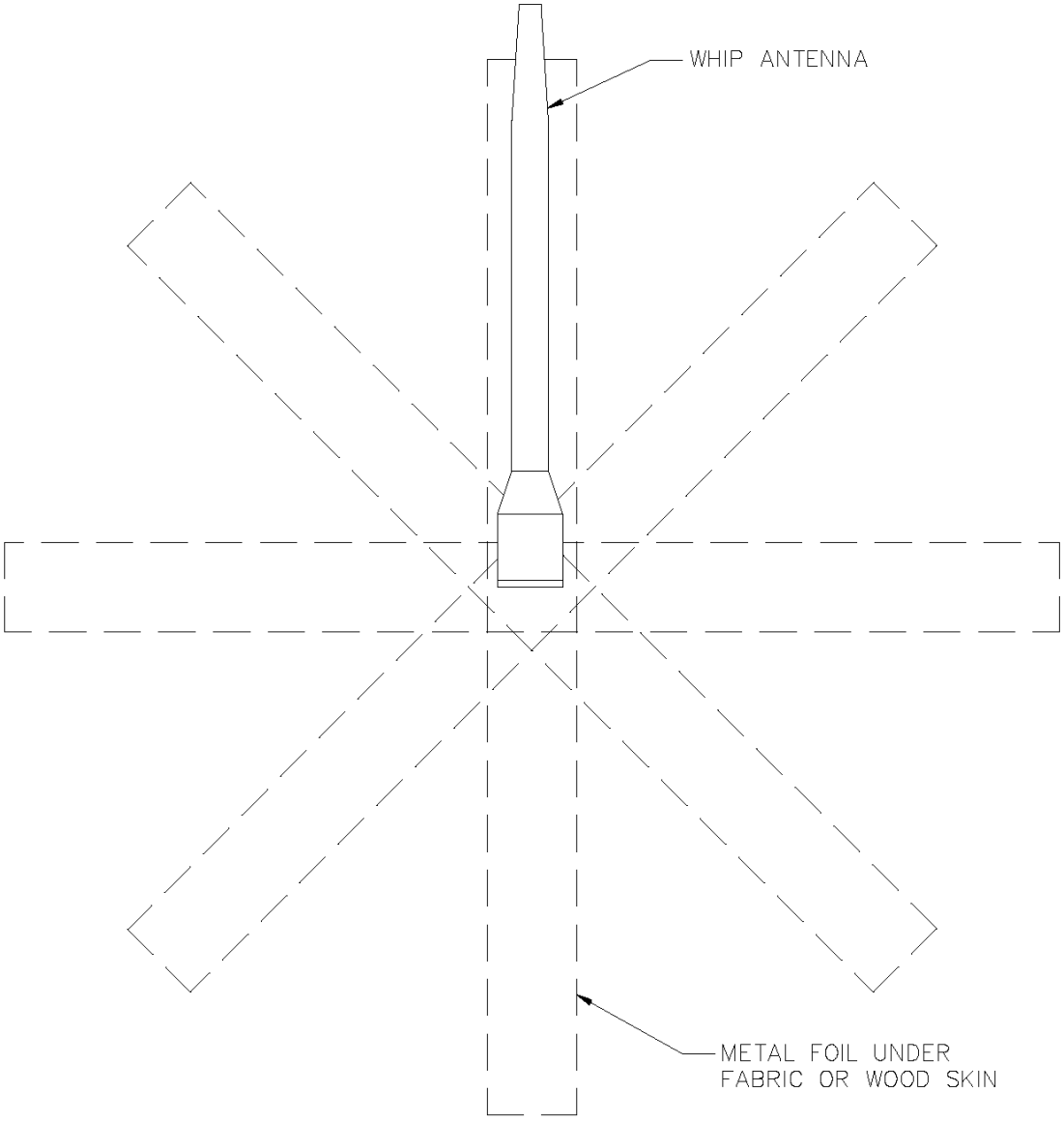
**Therefore the ground plane should be at least 24 inches in diameter**.

### 6.5.6 ANNT:XVG antenna install with fabric or composite




MOUNTING DETAIL FRONT VIEW

### 6.5.7 ANNT:XXW:SH:A:XX antenna install with fabric or composite



## 6.6 ELT INSTALLATION AND CONNECTIONS

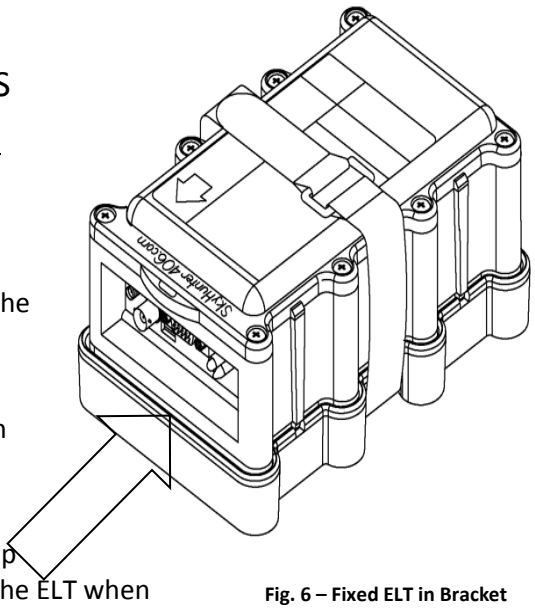
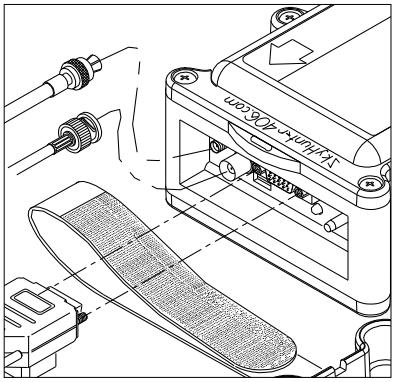



**Fig. 6 – Fixed ELT in Bracket**

**NOTE: When making connections to the face of the ELT be sure to use silicone grease to aide in creating a water resistant seal and to help protect against corrosion. Do not use RTV on the mini USB port or the DB 15 connector.**

1. Once the mounting bracket is installed, place the ELT in the bracket, ensuring that the arrow on the SkyHunter 406™ points in the direction of flight.
2. Inspect the Velcro strap for any wear or degradation, if in doubt, replace.
3. Securely fasten with the Velcro strap such that the ELT is firmly planted into the mounting tray and the Velcro strap is pulled tight. There should be very little movement in the ELT when mounted correctly, the lower gasket seam of the ELT will line up with the mounting bracket edge.
4. Replace the Velcro strap at a minimum of every battery replacement interval.
5. Attach the GPS antenna cable (optional) to the SMA connector.
6. Attach the External antenna cable to the BNC connector. When the coaxial cable is installed and the connectors mated, each end shall have some slack in the cable, and the cable shall be secured to aircraft structures for support and protection.
7. Firmly attach the remote connector or SkyKey programmer to the ELT using the thumbscrews.
8. Perform ELT Self Test by switching the ELT Master Switch to “ARM”. (refer to Chapter 7.3.1, the Self Test Section for detailed instructions)




ELT Connections

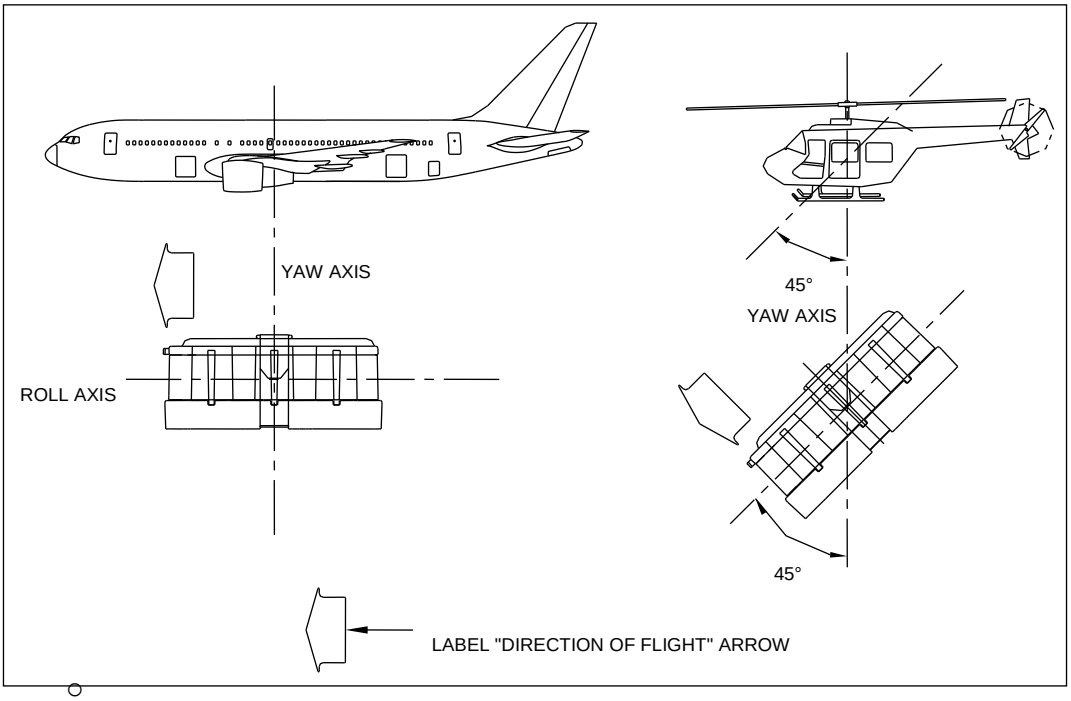



**Fig. 7 - Mounting AF Models**

- **Fixed Wing Aircraft** must have the SkyHunter 406™ **AF** ELT installed with the Direction of Flight Arrow facing forward around the roll axis.
- **Rotary wing aircraft** can have either the SkyHunter 406 **AF** or SkyHunter 406™ **HF** ELT installed. The AF model must be mounted with the direction of flight arrow facing forward around the roll axis and the ELT may be pointed downwards on up to a 45˚ angle to the yaw axis. **The HF model must be installed with the direction of flight arrow facing forward around the roll axis and can NOT be placed on an angle to the yaw axis.**

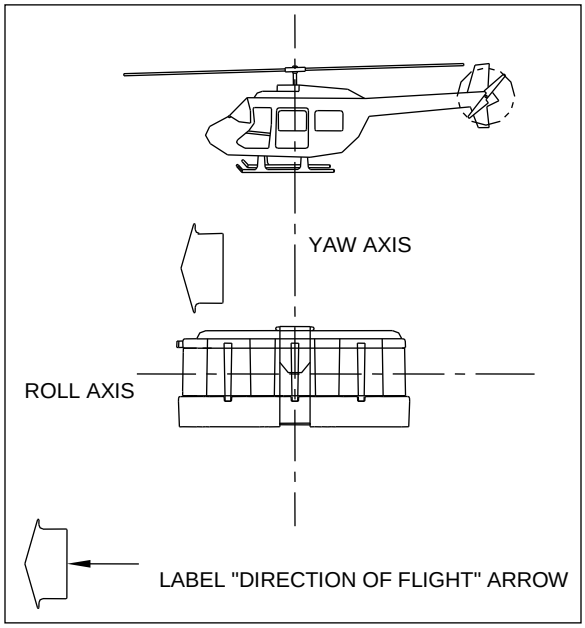
- 


**Fig. 8 - Mounting HF Models**

- 6 position g-switch models (SkyHunter 406™ HF Models) must be installed with the Direction of Flight Arrow forward facing around the roll axis.

# 7 SKYHUNTER 406™ OPERATION

## 7.1 ACTIVATION

- ELT is to remain "ON" until rescue as SAR forces could be searching despite darkness or poor weather.
- Your ELT antenna should have a clear view of the sky for best operation and SAR visibility.

### 7.1.1 Automatic Activation

In order to be automatically activated by the G-Switch, the ELT must be in "ARM" mode. This mode is mandatory during flight. Switch the ELT master switch to "OFF" **only** when the aircraft is parked for a long period of time or for a maintenance operation. Upon activation the ELT will begin to transmit the 121.5 MHz signal immediately and will be followed by the 406 MHz signal up to 50s later. The SkyHunter 406™ will burst approximately every 50s during the next 24 hours. During transmission the LED on the ELT will be solid green if the ELT has a GPS lock and will flash green if it does not. When the unit is on, the Remote Switch LED will be solid red if GPS is locked and flashing red if there is no lock. The audible buzzer will sound approximately every 50 seconds, coinciding with the 406MHz bursts when the ELT is attached to a remote connector

### 7.1.2 Manual Activation

Switch the ELT to "ON" either with the master switch or the Remote Switch located in the cockpit of the aircraft. Upon activation the ELT will begin to transmit the 121.5 MHz signal immediately and will be followed by the 406 MHz signal up to 50s later. The SkyHunter 406™ will burst approximately every 50s during the next 24 hours. During transmission the LED on the ELT will be solid green if the ELT has a GPS lock and will flash green if it does not. When the unit is on, the Remote Switch LED will be solid red if GPS is locked and flashing red if there is no lock. The audible buzzer will sound approximately every 50 seconds, coinciding with the 406MHz bursts when the ELT is attached to a remote connector.

## 7.2 RESET

In case of accidental activation and if it has been less than 50 seconds since activation you can reset the ELT. **If it has been more than 50 seconds regulations state that you may not interrupt the transmission unless efforts are made to contact the Air Traffic Controller of this action.**

### 7.2.1 Manual Reset

Switch the Master Switch on the SkyHunter 406™ to the "OFF" position and then back to the "ARM" position.

### 7.2.2 Remote Reset

Momentarily push the "RESET" side of the Remote Switch located in the cockpit of the aircraft.

## 7.3 LED CODING

You will notice specific LED codes flashing on your ELT's LED or the ELT on the Remote Rocker Switch, these codes and meanings are described below

### 7.3.1 Self Tests

There are separate self tests available on the SkyHunter406 ELT's as follows:

#### *7.3.1.1 Arm Test*

**CAUTION: This Self Test uses battery power and as a result if you choose to perform more than the recommended monthly testing early battery replacement may be required.**

- Place the ELT locking Master Switch in the "ARM" position.
- With the ELT already in the "ARM" position, press the "RESET" at the Remote Switch.

During the self test there will be a series of flashes from the LED that needs to be interpreted. Please use the table to identify the appropriate codes indicated. **CAUTION: The unit should not be switched to the "ON" position except in the case of an EMERGENCY.**

**LED Sequences Displayed**

| At the REMOTE SWITCH | At the ELT | Description |
|---|---|---|
| 1 Red Flash* | 1 Green Flash | Normal and Ready |
| 3 Red Flashes* | 3 Amber Flashes | Battery Voltage Low/Accumulated Battery Time Limit Exceeded |
| 4 Red Flashes* | 4 Amber Flashes | Abnormal Hardware Conditions **RETURN TO MANUFACTURER FOR REPAIR** |
| 5 Red Flashes* | 5 Amber Flashes | Programmed for ELT Serial Number protocol |

**Table 2 – Self Test LED Coding**

**For every Red Flash the buzzer will sound.*

### *7.3.1.2 Power Test Burst*

Using the following switch sequence the ELT operator can send out a test 406 MHz burst to ensure the antennas are operating correctly.

**CAUTION: The 'Power Test Burst' Test uses battery power and as a result if you choose to perform more than the recommended twice yearly testing early battery replacement may be required.**

**CAUTION: This test should only be performed annually to conserve battery power. This can only be done in the first 5 minutes of any UTC hour and can be performed a total number of 10 times over the lifetime of the battery pack.**

- Place the ELT locking Master Switch in the "ARM" position and wait 5 seconds to begin test or with the ELT already in the "ARM" position, press **["ON" , "ARM"] , ["ON" , "ARM"] , ["ON" , "ARM"]** (within 5 seconds) at the Remote Switch.
- Wait 30 seconds for the Test Burst (LED will flash twice every 5 seconds during this wait period)

**LED Sequences Displayed**

| At the REMOTE | At the ELT | Description |
|---|---|---|
| 15 seconds Solid Red* | 15 seconds Solid Green | PASS |
| 15 Red Flashes* | 15 Amber Flashes | FAIL |
| 3 Red Flashes* | 3 Amber Flashes | Maximum # of GNSS/Power Burst Tests Reached per battery pack to conserve battery power |

**Table 3 – Power Test Burst LED Coding**

**For every Red Flash the buzzer will sound.*

*Note : If the operator has performed the toggle sequence too quickly it will be ignored and the beacon will automatically perform an "ARM" test and power back down to await another activation. When performing the test toggle sequence it is advised to observe a 0.25-0.5 second remote switch "ON" time. Please note that the remote switch is a momentary type switch and therefore the operator does not need to actively move the switch to the "ARM" position but rather allow the switch to spring back into the default position.*

### *7.3.1.3 GNSS Self Test*

Using the following switch sequence the ELT operator can send out a test 406 Mhz burst to ensure the GPS receiver and antennas are operating correctly.

**CAUTION: The GNSS Self Test uses battery power and as a result if you choose to perform more than the recommended annual testing early battery replacement may be required.**

**CAUTION: This test should only be performed annually to conserve battery power. This can only be done in the first 5 minutes of any UTC hour and can be performed a total number of 10 times over the lifetime of the battery pack.**

- Place the ELT locking Master Switch in the "ARM" position and wait 5 seconds to begin test or with the ELT already in the "ARM" position, press **["ON" , "ARM"],["ON" , "ARM"],["ON" , "ARM"],["ON" , "ARM"],["ON" , "ARM"]** (within 5 seconds) at the Remote Switch.
- *GNSS Self Test will start (can last up to 5 minutes depending on satellite lock time) which will be indicated by the following beacon function.*
- Wait up to 5 minutes for the Test Burst (LED will flash four times every 30 seconds during this wait period)
- When a valid GPS position has been obtained the beacon will start into the 'burst prep mode', this will give the operator 30 seconds to be ready with any measurement equipment that may be needed to capture the test burst that will be encoded with position data.

| | | |
|---|---|---|
| 2 Red Flashes* | 2 Green Flashes | Burst Prep Mode |

**LED Sequences Displayed**

| At the REMOTE | At the ELT | Description |
|---|---|---|
| 15 seconds Solid Red* | 15 seconds Solid Green | PASS |
| 15 Red Flashes* | 15 Amber Flashes | FAIL |
| 3 Red Flashes* | 3 Amber Flashes | Maximum # of GNSS/Power Burst Tests Reached per battery pack to conserve battery power |

**For every Red Flash the buzzer will sound.*

*Note : If the operator has performed the toggle sequence too quickly it will be ignored and the beacon will automatically perform an "ARM" test and power back down to await another activation. When performing the test toggle sequence it is advised to observe a 0.25-0.5 second remote switch "ON" time. Please note that the remote switch is a momentary type switch and therefore the operator does not need to actively move the switch to the "ARM" position but rather allow the switch to spring back into the default position.*

### 7.3.2 ELT "ON"

The ELT will be "ON" when: **(ELT Remote Switch must be connected)**

1. The ELT locking Master Switch is placed in the "ON" position or;
2. The ELT is in the "ARM" position and the "ON" is pressed at the Remote Rocker Switch or;
3. The ELT is in the "ARM" position and the G-Switch has been activated.

**LED Sequences Displayed**

| At the REMOTE | At the ELT | Description |
|---|---|---|
| Continuous Flashing RED | Continuous Flashing GREEN | Transmitting – Normal Hardware Conditions – No GPS Lock |
| Continuous Solid RED | Continuous Solid GREEN | Transmitting – Normal Hardware Conditions – WITH GPS Lock |
| Continuous 3 second Red Flash | Continuous 3 second Amber Flash | Transmitting but With Abnormal Conditions – **DIAGNOSE FURTHER USING A SELF TEST** |

**Table 4 - ELT "ON" LED Coding**

# 8 MAINTENANCE

## 8.1 CANADA

The described maintenance steps below meet the requirements of the Canadian Aviation Regulations for annual performance check. These checks must be performed annually.

## 8.2 MAINTENANCE STEPS

These steps are used to comply with the above regulations.

### 8.2.1 Corrosion Inspection

Due to the possibility of exposure to extreme environmental conditions the SkyHunter 406$^{TM}$ ELT is to be inspected for corrosion upon every performance test and battery replacement.

### 8.2.2 Operational Testing

**Tests are only to be performed during the first 5 minutes of any UTC hour and should not last for more than 5 seconds.** This test will only indicate if the ELT is transmitting on 121.5 Mhz and NOT 406 Mhz and can be done at the operator's discretion.

Turn the ELT "ON" and listen on a VHF receiver tuned to 121.5MHz for approximately 3 sweeps then switch the ELT back to the "ARM" or "ARM" position. Monitor 121.5MHz to be sure the sweep stops after the test has been completed.

NOTE: Operational Testing in this manner does not identify if your ELT is operating within ALL operating parameters. Refer to the Self Test section of this manual for additional 406 Mhz operational testing.

### 8.2.3 Performance Testing

Performance Testing is practiced annually by a ***certified avionics shop with proper equipment.*** The ELT should be under power with its battery pack unless lengthy servicing is expected. An alternate power source will be acceptable under those circumstances. After passing these parameters the date the test was passed will be marked in a permanent manner on the outside of the ELT.

### 8.2.4 Measuring peak power after 3 minutes of operation

The ELT must be in a screen room or metal enclosure. Output power may be measured using a suitable Spectrum Analyzer or beacon tester connected to the output BNC connector of the ELT. Using a suitable impedance matching device confirm that the power levels are above the minimum acceptable found in the specifications outlined in Section 4. The 121.5MHz signal is present and active except when the 406MHz signal is active.

### 8.2.5 Measuring the frequency after 3 minutes of operation

Leaving the ELT configured as in the previous step measure both frequencies. The 406MHz signal will only be on for 520ms approx. every 50 s. Confirm the frequencies are within the limits set out in the specifications outlined in section 4.

### 8.2.6 Check for proper sweep tone

Turn the ELT "ON" and listen on a VHF receiver tuned to 121.5MHz for approx. 3 sweeps then switch the ELT back to the "ARM" or "ARM" position, continue monitoring 121.5MHz to be sure the sweep stops after the test has been completed.

### 8.2.7 Check the 406 Coded Message

Attach a decoding device such as the WS Tech 406 ELT Beacon Tester and follow the tester's instruction set. Confirm the resulting Hex ID from the tester is the same as the one indicated on the label of the SkyHunter406 $^{TM}$ ELT.

### 8.2.8 Measuring the current draw

The antenna connection must be terminated with a 50 ohm load for current measurements in the "ARM" mode, and "ON" mode without 406 MHz Burst to be accurate, using the appropriate bench equipment. Pointer Avionics Ltd does **NOT** recommend measuring the 406 Mhz burst current which has limits of approximately 5 Amps.

ARM current limits: $\leq$**5µA**

ON (without 406 MHz Burst) limits: **500-700 mA immediately after activation and within one minute 180-225 mA**

ON (with 406 MHz Burst) limits: **5 A**

### 8.2.9 Testing the G-Switch Function

*A Jumper is needed to perform this test, improper installation of this jumper has the potential to permanently damage the ELT. ONLY experienced technicians should perform this work. The ELT cannot be G switch activated without this jumper.*

Attach an HD DB 15 connector that has a jumper shorting pins 4 and 5 to complete the g-switch circuit. Verify that the ELT switch is in the ARM position. Grasp the ELT firmly, then vigorously thrust in the same direction as the direction of flight arrow to activate the g-switch circuit. The force required is >2.3G's to activate the ELT. Allow transmission to be long enough to verify activation and then turn ELT off by placing master switch into OFF position.

## 8.3 USA

Each emergency locator transmitter required by paragraph (a) of FAR 91.207 must be inspected within 12 calendar months after the last inspection for: Proper installation; Battery corrosion; Operation of the controls and crash sensor; and the presence of a sufficient signal radiated from its antenna.

## 8.4 INTERNATIONAL

Check with your nation's regulations to ensure compliance with your government.

## 8.5 BATTERY REPLACEMENT

For optimum performance it is recommended to have a battery pack which under load measures greater than 4.5 V at ambient room temperature. Mandatory battery replacement is required if any of the following conditions exist and is **to be performed by one of Pointer Avionics certified maintenance shops listed at WWW.SKYHUNTER406.COM**.

- If Battery has reached expiration date. (5 years)
- If cumulated transmitter "ON" time is more than 1 hour since last battery replacement, indicated by 3 red flashes on the Remote Switch or 3 amber flashes on the ELT LED, during the ARM Self Test.
- If the ELT has been on for an undetermined amount of time.
- If the ELT has been activated during an emergency.

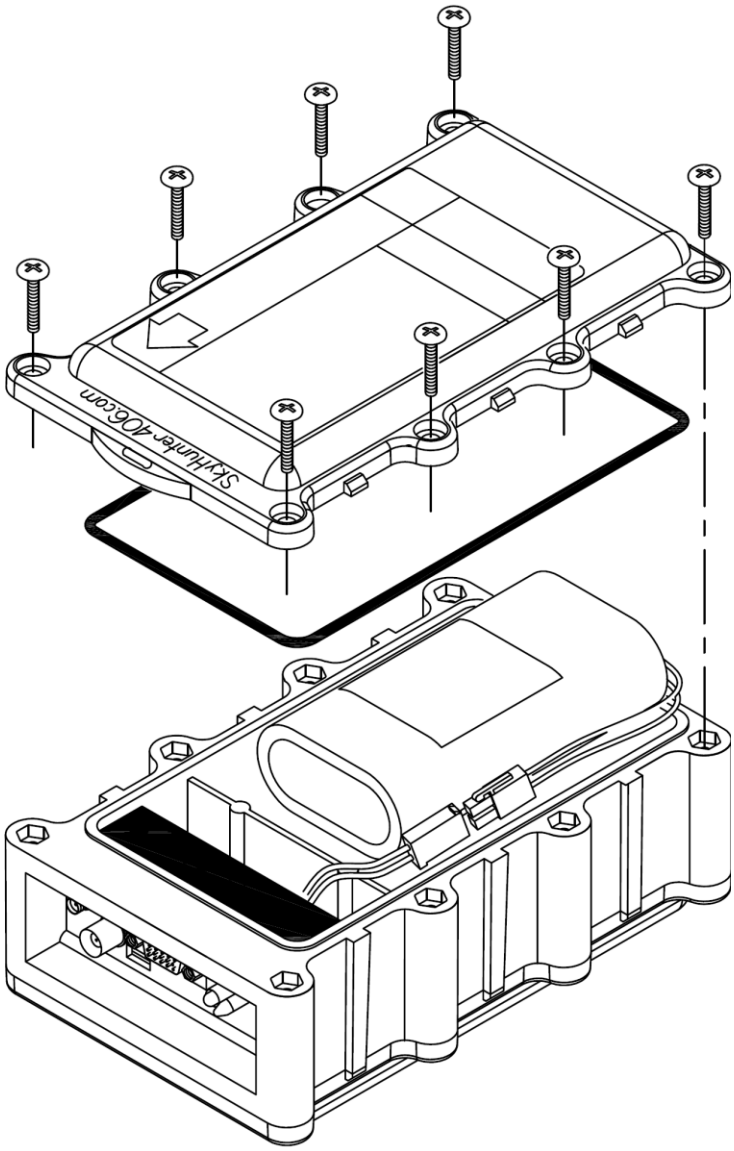



**Fig. 9 - Battery Cover Removal**

1. Secure the Master Switch in the OFF position.

2. Use a Phillips screwdriver to remove the 8 screws from the front cover that has the SkyHunter406 TM label on it**.(DO NOT REMOVE THE CIRCUIT BOARD COVER OR YOU WILL VOID ALL WARRANTY)**

3. Detach the battery and replace with a new SkyHunter 406 TM battery pack.

4. Replace screws and using a torque screw driver finish tightening the screws evenly to 12 inch pounds.

5. Certified Shop will perform an ELT Self Test to ensure all connections are correct and ELT is functioning properly.

6. The Pointer Avionics Certified Shop will also need to clear the accumulated battery use memory inside the ELT. This is performed through the SkyHunter406.com website. **Note: Replacing the battery and NOT resetting the accumulated battery timer will not affect the ELT functionality but will affect the indicator LED and the test results displayed**.

7. Ensure that updated battery replacement date is indicated clearly on the ELT using the battery label provided with the battery pack

## 8.6 VELCRO STRAPS

Velcro mounting bracket straps are shipped with the replacement battery pack and should be replaced at this time.

## 8.7 SHIPPING

Secure the Master Switch in the **"OFF"** position before shipping, or disconnect the battery pack. For further inquiries please contact us at **WWW.SKYHUNTER406.COM.**

# 9 REGISTRATION

Your SkyHunter 406™ ELT is programmed with information that is specific to your aircraft. When properly registered this will aid Search and Rescue response by providing them with your name and contact information, as well as your aircraft type and registration number. It is mandatory in the US and Canada to register your ELT, which can be done for free in a few moments. **It is the owner's responsibility to do so.** SAR forces could be looking up your cell phone number within minutes in an emergency situation if your SkyHunter 406™ is registered. No matter what your country of origin and the specific rules regarding registration , the SkyHunter 406™ ELT can be entered into the COSPAS-SARSAT database to provide this life saving information in the event of an emergency. The following websites and contact numbers will enable you to register your SkyHunter 406™. A primary and alternate 24 hour contact must be provided. If you move, want to update the emergency contact information, your phone number changes, or any of the important registered information changes, make sure to update your information.

## 9.1 CANADA

Canadian ELTs must be registered with the National Search and Rescue Secretariat. Beacon registration can be accomplished in a variety of ways. ***Canadian Aviation Regulations 605.38*** state that it must be registered. Information contained in the Registry is not available to the public. It is used only by the Canadian Mission Control Centre (CMCC) to assist SAR forces in locating persons in distress.

- ONLINE: www.cbr-rcb.ca
- Telephone: 1-877-406-SOS1(7671) OR 613-996-1616
- FAX: 1-877-406-FAX8(3298) OR 613-996-3746

## 9.2 USA

SkyHunter 406™ transmitters in the USA must be registered with the National Oceanic and Atmospheric Administration (NOAA). Registration is mandatory and failure to register or re-register every two years will result in a penalty/fine. After registration you will receive a Registration Decal by postal mail. This decal is to be affixed to the beacon and should be placed in such a way that it is clearly visible. If for some reason you do not receive the registration decal within two weeks, please call NOAA. For complete information regarding ELT registration in the United States, consult NOAA.

- ONLINE: http://beaconregistration.noaa.gov/rgdb/
- Telephone: 301-817-4515 Toll-free at 1-888-212-SAVE (7283)
- FAX: 301-817-4565
- Mail

NOAA SARSAT Beacon Registration
NSOF, E/SP3
4231 Suitland Road
Suitland MD 20746

## 9.3 INTERNATIONAL

SkyHunter 406™ transmitters sold in Mexico or for use outside of North America can be registered directly to the International Beacon Registration Database (IBRD) which is operated by COSPAS-SARSAT. The direct contact for the IBRD is listed below. Consult your aeronautics authorities for specific regulations regarding ELTS in your airspace.

- ONLINE: http://www.406registration.com

# 10 DIAGRAMS

## 10.1 MOUNTING BRACKET DRILLING PATTERN

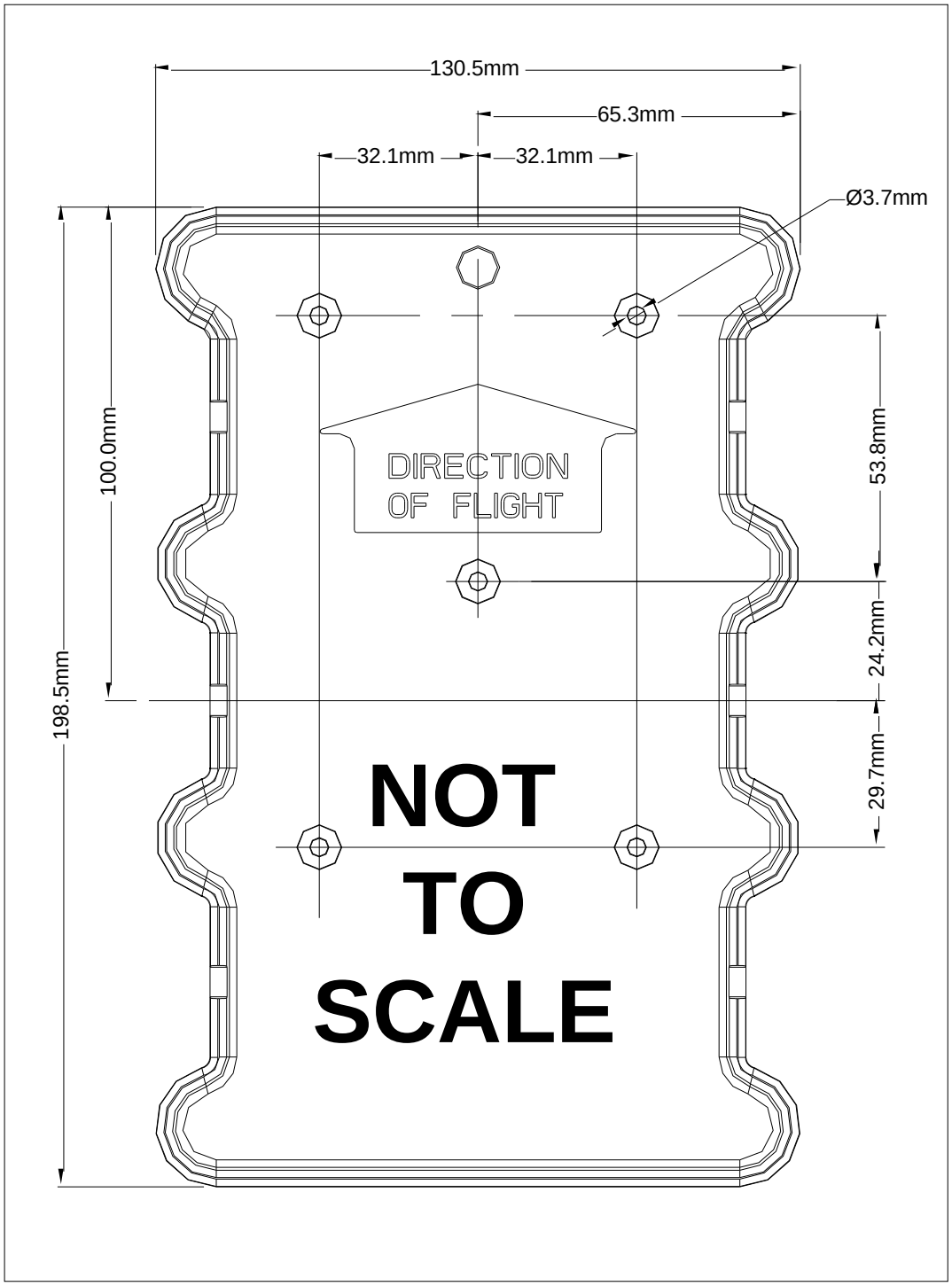
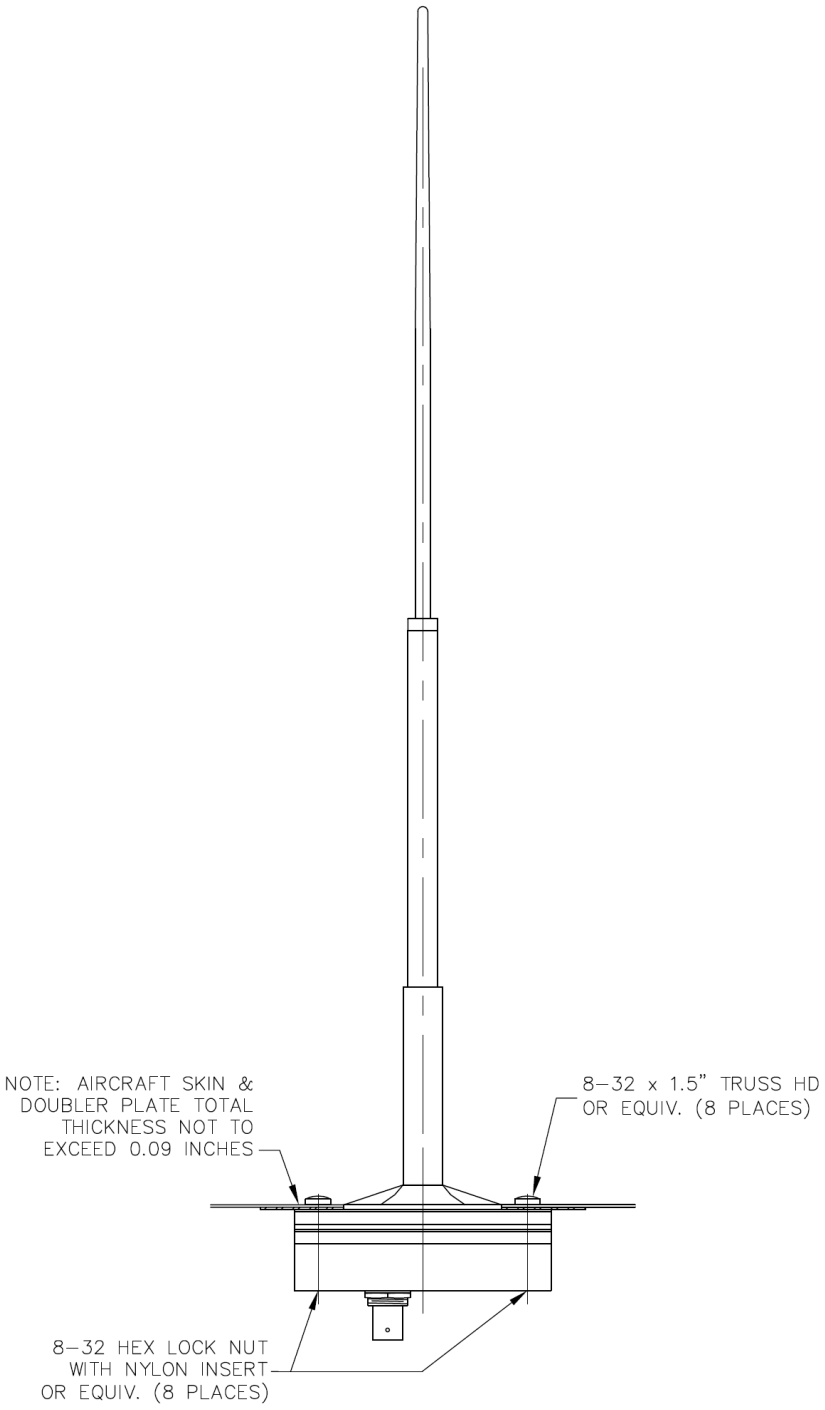



**Fig. 10 - Mounting Bracket Drilling Pattern, BRKT:TRY:SH:X:XX**

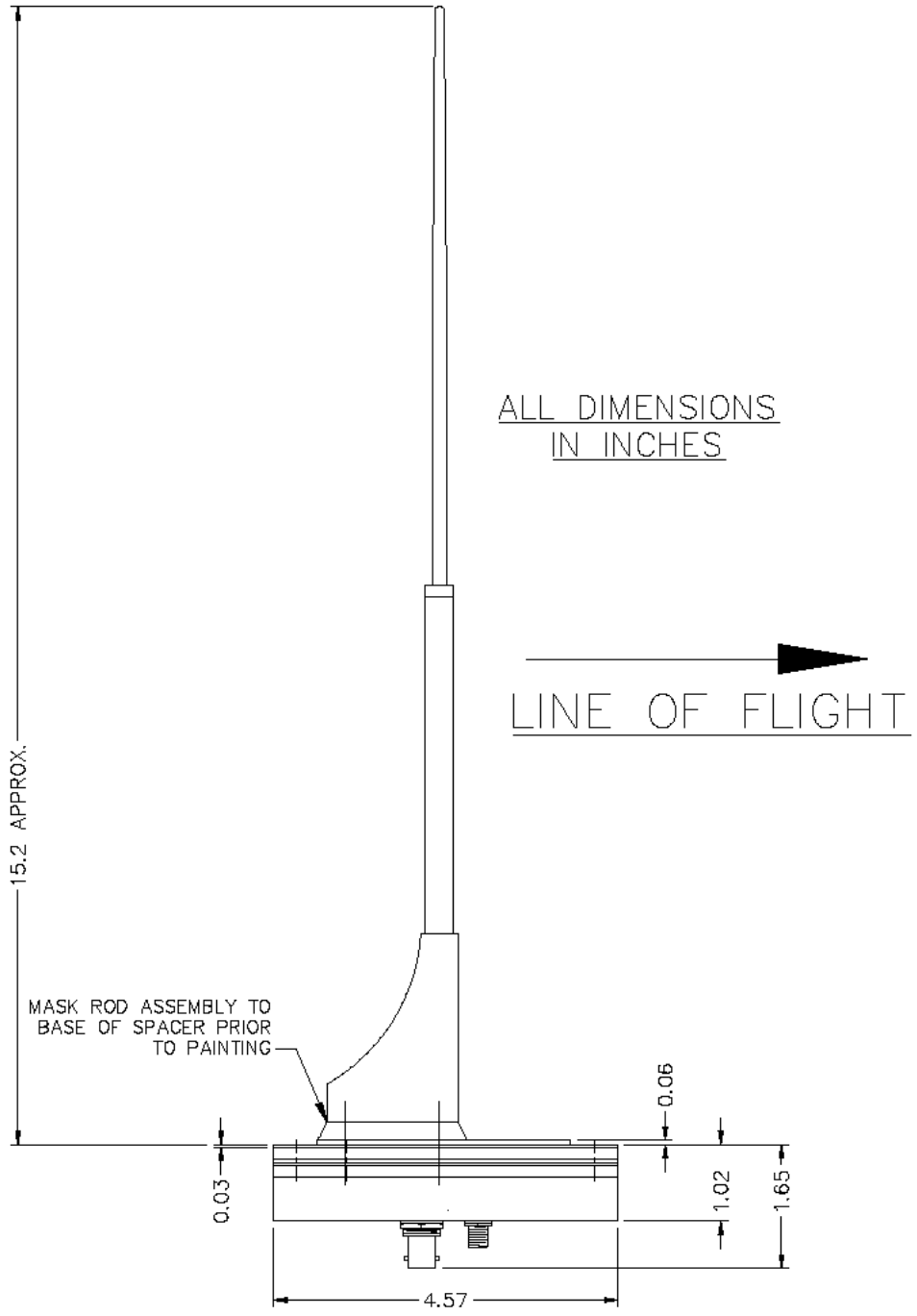
## 10.2 ANTENNA INSTALLATION DIAGRAMS

### 10.2.1 GPS / Rod Antenna Mounting ANNT:XVG:SH:A:XX



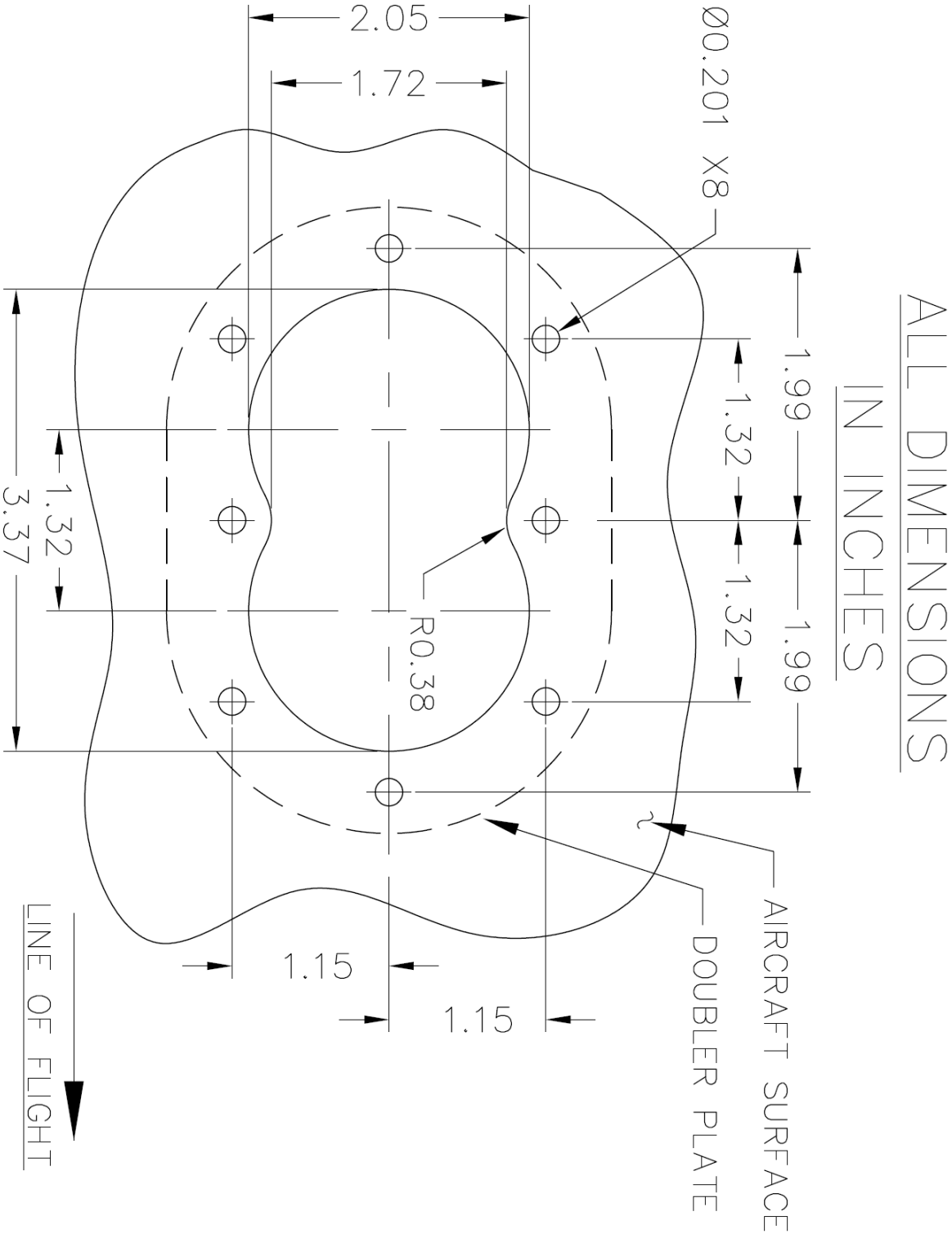

MOUNTING DETAIL FRONT VIEW

Rod / GPS Antenna mounting detail front view part # ANNT:XVG:SH:A:XX




MOUNTING DETAIL SIDE VIEW

Rod / GPS Antenna mounting detail side view part # ANNT:XVG:SH:A:XX


2.05
1.72
Ø0.201 X8
1.99
1.32
1.32
1.99
1.32
3.37
R0.38
1.15
1.15
ALL DIMENSIONS
IN INCHES
AIRCRAFT SURFACE
DOUBLER PLATE
LINE OF FLIGHT

# 10.2.2 Whip Antenna (121.5/406 MHz) ANNT:XXW:SH:A:XX

RAMI, Inc.
P.O. Box 858
Grand Haven, MI 49417-0858
(616) 842-9450
www.rami.com

***AV-200***
***ELT Antenna for General Aviation***
**Frequency Range: 121.5/406 MHz**

## Installation Instructions

1.) **Mounting location should be on the top of the aircraft at least 24" from any other metal protrusions. Typically mounted aft of passenger/ baggage area and forward of vertical stabilizer.**

2.) **Drill mounting hole (see options below) through the aircraft skin at desired location. Remove all burrs from around edge to allow proper seating of moisture seal.**

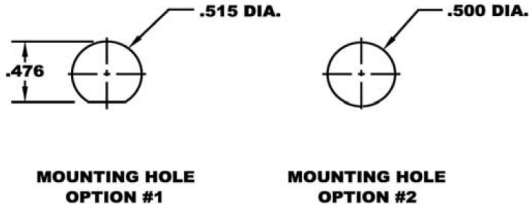
3.) **Disassemble antenna by removing the hex nut, lock washer and nameplate as show in the illustration.**

4.) **Insert the antenna through the mounting hole from the outside of the aircraft.**

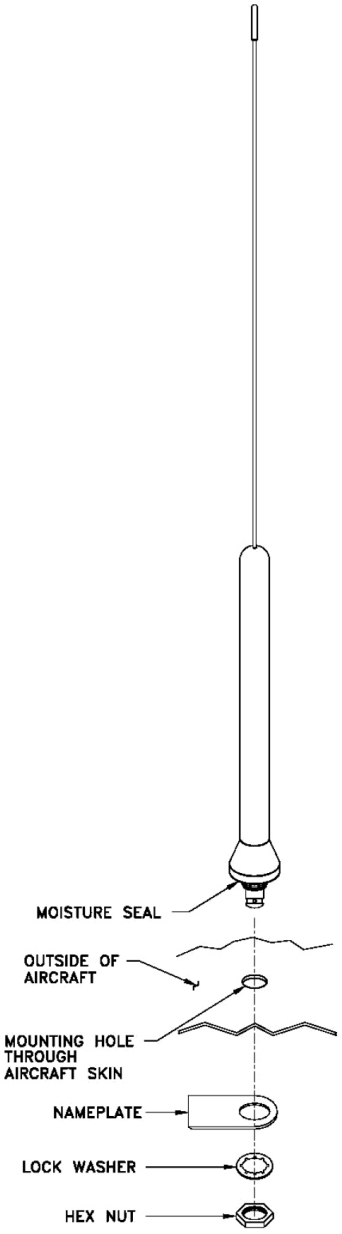
5.) **Slide nameplate and lock washer over the BNC connector of the antenna from the inside of the aircraft. Thread the hex nut onto the BNC connector and tighten securely.**

6.) **Connect the antenna to the ELT using a cable with a BNC type connector attached (not supplied).**

The conditions and tests for TSO approval of this article are minimum performance standards. Those installing this article, on or in a specific type or class of aircraft, must determine that the aircraft installation conditions are within the TSO standards. TSO articles must have separate approval for installation in an aircraft. The article may be installed only according to 14 CFR part 43 or the applicable airworthiness requirement.




**MOUNTING HOLE OPTION #1** **MOUNTING HOLE OPTION #2**

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Rev.: A Released: Feb., 2009

# 11 NOTICES TO USER

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication

This radio transmitter (IC Certification Number 273A-SKYH) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

## 11.1 INDUSTRY CANADA APPROVED ANTENNAS

| SkyHunter Part Number | Manufacturer | Antenna Type | MAX Gain(dbi)@ | | VSWR@ | |
|---|---|---|---|---|---|---|
| | | | 406 MHz | 121.5 MHz | 406 MHz | 121.5 MHz |
| ANNT:XXW:SH:A:XX | SkyHunter | Whip | 8 | 3 | 1.8:1 | 2:1 |
| ANNT:XVG:SH:A:XX | SkyHunter | Rod | 3 | 4 | 1.5:1 | 2:1 |

**All approved antennas have a nominal 50 ohm impedance.**

**ACTIONNEMENT AUTOMATIQUE FIXE**

En case d'installation d'un interrupteur a verifier s'il est regele sur la position "ARM". Installer l'unite sur le support de montage . Connecter le cable de l'antenne a distance. Deplacer l'interrupteur general de l'unite de la position d'arret/rereglage"OFF/RESET" a "ARM" Installer le support de securite de l'interrupteur general. La lampe de transmission est eteinte et l'unite est dans le mode normal/arme.

**ACTIONNEMENT MANUAL**

Pour utilisation cas d'urgence, placer l'interrupteur a distance dans la position de marche "ON" ou, plier le support de l'interrupteur loin de l'innerrupteur general de l'unite et placer dans la position de marche "ON". Verifier si la lampe de transmission est allumee. "NE PAS" deconnecter le cable de l'antenne ou ne pas enlever l'unite du support de montage. "NE PAS" deplacer l'interrupteur de la position de marche "ON".

**ACTIONNEMENT DE PORTATIF**

Tirer l'antenne telescopique be ses attachers, deconnecter le connecteur a distance et le cable pour haute-frequence. Ouvrir la loquet de la courroie de l'unite. Enlever l'unite du support et connecter l'antenne telescopique. Placer l'unite sur une surface plane, de preference metallique. Etirer l'antenne verticalement dans toute sa longeur. Plier le support de l'interrupteur loin de l'interrupteur general de l'unite et placer l'interrupteur dans la position marche "ON". La lampe de transmission est allumee. "NE PAS" eteindre l'inite. RESERVE! A l'utilisation en cas d'urgence dans l'aviation. L'actionnment non autorise est defend

# 12 REVISIONS TABLE

| Revision # | Description | Page Numbers Altered | Date (MM/DD/YYYY) |
|---|---|---|---|
| 9 | Initial Release | All | 09/16/2011 |
| 13 | Release | | 05/14/2012 |
| 14 | Release | | 06/14/2012 |
| 15 | Release | | 06/21/2012 |
| 16 | Release | Remote switch dwg | 06/26/2012 |
| 17 | Release | | 06/27/2012 |
| 18 | Release | Kit weights , 1-3 | 07/16/2012 |
| 19 | Release | Dwgs | 09/14/2012 |
| 20 | Public Release | Dwgs | 11/01/2012 |
| 21 | Public Release | Self Test | 11/09/2012 |
| 22 | Public Release | Remote Sw. Kit | 02/25/2013 |
| 23 | Maintenance section | Sec 8 | 03/20/2013 |
| 24 | Installation/Approvals | | 5/30/2013 |
| 25 | Velcro strap replacement | Sect. 6 & 8 | 8/8/2013 |
| 26 | Serial number protocol | | 01/01/2015 |

**Table 5 - Revisions**