TracVision TV1/RV1 Gyros
Replacement Instructions

Technical Support

If you need technical assistance, please contact KVH Technical Support:

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The following instructions explain how to replace the gyros in a TracVision® TV1/RV1 antenna.

Important!

Gyros are sensitive to shock. Handle the gyros carefully to avoid damage.

Tools Required

This procedure requires the following tools:

- ESD wrist strap
- #1 Phillips screwdriver
- Phillips torque screwdriver set to 3 in.-lbs
- 5/16" torque wrench set to 11 in.-lbs
- Flush cutters
- Laptop computer with the latest version of TV3 software downloaded from the KVH Partner Portal

Replace the Faulty Gyro

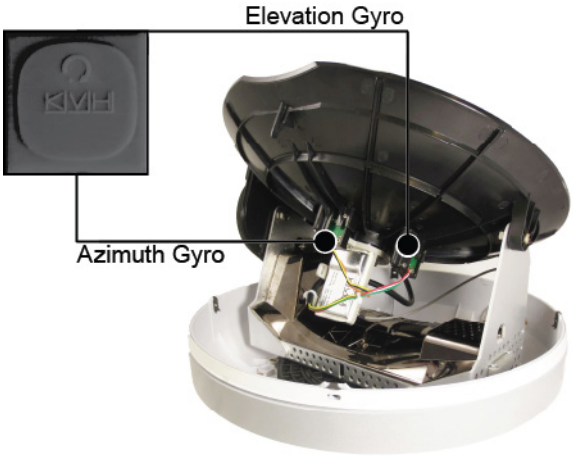
Follow the steps below to replace faulty gyros.

a. Power off and unplug the TV-Hub to disconnect power from the antenna.

CAUTION

Make sure the antenna is pointed away from the sun whenever the radome is removed. The high-gloss reflector can focus sunlight into a narrow beam, generating a significant amount of heat that can cause damage and injury.

Figure 1: Gyros



b. Remove and discard the four #8-32 screws securing the radome to the baseplate (see Figure 2). Carefully lift the radome straight up until clear of the antenna assembly and set it aside in a safe place. If you keep the radome topside, secure it with a lanyard to prevent it from falling overboard. Do not place the radome on a hot steel deck – the heat may warp the radome.

Important!

The main board is static-sensitive. Be sure to take the proper grounding precautions before handling.

c. Put on an ESD wrist strap and connect it to any bare metal portion of the antenna frame.

d. Disconnect the gyro cable from the Molex connector on the main board (see Figure 3).

e. Cut and remove the tie-wraps securing the gyro cable to the frame and LNB, labeled 1 through 7 in Figure 3.

f. Using a #1 Phillips screwdriver, remove and discard the two M2.5 screws securing the azimuth gyro to the mounting bracket, labeled 1 and 2 in Figure 4. Carefully let the gyro hang down, away from the mounting bracket.

g. Repeat step f to remove the elevation gyro screws, labeled 3 and 4 in Figure 4. Then remove the complete gyro and cable assembly from the antenna.

Figure 2: Radome Screws (TV1 Shown)

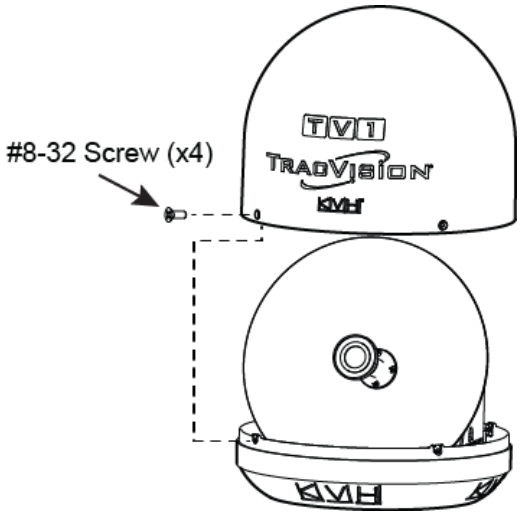


Figure 3: Gyro Cable Molex Connector and Tie-Wraps

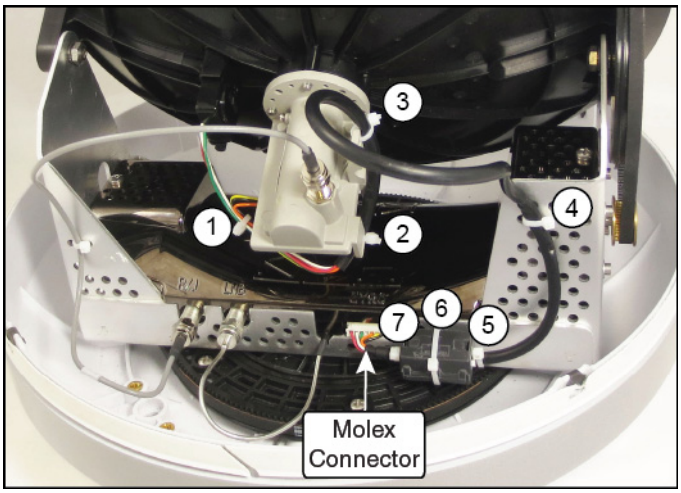
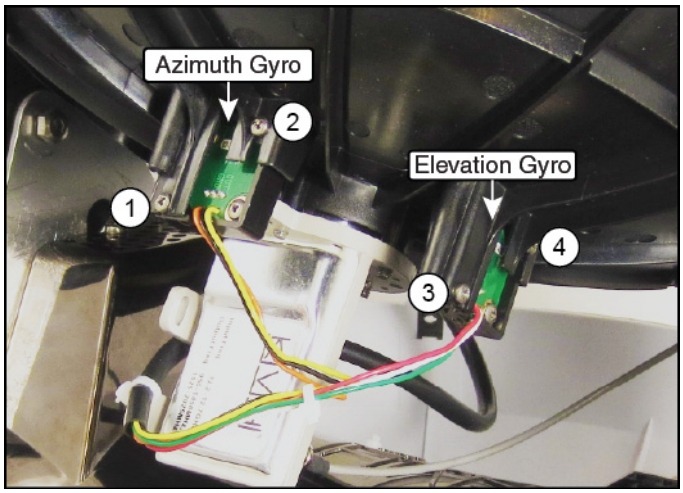


Figure 4: Gyros and M2.5 Screws



Important!

Do not overtighten the M2.5 screws when you attach the replacement gyro. Overtightening will strip the threads inside the gyro.

NOTE: The new azimuth gyro is identifiable by a green mark on its surface as shown in Figure 5.

h. Attach the replacement azimuth gyro to the mounting bracket with two new M2.5 screws (supplied in kit). Be sure to orient the azimuth gyro so that the gyro wire bundle is routed as shown in Figure 6. Then tighten the screws to 3 in.-lbs of torque.

i. Repeat step h to attach the replacement elevation gyro.

Important!

Avoid causing sharp bends in cables when securing or routing cables in the following procedure. Sharp bends or kinks in wires can degrade antenna performance.

j. Connect the new gyro cable to the main board at the Molex connector shown in Figure 6.

k. Using tie-wraps supplied in the kit, secure the gyro cable to the LNB and frame at the locations shown in Figure 6.

a. Slowly rotate the antenna assembly in both clockwise and counter-clockwise directions, as well as through its elevation range, to ensure neither the gyro cable nor the LNB RF cable restrict the antenna's movement. Ensure that the antenna assembly rotates freely for two complete revolutions (720°) in each direction without straining the cables, then fully tighten the tie-wraps.

b. Be sure to trim the excess portion of any tie-wraps you install and collect all tie-wrap trimmings from the antenna to avoid damage when the unit rotates.

c. Inspect the inside of the antenna to make sure you have not left any tools or debris inside.

d. Reinstall the radome onto the antenna, securing it with four new #8-32 screws (*supplied in kit*).

e. Reconnect power to the TV-Hub.

Figure 5: Azimuth Gyro Green Identification Dot

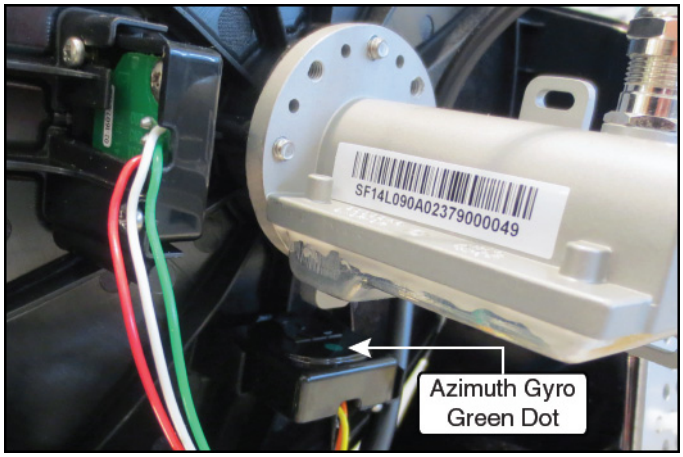
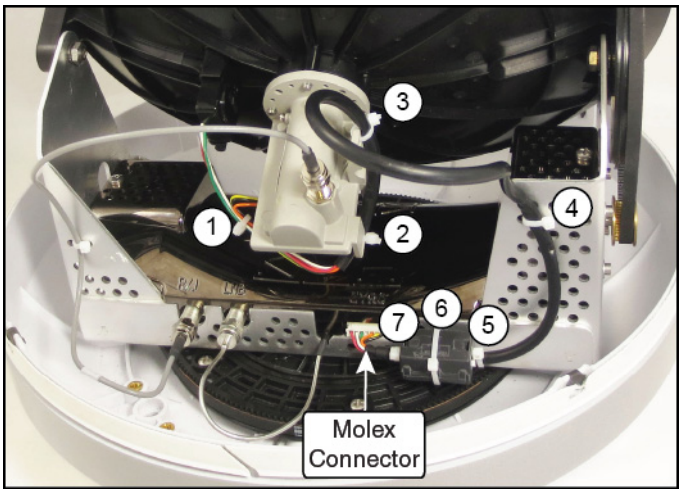


Figure 6: Gyro Cable Molex Connector and Tie-Wraps



Calibrate the Gyros

Follow the steps below to calibrate the replacement gyros.

Important!

Calibrate the gyros only while the vessel is stationary in calm seas.

a. Connect your computer to the TV-Hub and access its web interface. (Refer to the TracVision system's Quick Start Guide for details.)

b. At the Support page of the web interface, select Command Line.

c. At the command line, enter and send the following commands:

- **HALT**
- **DEBUGON**
- **EEUNLOCK**
- **=CALNEWGYRO**

d. After calibration is complete and the TV-Hub returns a **"PASS"** message from both gyros, enter and send the following command:

- **ZAP**

Verify Normal Operation

Test the system for normal operation. If the problem persists, contact KVH Technical Support.

The replacement procedure is complete!

Figure 7: Command Line