BARRETT

2019 Automatic Tuning Mobile HF Antenna Installation Instructions

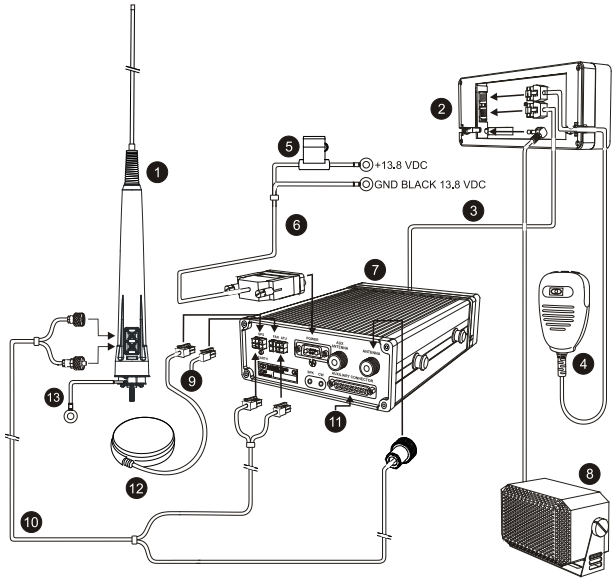
The Barrett 2019 antenna plugs directly into the “ATU” and “RF” connectors located on the transceiver using the cables supplied.

The Barrett 2019 antenna can be fitted with an optional internal GPS. This internal unit can be used to provide GPS data as part of a GPS tracking network without the need to install a separate GPS thereby simplifying the system installation.

The GPS unit is connected via the integrated coaxial, control and GPS cable supplied with the Barrett 2019 antenna. The interface cable is supplied with the 3 connectors as standard even if the GPS unit is not fitted.

Important:- The transceiver must have the 2019 antenna option set during programming.

Transceiver Connection Diagram



1. 2019 automatic tuning HF mobile antenna
2. 2050 control head
3. Cable with RJ45 connectors (P/N BCA29995)
4. Microphone
5. Heavy duty fuse & holder (P/N BCA20021) supplied in mobile pack.
6. 6 metre power cable supplied with transceiver
7. 2050 transceiver body
8. Extension speaker supplied with 2050 transceiver
9. Connection for external fan unit
10. Interface cable – integral coaxial, control and optional GPS connection
11. Auxiliary connector
12. External GPS – (used if optional internal 2019 GPS unit is not required or fitted)
13. Earth cable

Mounting the 2019 Automatic Tuning Mobile HF Antenna

The Barrett 2019 antenna should be mounted in positions similar to those illustrated in the diagrams on the following pages. Select a position free from excessive vibration. A bracket, fabricated to withstand the forces and vibration that can be expected during off-road driving, should be used to mount the antenna to the vehicle. When locating the mounting position for the antenna ensure that the antenna body, when flexing on its vibration mount, cannot come into contact with other parts of the vehicle. The antenna should be mounted as far from surrounding objects on the vehicle as possible.

The antenna is supplied with one middle section and one top whip section (Barrett P/N: BCA201901), a tapered black spring (Barrett P/N: BCA201903), an antenna installation guide and a pre-terminated 6 metre control cable to suit the Barrett 2019 antenna to transceiver. A 6 metre (Barrett P/N: BCA201904) or 10 metre (Barrett P/N: BCA201902) extension cable for the control cable is also available.

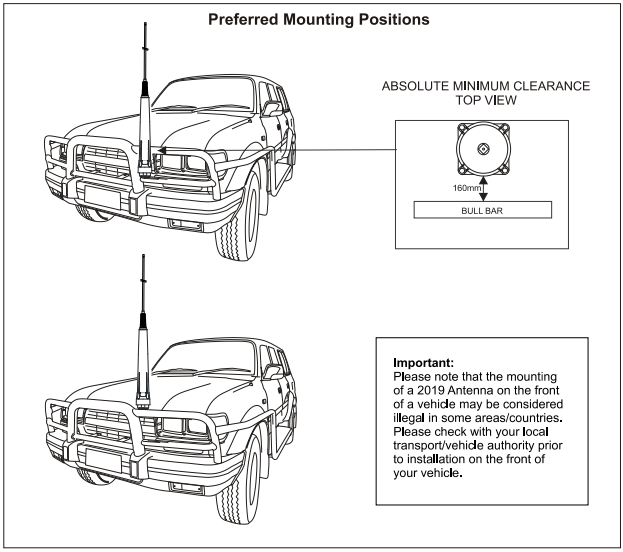
The control cable should be routed into either the engine compartment or boot (trunk) of the vehicle. If the joint between the antenna control cable and the extension cable is in an exposed position, a butyl rubber self amalgamating tape should be used to seal the joint. Do not wrap this joint if it cannot be made completely water tight as water will collect in the joint and cause it to corrode.

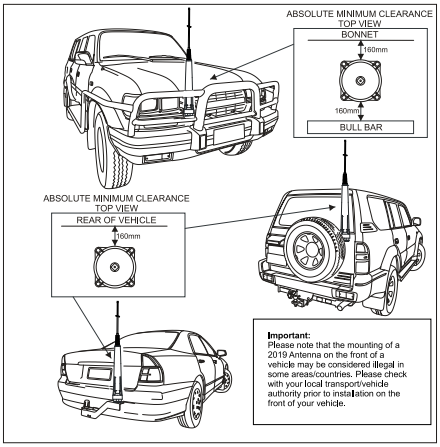
A good earth (ground) to the main body of the vehicle is essential for efficient operation of the antenna. To achieve this clean all joints to bare metal and use copper braid earth straps if any non-metallic joints are encountered.

After mounting the main body of the antenna, screw the black base spring onto the antenna body followed by the whip section.

Important Information

It is ESSENTIAL to maintain the minimum clearances between the antenna and surrounding metal work as indicated in the diagrams. FAILURE TO MAINTAIN THESE CLEARANCES WILL NOT ONLY REDUCE THE EFFICIENCY OF THE BARRETT 2019 AUTOMATIC TUNING MOBILE HF ANTENNA BUT MAY ALSO LEAD TO INTERNAL RF ARCING AND FAILURE.

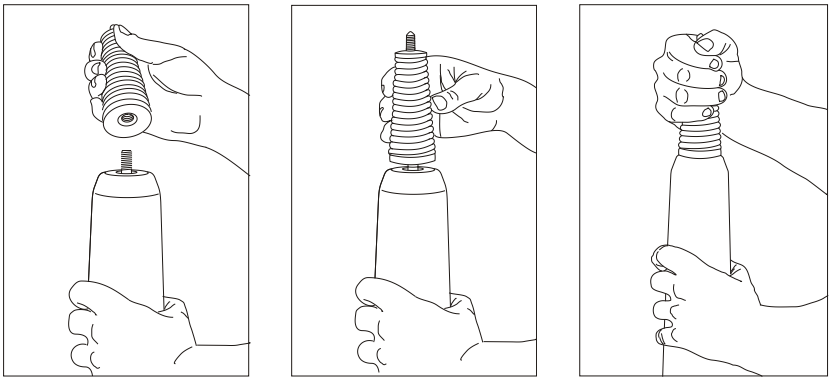




Caution:- Whilst the Barrett 2019 automatic tuning mobile HF antenna is designed to withstand vibration to military specifications on tyred vehicles, some mounting positions on large prime-movers, particularly front mounted bull bars, are subject to vibration that far exceeds this specification. Do not mount the Barrett 2019 antenna in positions such as these as damage to the antenna may result.

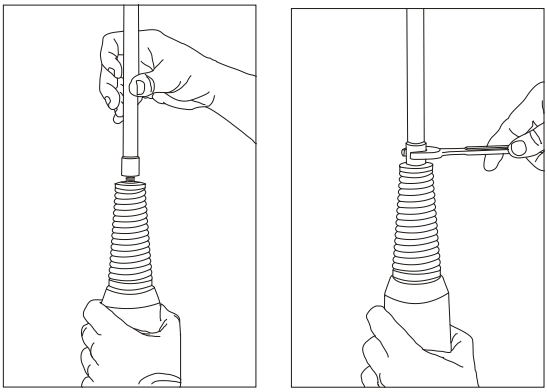
Antenna Assembly

Mounting the Base Spring

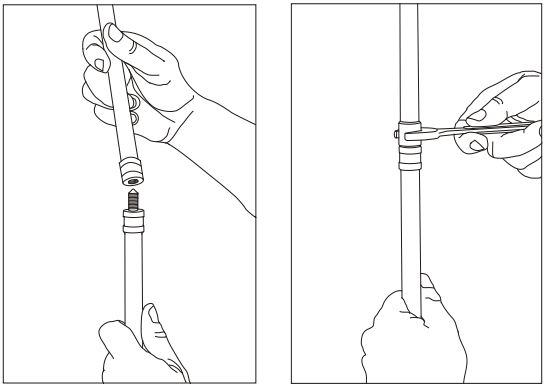


The base spring should only ever be hand tightened, if a tool is used it may damage the spring base.

Mounting the Whip Sections



To mount the whip section it is recommended that only one section of the whip is screwed onto the antenna at a time. The whip section should be hand tightened fully then a suitable tool (ie: a spanner) can be used to tighten the section a further 10 to 20 degrees clockwise while holding the antenna body with a free hand.



To mount 2 whip sections together the unattached whip section should be hand tightened fully then a suitable tool (ie: a spanner) can be used to tighten the section a further 10 to 20 degrees clockwise while holding the already screwed on whip section with a free hand.

Testing the Barrett 2019 Automatic Tuning Mobile HF Antenna

To test the Barrett 2019 antenna, first select the lowest transmit frequency in the transceiver and press the TUNE key. The display should show the word “Tuning” for a few seconds, followed briefly by “Tune Passed” and an indication of the measured VSWR (Voltage Standing Wave Ratio) value. Check this reading against the VSWR meter.

Repeat the above test on the highest frequency in the transceiver and on a selection of frequencies in between at approximately 2 MHz intervals. If the tune passes at all times the Barrett 2019 antenna is working correctly. The Barrett 2019 antenna tunes to maximise whip current, not minimise VSWR, but the displayed VSWR value should generally be between 1.0:1 and 2.0:1. However, if the display shows “Autotune Fail” accompanied by low pitched beeps at any point, the Barrett 2019 antenna has failed tune. Confirm the "Antenna Type" is selected as either "910 Mobile Antenna" or “2019 Mobile Antenna” in the transceiver Protected Menu I/O settings field. Check all cables are correctly connected, check the earth cable from the base of the Barrett 2019 antenna has a good connection to the vehicle body (not chassis or battery), check the whip fitted is not faulty or incorrect and move the vehicle if the Barrett 2019 antenna is close to any metal fences, buildings etc. If the problem cannot be resolved, contact your dealer or Barrett Service Department for advice.

Head Office:

Barrett Communications Pty Ltd
47 Discovery Drive, Bibra Lake, WA 6163 Australia
Tel: +61 8 9434 1700 Fax: +61 8 9418 6757
Email: information@barrettcommunications.com.au

www.barrettcommunications.com.au