80 Meter Add-On Kit for the Hustler® 4-BTV Vertical Antenna

DXE-AOK-80M

DXE-AOK-80M-INS Revision 0d

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DXE-AOK-80M Installed on a Hustler® 4-BTV
Shown with optional DXE-RADP-3 Radial Plate, DXE-SSVC-2P V-Clamps,
DXE-TB-3P Tilt Base, DXE-AOK-DCF Direct Coax Feed, DXE-RADW Radial Wires,
DXE-CBC-8XU2 Coaxial Cable, DXE-363-SST Bulkhead SO-239 Fitting
The DX Engineering DXE-AOK-80M 80 Meter Add On Kit for the Hustler® 4-BTV Vertical Antenna adds 80 meter coverage without giving up any existing band coverage.

The DXE-AOK-80M kit is tunable to operate across a small segment of the 75/80m band with an SWR of 1.5:1 or less. Larger frequency excursions are easily made by lowering the antenna and adjusting the length of the top rod. A DXE-TB-3P Tilt Base for Hustler® BTV Antennas makes this a simple job.

No disassembly of the existing antenna is required, simply add this DXE-AOK-80M kit which includes the Hustler RM-80S and a three-bladed spider assembly to the top of the existing installation, make some minimal tuning adjustments and you're on the air with an additional band.

**Included Components**
- Hustler® RM75/80 Resonator with Large Corona Ball Whip
- Allen Wrench for the two Allen Set Screws on the 80 Meter Resonator
- Hustler three bladed Spider Assembly for 80 meters

**Tools Required**
- Allen Wrench - supplied with RM 75/80 Resonator
- 1/4" Nut Driver
- Pliers
- MFJ-259B Antenna Analyzer

**Installation**

On your existing Hustler® 4-BTV, there may be a plastic cap on the threaded rod protruding from the top of the vertical antenna as shown to the right. If so, remove the cap. Ensure the existing threaded rod is in place, this is needed to mount the new 75/80 Meter Resonator.

The three bladed spider assembly has three strips of metal welded to an element clamp. Using pliers to hold the welded area, carefully bend the three bladed spider legs as shown below.

Install the three bladed spider just below the top of the antenna as shown to the right.

Using the supplied Allen Wrench, loosen the two Allen set screws far enough to allow insertion of the whip antenna about 4" beyond the set screws as shown below. Snug the Allen set screws in place to hold the whip in place. During tuning, you will be making adjustments to this length.
Install the Hustler® 75/80 RM Resonator to the top of the 4-BTV in the threaded rod that is protruding from the top tube.

When installing stainless steel hardware, it is suggested that UMI-81343, UMI-81464, DXE-NSBT8 or DXE-NMBT8 - Never-Seez® or Anti-Seize be used to prevent thread galling.

**Tuning**

An antenna analyzer is the best way to adjust the resonant frequency of an antenna. The MFJ-259B Antenna Analyzer is an ideal piece of equipment for tuning a Hustler® BTV antenna.

Measurements should be made at the antenna using a short (5 or 6 ft) piece of 50 Ω coax between the antenna and the analyzer. If you are too close to the antenna your presence can affect the tuning, if you are too far, the coax length may act as a radial and resonate. Taking readings close to the antenna also eliminates the possibility of a long or marginal feedline influencing the tuning or causing erratic readings. You should tune the antenna for resonance (X=0) rather than for low SWR, although they are often close or at the same point. Normally, the SWR goes down somewhat and the bandwidth increases once the feedline is reconnected and you measure the SWR at the operating position.

The whip must be trimmed for the frequency desired. The chart below shows good starting points. Using the MFJ-259B analyzer will aid in getting the desired resonance. Make small adjustments to the whip length and verify you are going in the proper direction. Use the old adage "Measure twice, cut once". If you desire to have two frequencies that are far apart (CW vs SSB), you may want to have two whips One whip cut for the lower frequency in the CW area of the band, and another whip cut for the higher end in the SSB area of the band.

<table>
<thead>
<tr>
<th>FREQUENCY (KHz)</th>
<th>Exposed Tip Rod Length</th>
<th>Your Final Length</th>
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<tbody>
<tr>
<td>4000</td>
<td>18&quot;</td>
<td></td>
</tr>
<tr>
<td>3950</td>
<td>19-5/8&quot;</td>
<td></td>
</tr>
<tr>
<td>3900</td>
<td>21&quot;</td>
<td></td>
</tr>
<tr>
<td>3850</td>
<td>22-1/2&quot;</td>
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<tr>
<td>3800</td>
<td>24-1/8&quot;</td>
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<tr>
<td>3750</td>
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<td>3725</td>
<td>26-1/2&quot;</td>
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<tr>
<td>3700</td>
<td>27-1/4&quot;</td>
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<td>3650</td>
<td>29&quot;</td>
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<td>3600</td>
<td>30-5/8&quot;</td>
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<td>3550</td>
<td>33&quot;</td>
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<tr>
<td>3500</td>
<td>34-5/8&quot;</td>
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The above dimensions are the exposed tip rod length. See illustration.

Detailed information on tuning and making the Hustler® BTV series vertical antennas top performing systems can be found on the DX Engineering website (www.DXEngineering.com) - look in the BTV antenna area of the website for the "BTV Guide". Additionally there are a number of add-on kits available to further enhance your Hustler® BTV antenna.
Optional Items

17M Add-On Kit for the Hustler® BTV Series Verticals - DXE-AOK-17M
The patented* DX Engineering DXE-AOK-17M kit adds 17 meter coverage to the Hustler® BTV series of vertical antennas without giving up any existing band coverage. This kit will operate across the entire 17m band with an SWR of 1.5:1 or less. No disassembly of the existing antenna is required, simply bolt this kit over the 10m trap, make some minimal tuning adjustments and you’re on the air with an additional band.

*US Patent No. 7,554,500

60M Add-On Kit for the Hustler® BTV Series Verticals - DXE-AOK-60M
The DX Engineering DXE-AOK-60M kit adds 60 meter coverage to the Hustler® BTV series of vertical antennas without giving up any existing band coverage. This kit will operate across the entire 60m band with an SWR of 1.5:1 or less. Kit includes the 60 meter resonator and new capacitive compensator. No disassembly of the existing antenna is required, simply add this kit, make some minimal tuning adjustments and you're on the air with an additional band. The BTV will retain full performance on all bands.

Direct Coax Feed for Hustler BTV Verticals - DXE-AOK-DCF
The DXE-AOK-DCF Direct Coax Feed assembly by DX Engineering for the Hustler® BTV series antennas allows direct connection from a coaxial cable with a PL-259 connector. Manufactured from heavy duty stainless steel, this add-on kit allows convenient connection from your coaxial cable feedline directly to the base of the Hustler® BTV-series vertical antennas. It may be positioned in any one of three different directions to allow straight-in connection from your feedline. Also order DXE-8XD002 (low power) or DXE-8UD002 (high power, low loss) coaxial jumper cable for connection to your DXE-RADP-3 Radial Plate with DXE-363-SST Bulkhead Connector for a professional, reliable installation.

New all-stainless steel hardware is provided for adapting to your new or existing Hustler® BTV antenna. It allows for easy removal of the coaxial cable feedline for yard maintenance, or antenna layover and disconnection for "stealth" installations.

MFJ HF/VHF Antenna/SWR/RF Analyzer w/ LCD, Counter & Meters - MFJ-259B
The MFJ-259B RF analyzer is a compact battery powered RF impedance analyzer. This unit combines four basic circuits; a 1.8-170 MHz variable frequency oscillator, a frequency counter, a 50Ω RF bridge, and an eight-bit micro-controller. This unit makes a wide variety of useful antenna or impedance measurements, including coaxial cable loss and distance to an open or short. Primarily designed for analyzing 50Ω antenna and transmission line systems, the MFJ-259B also measures RF impedances between two ohms and several hundred ohms. It also functions as a signal source and frequency counter. The frequency range of impedance measurement is 1.8 to 170 MHz, in six overlapping bands. Requires 10 AA size batteries for portable operation (not furnished). See "Suggested Parts" on the DX Engineering web site for AC adapter and accessories.

Technical Support
If you have questions about this product, or if you experience difficulties during the installation, contact DX Engineering at (330) 372-3200. You can also e-mail us at: dxengineering@dxengineering.com
For best service, please take a few minutes to review this manual before you call.

Warranty
All products manufactured by DX Engineering are warranted to be free from defects in material and workmanship for a period of one (1) year from date of shipment. DX Engineering’s sole obligation under these warranties shall be to issue credit, repair or replace any item or part thereof which is proved to be other than as warranted; no allowance shall be made for any labor charges of Buyer for replacement of parts, adjustment or repairs, or any other work, unless such charges are authorized in advance by DX Engineering. If DX Engineering’s products are claimed to be defective in material or workmanship, DX Engineering shall, upon prompt notice thereof, issue shipping instructions for return to DX Engineering (transportation-charges prepaid by Buyer). Every such claim for breach of these warranties shall be deemed to be waived by Buyer unless made in writing. The above warranties shall not extend to any products or parts thereof which have been subjected to any misuse or neglect, damaged by accident, rendered defective by reason of improper installation, damaged from severe weather including floods, or abnormal environmental conditions such as prolonged exposure to corrosives or power surges, or by the performance of repairs or alterations outside of our plant, and shall not apply to any goods or parts thereof furnished by Buyer or acquired from others at Buyer’s specifications. In addition, DX Engineering’s warranties do not extend to other equipment and parts manufactured by others except to the extent of the original manufacturer’s warranty to DX Engineering. The obligations under the foregoing warranties are limited to the precise terms thereof. These warranties provide exclusive remedies, expressly in lieu of all other remedies including claims for special or consequential damages. SELLER NEITHER MAKES NOR ASSUMES ANY OTHER WARRANTY WHATSOEVER, WHETHER EXPRESS, STATUTORY, OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS, AND NO PERSON IS AUTHORIZED TO ASSUME FOR DX ENGINEERING ANY OBLIGATIONS OR LIABILITY NOT STRICTLY IN ACCORDANCE WITH THE FOREGOING.

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