Ka and Ku Prime Focus Motorized Feed

User's Manual

FEED-2KA-MOTO
FEED-2KU-MOTO

MAN_FEED_PF_MOTO_KA-KU_REV003

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Warranty

Seller warrants the items ordered hereunder at the time of shipment to be free from defects in material, workmanship, and to conform to the contract specification. Seller's liability under this Warranty shall terminate one (1) year after date of shipment of order. Some individual products include extended warranties as stated in brochure(s) and extended warranties may be purchased as requested and quoted. Written notice of any defects shall be given Seller upon discovery and Seller shall promptly correct such defects by repair or replacement, at its option, without charge, either FCA Seller's plant or service in the field. After the warranty period stated herein has expired, some manufacturer's and/or licensor's warranties may still be in effect, and the Purchaser shall look solely to such manufacturer and/or licensor for warranty repair.

IN NO EVENT SHALL SELLER'S LIABILITY UNDER THIS WARRANTY EXCEED THE COST OF REPAIR OR REPLACEMENT OF SUCH DEFECTIVE ITEM AND UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES.

Specifically excluded from this Warranty are:

a. Defects or nonconformance caused by and resulting from improper operation, maintenance, or storage of the equipment.

b. Items of characteristically indeterminate life, such as bulbs, fuses, etc.

THIS WARRANTY CONSTITUTES SELLER'S SOLE AND EXCLUSIVE LIABILITY HERUNDER AND PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR DEFECTIVE OR NONCONFORMING ITEMS AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS IMPLIED OR STATUTORY (INCLUDING THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE).

1. OBJECTIVE

This document will illustrate the setup and installation of the maintenance-free Ka or Ku Motorized Feed (for Axi-symmetric Prime Focus Antennas) produced by Viking Satcom. This involves our continuous effort to deliver customer satisfaction and support.

The objective of this document is to help customers achieve a trouble-free installation. This will also identify the performance and features this product is equipped with and the proper mounting/wiring that is required for maximum field life.

NOTE: You must read this document fully before attempting to install or operate.

2. RECEIVING YOUR MOTORIZED FEED

After unpacking, carefully examine the feed system for signs of damage incurred during shipping. If damage is discovered, document thoroughly for a possible insurance claim.

Highlighted below you will see a few areas that should be examined before attempting to install.

Check for damaged connectors on the potentiometer.

Check for loose hardware or components.

Check for any damage, such as broken, bent, twisted, or cracked components. Your system should be free from all defects.

3. FEED SYSTEM SPECIFICATIONS AND FEATURES

3.1 Specifications

Specifications		
	Ka Band	**Ku Band**
Polarity	Dual	
Polarization	Linear	
Frequency Range	17 - 22 GHz	10.7 - 12.75 GHz
f/D Range	.335 - .425	
VSWR	1.5:1	
Polarization Isolation	35 dB (Typ.)	
Rotation	280°	
Temperature Range	-40° C - +60° C	
Flanges	WR42	WR75
Weight	5 lbs.	

3.2 Features

Features for the Ka or Ku Motorized Feed include:

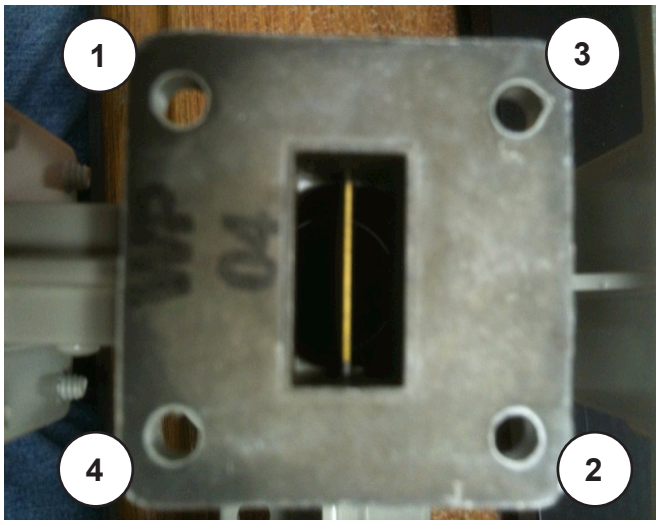
- Full 280° of Travel
- Hi Torque 24 VDC Motor
- 5K 10 Turn Potentiometer
- Stainless Steel Hardware
- Field Replaceable Components
- All Components Weather Resistant
- Ideal for Use with Research Concepts Controllers
- Hard Coat Anodized Aluminum Gears for Wear Protection
- For Use with New Antennas or Upgrading Existing Antennas in the Field
- Universal Mounting - Mounts to a Single Pole, Tripod, and Quadpod Feed Supports

4. LNB AND FILTER ATTACHMENT

1. Using 4-40 hardware, attach (leave loose) the gasket side of an LNB or filter to the Ka Band (WR42) flange of the feed using the supplied O-Ring. For Ku Band (WR75) the hardware will be 6-32 or M-4, depending on the make and model of the LNB being used.

2. For a more secure seal, a small amount of silicone or a gasket lubricant may be applied to the gasket only. When applying, ensure that you do not allow the silicone or lubricant to come in contact with either side of the main surface of the flange (feed side or LNB/filter side). The silicone or lubricant should only be allowed in the gasket sealing area. If large amounts of silicone are introduced to the flanges you may experience a decrease in performance once it fully cures.

3. Once the component flanges have been assembled, each Ka Band (WR42) flange screw should be torqued in the pattern shown below to no less than 10 inch pounds and no greater than 15 inch pounds with non-lubricated threads. For Ku Band (WR75) flange screws should be torqued in the pattern shown below to no less than 30 inch pounds and no greater than 40 inch pounds.



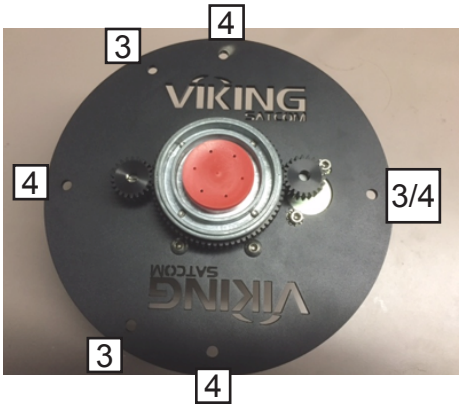
4. If threads are lubricated, the torque can be reduced by 20% for either flange. If a torque wrench is not availabe, turn the screw or bolt slowly until you feel contact, then continue turning beyond that point by 1/8 of a turn.

5. Always ensure that the gasket remains in the groove and that no pinching of the gasket is occurring during the torque process. Also ensure that the flanges have pulled together on all (4) sides of the flange, giving solid contact across the flange once all of the fasteners are fully torqued.

5. INSTALLATION

1. Each antenna has its own feed/strut mounting method. Below are a few examples of how the feed system can be mounted to an antenna.

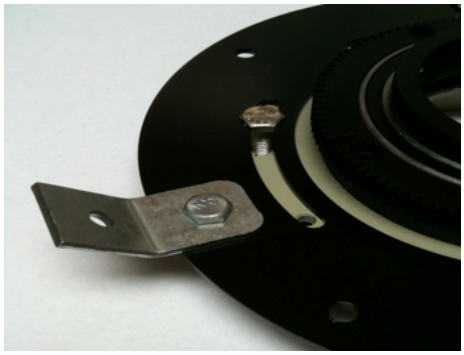
Three and Four Hole Bolt Pattern
Used for Tri/Quad Strut Mounting



Tri/Quad Strut to
Supplied Mounting Ring

(Photo is for Reference Only)

Prodelin Strut Tabs to
Supplied Mounting Ring



(Photo is for Reference Only)

2. Once the mounting method is chosen, attach all components to the feed main body on the ground before attaching to the antenna. This includes LNBs, filters, and other accessories to minimize danger during installation.

3. The potentiometer can be measured with an ohm meter. When properly centered, it will read: 2.5 ± 0.1 kohms. These are set and tested on ***every*** unit before packaging.

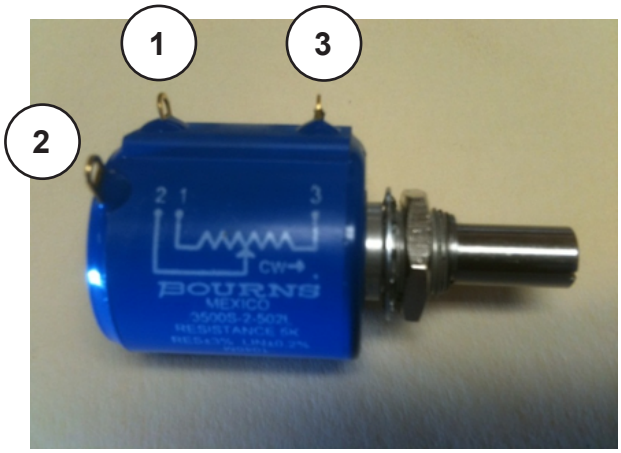
4. The purchase of a new potentiometer will be required if over-traveled. This feed is designed to use the OMT/LNB as the mechanical stop to prevent over-traveling the potentiometer.

6. FEED SYSTEM WIRING

Illustrated below are the potentiometer and the 24 VDC motor. This manual references Research Concepts (RCI) antenna controllers. If you are not using a Research Concepts antenna controller, please refer to the instruction manual you received with your controller for wiring instructions and diagrams.

6.1 Potentiometer

Potentiometer



Connector 1

This is the counter-clockwise post (sensor return). When using a RCI controller, the blue wire for the polarization will be attached at this location.

Connector 2

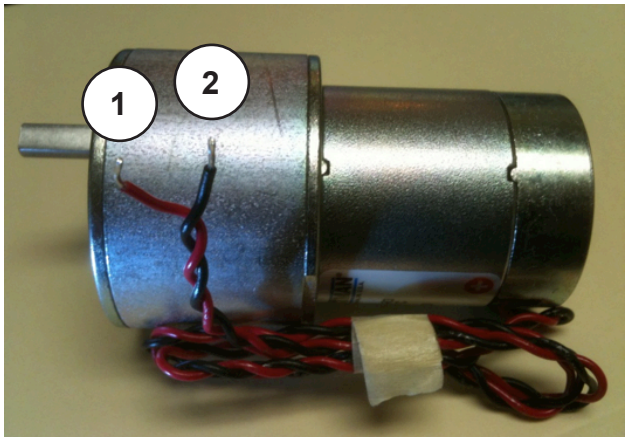
This is the wiper post (sensor reference). When using a RCI controller, the yellow wire for the polarization will be attached at this location.

Connector 3

This is the clockwise post (sensor signal). When using a RCI controller, the brown wire for the polarization will be attached at this location.

6.2 Motor

24 VDC Motor



Wire Number 1

This is the positve (+) wire (red). On the RCI controller, this will attach to the black wire for the polarization drive.

Wire Number 2

This is the negative (-) wire (black). On the RCI controller, this will attach to the red wire for the polarization drive.

NOTE: When installing, a soldiered joint is recommended for both potentiometer and drive motor. There should also be a protective cover (shrink tubing preferred) or coating applied at all wiring joints for maximum life and performance.

6.3 Wire Route

1. The figures below illustrate the motor cover removed and the proper wire route with the protective black motor cover on. NEVER puncture or cut a hole in this cover for any reason. The cover is used to keep rain, snow, dust, and dirt from penetrating the motor. Alterations to the cover may cause premature motor failure due to water intrusion. This will not be covered under warranty and you will need to purchase a replacement motor.

2. Once all connections have been soldiered and covered, secure the wiring from rubbing against any sharp corners or objects. Zip ties are commonly used. ALWAYS leave extra wire (slack or loose wire) so there is no strain on the connections. This will give you longer field life and reduce the amount of service calls made. When attaching the cables to the LNBs and feed system you must also leave enough loose wire for feed travel. If this is not done, serious damage can be introduced to your feed system, LNBs, filters, and wiring.

3. Installation is complete.