

ASSEMBLY INSTRUCTIONS VIXEN PORTA MOTOR KIT

Contents: 2 x Motor Assembly (16 teeth on motor gear) (1x left hand, 1 x right hand)
 2 x Gear Wheel 58 teeth
 2 x Cover Plate (1x left hand, 1 x right hand)
 1 x Azimuth mounting bracket (long)
 1 x Altitude mounting bracket (short)
 4 x M6 bolt 12mm
 6 x ¼" Whitworth bolt 16mm
 4 x M3 bolt 6mm

 1 x Standard Microstep Drivebox
 1 x Intelligent Handset
 1 x 3m RJ45 patch cord
 1 x Handbook

Tools required: Screwdriver No 1 flat blade
 Allen Key 5.0mm (with Porta)

This is a precision piece of equipment and care is needed to make sure that the mount is in a condition to give the best from the drive. The two slow motion shafts must not be difficult to turn but yet they must not be so loose that there is a lot of backlash present. There are adjustments controlling the fit of the worm in the wormwheel which should be done if these conditions exist. See the Vixen PORTA Instruction manual. Also when the telescope axes are unclamped they should be free to turn without appreciable drag, otherwise the bearings may need adjustment.

A left hand and right hand pair of motors and brackets allows both slow motion adjustment knobs to point in the same direction. It is suggested you do a dry run to determine which ones are which.

AZIMUTH AXIS

Remove the AZIMUTH ARM assembly by undoing 4 socket head bolts. Sandwich the long Motor mounting bracket with the Azimuth Arm and screw up using 4 off Whitworth bolts supplied.

The large manual slow motion knob can be left on although it will not be usable when the motor is powered.

Assemble the 58 tooth gear (boss first) onto the Azimuth slow motion shaft. It may be a tight fit, if so rub the shaft down with emery cloth to reduce its diameter slightly. The grub screw must be done up to rest on the flat of the shaft to stop rotation when in use.



Attach the motor with 2 off M6 bolts. The position of the motor must be adjusted so that it is correctly lined up with the gear on the slow motion shaft. When it is correct there is very little backlash in the gears and the faces of the gears on the motor and the shaft are all parallel. The motor itself will be parallel to the mount metalwork. When all appears fine then tighten up the 58 tooth gear wheel and the motor mounting screws.

Rotate the slow motion knob to ensure the gears are not binding and there is very little backlash to the motor.

Finally assemble the gear cover metal plate with two M3 bolts.

ALTITUDE AXIS

Remove the Telescope Mounting plate by the two socket head bolts. Sandwich the short Motor mounting bracket with the Telescope Mounting plate and screw up using 2 off Whitworth bolts supplied.

Follow the motor mounting procedure as for the Azimuth axis.

POWER UP

Check the motors operate to the slew rate required when the telescope is mounted on the head.

MAINTENANCE

Occasional wiping of the gears may be necessary with a thin oil to remove deposits. The gear teeth should also be greased using a lithium based grease.

FAULT FINDING

In the event of a fault the user can determine roughly where the fault lies by trying out a few tests.

The motors are interchangeable on the leads from the drive box so the first test is to swap over the motor leads. If the fault transfers to the other motor then the fault is in the drivebox. If the fault stays where it is then the fault is with the motor assembly.

Erratic running or stalling at slew speed can be due to low battery voltage or unbalanced telescope or slow motion requires too much torque to turn. The manual and the AWR website will give further hints and tips of what to do.

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