

## MI-8100 Family of Precision Two-Axis Gimbal Positioners

### Key Features & Benefits

- Adaptable to a variety of applications
- Extreme accuracy via direct-drive motors coupled to encoders
- Backlash completely eliminated
- High precision, angular contact bearings enhance accuracy
- Wide speed range, up to 45 degrees per second
- Extended travel up to +/-70 degrees on both axes
- Supports a wide assortment of antennas
- Compact design easily fits inside small volumes
- High structural stiffness allows extended servo bandwidth for demanding tracking applications



Model MI-8120 Two-Axis Gimbal Positioner

### Description

The MI-8100 family of precision gimbal positioners is ideally suited for high performance tracking applications. Incorporating direct drive motors and extremely accurate encoders, the MI-8100 gimbals provide superb responsiveness and pointing accuracy.

The MI-8120 two-axis gimbal offers extreme accuracy by virtue of its direct drive motors that are structurally coupled to the encoders and the antenna/counterweight system.

Flexible couplings are absent, as are gears, timing belts, and virtually all the conventional sources of positioning error in a mechanical drive. System stiffness is thereby greatly enhanced, and backlash is completely eliminated.

Accuracy is further enhanced by the use of high precision, angular contact bearings. Minimum friction and zero bearing clearance are achieved by tailoring the bearing selection and preload amount for specific applications.

The gimbal structure is precision engineered to assure that static deflection and dynamic properties are appropriate for each application, resulting in increased accuracy and extended servo bandwidth.



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The gimbal is capable of operating over a wide speed range, up to 45 degrees per second depending upon antenna size and weight. The direct drive configuration is free of the speed limitations inherent with conventional positioners. Virtually any suitable antenna can be smoothly driven at speeds ranging from imperceptible movement to a rapid slew. Extended travel, up to +/-70 degrees, is available on both axes. A novel counterweighting configuration and a low profile trunion allow a remarkable range of motion. The MI-8100 Gimbal Positioners can be customized to meet specific requirements.

## Product Specifications

Accuracy: .005 degrees typical .0025 degrees achievable

Antenna Size: Up to 42" diameter typical  
Larger antennas are possible

Antenna Weight: Up to 100 lbs typical  
Heavier antennas are possible

Axis Intersection: .005 inches

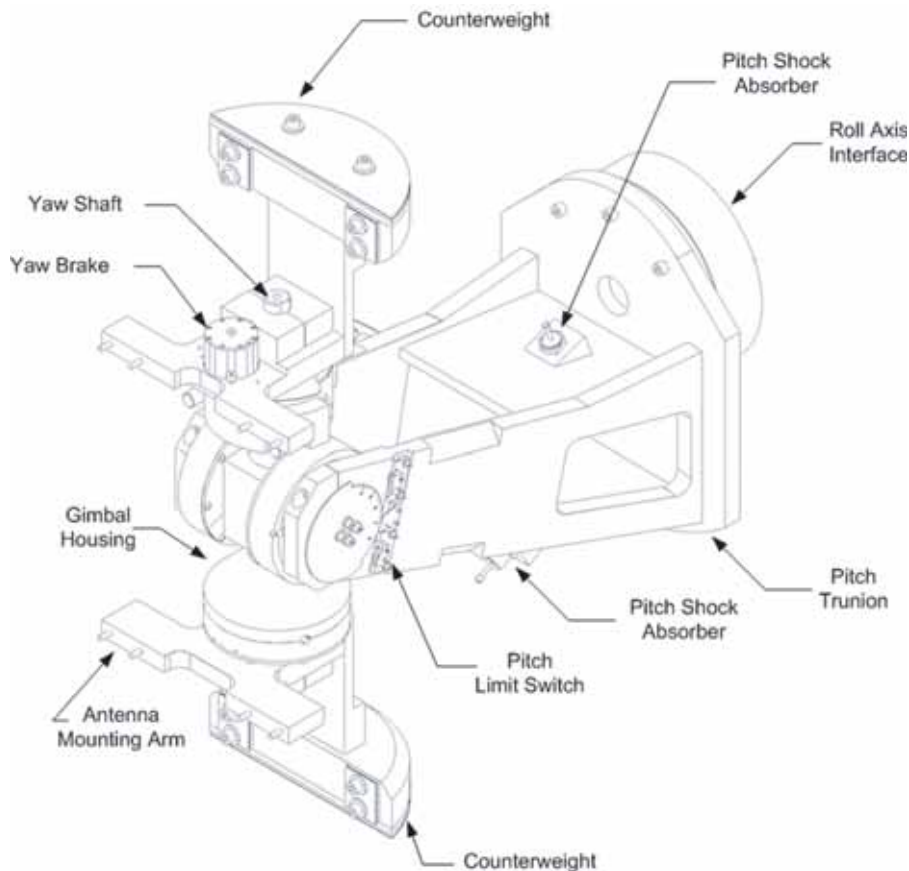
Peak Delivered Torque: 2.3 lbs

Repeatability: .001 degrees

Resolution: .0001 degree

Speed: Up to 45 degrees/second, depending on antenna size and weight

Travel Limits: Up to +/-70 degrees in both axes



Specifications subject to change without notice.



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