

MODEL-20 STEPPER PAN & TILT GIMBAL

IDEAL FOR CAMERA, ANTENNA OR INSTRUMENT POSITIONING

The Model-20 Pan & Tilt Gimbal features Sagebrush's Roto-Lok® rotary drive to provide freedom from backlash, ultra-smooth motion, high resolution control, and reliability that cannot be achieved with competitive gear driven Pan & Tilt gimbals.

This model gimbal utilizes an on-board microprocessor for open-loop control of stepper motors. Positioning information is transmitted to and from the gimbal via a serial interface. On-the-fly speed and direction changes are supported by the Model-20. Motion commands to a defined position are accomplished by automatic vectoring of the Pan & Tilt axes, or by individual speed and direction control of each axis. The user interface software supports control via computer or joystick.

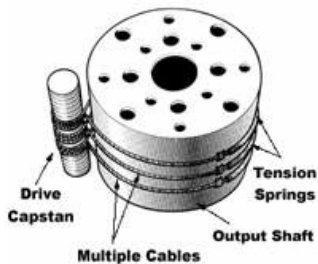
Power and payload controls are available for a variety of applications. For camera applications, the Model 20 also supports a fully integrated lens control module, which provides programmable zoom and focus position settings. Two auxiliary serial ports are available for additional payload control options.

The Model 20 Pan & Tilt gimbal provides precision performance, reliability, flexibility, and the ability to operate in harsh environments.



SPECIFICATIONS FOR MODEL 20 PAN & TILT GIMBAL

We reserve the right to change these specifications at any time.



ROTO-LOK®

FEATURES

- **20 lb Payload Capacity**
- **Dual Payload Shelves**
- **0.01° Positioning Resolution**
- **Zero Backlash**
- **Wide Angular Coverage**
- **No Maintenance Required**
- **Quiet Operation**
- **60°/Sec Positioning Rates**
- **50 Programmable Presets**
- **Several Mounting Options**
- **RS-232/485 Communications**
- **Balanced Payload**
- **Weather Resistant**
- **12 to 28 Volt AC or DC**



Height _____	13" (330 mm)
Width _____	8.8" (223.5 mm)
Depth _____	8.4" (213.4 mm)
Weight _____	13 lbs (5.9 Kg)
Payload Capacity _____	20 lbs (9 Kg) (balanced on CG)
Max Inertia _____	Pan <550 lb-in ² (<0.16 Kg-m ²), Tilt <400 lb-in ² (<0.12 Kg-m ²)
Travel Range (Azimuth) _____	360° non-continuous (+/-180°)
Travel Range (Elevation) _____	+95° to -35° from horizontal
Travel Rate (Max) _____	60°/sec (with 20 lb payload balanced on dual shelves)
Positional Resolution _____	36.35 arc sec/motor step (0.01°) (more resolution see options)
Input Power _____	12 to 28 VDC or 12 to 24 VAC (specify voltage with order)
Power Usage _____	16 Watts, 4 Watts nominal
Power & Data Connector _____	MIL-C-5015 Connector (mating connector supplied)
Controller Interface _____	PC (standard serial interface)
Payload Power _____	Provides on-board power for most applications
Payload Wiring _____	Internal from base connector thru both axes to payload
Payload Shelves _____	Adjustable to balance payload CG
Color _____	White Powder Coat; other colors available
Motor Type _____	Stepping motor
Motor Controller _____	32-bit microprocessor on-board the gimbal
Communication _____	RS-232 or RS-485 (specify with order)
Communication Ports _____	Two additional RS-232 comm ports included
Lens Control _____	Internal programmable controller for zoom and focus
Manuals _____	Installation, Operating and Maintenance instructions
Routine Maintenance _____	None required
Warranty Period _____	One year (if operated according to instructions)
Operating Temperature _____	-20°F (-30°C) to +158°F (70°C)

OPTIONS

Offset Mounting Brackets _____	Places payload on pan & tilt axes
Increased Resolution _____	18.18 arc seconds/step (at reduced torque & speed)
Geared Stepper Motors _____	5:1 ratio (12°/sec max slew) (step size 7.27 arc sec)
Incremental Encoders _____	25.92 arc seconds/bit or 6.48 arc seconds/bit
Payload Cable Installed _____	Factory Installed power, communication, and/or video
Heavy Duty Pan Axis Bearing _____	Added durability for shock/vibration environments
Optional Finish Color _____	Specify desired color in paint or powder coating