

V-106

Voice-Coil Scanning System

Application Examples

- Semiconductor testing
- Photonics alignment and packaging
- Medical analytical equipment
- Micro-dispensing applications
- Optical device testing
- Lens testing
- Scanning microscopy
- Micromanufacturing

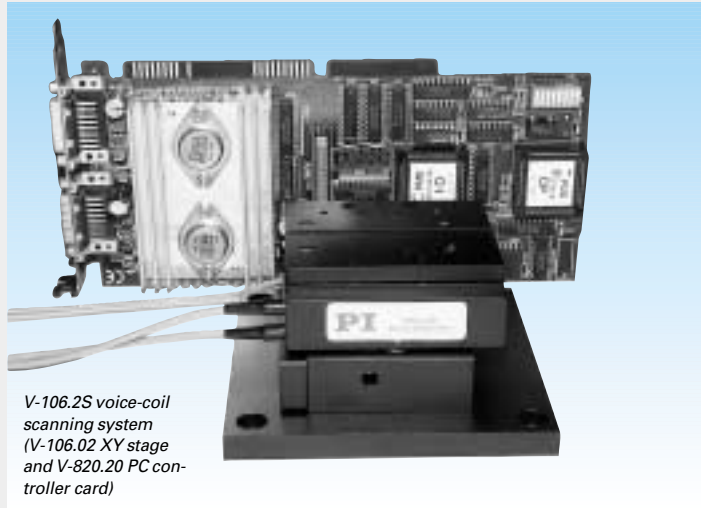
Ordering Information

V-106.1S
Voice-Coil Scanning System: Controller Card (V-820.20) and X-Axis Stage, 6 mm

V-106.2S
Voice-Coil Scanning System: Controller Card (V-820.20) and XY Stage, 6 mm

V-820.20
Voice-Coil Scanning Controller, PC Card, 2-Axis

Custom Designs for Volume Buyers



V-106.2S voice-coil scanning system (V-106.02 XY stage and V-820.20 PC controller card)

- **Fast Scanning & Positioning**
- **X and XY Versions**
- **Velocity up to 50 mm/sec**
- **Travel Range: 6 mm**
- **Resolution: 0.1 μm**
- **PC-Card Servo-Controller**
- **Windows™ Software**

The V-106 voice-coil scanning and positioning system is designed for applications where small samples have to be positioned or scanned with high velocity and high resolution. It provides superior responsiveness compared to micropositioners with conventional lead-screw drives. The mechanics (X or XY stage) are driven by an integrated, non-contact, zero-friction, voice-coil actuator. Scan velocities up to 50 mm/sec over a range of 6 mm are feasible with typical

- PZT Actuators
- PZT Flexure NanoPositioners
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- Tutorial: Piezoelectrics...
- Capacitive Position Sensors
- PZT Control Electronics
- MicroPositioners / Hexapod Systems**
- Photonics Alignment & Packaging Systems
- Motor Controllers
- Index

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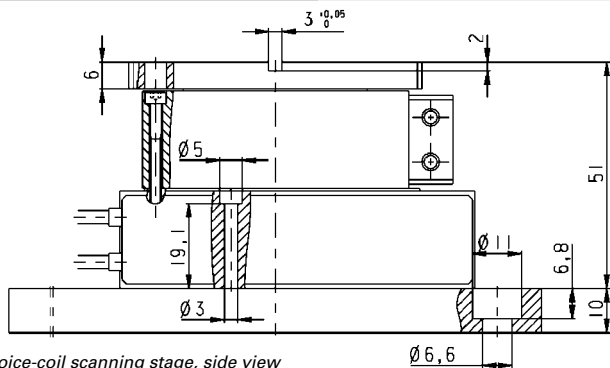
loads of less than 100 grams (see V-102 QuickScan, page 7-18, system for velocities up to 150 mm/sec). Integrated linear encoders provide position resolution of 0.1 μm.

Non-Contact Limit and Origin Switches

Integrated, non-contact, high-precision Hall-effect origin and limit switches, protect your equipment and increase versatility in automation applications.

The digital controller comes on an ISA-bus-compatible PC plug-in card and features on-board linear amplifiers for two individual axes, a 32-bit PID-Vff servo system and other features such as I/O lines and hardware interrupt capability.

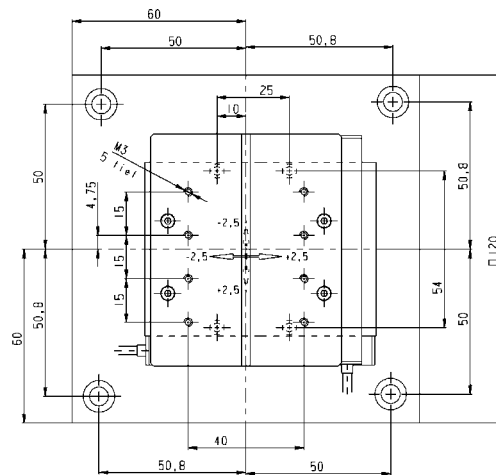
A mounting plate and software tools (LabView drivers, libraries in C, Pascal, Basic...) are included in the system.



XY voice-coil scanning stage, side view

Technical Data

Models	V-106	Units
Travel	6	mm
Min. Incremental Motion	0.1	μm
Repeatability	0.2	μm
Max. Velocity	50	mm/sec
Displacement sensor	Incremental linear encoder	
Controller	PC-board, 32-bit digital PID-Vff (part#: V-820.20)	
Interface	PC ISA bus, I/O mapped, interrupt and break-point capability	
Software	Windows™ operating program, LabView™ drivers, libraries in C, BASIC, Pascal, Delphi	
MTBF	>20000 hours	



XY voice-coil scanning stage with mounting plate, top view