



We've made our heavy-duty galvanometers do a whole lot more by making them a whole lot smaller.

Introducing a new class of rotational voice coil stages— instruments with the precision of a galvanometer and the size and reliability of a resonant scanner.



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Overview: The New RVC-5 Rotational Voice Coil Motor is incredibly small, and provides a unique way to create rotational translation. It's rotation or *tilting* action is achieved through the use of a flexure bearing developed using advanced FEA research. It is designed to provide infinite life, and a tilt range of ten (10) degrees mechanical. This use of flexure bearings produces stiction and friction-free positioning of various user loads (usually a mirror) with high reliability, resolution and velocity regulation.

Voice Coil: The RVC-5 Rotational Voice Coil Stage will *tilt* user loads by pushing or pulling on the lever arm that extends from the bearing. We use a voice coil motor for its superior force-to-size and mass characteristics, and anchor it directly under the user load platform for the most efficient use of space.

Positioning Feedback Sensor: The RVC-5 Rotational Voice Coil Stage includes a very high-resolution position sensor. This non-contact, electro-optic sensor directly monitors the angular position of the user load with micro-radian scale resolution and repeatability. It produces an analog signal proportional to position, and is noise limited.

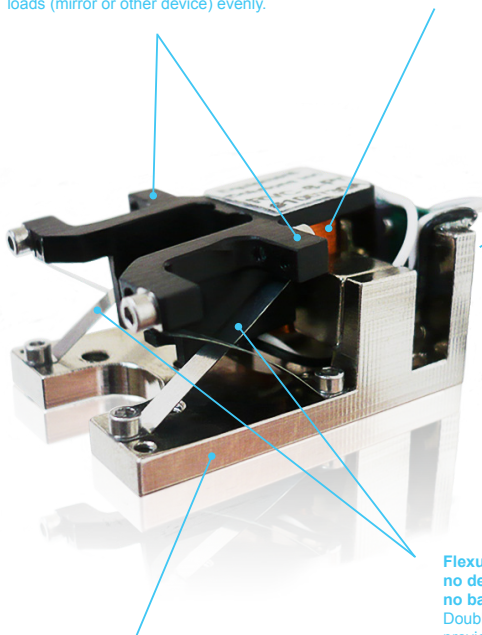
RVC-5. Small in size, big on possibilities, it's the first in a new line of compact rotational voice coil stages.



RVC-5 with 35 mm gold mirror

Can be commanded to any angular position and follow a completely linear velocity profile in its range. Rigid "H" frame lever arm supports user loads (mirror or other device) evenly.

A smaller motor means a much smaller size and cost. Voice coil motor chosen for its superior force-to-size/mass attributes, sits directly under the load platform, to push and pull the lever arm with a minimum of mass and space.



RVC-5 Rear View

Can easily be commanded to oscillate or move to any fixed point along its large angular range. Fully integrated, absolute angle position sensor electronics bolted to the rear of the unit has direct compatibility with the SCA814 Servo-Controlled Amplifier.

Flexure bearings have a longer life—no detent force or friction to fight, and no ball or needle bearings to wear out. Double flexure bearings on both sides provides stiction, friction-free positioning consistently and at smooth, steady speeds. Designed to provide infinite life, it has a tilt range of 10 degrees.

25 x 40 x 15 mm. Innovative new size and configuration is ideal for micro-positioning applications in semiconductor, medical, optical testing, scanning microscopy, circuit board assembly, and micro manufacturing.

We pride ourselves in giving OEMs and VARs precisely the tools they need to make the best systems possible—our highest priority is in applications support. Our knowledgeable engineers will help you analyze your objectives to achieve the very best solutions, even before you become a customer. Undivided attention and long term relationships ensures your success—and ours. Please contact our Sales Department or our office by phone: (408) 245-7161, fax: (408) 245-7160, mail: 461 East Evelyn Avenue / Sunnyvale, CA 94086, or by email: sales@equipsolutions.com

| Mechanical Specifications: | |
|----------------------------------|-----------------|
| Physical Dimensions: | 25 x 40 x 15 mm |
| Angular Excursion (mechanical): | ±5° |
| Stage Moving Mass: | 2.4 grams |
| Torque Constant: | 0.01 Nm/A |
| Maximum Motor Temperature: | 100 °C |
| Electrical Specifications: | |
| Coil Resistance: | 5 Ω |
| Coil Inductance: | 200 μH |
| RMS Current: | 0.3A |
| Peak Current: | 3A for 10 msec |
| Small Angle Step Response: | 5 msec |
| Position Sensor Specifications: | |
| Sensor Non-Linearity: | ±0.3% FS |
| Sensor Scale Drift: | 200 PPM / °C |
| Sensor Short Term Repeatability: | 1.5 μrad |
| Sensor Signal Output: | 0 - 2.5 VDC |

